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Diversification in East and Southern Africa

Nationally Determined Contributions (NDCs) Capacity Scorecard: Scoping Study for East and Southern Africa (ESA)

International Water Management Institute (IWMI)

and the

African Group of Negotiators Expert Support (AGNES)

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Contents

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The CGIAR Initiative on Diversification in East and Southern Africa aims to help smallholders transition to sustainably intensified, diversified, and derisked agri-food systems based on maize in 12 ESA countries. Specifically, it seeks to enable 50,000 value chain actors, including farmers (at least 40% women, 40% youth), to adopt climate-smart maize-based intensification and diversification practices and one million to access digital agro-advisory services. Emphasizing the role of the private sector in driving such transformation, UU targets to support at least 30 start-ups and SMEs.

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Abbreviations

Acronyms	Definitions
AR6	IPCC 6th Assessment Report
AU	African Union
COMESA	Common Market for Eastern and Southern Africa
CSO	Civil Society Organization
DRC	Democratic Republic of Congo
EAC	Eastern African Community
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
ESA	East and Southern Africa
GAIA	Global Alliance for Incinerator Alternatives
GDP	Gross Domestic Product
GGA	Global Goal on Adaptation
ICTU	Information necessary for Clarity, Transparency and Understanding
IGAD	Intergovernmental Authority on Development
IPCC	Intergovernmental Panel on Climate Change
ITUC	International Trade Union Confederation
KII	Key Informant Interviews
KP	Kyoto Protocol
LEG	Least Developed Expert Group
LT-LEDS	Long-Term Low Emission and Climate Resilient Development Strategy
MDAs	Ministries, departments and agencies
MEL	Monitoring, Evaluation and Learning
NAPs	National Adaptation Plans
NCQG	New Collective Quantified Goal for Climate Finance
NDCs	Nationally Determined Contributions
PA	Paris Agreement
PCCB	Paris Committee on Capacity Building
RCP	Representative Concentration Pathway
SADC	Southern Africa Development Community
SDGs	Sustainable Development Goals
SRES	Special Report Emissions Scenarios
UMA	Arab Maghreb Union
UNFCC	United Nations Framework Convention on Climate Change

Foreword

Climate change is undeniably one of the most urgent global challenges of our era, requiring a unified and collective response from all nations. Despite contributing relatively little to global greenhouse gas emissions, Africa faces an outsized vulnerability to climate change, driven by the socioeconomic disparities that compound the continent's challenges. Yet, Africa remains resolute in its dedication to addressing this crisis. A cornerstone of the Paris Agreement (PA) is the Nationally Determined Contributions (NDCs), where nations articulate their climate action commitments, revising and communicating them every five years. These NDCs are shaped through a bottom-up process that captures each country's distinct circumstances and priorities, grounded in extensive stakeholder engagement across government bodies, civil society, academia, and the private sector.

As the global community looks ahead to the formulation of the Next Generation of NDCs in 2025, a significant partnership has emerged between the International Water Management Institute (IWMI) and the African Group of Negotiators Expert Support (AGNES). Supported by CGIAR's Regional Integrated Initiative for East and Southern Africa (ESA), Ukama Ustawi, this collaboration aims to deliver critical technical support and assess countries' capacities to implement their NDCs through the creation of an NDC Capacity Scorecard.

Effective NDC implementation hinges on robust institutional frameworks that embed climate action within sectoral policies, programs, and budgets. Strengthening NDC capacity across crucial sectors—such as water, health, agriculture, and education—is essential, given the interconnected impacts of climate change on these areas. A cross-sectoral coordination approach, led by focal ministries responsible for NDC implementation, is vital to ensure cohesive and comprehensive integration of climate action across sectors. This coordination will allow for improved resource allocation, policy alignment, and collaboration between ministries, driving a more unified response to climate challenges.

However, many African countries experience significant capacity shortfalls at the sectoral, institutional, and individual levels, limiting their ability to fully realize their NDC targets. These challenges include:

- **Technical Expertise**: Gaps in skills needed for greenhouse gas inventories, climate modeling, vulnerability assessments, and data analysis.
- **Institutional Capacity:** Weak coordination mechanisms and policy fragmentation, hampering the mainstreaming of climate action into national development plans.
- **Resource Mobilization:** Limited domestic funding and obstacles in accessing international climate finance.
- **Climate Finance Absorption**: Constraints in project management and financial oversight, which impede the effective utilization of funds.

The Paris Committee on Capacity Building (PCCB) has highlighted these gaps, stressing the importance of standardized data, enhanced governance structures, cross-sectoral collaboration, and gender-responsive strategies. Addressing these issues demands targeted capacity-building initiatives and tools that can assess and bolster countries' ability to meet their climate commitments.

This scoping study seeks to develop a comprehensive NDC Capacity Scorecard, designed to evaluate the readiness and capacity of East and Southern African (ESA) countries to develop and implement their NDCs. The self-assessment scorecard will allow decision-makers to assess critical dimensions of NDC implementation capacity and establish relevant indicators for each dimension. The development process will involve a thorough literature review, an assessment of existing NDC tools, the creation of a prototype scorecard, pilot testing in selected ESA countries, and iterative refinements based on stakeholder feedback. Continuous engagement with stakeholders will ensure that the scorecard is practical, relevant, and effective.

By considering the diverse geographical, political, and socioeconomic contexts of the region, this exercise will provide crucial insights into the capacity needs of ESA countries. It emphasizes the necessity of a context-sensitive approach, offering tailored recommendations and capacity-building strategies to enhance each nation's ability to achieve its NDC commitments and overall

climate goals. The cross-sectoral coordination of key ministries, particularly in sectors like water, health, education, and agriculture, will be pivotal to ensuring a unified and sustained response to climate change.

Dr. Inga Jacobs-Mata

Director of Water, Growth and Inclusion at the International Water Management Institute (IWMI) and Lead for the CGIAR Initiative on Diversification in East and Southern Africa (ESA)

Africa, despite its relatively low greenhouse gas emissions contribution, faces some of the most severe impacts of climate change. These increasingly observable impacts threaten the livelihoods of millions who depend on climate-sensitive sectors such as agriculture, fisheries, and natural resources. Addressing these risks requires not only high adaptation and mitigation ambition but also capacities to develop and implement strategies that are adaptive, inclusive, and sustainable.

Nationally Determined Contributions (NDCs) serve as a central pillar under the Paris Agreement, requiring countries to articulate their mitigation and adaptation ambitions. However, the ability of many African nations to translate these ambitions into action remains challenged by significant capacity gaps in governance, financial, institutional frameworks, and technical expertise.

The development of an NDC Capacity Scorecard is a proactive response to these challenges, offering a systematic way to assess and improve the capacities needed for NDC development and implementation. This report reflects the collaborative work of the African Group of Negotiators Expert Support (AGNES) and the International Water Management Institute (IWMI) with the goal of providing African countries with the tools necessary to assess their technical, governance, institutional, and financial capacities for developing and implementing their NDCs.

The NDC Capacity Scorecard Scoping Report comes at a pivotal time for African countries as they intensify efforts to meet climate commitments under the Paris Agreement. The Scoping Study highlights the importance of collaboration among governments, civil society, academia, and the private sector. Climate action must be inclusive, with all stakeholders playing a role in shaping and driving solutions. Through this scorecard initiative, countries in Africa can better position themselves to access the international support and financing required to achieve their climate goals. By creating a comprehensive scorecard, countries will have a tailored tool to help in aligning and prioritize their capacity-building needs.

As countries move toward the NDC 3.0 by February 2025, the NDC Capacity Scorecard will serve as a key enabler for African countries to not only enhance their capacities but also strengthen their leadership in the global climate discourse. This report, therefore, is not just a technical document; it is a call to action—a commitment to building resilience and advancing sustainable development across the continent.

Dr George Wamukoya, OGW

Team Lead

African Group of Negotiators Experts Support (AGNES)

Executive Summary

Nationally Determined Contributions (NDCs) are central to the Paris Agreement, requiring countries to set and communicate climate action targets every five years. NDCs are formulated through a bottom-up process considering national circumstances and priorities, providing a framework for economic development and poverty eradication aligned with climate goals. The process includes comprehensive stakeholder engagement, encompassing government bodies, civil society, academia, and the private sector. As the world gears up for the development of the Next Generation of NDCs in 2025, an important partnership between the International Water Management Institute (IWMI) and the African Group of Negotiators Expert Support (AGNES), made possible through the CGIAR's Regional Integrated Initiative for East and Southern Africa (ESA), *Ukama Ustawi*, has sought to provide technical support to the process and assess the capacity of countries to implement the NDC's in various sectors through a NDC Capacity Scorecard.

Effective NDC implementation necessitates a robust institutional framework, integrating climate action into sectoral policies, programs, and budgeting. Many African countries face significant capacity gaps at systemic, institutional, and individual levels, hindering their ability to implement NDCs. Key capacity gaps include:

- **Technical Expertise**: Limited capacity in greenhouse gas inventories, climate modeling, vulnerability assessments, and data analysis.
- **Institutional Capacity**: Weak coordination mechanisms and policy coherence impede climate action integration into national planning.
- **Resource Mobilization**: Constrained domestic budgets and limited ability to access international climate finance.
- **Climate Finance Absorption**: Challenges in project management and financial management limit the effective use of available funds.

The Paris Committee on Capacity Building (PCCB) has highlighted these gaps, emphasizing the need for standardized data, governance, coordination, and gender-responsive approaches. Addressing these gaps requires targeted capacity-building strategies and tools to assess and enhance countries' capabilities.

The purpose of this study is to develop a robust NDC Capacity Scorecard to evaluate the capability of East and Southern African (ESA) countries in implementing their NDCs. This scorecard will identify key dimensions of NDC implementation capacity and develop indicators for each dimension. The development process includes a comprehensive review of existing NDC assessment tools, the development of the scorecard prototype, pilot testing in selected ESA countries, and refinement based on feedback.

The scorecard development is based on a literature review of existing NDC assessment tools, comparing their gaps and needs, as well as participatory action research and engagement with selected country teams to in the piloting and validation of the scorecard. Data collection includes reviewing international, regional, and national policies, technical reports, and scientific publications. The process involves stakeholder engagement to ensure the scorecard's relevance and effectiveness.

The development of an NDC Capacity Scorecard will provide valuable insights into the capacity gaps and needs of ESA countries. Tailored recommendations and capacity-building strategies will enhance their ability to implement NDCs effectively.

1. Introduction

1.1 Background

The United Nations Framework Convention on Climate Change (UNFCCC) is an intergovernmental treaty developed to address the global challenge of climate change. The Convention, which sets out an agreed framework for a global response to climate change was adopted in June 1992 in Rio de Janeiro, Brazil at the Rio Earth Summit. The ultimate objective of the Convention is to *"stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system"* of which *"should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner"*. Since it is a framework instruments need to be established to operationalize its provisions. Two such instruments have been established under the Convention, namely: The Kyoto Protocol (1997) and The Paris Agreement (2015).

The Kyoto Protocol (KP) was adopted in 1997 and came into effect in 2005. The main objective of the KP is to reduce emissions of Annex I (developed) countries by at least 5% below 1990 levels (and in some cases 1995 levels) in the period 2008-2012. The second commitment period 2013 – 2020 was adopted in Doha in 2012 but only came into effect in 2020 making it difficult to implement it and has since expired. The Paris Agreement (PA) which was adopted in 2015 and came into effect in 2016 is an important instrument that aims to enhance collective global response in addressing the impacts of climate change. The PA establishes three important goals – 1. holding the increase in the global average temperature to below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, 2. regularly evaluating progress towards the agreement's goals as seen through the updating of NDC targets and ambitions, 3. align financial flows by providing funding to developing countries to address climate change mitigation and adaptation – relating to the Global Goal on Adaptation (GGA) and New Collective Quantified Goal for Climate Finance (NCQG).

The Nationally Determined Contributions (NDCs) are the main building blocks under the PA. The NDCs are premised on recognition that climate change is a global challenge that requires collective global response by all countries. Consequently, Article 4 of the PA provides for all countries to formulate, communicate and maintain their respective NDC targets every five years, ***Annex 2*** provides a list of African countries who have submitted and updated their NDCs. Although NDCs are universal, their formulation is a bottom-up process in which countries contextualize and self-differentiate their targets and contributions based on their national circumstances and priorities. NDCs represent the opportunity for fundamental shifts in a country's approach to economic development and poverty eradication efforts while the Long-Term Low Emission and Climate Resilient Development Strategy (LT-LEDS) offer countries a long-term perspective to inform the design of development trajectories.

The development of the NDC is a very rigorous process which typically begins with the assessment of a country's unique vulnerabilities to climate change. It is a government-driven process that brings on board different stakeholders including government ministries, departments and agencies (MDAs), civil society, academia, and the private sector to set the national target and identify potential adaptation and mitigation actions as well the required means of implementation *(finance, technology development and transfer and capacity building)*. The realization of

NDC and LT-LEDS ambition to mitigate climate change and adapt to its effects provides an opportunity to align climate and sustainable development strategies in support of the PA, the 2030 Agenda and the Sendai Framework on Disaster Risk Reduction. While the UNFCCC CMA Synthesis report highlights the role of NDCs in establishing near-term mitigation targets and actions, it's important to note that NDCs encompass both mitigation and adaptation components, with the focus being East and Southern Africa, ***Annex 3*** provides an overview of the targets and priority sectors within the region. As such, they go beyond solely focusing on the reduction of emissions – clearly defining these actions there's a potential alignment with the long-term vision of these frameworks providing a comprehensive framework for countries to outline their climate actions, addressing both emissions reductions and the adaptation to climate change impacts. However, it is worth noting that the relationship is not always linear in that countries are at different phases of developing and implementing the aforementioned, resulting in difficulties in aligning short-term actions with long-term goals.

A sound institutional framework that governs the overall NDC development and implementation is critical at enhancing coordination and strengthening the efficiency and capacity to deliver on climate commitments. The implementation of an NDC requires integration into various sectoral policies, programmes and budgeting, which requires robust coordination and a whole-of-society approach. Unfortunately, most of African countries do not have the systemic and institutional capacities to fully address this challenge. Further, the preparation of an NDC Implementation Strategy/Plan is a good place to begin NDC coordination. Coordination responsibilities would also include tracking progress towards NDC goals against the PA objectives, promoting transparency, attracting local buy-in amongst policy makers and international support needed, establishing decision-taking procedures and inclusive stakeholder engagement.

Many countries have limited capacity to advance their efforts to implement their commitments as guided by the PA. An in-depth understanding of the specific nature of these capacity gaps can help further direct and prioritize support. In 2019, the Paris Committee on Capacity Building (PCCB) prepared a technical paper on capacity gaps and needs in which it concluded that capacity gaps persist at the systemic, institutional and individual level and that *"all countries continue to face capacity gaps and needs with respect to the implementation of the adaptation and mitigation components of their NDCs.[1]"* It further emphasized that the *"common capacity gaps and needs persist on cross-cutting issues such as standardized data generation, collection and analysis, governance and coordination, development of endogenous capacity, access to climate finance and gender responsiveness."*

Some of the key objectives of the report and the NDC Capacity Scored *inter alia* include:

1. Support developing countries in undertaking the ***assessment of their capacity gaps and needs*** regarding the full implementation of their current NDCs and in developing new or updated NDCs,
2. Continuation of collection ***and sharing experiences, good practices and lessons learned from a national level assessment of capacity gaps and needs*** related to climate action, and

[1] UNFCCC (2019). Paris Committee on Capacity-building (PCCB): National-level pilot exercise on Committee on Capacity-building (PCCB), Bonn, July 2019

3. ***Develop a toolkit to guide a national level assessment of capacity gaps and needs*** relating to the implementation of the PA, in consideration of lessons learnt from national capacity needs assessments conducted.

However, it was noted that there are significant differences between countries in terms of the scope and scale of those capacity gaps and needs. For example, the majority of the NDCs are developed with external support and without solid sector/subsector specific data.

Therefore, the purpose of this study is to review the existing NDC assessment tools and develop a robust NDC Capacity Scorecard. The resultant Scorecard will assist countries in identifying their capacity gaps and needs and provide an indication of the capacity required for implementation in order to effectively deliver on the NDCs as envisioned under Article 4 of the PA.

1.2 Scope of Work

The NDC Capacity Scorecard that is under development is intended to assess the capacity of East and Southern African (ESA) countries to implement their NDCs. Through a phased approach encompassing several specific objectives, the aim is to identify the key dimensions of NDC implementation capacity within the context of the region. Subsequently, develop a set of indicators for each dimension.

Following the development phase, the capacity scorecard will undergo pilot testing in pre-selected countries in ESA. Based on feedback received during pilot testing, the scorecard will be refined to ensure its effectiveness and relevance. The final scorecard will be disseminated to countries in ESA and other relevant stakeholders, with the envisioned aim of having it utilized by other regions within Africa.

Ultimately, the NDC Capacity Scorecard seeks to identify gaps and weaknesses in NDC implementation capacity and provide tailored recommendations and capacity-building strategies to address these challenges.

The scope of work entails:

a) A scoping study identifying the key dimensions for NDC setting and implementation assessment.

- review of existing NDC assessment tools and identifying the gaps and needs among available NDC assessment tools enabling countries in East and Southern Africa to self-assess their progress, and
- findings inform the development of an NDC capacity scorecard, including a set of indicators for each category of NDC, which will be validated by experts from the AGNES network.

b) Development of the NDC Capacity Scorecard.

c) Piloting/testing the NDC Capacity Scorecard. This will entail piloting/testing the scorecard in at least one or more countries in East and Southern Africa and providing feedback and recommendations for scorecard revision.

d) Develop a training manual on how to use the Scorecard.

1.3 Approach and Methodology

We develop the NDC capacity scorecard based on a literature review of the existing NDC assessment tools and comparing their gaps and needs as well as by taking head of the existing guidance provided to countries in their development of the NDCs as referenced in ***Annex 4***. The review focused on international, regional and national policies, and technical reports which include the NDCs, NAPs, African Union Climate Change and Resilient Development Strategy and Action Plan (2022 – 2032), IPCC Assessment Reports, regional climate risk profiles in Africa, and other scientific publications. In addition, we utilize surveys to collect empirical data to identify key areas of focus and indicators when assessing capacity needs and gaps of the target countries in efforts to effectively pilot test the scorecard. The questionnaire that we intend to distribute for data collection is detailed in ***Annex 1***.

The proposed steps to be taken in developing the NDC Capacity Scorecard are depicted in ***Figure 1*** below:

Figure 1*: Steps to developing the NDC Capacity Scorecard*

Step 1*: Primary Data Collection*

- A questionnaire will be developed and administered to collect baseline information on the status of the development and implementation of NDCs and capacity gaps and needs. The primary target stakeholders will be UNFCCC focal points who coordinate NDC development processes in their respective countries. Key Informant Interviews (KII) will also be conducted with other experts involved in NDC processes to obtain further in-depth information.

Step 2*: Data Analysis*

- Data analysis will be performed using qualitative and quantitative methods. The software to be used includes Statistical Package for Social Sciences (SPSS), Microsoft Excel program, and STATA. Findings from the data analysis will be the basis of a technical report, scientific article, and a policy brief.

Step 3*: Development of the NDC Capacity Scorecard*

- Based on the situation analysis, the capacity needs assessment that will inform the development of a draft NDC Capacity Scorecard. The development process will involve the identification of priority sectors,

selection of appropriate measuring indicators, weighting criteria, and compute ranking score using multi-criteria decision modeling (MCDM) tool, among others.

Step 4: *Development of a user manual*

- After developing the NDC capacity scorecard, the next step will be to develop a user manual for the scorecard.

Step 5: *Pilot Testing the Scorecard*

- The developed NDC Capacity Scorecard will be piloted in two selected countries, Kenya and South Africa. Thereafter, the process will be finalized by conducting a Monitoring, Evaluation and Learning (MEL) to assess the performance of the scorecard. The feedback will lead to an iteration of the scorecard to improve the tool.

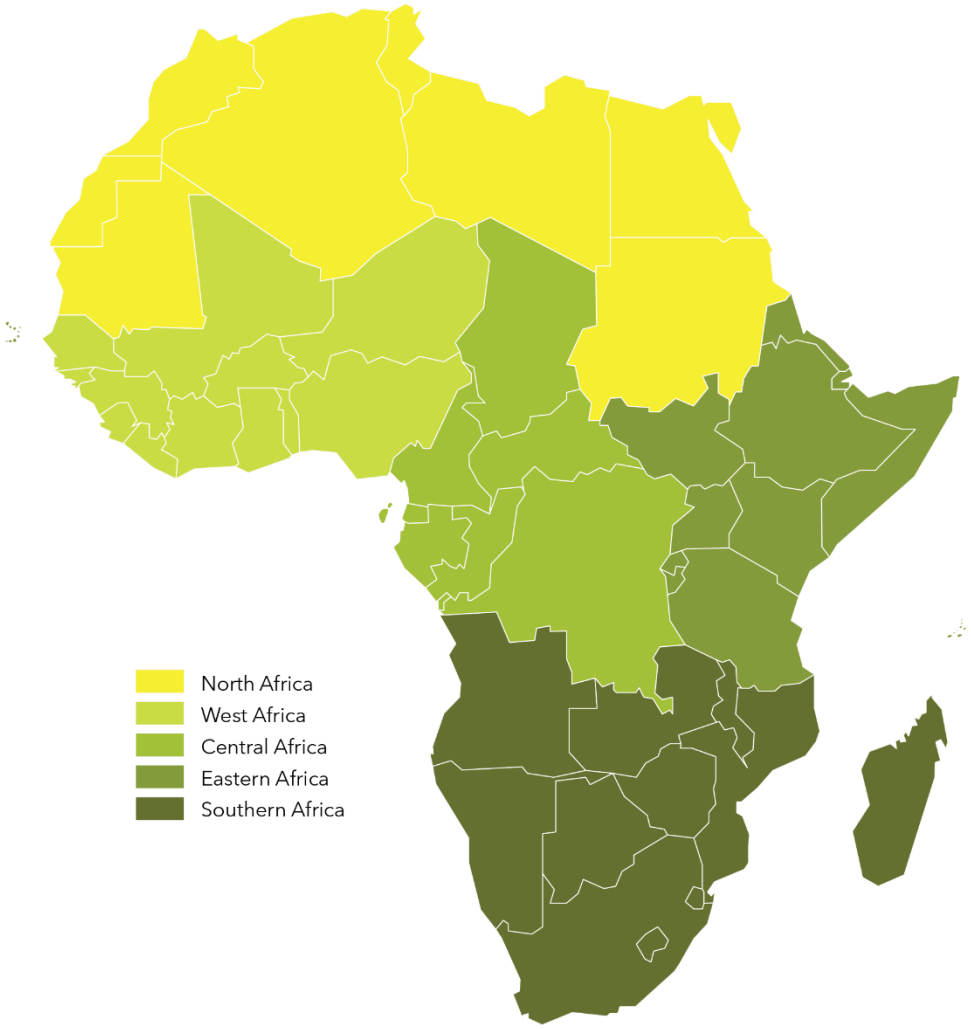
2. Africa's Economic Profile and Climate Risks

2.1 Background

The African continent comprises 55 Member States, including the Western Sahrawi. The continent is divided into five geographic regions as depicted in ***Figure 2***, namely Central Africa, Eastern Africa, North Africa, Southern Africa, and West Africa. The total African population is estimated to be over 1.2 billion, and the youngest population in the world with more than 400 million youths aged between 15 and 35 years. In addition, Africa has a nominal Gross Domestic Product (GDP) of about USD 2.263 trillion making it the eleventh-largest economy in the world (AU, 2023)

Africa's economy is centered around agriculture with over 60% of the population depending on subsistence agriculture and supporting the livelihoods of more than 55% of the labor workforce. Over the years, agricultural productivity has declined by 34% due to climate change (AU, 2023). This is regarded as the highest declining productivity compared to other regions of the world, induced by climate change. Future projections indicate that Africa will be negatively affected by environmental limits in areas where crop yields are already declining, by regions, and/or different types of crops. Consequently, progress towards economic diversification and sustainable growth is constrained by the impacts of climate change, especially in climate-sensitive sectors (agriculture, energy, and the blue economy) due to Africa's susceptibility to climate variability and change (AU, 2023). This has a bearing on the continent's ability to achieve its Agenda 2063 and the Sustainable Development Goals (SDGs) by 2030.

***Figure 2**: Map of Africa showing the Sub-Regional Blocks*



Graphics: Dinuk Senapatiratne

The AU has implemented various policies to address the threat posed by climate change. Of these policies, the AU Climate Change and Resilient Development Strategy and Action Plan (2022 – 2032) is the continental blueprint for climate change. The Strategy and Action Plan goal is to "provide a continental framework for collective action and enhanced cooperation in addressing climate change issues that improves livelihoods and well-being, promotes adaptation capacity, and achieves low-emission, sustainable economic growth" and has the overall objective of "building the resilience of African communities, ecosystems and economies, and supporting regional adaptation" recognizes that climate change is existential threat to Africa's communities, ecosystems and economies and that it places our developmental gains, our prosperity and the aspirations of Agenda 2063 in jeopardy. To achieve the aforementioned goal and objective, four targeted objectives have been put forward, namely:

- Strengthening the adaptive capacity of affected communities and managing the risks related to climate change.
- Pursuing equitable and transformative low-emission, climate-resilient development pathways.
- Enhancing Africa's capacity to mobilize resources and improve access to and development of technology for ambitious climate action.

- Enhancing inclusion, alignment, cooperation, and ownership of climate strategies, policies, programmes and plans across all spheres of government and stakeholder groupings.

It is imperative to emphasize that the AU Climate Change and Resilient Development Strategy and Action Plan, is primarily intended to support its Member States to deliver on the national and international climate change commitments under the Paris Agreement as expressed through their respective Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and Long-Term, Low Emission and Climate-Resilient Development Strategies (LT-LEDS).

2.2 Sub-Regional Climate Profiles

2.2.1 Central Africa

The Central Africa sub-region includes eleven countries, namely Angola, Cameroon, Central African Republic, Chad, Democratic Republic of Congo (DRC), Equatorial Guinea, Gabon, Republic of Congo, and São Tomé and Príncipe. The Economic Community of Central African States (ECCAS), the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Southern Africa Development Community (SADC) are the regional bodies[2].

The region is dominated by the Congo River Basin, second only in size to the Amazon Basin, which hosts Africa's largest tropical rainforest. The region has vast natural forest resources, arable land, oil, gas, and minerals. Oil commodity exports account for over 50% of total exports for most countries in the region (AfDB, 2023).

The region is hot and humid due to the Congo River Basin and the Congo Forest, the mountains, savannahs, and wetlands. The forest plays an important role in regulating the world's climate. It is estimated that the mean annual temperatures have increased by 0.75°C since 1960 (IPCC, 2021a), resulting in an increasing number of hot days and heatwaves between 1979-2016 (Hu et al., 2019), while cold extremes have also decreased (Seneviratne et al., 2021). Deforestation has been projected to reduce evapotranspiration and further warming with an average increase from 0.7^{0}C and up to 1.2^{0}C locally in deforested areas in the Congo Basin (Doherty et al., 2022). The warming and associated evapotranspiration will continue to increase in the future and heavy rainfall events will be more frequent and more intense. The coastal environments, including low sandy beaches and mangrove forests, are at risk of rising sea levels, sea surface temperatures, and increasing ocean acidification.

[2]***Annex 5***, has been included to provide a detailed break-down of the African regional economic communities, as a result of geography, politics, economic interests and so forth some countries are seen to form part of more than one regional body.

Climate change has increased the risk of extreme heat and heatwaves, leading to drought and extreme precipitation, and floods in Central Africa. These extreme weather events often trigger transboundary cascading impacts that have far-reaching effects. Shared natural resources in the region have led to systemic cascading risks such as involuntary migration, forced displacement, increase in inter-communal violence, increase in organized crime, food insecurity, and rise in land conflicts (UNOCA, 2022). For instance, the Lake Chad Basin crisis, caused by various factors and exacerbated by extreme heat and drought, has affected four countries, leaving close to 400,000 people displaced, and a further 6.1 million in need of humanitarian assistance (Lamarche, 2022). The Congo Basin, a crucial natural resource spanning six countries[3], is also expected to be increasingly decreased in terms of vegetative productivity and deforestation (CMS, n.d.), which will undoubtedly lead to food insecurity, displacement and migration, habitat loss, and land conflicts.

Table 1 below provides a summary of potential climate hazards and risk projections that are anticipated for Central Africa.

***Table 1**: Climate Hazards and Risks Projections in Central Africa*

Climate Hazard/ Risk	Frequency	Projection
Extreme Heat and Heatwaves	The number of hot days and heatwave days increased between 1979–2016 (Hu et al., 2019) and cold extremes have decreased.	By the end of 2070–2099 century, warming of 2°C (RCP4.5) to 4°C (RCP8.5) is projected over the region and the number of days with maximum temperature exceeding 35°C is projected to increase by 150 days or more at GWL 4.4°C. The number of heatwave days is projected to increase, and extreme heatwave events may last longer than 180 days at GWL 4.1°C
Extreme precipitation and Floods	The severe lack of station data over the region leads to large uncertainty in the estimation of observed rainfall trends and low confidence in changes in extreme rainfall (Ranasinghe et al., 2021). There are some evidence of drying since the mid-20th century through decreased mean rainfall and increased precipitation deficits (IPCC, 2021a), as well as increases in meteorological, agricultural and ecological drought (medium confidence) (Seneviratne et al., 2021).	At GWL 3°C and GWL 4.4°C, an increased mean annual rainfall of 10–25% is projected by regional climate models and the intensity of extreme precipitation will increase (high confidence). This is projected to increase the likelihood of widespread flood occurrences before, during and after the mature monsoon season.

[3] Cameroon, Central African Republic, DRC, Republic of Congo, Equatorial Guinea and Gabon

2.2.2 Eastern Africa

The Eastern Africa region encompasses a diverse array of landscapes across fourteen countries those being Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Mauritius, Republic of Burundi, Rwanda, Seychelles, Somalia, South Sudan, United Republic of Tanzania, and Uganda. The respective regional bodies are COMESA, the EAC, and the Intergovernmental Authority on Development (IGAD).

The geographical diversity ranges from the lush highlands of Ethiopia (Abyssinian Highlands) to the arid deserts of Djibouti and Somalia (Guban Desert) and from the volcanic landscapes of the United Republic of Tanzania to the island paradises of Mauritius, Comoros, and Seychelles. It also boasts diverse landscapes and attractions, including Kenya's Maasai Mara Reserve, the United Republic of Tanzania's iconic Serengeti National Park, and Mount Kilimanjaro, the highest mountain in Africa (peak height 5,895m). There are numerous transboundary lakes, such as Lake Victoria, Lake Tanganyika, and Lake Malawi. The most iconic landscape is the Great Rift Valley traversing seven countries in the region.

The region is vulnerable to various climate hazards and risks exacerbated by climate change (Richardson et al., 2022). These pose significant challenges to key sectors of agriculture and food security dominated by rain-fed production systems and responsible for the livelihoods of the teeming population of smallholder farming households (Rahut et al., 2021). **Table 2** below, summarizes the most pressing climate risks for the region.

***Table 2**: Climate Hazards and Risk Projections in Eastern Africa*

Climate Hazard/Risk	Frequency	Projection
Drought	The occurrence of droughts in East Africa has increased twofold since 2005, now happening every three years instead of every six (Funk et al., 2023; Haile et al., 2019)	Air temperature is projected to increase by 1.7 to 3.9 ℃ compared to pre-industrial levels by 2080. The most significant increase are expected in northern Sudan and northern Kenya. Likewise, there will be a notable increase in extremely hot days, particularly in Somalia, eastern Ethiopia, and northeastern Kenya.
Rainfall variability	Erratic pattern is experienced over the region	Future precipitation trends in EA widely vary with projections indicating an annual increase of 15 to 136mm under RCP6.0 scenario. The northern and central areas may experience more rainfall while the south could experience a decrease. Dry and wet periods are expected to become more extreme.
Heatwaves	Heatwaves are not routinely monitored in sub-Saharan Africa and are underreported (Otto & Harrington, 2020).	Under the RCP6.0 scenarios, the percentage of the population affected by at least one heatwave annually is expected to increase significantly from 1.6% in 2000 to 10.4% by 2080. This rise in frequency poses a serious health risk, particularly to vulnerable groups. By 2080, heat-related mortality could increase more than fourfold without adaptation measures.
Cyclones	The Southwest Indian Ocean basin experiences nine tropical cyclones annually	Tropical cyclones leading to landfall are projected to become less frequent at 1°C, 2°C and 3°C of global warming but the region will experience intense rainfall and higher wind speeds (IPCC, 2022).

These climate-induced alterations result in severe consequences such as drought which lead to reduced water availability in shared river basins, such as the Jubba and Shabelle rivers (Omar, 2021). As water sources diminish, competition intensifies between pastoralist communities and agricultural users on both sides of the border. The compounding effects of drought, food insecurity, and resource competition also drive cross-border migration flows and communal conflicts. Projections indicate that tens of millions of individuals will migrate within and across borders in response to escalating water stress, diminished agricultural yields, and rising sea levels under a scenario of 2.5°C global warming (IPCC, 2021b).

In a similar pattern, climate change exerts severe impacts on species migration routes, such as the Wildebeest migration from Kenya to the United Republic of Tanzania, leading to population decline (Apollo & Mbah, 2021). It also accelerates environmental degradation processes, such as desertification and deforestation, which transcend national boundaries. Degradation in one country can exacerbate vulnerabilities in neighboring areas, leading to the ecological decline of rich forest resources and catchment areas (Wassie, 2020). In addition, the region's vital fisheries are threatened as rising temperatures exceed the thermal tolerance of indigenous species such as tilapia, affecting both food security and economic stability of lakeside communities such as those around Lake Victoria (Mohammed & Uraguchi, 2013)

2.2.3 North Africa

The North Africa region consists of Algeria, Egypt, Libya, Morocco, Mauritania, Tunisia, Sudan, and Western Sahrawi, is home to two primary regional economic communities: the Arab Maghreb Union (UMA) and COMESA.

The economies of North Africa are primarily fuelled by sectors such as agriculture, manufacturing, services, and tourism. While oil and gas production play a dominant role in the economies of Algeria and Libya, Egypt boasts a more diversified economy with significant contributions from tourism, Suez Canal revenues, and manufacturing. However, high youth unemployment rates continue to pose a considerable challenge across many North African nations.

The climate in the region is primarily characterized by the annual high-pressure systems originating from the Sahara Desert. The coastal areas are categorized as humid temperate climates with hot and dry seasons while the inland regions are classified as hot and arid climates. Scientists have highlighted the significant fluctuations in rainfall amounts from year to year, leading to periods of drought and heatwaves (Cook et al., 2016). The region faces heightened vulnerability to various climate-related challenges due to its geographical location and socio-economic conditions, particularly given its arid to semi-arid climate. Key drivers of this vulnerability include droughts, heatwaves, desertification, sea-level rise, extreme weather events, ecosystem degradation, water scarcity, and food insecurity.

Table 3 provides a synthesized view of projected climate hazards and their potential risks, offering insights into anticipated climate-related challenges.

***Table 3**: Climate Hazards and Risk Projections in North Africa*

Climate Hazard/ Risk	Frequency	Projection
Temperature increase	Observed trends in mean annual and seasonal near-surface temperature indicate an overall warming that is significantly high beyond the range of changes due to natural (internal) variability (IPCC, 2021a).	The strongest warming was projected to take place close to the Mediterranean coast. In inland Algeria, Libya, and large parts of Egypt, warming by 3°C in a 2°C world was projected by the end of the 21st century (Waha et al., 2017)
Heatwaves	Linked to the rise in temperature, the frequency of occurrence of heat waves has also increased (Varela et al., 2020). Studies indicate a notable uptrend in heatwaves with temperatures often exceeding historical records (IPCC, 2021a). Factors contributing to this trend include climate change-induced warming, urban heat island effects, and land-use changes. The warm days and nights have become more frequent. Since 1980, the length of warm spells has increased in many North African countries and heat waves have become more intense and impacted a wider area across (IPCC, 2021a).	By the end of the century, in a 2°C world, highly unusual *(i.e. three standard deviations warmer than the mean temperature)* heat extremes were projected to occur in about 30% of summer months almost everywhere in the MENA region. In northern Africa, there is a projected increase in the number of heat wave days and warm spell durations leading to increased persistence of hot days over the 21st century (Lelieveld et al., 2017; IPCC, 2021a)
Drought and desertification	Compared to coastal areas, North African drylands experience lower rainfall amounts and higher rainfall unpredictability, which is likely to become more frequent in consecutive years of drought. Overall, North Africa is becoming more arid due to decrease in precipitation (IPCC, 2021a).	The Representative Concentration Pathway (RCP) 8.5 scenario shows that North African countries, particularly Morocco, Algeria, and Tunisia, are consistently anticipated to emerge as significant global drought hotspots. Future drought projections are subject to considerable model uncertainties and influenced by the methodology used and baseline periods, yet there is consistency among various studies regarding the anticipated rise in extreme drought conditions across the Mediterranean and Northern Africa.
Precipitation and Rainfall variability	Northern North Africa has experienced a decrease in precipitation received in winter and early spring. However, in autumn *(September to November)* observations show a positive trend in in some parts of Northern Algeria and Morocco. Since 2000, in Western North Africa, average annual rainfall has recovered or become wetter	A likely reduction in precipitation is to be expected in North Africa by the end of the 21st century as predicted in the Special Report Emissions Scenarios (SRES) A1B and A2 scenarios (IPCC, 2021a).

Climate Hazard/ Risk	Frequency	Projection
	with accompanying increases in heavy rainfall and flooding. However, in Eastern North Africa, rain days of over 10mm *(about 0.39 in)* per day have decreased and the number of consecutive dry days has increased (IPCC, 2022).	
Heavy rainfall and Flash floods	The region is faced with a decline in precipitation due to factors including climate change, and an increase in out-of-season flash floods. For instance, flash floods hit various parts of Egypt in 2015 and 2016 caused by severe rainfall of an intensity that exceeded 40mm per day, resulting in the loss of tens of lives and infrastructure destruction (Hassan et al., 2022). Flash floods, characterized by sudden and intense rainfall leading to rapid inundation of local areas, have become more frequent in some regions of North Africa. In the same accord, heavy rainfall and flooding have increased in Western North Africa (IPCC, 2021a).	Climate change projections indicate that rising temperatures can lead to increased atmospheric moisture content, potentially fueling more intense rainfall events when coupled with other atmospheric dynamics (IPCC, 2021a). The 6th IPCC Assessment Report projected that extreme rainfall events and pluvial areas are projected to increase in the MENA region with high confidence (IPCC, 2021a).

2.2.4 Southern Africa

The Southern Africa region consists of Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe. The main regional economic communities for the region are the SADC and COMESA.

The region comprises different agroecological zones with specific temperature and moisture regimes: the tropical humid to sub-humid climate, the arid tropical climate, and the sub-tropical and semi-arid zones with increased humidity towards the coastal regions. Southern Africa has a generally warm climate with the greater part of the region experiencing an average annual temperature above 17°C. In summer, temperatures are highest over the desert regions while in winter, temperatures decrease southwards and are coldest in the high-altitude regions. There are two distinct seasons, a wet season in the summer for half of the year and a dry season during winter. There is a high degree of spatial variation in rainfall due to the influence of the ocean currents and prevailing winds across the region.

The region is classified as a climate change hotspot by the IPCC Special Report on Global Warming of 1.5ºC (Bey et al., 2018). A region with a warm climate, wet-dry seasonality, and water stress in the context of naturally occurring droughts (Lieber, 2022). As the intensity and frequency of climate change impact increase, the region is projected to experience recurrent extreme climatic shocks, including droughts, flooding, heatwaves, and tropical cyclones

linked to reduced agricultural production, displacements, damage to infrastructure, and disease outbreaks. The expected increase poses significant challenges for disaster risk management in Southern Africa with associated impacts on infrastructure, transport, agriculture, health, tourism, and insurance sectors, among others.

The IPCC 6th Assessment Report (AR6) observed that major water scarcity issues are expected due to environmental degradation. It also projected that at 2°C, global warming, transmission, and distribution of vector-borne diseases are expected to increase in southern Africa, further exacerbating existing issues of poverty, food security, and nutrition. This, combined with an increasing population and poor land-use practices, will place additional strain on health and economic systems (Lieber, 2022).

Southern Africa has a different propensity for transboundary climate risks which include trade and water resources leading to loss of livelihoods and conflicts across the countries. The region shares three main river basins: the Okavango (between Angola, Namibia, *and Botswana)*, Zambezi *(Zambia, Angola, Zimbabwe, Mozambique, Malawi, Botswana, Tanzania and Namibia)*, and *Limpopo (South Africa, Botswana, Zimbabwe, and Mozambique)* (Turton, 2003). Increasing population, urbanization, and other planned developments such as hydropower generation, declining rainfall and increasing intensity of extreme weather events such as droughts and floods are exacerbating water stress and altering flow patterns in the region (Harris et al., 2023). This results in cascading risks that impede socioeconomic activities and impact food and energy security. Southern Africa's trade system is characterized by exports of raw materials such as fossil fuels, minerals and food. Therefore, climate-related impacts disrupt export activities and port operations since rich resources are shipped mainly through the region's largest harbor in Durban, South Africa, affecting the region's trade, economy, and livelihoods. There is a need to diversify production and improve the management of shared water resources within the region. **Table 4** provides a summary of the most pressing climate risks facing the region, highlighting key vulnerabilities and potential impacts.

Table 4*: Climate Hazards and Risk Projections in Southern Africa*

Climate Hazard/Risk	Frequency	Projection
Heatwaves	Rising temperatures will very likely result in a more frequent and higher exposure to heatwaves, thereby increasing heat-related mortality (Bey et al., 2018). This increase in temperature is aggregated across Southern Africa countries with mor expected heat related mortality, especially in Namibia and Angola.	Under RCP2.6, the projected air temperature will very likely increase from a range between 1.8 and 2.1°C by 2030, and between 1.9 and 2.2°C by 2080. Under RCP6.0, air temperature will increase by between 1.7 and 1.9°C by 2030, and between 2.9 and 4.1°C by 2080. The annual number of heatwaves is projected to increase with the increase in the number of hot days.
Drought	Drought events have been associated with major multi-sector impacts on food security and reduced energy security through disruption to hydropower generation (Chikoore & Jury, 2021). Drought events over Southern Africa are often linked to high surface air temperatures and heatwaves.	Increase in drought frequency and duration is expected over large parts of southern Africa above 1.5°C global warming. The duration is expected to double from 2 to 4 months in the southern African agriculture and affect biodiversity losses.

Tropical Cyclones	The Southwest Indian Ocean basin experiences nine tropical cyclones annually, and sometimes less intense tropical storms. Of all the tropical cyclones, only 5% reach landfall over southern Africa (CRED, 2022). Such cyclones making landfall along the eastern coast of southern Africa are associated with flooding in Mozambique, Zimbabwe, and South Africa.	Tropical cyclones leading to landfall are projected to become less frequent at 1°C, 2°C and 3°C of global warming but the region will experience intense rainfall and higher windspeeds (Bey, et al., 2018)

2.2.5 West Africa

West African countries include Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The main regional economic community of the region is the Economic Community of West African States (ECOWAS).

West Africa is characterized by four main bioclimatic zones arranged from north to south: the Sahel, Sudan, Guinean, and Guineo-Congolian. These zones exhibit a latitudinal gradient of rainfall, with the Sahel experiencing the lowest precipitation *(as little as 100 mm annually)* and rainfall increasing progressively towards the south, peaking along the southern coast *(up to 5,000 mm annually)*. Subdividing these regions into three distinct subregions, this classification includes the Sahel, the Inland Forests - encompassing much of the Sudan zone and the inland areas of the Guinean and Guineo-Congolian zones - and the Coastal subregion, consisting of the coastal areas spanning across the various bioclimatic zones (USAID, 2018).

West Africa has a diverse geography that encompasses a range of ecosystems, climate zones, and topographical features. It is one of the world's most vulnerable regions to climate variability and change, with escalating temperatures and shifting rainfall patterns already disrupting livelihoods, food security, and socio-economic stability. Extreme climate fluctuations have continuously led to agricultural losses, recurring food crises, water scarcity, flooding, and environmental degradation. The warming trend surpasses the global average with the Sahel experiencing the most significant impact. The extensive coastline, which provides habitat to densely populated cities and economic centers, is also facing rising sea levels and severe coastal erosion, threatening urban areas, ports, aquifers, and vital sectors like agriculture and fisheries.

Coastal degradation and erosion have already incurred substantial economic losses, with countries like Togo and Mauritania witnessing a decline of over 2% of GDP in just one year. Agriculture which is the mainstay of livelihoods and contributes significantly to GDP, is under increasing pressure from heat stress, erratic rainfall, and more frequent and severe weather events in the region. The transnational ramifications of climate change extend to food and water security, health risks relating to air quality, disruptions in transportation networks, and migration patterns.

Transboundary cascading climate risks in the region pose significant challenges due to the interconnected nature of the region's ecosystems, economies, and societies. As climate change exacerbates extreme weather events like droughts, floods, heatwaves and storms, these events often transcend national borders, triggering a chain reaction

of adverse impacts (IPCC, 2021a). Prolonged droughts within the Sahel region is causing water scarcity, reduced pasture availability and poor agricultural productivity, affecting food security and livelihoods, forced displacement and migration, and conflicts over shared resources, further straining the regional stability (Opitz-Stapleton, et al., 2021). In addition, floods are disrupting transportation and trade routes, impeding economic activities, and access to essential services. The interdependence of West African nations means that a climate-induced crisis can quickly ripple through the region, underscoring the need for well-coordinated, cross-border climate adaptation and disaster risk reduction strategies. **Table 5** provides a synthesized view of projected climate hazards and their potential risks, offering insights into anticipated climate-related challenges

***Table 5**: Climate Hazards and Risk Projections in West Africa*

Hazard/Risks	Frequency	Projections
Droughts	Since the mid-1970s, seasonal and average annual temperatures have risen by 1–3°C, with the most significant increase observed in the Sahel (IPCC, 2021a). Given the interannual variations in precipitation trends, there is an overall decline in rainfall in the Sahel and the Sudan region. Droughts have increased in intensity and frequency in the region. The impacts are increase in food and livelihood insecurity, low agricultural production and an increase in resource-related conflicts.	Most projections models show a decreased rainfall between the range of -16 to +6% in the Western Sahel and this is connected with an increase in temperature up to 2.9°C temperature increase by 2050. These projections indicate that the number of dry days/spells will increase by 8 to 28 days annually.
Heavy rainfall/Flash Floods/Storms	Current trends show an overall increase in the frequency and intensity of heavy rainfall in the Western and southern parts of the region, especially Ghana, Togo, and Benin. In 2022 rainfall season, shorter spikes of very heavy rain led to flash floods and riverine floods.	CMIP6 models project monsoon rainfall amounts to increase by approximately 2.9% per degree of warming frequency of rainfall resulting in heavy rainfall and storms particularly in countries such as Nigeria, Ghana, Benin, Togo, Ivory Coast, Mali and Burkina Faso.
Sea level rise	Coastal countries are experiencing sea level rise. In Dakar, Senegal, a sea level rise of 8.4 cm has been experienced between 1942 to 2012 and 25 cm in Takoradi, Ghana since the 1930s. This has caused coastal flooding in the region (IPCC, 2021a).	It is predicted that a sea level rise of between 17 and 45 cm by 2050s, specifically in Senegal and Nigeria are projected to rise by 17 to 43 cm. Ghana, Benin and Togo are predicted to rise by 18 to 43 cm while Cote D'Ivoire will rise by 18 to 45cm by 2050.

Hazard/Risks	Frequency	Projections
Heat waves	In the 21st century, heatwaves have intensified and prolonged compared to the final two decades of the 20th century with hot days rising from 1–9 days and 4–13 nights per decade between 1961–2014. This is attributed to the significant temperature rise of between 1 – 3°C since the mid-1970s (IPCC, 2021a).	Temperature projections show a temperature increase of 1.6 to 2.9°C for countries such as Niger, Burkina Faso, Mali, and Nigeria, and increase of up to 1.4 to 2.5°C in Senegal and the Gambia, an increase of up to 1.3 to 2.3°C in Côte d'Ivoire, Ghana, Togo, and Benin, hereby leading to an increased duration of long-lasting heatwaves (6 – 28 days) in the eastern side of the region.

3. Rationale for developing an NDC Capacity Scorecard

Despite Africa's minimal contribution to greenhouse gas emissions, the continent faces unique vulnerabilities that necessitate the development of an NDC Capacity Scorecard. African economies are often **reliant on climate sensitive industries**, such as agriculture which are highly susceptible to climate variability, furthermore, **adaptive capacity constraints** due to poverty, inequality, barriers in technological advancements and weak institutional capacity exacerbate the inability to efficiently and effectively adapt to climate-related risks. Moreover, the continent is faced with **data accessibility constraints resulting in data gaps** relating to accurate and reliable climate data to assist in decision-making. When contrasted to with other regions, many African nations face heightened challenges in curating basic meteorological data such as temperature, pressure and precipitation – in efforts to strengthen data collection and the provision of sustainable networks the continent needs to invest in resource planning and allocation, capacity development, equipment maintenance and replacement, data archiving and data dissemination (WMO, 2019). However, it's important to recognize that progress varies across the continent, with some countries demonstrating notable advancements in their meteorological capabilities.

The development of an NDC Capacity Scorecard tailored to the African context, with the initial focus being on ESA is crucial for two key reasons. First, it will assist in identifying capacity constraints faced by countries in developing ambitious yet achievable NDCs. Second, it will pinpoint the capacity-strengthening and knowledge-sharing needs for effective NDC implementation, addressing a critical gap identified in the evaluation of existing tracking tools and scorecards (as detailed in ***Annex 6***).

As a result, the NDC Capacity Scorecard will assist in:

- **Identifying capacity needs**: The scorecard will aid in identifying specific areas within the NDC development process that require capacity strengthening, enabling targeted interventions and efficient resource allocation.
- **Tracking progress and enhancing accountability**: Assist in establishing a baseline that will aid in tracking progress overtime, as a result the scorecard will enhance transparency and accountability in NDC implementation.

- **Informing policy and investment decisions**: The scorecard is intended to assist in providing valuable insights for policymakers and investors, guiding them towards evidence-based decisions that are geared towards supporting climate resilience.

4. Tools for Tracking Nationally Determined Contributions (NDCs)

4.1 Context

Article 4.2 of the Paris Agreement requests each country to *"prepare, communicate and maintain successive NDCs that it intends to achieve"*. This development process and the successive implementation of the NDCs requires capacity on the part of each country to effectively communicate their national contributions towards emissions reduction, accurately reflecting their unique national positions and circumstances, set up structures, frameworks and enabling environments for the successful implementation of their targets, and accurately track their progress.

Many African countries have prepared and submitted their NDCs in line with the PA requirement. The process takes a multifaceted approach that is characterized by sectoral data collection, analysis, and projections with comprehensive stakeholder engagement. It is a collaborative process in which the governments take the central lead while ensuring that key stakeholders, which include civil society organizations (CSOs), research institutions, academia, the private sector, local communities and indigenous peoples, and other non-state actors actively participate (Network, 2016).

Africa's priority, as contained in the NDCs, remains to be adaptation and building climate resilience, with mitigation co-benefits (Srouji et al., 2024). The NDCs reflect countries' commitments to reducing emissions and adapting to climate impacts with either quantitative or qualitative targets, timelines, and a set of actions across priority sectors namely energy, transport, agriculture, health, water, infrastructure, tourism, depending on the economy of every country. A number of African countries, including Kenya, South Africa, Uganda, Nigeria, Morocco, DRC *inter alia*, have established governance structures and processes with the objective of implementing their mitigation and adaptation targets and priorities within the NDCs.

As a strategy towards implementing the NDCs, countries such as Ethiopia, Kenya, Zambia, Rwanda and South Africa have made tremendous efforts towards resource mobilization to access climate finance, although the funds are yet to meet the needs set out as NDC targets. Diverse sources of funding have included climate finance, development finance, domestic public finance, foreign investment, and domestic private finance and investment. The quantum of available climate finance *(public and private sector)* will significantly affect the propensity of African countries to deliver on their NDC promises. In some instances, proposals have been submitted to financing entities such as the Green Climate Fund (GCF) while dedicated national climate funds have been established. In some cases, namely Ghana and Kenya are considering the use of market mechanisms under Article 6 of the Paris Agreement (UN, 2015) as part of their funding sources.

4.2 Capacity gaps and needs

African nations have outlined ambitious goals within their Nationally Determined Contributions to combat climate change. However, significant capacity gaps hinder their ability to implement these plans effectively. Several capacity gaps have been identified in the existing NDCs. These include:

- **Technical expertise**: Even though the level of capacities has increased across the continent, many African countries still have insufficient technical capacity needed to develop robust NDCs that align with national development priorities and international climate commitments. This may include capacities in greenhouse gas inventories, climate modelling, vulnerability assessments, cost-benefit analysis of adaptation and mitigation measures, data gaps, and outdated information systems. Limited technical capacity has led to the over-reliance of external experts who may not have a deeper understanding of the national circumstances, hence leading to the development of NDCs whose implementation become a challenge.

- **Institutional capacity**: Weak institutional mechanisms for coordination, collaboration and limited policy coherence pose challenges in the integration of climate considerations into national development and planning processes. Strengthening institutional capacity, enhancing inter-ministerial coordination, and mainstreaming of climate change into sectoral policies are critical for successful implementation of NDCs. Furthermore, lack of essential resources and support coupled with impediments resulting from a lack of political support poses a challenge to the efficient development and implementation of NDCs (Roser, et al., 2020).

- **Resource mobilization capacity**: Most African countries have constrained domestic budgets and financial resources which are restricting their ability to effectively finance climate change adaptation and mitigation efforts. There are many competing development priorities resulting in limited allocations for climate-related interventions at the national level. In addition, low capacity to develop bankable proposals for accessing international climate finances is a major drawback for many African countries. These gaps are hindering their capacities to unlock existing climate finance sources to implement their NDCs.

- **Climate finance absorption capacity**: Constraints in project management, procurement, and financial management have made it a challenge for some African countries in utilizing and absorbing climate finance. Strengthening capacity in project management would ensure efficient and transparent implementation adaptation and mitigation projects. Additionally, (Pauw et al., 2020) argue that the equity-based transfer of climate financing to capacitate developing countries in achieving their NDC targets is not linear as it is underpinned by various justifications and interest. Given that finance providers are not legally obliged to provide said finance the equity and feasibility perspective of allocation is discretionary.

4.3 Overview of Existing Assessment Tools: Guidance and Scorecards

A number of tools have been used to mainstream specific sectors into the NDCs. Such tools include guidelines developed by the UNFCCC to ensure consistency and comparability of the NDCs across Parties. In addition, different stakeholders have developed scorecards intended to guide sector mainstreaming into their NDCs. A few also target tracking the implementation of NDCs. Below, we discuss the different assessment tools.

4.3.1 Guidelines from the UNFCCC

The NDCs are at the heart of the PA and are a crucial component of the collective global effort to reduce GHG emissions. Article 4 obligates all parties to prepare, communicate and maintain an NDC every five years. In doing so, parties must *"provide the Information necessary for Clarity, Transparency and Understanding (ICTU) in accordance with decision 1/CP.21"*. The Paris Decision requested the Ad-hoc Working Group on the Paris Agreement (APA) to develop further guidance for ICTU. The guidance, known as ICTU Guidance, was adopted as part of the Katowice Climate Package in December 2018.

The guidance for the ICTU was based on the elaboration of elements identified in paragraph 27 of decision 1/CP .21. The guidance, although relating mainly to the mitigation component of NDCs, allows for countries to apply different elements of ICTU as applicable to their NDC and as they relate to mitigation co-benefits resulting from their adaptation actions and/or economic diversification plans. Additionally, the ICTU guidance was to be applied from the second NDCs, but Parties were strongly encouraged to apply the guidance for new/updated NDCs in 2020. The ICTU guidance is made up of seven main information elements. Each of these elements is further expounded providing a set of guiding questions.

- Quantifiable information on the reference point *(including, as appropriate, a base year)*
- Time frames and/or periods for implementation
- Scope and coverage
- Planning processes
- Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic GHG emissions and, as appropriate, removals
- How the Party considers its NDC is fair and ambitious in the light of its national circumstances
- How the NDC contributes towards achieving the objective of the Convention as set out in Article 2

While the ICTU guidelines are effective in building the capacity of developing countries, they fail to comprehensively assess and address the capacity gaps and weaknesses in undertaking the NDC development process and assess the development needs and climate vulnerabilities of each developing country. Additionally, there are no guidelines that holistically assess the development and implementation capacities of countries.

4.3.2 Scorecards

There is a diverse array of NDC scorecards designed to assess and evaluate countries' efforts towards achieving their NDCs in various sectors and thematic areas. These scorecards serve different purposes, ranging from evaluating the integration of air quality and health aspects into NDCs to analyzing gender performance and industry transition ambition levels. Notably, scorecards such as the Clean Air NDC Scorecard and the Healthy NDCs Scorecard concentrate on evaluating the incorporation of air quality and health considerations into NDCs at the national level, employing qualitative policy analysis methodologies.

Similarly, the NDC Scorecard on Waste Management and the NDC Industry Transition Scorecard assesses sector-specific aspects of waste management strategies and industry decarbonization plans, respectively, both targeting government officials and non-state actors. Moreover, cross-sectoral scorecards like the CARE NDC Scorecard on Gender and the International Trade Union Confederation Climate Scorecard explore broader thematic issues such as gender performance and just transition integration within NDCs, catering to policymakers and government officials.

These scorecard analyses employ a mix of qualitative and quantitative methodologies, metrics and indexes including policy analysis and GHG emissions tracking, to provide insights into NDC implementation at both national and regional levels. It is important to note that based on the methodologies, tools such as the NDC Tracking Tool and GACMO are useful in tracking progress in implementing NDCs. All other scorecards and analyses look into the contents of the NDCs to track the mainstreaming of key aspects such as gender, clean air, industry, waste management, and health commitments; this is important to inform countries whether their commitments are robust towards a whole-of-economy approach in addressing climate change.

Each scorecard contributes to a comprehensive understanding of countries' progress towards low-carbon emission pathways outlined in their NDCs. Overall, this variety underscores the multifaceted nature of NDC assessment efforts, addressing specific thematic concerns while aiming to inform policy and action across different levels of governance. Some of the existing scorecards are hereby highlighted in **Table 6** below, a detailed outline of each NDC Scorecard is provided in **Annex 6** :

Table 6: Review of Existing NDC Scorecards

Scorecard	Purpose	Focus Area	Geographic Scope	Methodology	Target Audience	Website source
Clean Air NDC Scorecard	Evaluates how effectively air quality aspects and health are incorporated into Nationally Determined Contributions (NDCs).	Sector-specific	National	Qualitative Policy Analysis	Government, Research institutions and Practitioners	Clean Air NDC Scorecard
GCHA Healthy NDCs Scorecard	Assesses how much governments' national climate commitments recognize and respond to the abundant linkages with health	Sector-specific	National	Qualitative Policy Analysis	Government, Research institutions and Practitioners	Healthy NDCs Scorecard

Scorecard	Purpose	Focus Area	Geographic Scope	Methodology	Target Audience	Website source
Greenhouse Gas Abatement Cost Model (GACMO)	Calculates GHG reductions resulting from specific mitigation actions, allowing for comparisons with a business-as-usual scenario.	Cross-sector	National & Regional	Quantitative aggregation	Government and non-state actors	Greenhouse Gas Abatement Cost Model (GACMO)
CARE NDC Scorecard on Gender	Analyses most recent NDCs regarding their gender performance	Cross-sector	National & Regional	Qualitative Policy Analysis	Government and non-state actors	CARE NDC Scorecard on Gender
Health Commitments Scorecard	Provides a global perspective on the COP26 Health Programme by reviewing the most recent NDCs	Sector-specific	National	Qualitative Policy Analysis	Government and non-state actors	Health Commitments Scorecard
NDC Scorecard on Waste Management	Reviews and rates NDCs on their outlined waste management strategies and overall discussion of waste.	Sector-specific	National & Regional	Qualitative policy analysis	Government and non-state actors	NDC Scorecard on Waste Management
International Trade Union Confederation Climate Scorecard	Analyses countries updated NDCs for their integration of Just Transition	Cross-sector	National	Qualitative policy analysis	Policymakers and Government officials	International Trade Union Confederation Climate Scorecard
NDC Industry Transition Scorecard	Evaluates the progress made in raising industry transition ambition levels in NDCs and the extent to which parties are proposing detailed decarbonization plans	Sector-specific	National & Regional	Qualitative Policy Analysis	Policymakers, Government officials, private sector and other non-state actors	NDC Industry Transition Scorecard
NDC Tracking Tool-FAO	Monitor and assess progress in implementing their NDCs	Cross-sector	National	Quantitative, Qualitative and Indexes	Government and non-state actors	NDC Tracking Tool-FAO
Climate Scorecard for NDCs Cross the Americas	Provided a snapshot of countries' NDCs focusing on the country profile of GHG emissions and GDP	Cross-sector	National & Regional	Quantitative, Qualitative and Indexes	Policymakers and Government officials	Climate Scorecard for NDCs Cross the Americas
DEAL NDC Score Card	Assessing countries' progress toward low-carbon emission pathways outlined in their NDCs.	Cross-sector	National	Quantitative, Qualitative and Indexes	Government, Research institutions and Practitioners	DEAL NDC Score Card

Scorecard	Purpose	Focus Area	Geographic Scope	Methodology	Target Audience	Website source
Scorecard analysis of NDCs in Southeast Asian Countries	Provides an in-depth country focus on Southeast Asian states' NDCs thereby providing insight into how a future 'decarbonized' picture might look	Cross-sector	National	Qualitative Policy Analysis	Government and non-state actors	Scorecard analysis of NDCs in Southeast Asian Countries
IWMI Water Tracker	Provides a more refined understanding of water's role in climate change adaptation and mitigation, ensuring effective and sustainable climate action.	Sector-specific	National & Regional	Quantitative, Qualitative and Indexes	Government and non-state actors	Water Resilience Tracker - International Water Management Institute (IWMI)

4.3.3 Emerging gaps from existing scorecards

As indicated in the highlights presented on the scorecards, there were glaring gaps which include:

- **Lack of an NDC capacity scorecard**: that assesses the capacity of countries to develop and implement their NDCs.
- **Under-representation of certain sectors**: While some scorecards address sector-specific issues such as air quality, health, waste management, and industry transition, there's an absence of scorecards focusing on other critical sectors such as water, forestry, and urban planning. Developing scorecards targeting these sectors could help in assessing their integration into NDCs and promoting holistic climate action.
- **Methodological diversity**: While some scorecards employ qualitative policy analysis, others use quantitative aggregation or composite indices. There is an opportunity to enrich the tools by incorporating some of the emerging approaches such as multi-criteria decision analysis.
- **Limited Scope**: While some scorecards assess and track the implementation of NDCs *(e.g., NDC Tracking Tool and GACMO)*, there's still a gap in scorecards that can assess the development process of NDCs.
- **Limitations of NDCs**: in most cases, they do not capture all the national priorities, and as a consequence, they under-represent the country's needs.

4.3.4 How can this scorecard approach add value to the country's decision-makers?

Every five years, countries must update their Nationally Determined Contributions (NDCs), with each subsequent iteration having to be more ambitious than the previous in carbon emissions reduction. However, countries rarely

assess their ability to achieve the ambitions they set for themselves. Thus, this ever-increasing ambition is rarely met between iterations.

A scorecard approach as proposed here, allows decision-makers to develop NDC targets more fitting to their specific contexts, in terms of capability to achieve them. This understanding of inherent capabilities will allow governments to determine the technical assistance they require to meet the targets set.

5. Conclusion

The journey towards addressing the profound challenges of climate change requires a robust and unified global response. The United Nations Framework Convention on Climate Change (UNFCCC), along with its pivotal instruments—the Kyoto Protocol and the Paris Agreement—provides the necessary framework for this collective action. Nationally Determined Contributions (NDCs) form the cornerstone of the Paris Agreement, enabling countries to define their pathways to mitigate climate change and adapt to its inevitable impacts.

Challenges and Opportunities

Africa faces significant challenges in developing and implementing NDCs, primarily due to substantial capacity gaps at systemic, institutional, and individual levels. These gaps hinder the ability to undertake comprehensive climate actions, integrate climate considerations into national development plans, and mobilize and absorb necessary climate finance. The lack of technical expertise, weak institutional frameworks, and limited financial resources are critical barriers to achieving the ambitious targets set within NDCs.

Despite these challenges, there are substantial opportunities for transformative action. The development of an NDC Capacity Scorecard presents a significant step towards identifying and addressing these capacity gaps. By providing a systematic approach to assess and enhance the capabilities of East and Southern African (ESA) countries, the scorecard can facilitate more effective and targeted climate actions.

Key Findings and Recommendations

The scoping study and the subsequent development of the NDC Capacity Scorecard have highlighted several critical dimensions for effective NDC implementation:

- Technical Expertise: Enhancing technical capacities in greenhouse gas inventories, climate modeling, and vulnerability assessments is crucial. Capacity-building programs should focus on developing these skills within national institutions to reduce reliance on external experts.
- Institutional Frameworks: Strengthening institutional mechanisms for coordination and collaboration is vital. This includes enhancing inter-ministerial coordination and mainstreaming climate change into sectoral policies and national planning processes.
- Resource Mobilization: Improving capacities to access and utilize climate finance is essential. This involves developing skills to create bankable proposals and establishing transparent financial management systems to absorb and efficiently use funds.
- Climate Finance Absorption: Addressing project management and procurement challenges will ensure that available climate finance is effectively used to implement adaptation and mitigation projects.

Way Forward

The NDC Capacity Scorecard, once fully developed and validated, will serve as a comprehensive tool for ESA countries to self-assess and enhance their climate action capacities. The phased approach of scoping, developing, piloting, and refining the scorecard ensures that it is robust, relevant, and effective.

Pilot Testing and Feedback

The pilot testing phase in selected ESA countries will provide valuable insights and feedback, enabling the refinement of the scorecard to meet the specific needs and contexts of the region. This iterative process will ensure that the final scorecard is a practical and useful tool for national stakeholders.

Training and Capacity Building

A critical component of this initiative is the development of a training manual on using the NDC Capacity Scorecard. This manual will guide national stakeholders, including government officials, civil society organizations, and the private sector, in effectively utilizing the scorecard to enhance their climate action capacities.

Regional and Global Dissemination

Once validated, the NDC Capacity Scorecard will be disseminated across ESA countries and other regions within Africa. This broader dissemination aims to promote its adoption and use, facilitating a continent-wide enhancement of NDC implementation capacities. Additionally, lessons learned from this initiative will be shared globally, contributing to the broader discourse on effective climate action.

Collaboration and Stakeholder Engagement

The success of this initiative hinges on robust collaboration and stakeholder engagement. Governments, civil society, academia, and the private sector must work together to leverage their unique strengths and perspectives. Inclusive stakeholder engagement ensures that the scorecard reflects diverse needs and promotes widespread buy-in and support.

Sustainable Development and Climate Resilience

Ultimately, the NDC Capacity Scorecard is more than a tool for assessing climate action capacities; it is a catalyst for sustainable development and climate resilience. By aligning climate strategies with national development goals, countries can achieve a balanced approach that promotes economic growth, poverty reduction, and environmental sustainability.

Commitment to Continuous Improvement

As climate change continues to pose evolving challenges, the commitment to continuous improvement and adaptation is crucial. The NDC Capacity Scorecard must be regularly updated and refined to reflect emerging best practices, scientific advancements, and evolving national circumstances.

Understanding a country's ability to meet the ever-increasing ambition of its Nationally Determined Contributions is critical in the development of implementation pathways. It also allows for more realistic targets to be developed that will aid developing countries in their applications for climate finance to support implementation.

The development of the NDC Capacity Scorecard is a significant contribution to the development of climate resilient pathways for Africa. It is well documented that Africa will be hardest hit by climate change. Developing realistic and

achievable targets will lead to a more climate resilient continent. Overly ambitious targets paralyze countries, and this non-action leads to greater impacts of climate change that further impoverishes the continent.

The NDC Capacity Scorecard allows governments to be more realistic in their goal setting and helps funders achieve greater impact within communities most vulnerable to climate effects.

The development and implementation of the NDC Capacity Scorecard represent a significant milestone in Africa's journey towards climate resilience. By addressing capacity gaps and enhancing institutional frameworks, the scorecard will empower countries to effectively deliver on their NDCs. This initiative underscores the importance of robust, inclusive, and coordinated climate action as a pathway to sustainable development and a resilient future for Africa and the world.

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Annexes

Annex 1: *Sample Questions for NDC Capacity Assessment for African Countries*

The International Water Management Institute (IWMI) and the African Group of Negotiators Experts Support (AGNES) recognize the critical importance of effective development and implementation of Nationally Determined Contributions (NDCs) in the context of climate change mitigation and adaptation. There is a need to develop tools and resources to support countries in assessing and strengthening their capacity to implement their NDCs. A capacity scorecard is one such tool that can be used to assess a country's NDC implementation capacity across a range of dimensions, such as institutional arrangements, governance, planning, monitoring and evaluation, and financial resources. In line with the Paris Agreement's goals, this collaborative research aims to develop a Capacity Scorecard that will assess countries' capacity to develop and implement their NDCs.

This questionnaire aims to gather insights into the strategies, challenges and progress made by African countries. By capturing the perspectives and experiences of key stakeholders involved in this process, we seek to enhance our understanding of the unique context in which NDCs are formulated and operationalized to facilitate the development of a capacity scorecard.

Your participation in this questionnaire is voluntary, you can stop at any time or skip questions. Your responses will be anonymized. They will be informing our research and contributing to a deeper understanding of climate action in Africa.

This will take an estimated 30 minutes

Do you agree to participate? (Yes/No)

Section 1: General Information

a. Country of respondent: ----------

b. Position of Respondent: ----------

c. Contact Information: ----------

Section 2: NDC Development Process

a. In what year did your country submit its last NDC to the UNFCCC?
b. Who were the key stakeholders involved in the NDC development process?
c. How were consultations with the stakeholders mentioned conducted?

d. Which **processes, assessments,** and **criteria** were used to determine the mitigation and adaptation targets and actions outlined in your country's NDC?

e. Has your country updated its NDCs? If yes, were the same processes outlined in (d) above used? If not, what is new?

f. What support did your country receive during the drafting/updating of the NDC? (Financial, Technical, organizational, etc.)

Section 3: NDC Implementation Process

a. List the NDCs implementing ministries/ departments/agencies in your country?

b. What steps have been taken to mainstream climate change into national policies, plans, and strategies to support NDC implementation?

c. What institutional arrangements are in place to coordinate and oversee the implementation of your country's NDC?

d. How are financial resources mobilized and allocated to support the implementation of NDC priority sectors and targets?

e. How does your country monitor, report, and verify progress on the implementation of its NDC? (GHG emissions reductions and adaptation outcomes)

f. Which specific tools have you used for tracking NDC implementation?

g. Are there capacity-building efforts undertaken to strengthen the skills and expertise needed for effective NDC implementation?

Section 4: Challenges and Opportunities

a. During the developing/updating of NDC: what major challenges/capacity constraints did your country experience? Please explain.

- Institutional
- Technical Financial
- Governance
- Planning
- Monitoring, Evaluation & Learning (MEL)
- Any other (specify)

b. How were the challenges/capacity constraints mentioned in (a) above addressed?

c. During the implementation phase: what are some of the main capacity challenges your country experienced? Please explain.

- Institutional
- Technical
- Financial
- Governance
- Planning

- Monitoring, Evaluation & Learning (MEL)
- Any other (specify)

d. How are the challenges in (c) above addressed?

e. What are the existing opportunities to enhance NDC implementation in your country?

f. How do you engage with international partners, including bilateral and multilateral donors, to support NDC implementation efforts?

g. What lessons have you learned from the NDC development and implementation processes that could be useful for other African countries?

Section 5: Future Plans

a. Does your country have plans to revise or update its NDC? If yes, what factors will influence this process?

b. How does your country intend to enhance effectiveness of its NDC over time?

c. How does your country intend to align its LTS to its NDC?

d. Are there any specific areas or sectors your country intends to focus its efforts in future NDC implementation?

***Annex 2**: List of African countries with submitted and revised NDCs*

Country	Title	NDC Submitted	Revision Submitted	Status
Algeria	Algeria First NDC	20/10/2016	No	Active
Angola	Angola First NDC (Updated submission)	31/05/2021	Yes	Active
Benin	Benin First NDC (Updated submission)	12/10/2021	Yes	Active
Botswana	Botswana First NDC	11/11/2016	No	Active
Burkina Faso	Burkina Faso First NDC (Updated submission)	09/10/2021	Yes	Active
Burundi	Burundi First NDC (Updated submission)	05/10/2021	Yes	Active
Cape Verde	Cape Verde First NDC (Updated submission)	02/04/2021	Yes	Active
Cameroon	Cameroon First NDC (Updated submission)	11/10/2021	Yes	Active
Central African Republic	Central African Republic First NDC (Updated submission)	24/02/2021	Yes	Active
Chad	Chad First NDC (Updated submission)	19/10/2021	Yes	Active
Comoros	Comoros First NDC (Updated submission)	05/11/2021	Yes	Active
Congo	Congo First NDC (Updated submission)	02/08/2021	Yes	Active
Côte d'Ivoire	Côte d'Ivoire First NDC (Updated submission)	09/05/2022	Yes	Active
Democratic Republic of Congo	Democratic Republic of Congo First NDC (Updated submission)	28/12/2021	Yes	Active
Djibouti	Djibouti First NDC	11/11/2016	No	Active
Egypt	Egypt Second Updated NDC	26/06/2023	Yes	Active
Equatorial Guinea	First NDC (Updated submission)	24/10/2022	Yes	Active
Eritrea	Eritrea First NDC	19/06/2018	Yes	Active
Eswatini	Eswatini First NDC (Updated submission)	12/10/2021	Yes	Active
Ethiopia	Ethiopia First NDC (Updated submission)	23/07/2022	Yes	Active
Gabon	Gabon Second Updated NDC	06/07/2022	Yes	Active

Country	Title	NDC Submitted	Revision Submitted	Status
Gambia	Gambia Second NDC	12/09/2021	Yes	Active
Ghana	Ghana First NDC (Updated submission)	04/11/2021	Yes	Active
Guinea	Guinea First NDC (Updated submission)	28/07/2021	Yes	Active
Guinea – Bissau	Guinea – Bissau First NDC (Updated submission)	12/10/2021	Yes	Active
Kenya	Kenya First NDC (Updated submission)	28/12/2020	Yes	Active
Lesotho	Lesotho First NDC (Updated submission)	22/06/2018	Yes	Active
Liberia	Liberia First NDC (Updated submission)	04/08/2021	Yes	Active
Libya	N/A	N/A	N/A	N/A
Madagascar	Madagascar First NDC	29/01/2024	N/A	Active
Malawi	Malawi First NDC (Updated submission)	30/07/2021	Yes	Active
Mali	Mali First NDC (Updated submission)	11/10/2021	Yes	Active
Mauritania	Mauritania First NDC (Updated submission)	12/10/2021	Yes	Active
Mauritius	Mauritius First NDC (Updated submission)	05/10/2021	Yes	Active
Morocco	Morocco First NDC (Updated submission)	22/06/2021	Yes	Active
Mozambique	Mozambique First NDC (Updated submission)	27/12/2021	Yes	Active
Namibia	Namibia Updated NDC	17/01/2024	Yes	Active
Niger	Niger First NDC (Updated submission)	13/12/2021	Yes	Active
Nigeria	Nigeria First NDC (Updated submission)	30/07/2021	Yes	Active
Rwanda	Rwanda First NDC (Updated submission)	20/05/2020	Yes	Active
São Tomé and Príncipe	São Tomé and Príncipe First NDC (Updated submission)	30/07/2021	Yes	Active
Senegal	Senegal First NDC	29/12/2020	No	Active
Seychelles	Seychelles First NDC (Updated submission)	30/07/2021	Yes	Active

Country	Title	NDC Submitted	Revision Submitted	Status
Sierra Leone	Sierra Leone First NDC (Updated submission)	31/07/2021	Yes	Active
Somalia	Somalia First NDC (Updated submission)	31/07/2021	Yes	Active
South Africa	South Africa First NDC (Updated submission)	27/09/2021	Yes	Active
South Sudan	South Sudan Second NDC	21/09/2021	Yes	Active
Sudan	Sudan First NDC	22/09/2022	Yes	Active
Togo	Togo First NDC (Updated submission)	12/10/2021	Yes	Active
Tunisia	Tunisia First NDC (Updated submission)	10/10/2021	Yes	Active
Uganda	Uganda Updated NDC	12/09/2022	Yes	Active
United Republic of Tanzania	United Republic of Tanzania First NDC (Updated submission)	30/07/2021	Yes	Active
Zambia	Zambia First NDC (Updated submission)	30/07/2021	Yes	Active
Zimbabwe	Zimbabwe First NDC (Updated submission)	24/09/2021	Yes	Active

Source: (UNFCCC, n.d.)

***Annex 3**: Summary of NDC Targets and Priority Sectors in East and Southern Africa*

Country	Mitigation Target (Emission reduction percentage)	Finance Targets / Commitments	Mitigation Priority Sectors	Adaptation Priority Sectors
Angola	14% reduction (unconditional) relative to BAU; and additional 10% through conditional contribution.	USD 44.1 billion, with mitigation accounting for USD 44 billion, and adaptation USD 144 million.	Energy, AFOLU, Industry, and Waste.	Agriculture and Fisheries, Coastal Zone, Water Resources, Human Health, Infrastructure, Forestry, Ecosystem, and Biodiversity.
Botswana	15% reduction of emissions by 2030, taking 2010 as the base year.	USD 18.4 billion for mitigation	Energy and Transport sectors.	Water, Agriculture, and Health.
Eswatini	5% reduction of emissions by 2030 relative to 2010 levels. The target to increase to 14% reduction through external funding.	USD 950 million to USD 1.5 billion, conditional.	Energy and transport, Waste, IPPU, and AFOLU.	Agriculture, Water, Health, Ecosystem and Biodiversity, and Infrastructure.
Lesotho	Unconditional 10% reduction in emissions by 2030 relative to BAU, and additional 25% reduction through conditional support.	USD 0.59 billion in total, out of which USD 0.32 billion is conditional.	Energy, Agriculture, Industrial Processes, Waste, and LULUCF.	Agriculture, Water, Human Health, Energy, Gender, Infrastructure, Tourism, Biodiversity and Ecosystems, and Culture.
Malawi	Unconditional 6% reduction relative to BAU by 2040, and additional 45% reduction through conditional support.	A total of USD 46.3 billion is required both for mitigation and adaptation. Mitigation accounts for USD 41.8 billion and adaptation USD 4.5 billion.	Energy, IPPU, AFOLU, and Waste.	Agriculture, fisheries and livestock, Ecosystems (forestry, biodiversity, tourism, culture), Energy, Human Health, Infrastructures, and social protection and gender.
Mozambique	Reduce emissions by about 40 million tCO2eq between 2020 and 2025.	USD 7.586 billion for both mitigation and adaptation.	Energy, IPPU, AFOLU, and Waste.	Water resources, Agriculture and Food Security, Social protection, Health, Biodiversity, Forests, Infrastructure, Urban areas, and Coastal zones.

Country	Mitigation Target (Emission reduction percentage)	Finance Targets / Commitments	Mitigation Priority Sectors	Adaptation Priority Sectors
Namibia	91% emissions reduction below 2015 levels by 2030. 14% unconditional and 77% conditional.	A total of USD 5.33 billion is required for both mitigation and adaptation. USD 0.53 billion unconditional and USD 4.80 billion conditional.	Energy, IPPU, AFOLU, and Waste.	Water, Agriculture and forestry, Coastal zones, Health, Tourism, and Disaster risk management.
South Africa	By 2025 emissions will be in the range from 398-510 Mt CO2-eq, and by 2030 emissions to be in the range from 350-420 Mt CO2-eq.	USD 60-64 billion.	Energy, IPPU, AFOLU, and Waste.	Health, Agriculture and Forestry, Human settlements, Biodiversity, and Water
Zambia	25% emission unconditional reduction, and 47% conditional reduction compared to 2010 levels.	USD 15 billion through domestic and limited international support, and USD 35 billion through substantial international support.	Energy, AFOLU, and Waste.	Agriculture and food security, Health, Nutrition, Water, Sanitation and Hygiene, Education, and Safety net programmes.
Zimbabwe	40% emissions reduction compared to BAU by 2030.	The cost of mitigation is estimated to be USD 4,834.47 million.	Energy, IPPU, AFOLU, and Waste.	Agriculture, Water, Infrastructure, Disaster risk reduction.
Djibouti	40% GHG emissions by 2030	Mitigation estimates exceeding US $3.8 billion, with an additional US $1.6 billion	Energy and Industrial processes.	Agriculture, Water,
Eritrea	Reducing GHG by 12.6% unconditionally and (ii) reducing by 38.5 % in the conditional scenario assuming external assistance compared to the business-as-usual scenarios	an estimated mitigation expenditure of more than USD 3,548 billion by 2030	Energy sector	Agriculture, Marine Resources, Health, Water, and Land Resources, necessitating adaptation measures

Country	Mitigation Target (Emission reduction percentage)	Finance Targets / Commitments	Mitigation Priority Sectors	Adaptation Priority Sectors
Kenya	Reduce its GHG emissions by 32% by 2030 compared to the business-as-usual (BAU) scenario of 143 MtCO2eq	Mitigation activities are estimated to require USD 17,725 million in resources. Total cost of mitigation and adaptation estimated to 62 billion USD	Energy, Agriculture Waste	Disaster risk reduction, Agriculture, Environment, Energy, Water and sanitation, Health, Population, urbanization and housing, Tourism, Gender, Devolution
Sudan	Sectoral approach/ reductions	Over 8.23 billion USD needed over the next 10 years as total costs for both mitigation (4,393) and adaptation (3,850)	Energy, Forestry, and Waste	Water, Agriculture, Public health, Coastal zone
Uganda	Reduction of GHG emissions by 24.7% below the Business-As-Usual (BAU) trajectory by 2030	Mitigation estimated at USD 28.1 billion, with domestic resources covering unconditional actions and international support required for conditional measures	Agriculture, Forestry, Energy, Waste, and Industry	13 sectors with 48 priority actions, addressing areas such as Ecosystems, Water, Agriculture, and Forestry
Somalia	Reduction of GHG emissions by 30% compared to the BAU scenario, equating to approximately 32.40 MtCO2eq by 2030	The overall cost of implementing mitigation actions during the NDC period is USD 6.96 Billion.	Agriculture, Forestry, and Land-use, Energy, Transport, Waste	Agriculture and Food security, Water resources management and public health, Disaster preparedness and management, Coastal, marine environment and fisheries, Energy, Forestry and Environment, Human settlements, Infrastructure including roads, bridges
Mauritius	Reduction of GHG emissions by 40% by 2030, compared to the BAU scenario estimated at 6,900 ktCO2eq.	USD 2 billion allocated for mitigation and USD 4.5 billion for adaptation	Energy, Transport, Waste, and Industrial Processes and Product Use (IPPU)	Fisheries (Blue Economy), Tourism, Biodiversity (Terrestrial and Marine), Forestry, Agriculture and Coastal Zone

Source: (Africa NDC Hub, 2024)

***Annex 4**: Review of Existing Guidance*

Guidance	Purpose	Information Elements	Target Audience
Guidance for the Information necessary to facilitate Clarity, Transparency and Understanding (ICTU)	To develop guidance on how to facilitate clarity, transparency and understanding in NDCs by creating guidelines based on information elements from paragraph 27 decision 1/CP.21	▸ Quantifiable information on the reference point ▸ Time frames and/or periods for implementation ▸ Scope and coverage ▸ Planning processes ▸ Assumptions and methodological approaches ▸ How the Party considers its NDC is fair and ambitious in the light of its national circumstances ▸ How the NDC contributes towards achieving the objective of the Convention as set out in its Article 2	All Parties to the Convention

***Annex 5**: African Regional Economic Communities (RECs)*

Regional Economic Community	Countries
Arab Maghreb Union (AMU)	Algeria Libya Mauritania Morocco Tunisia
Common Market for Eastern and Southern Africa (COMESA)	Burundi Comoros DR Congo Djibouti Egypt Eritrea Eswatini Ethiopia Kenya Libya Madagascar Malawi Mauritius Rwanda Seychelles Somalia Sudan Tunisia Uganda Zambia Zimbabwe
Community of Sahel-Saharan States (CEN-SAD)	Benin Burkina Faso Central African Republic Chad Comoros Djibouti Egypt Eritrea Gambia Ghana Guinea-Bissau Ivory Coast Libya Mali Mauritania Morocco Niger Nigeria Senegal Sierra Leone Somalia Sudan Togo Tunisia

Regional Economic Community	Countries
East African Community (EAC)	Burundi DR Congo Kenya Rwanda South Sudan Tanzania Uganda
Economic Community of Central African States (ECCAS)	Angola Burundi Cameroon Central African Republic Chad DR Congo Equatorial Guinea Gabon Republic of Congo Rwanda São Tomé and Príncipe
Economic Community of West African States (ECOWAS)	Benin Burkina Faso Cape Verde Côte d'Ivoire Gambia Ghana Guinea Guinea-Bissau Liberia Mali Niger Nigeria Senegal Sierra Leone Togo
Intergovernmental Authority on Development (IGAD)	Djibouti Eritrea (observer status) Ethiopia Kenya Somalia South Sudan Sudan Uganda
Southern African Development Community (SADC)	Angola Botswana Comoros DR Congo Eswatini Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles

Regional Economic Community	Countries
	South Africa
	Tanzania
	Zambia
	Zimbabwe

Source: (AU, 2024)

Annex 6: *Detailed review of existing NDC Scorecards*

Some of the existing scorecards are hereby highlighted, ***Table 6*** of this study provides links to the scorecards detailed below:

1. COP26 Health Commitments Scorecard

The COP26 programme considered the impacts of climate change on health, thus the World Health Organization (WHO), Health Care Without Harm, the UK COP Presidency and the UNFCCC Climate Champions launched a country commitments platform on Health Commitments Scorecard. This scorecard set out to provide a global perspective on the COP26 Health Programme by reviewing the most recent NDCs and adaptation communications submitted before the close of COP26 (12th November 2021) by countries that are committed to the programme.

The scorecard analyzed the NDCs and adaptation communications of specific countries for any issue related to the health commitments regarding climate resilient health systems, sustainable low carbon health systems, net zero commitment, and net zero target. The scorecard highlighted details relevant to mitigation and adaptation within the communications. The scorecard use a qualitative scoring methodology to generate indexes which are ranked in its assessment. The scorecard has been used to analyze the NDCs and adaptation communications of 50 countries that are already committed to a climate-resilient health system, out of 51 countries who made initial commitment.

2. NDCs Across the Americas Scorecard

With the goal of facilitating dialogue on the need for increased leadership and funding in support of national climate plans, as described under the Paris Agreement, the NDCs Across the Americas Scorecard provided a snapshot of countries' NDCs through country-specific scorecards and a subsequent white paper. The analysis first provides a country profile of GHG emissions, Gross Domestic Product (GDP), and a comparison of updated NDCs vis-a-vis the Intended NDCs across countries. The analysis disaggregated NDCs of various countries based on the following indicators:

- Is the GHG emission reduction target stated in the updated NDC more ambitious?
- Is adaptation/resilience component more ambitious?
- The percentage of total GHG emission reduction targets depend on international assistance.
- Is there a carbon neutrality commitment?
- Is the country on track to achieve its pledges?
- Is the country implementing policies/regulations consistent with NDCs?
- Are COVID-19 recovery measures aligned with Paris commitments?

The indicators were rated with a qualitative score of "Yes", "Insufficient", "No" or "Undetermined". Additionally, given the percentage of GHG emissions which are dependent on international assistance, the indicator was scored "green" if the targets were 100% unconditional, "orange" if the targets were 1-50% conditional, and "red" if the targets were 51-100% conditional. The Institute of the Americas NDC scorecard was used to profile 16 countries. The countries

represent 90% of the Hemisphere's total population and 98% of its combined GDP. The regional scorecard was used as a tool to emphasize the critical areas of near-term attention needed from policymakers and government officials such as energy, agriculture, and land-use, which are the three largest sources of greenhouse gas emissions in Latin America and Caribbean.

3. CARE Gender Scorecard

In 2021, CARE and CAN International review the new and updated NDCs with the expectation to promote gender inclusion in climate action hence the development of the CARE Gender Scorecard. Gender performance was analyzed with a scorecard approach and countries ranked in different groups. The methodology was drawn from WEDO's Gender Climate Tracker NDC review framework and focuses on three areas with specific indicators for each:

I. **Governance:** This involve reviewing whether the NDCs included any reference to gender or women. Reference to commitments on mitigation, adaptation, capacity-building, implementation, and whether the gender reference is crosscutting were analyzed. Women position in the NDC, as agents of change, or as stakeholders, was also considered in terms of vulnerability to impacts of climate change.

II. **Planning**: The extent of gender inclusion in planning involved two indicators: the existence of gender-responsive budgeting and participatory planning process in the NDC.

III. **Implementation and Enhanced Climate Policy Instruments:** The indicator used was the existence of a mechanism or process for monitoring the implementation of the NDC.

The revised NDCs were analyzed using the above indicators and scored either green (progressive), yellow (moderate), or red (laggard). The countries were then ranked according to their overall score. The NDCs assessment based on 6 green indicators were given a light green score (Role model group). Secondly, the NDCs of 5 green or more indicators were given a green score (Progressive group). Thirdly, the NDCs of 4 green indicators were given an orange score (Advanced group). Next, a score of yellow based on 2-3 green indicators (Moderate group). The final group of 1 or 0 green indicators with a score of red (Laggards).

The analysis reviewed the NDCs of 56 Parties with varying approaches to integrating gender equality within their NDC planning and implementation process with many of the new or updated NDC submitted and overall progress compared to 2015. Of the 56 countries, only 7 (Cambodia, Honduras, Kenya, Marshall Islands, Nepal, Panama, and Papua New Guinea) achieved a full score of 6 and only 10 made it into the Progressive Group.

4. NDC Industry Transition Scorecard

In the run up to COP26 and as countries submitted their latest updates to their NDCs, the Leadership Group for Industry Transition assessed the NDCs submitted by September 2021. This assessment was aimed at evaluating the progress made in raising industry transition ambition levels in NDCs and the extent to which parties are proposing detailed decarbonization plans for their heavy industries. The assessment was carried out using a three-phased NDC Industry Transition Scorecard.

The scorecard applied a three-phase methodology:

- **Phase 1 - Industry included**: If the NDC included industry in its scope, it proceeded to Phases 2 and 3. If not, it was excluded and not given a score.
- **Phase 2 - Specific industries mentioned**: The mention (or lack thereof) of specific industries was recorded in the NDC.
- **Phase 3 - Domestic mitigation measures targeting industries included**: This was further broken down into three subsequent steps:
    - **Industry transition measures mentioned-** If this was not mentioned, the NDC was given "No Score". If mentioned, it moved to the second step.
    - **Specific measures targeting specific industries mentioned-** If this was not mentioned, the NDC was given a score of "Low". If mentioned, the NDC moved to the third and final step.
    - **Industry transition measures mentioned-** If this was not mentioned, the NDC was given a score of "Medium". If it was mentioned, the NDC was given a score of "High".

This scorecard was used to assess the updated NDCs of 94 countries and compared the updated and intended NDCs for 86 parties. High-scoring NDCs were found to focus on cross-sectoral measures such as energy efficiency, timelines and budget estimations for implementing the measures. The scorecard's measure of mitigation measures showing a significant increase in NDCs containing detailed industry transition mitigation measures. The NDCs are increasingly being used as a platform to outline policy initiatives.

5. NDC Scorecard on Waste Management

The Global Alliance for Incinerator Alternatives (GAIA) report evaluates NDCs on their goals for reducing greenhouse gas emissions by developing a scorecard that rated NDCs on their waste management strategies and discussions. This analysis was restricted to the text of the NDCs and analyzed all updated NDCs submitted before 11 October 2021. The NDC Scorecard on Waste Management 's analysis was based on three indicators and given a score of green (positive), yellow (mixed), or red (negative), and grey (no data was available) for each category as follows:

- **Overall discussion of waste and climate**
    - NDCs were scored based on whether they discussed the link between waste and climate, and if so, if they proposed specific policies, technologies, or strategies for achieving emission reductions in the sector. NDCs were scored "green" if had a clear discussion of the waste sector with concrete plans for waste emission management, "yellow" if mentioned waste but do not discuss the topic in depth or fail to propose concrete actions, and "red" if they do not mention waste at all.
- **Proposed waste management practices**

- NDC that proposed specific plans for the waste sector was assessed based on whether the proposed policies, technologies, and strategies were positive, ambiguous, or detrimental to achieving international climate goals.
- NDCs receive "one point" for each positive intervention proposed, "zero point" for each ambiguous intervention, and "minus one" point for each detrimental intervention. The overall rating was based on whether they propose more positive or negative practices. NDCs were scored "green" if they had more positive than negative practices, without combustion-based interventions, "yellow" if there were equal numbers of positive and negative practices or more positive than negative practices but included combustion-based interventions, and "red" if there were more negative than positive practices.

- **Environmental justice and civil society engagement**
  - NDCs were rated on the social dimensions of their waste sector climate plans, for example, discussion of waste-related environmental justice issues such as the disproportionate impact of waste pollution on low-income communities, gender and equity considerations in the waste sector, or recognition of informal waste workers. NDCs were scored "green" if they had a clear discussion of environmental justice issues, gender and equity, or informal workers in the waste sector or clear process for waste sector stakeholder engagement, "yellow" if they had simple/vague reference to environmental justice, gender and equity, or informal workers in the waste sector, or multi-stakeholder engagement process that does not address the waste sector specifically, and "red" if they had no discussion of environmental justice issues, gender and equity, or informal workers in the waste sector, and no stakeholder engagement process.

The analysis assessed a total of 99 NDCs representing 125 countries using the developed scorecard.

6. International Trade Union Confederation Climate Scorecard

The International Trade Union Confederation (ITUC) developed the International Trade Union Confederation Climate Scorecard that analyzes updated NDCs of countries for their integration of Just Transition in the text of their communications. The scorecard assessed NDCs based on three criteria:

a. Climate Ambition- plans to cut emissions by 2030, measures for climate adaptation and commitment to climate finance.

b. Just Transition- plans for industries and sectors.

c. Social Dialogue- workers and their unions have a seat at the table to design climate policies and their implementation.

The NDCs were given qualitative scores of 'Yes' and 'No' for each of the three indicators. The Climate scorecard was used to assess the updated NDCs of 52 countries by 2020.

7. GCHA Healthy Scorecard

The GCHA Healthy NDCs Scorecard is a national Level tool targeting the health sector and assesses how much governments' national climate commitments recognize and respond to the abundant linkages with health. It ensures the integration of health into climate policy protects populations, maximizes economic benefits, and builds public backing for ambitious climate policies which are urgently needed. Failure to include health in NDCs is a missed opportunity for people, the public purse, and political support.

NDCs were assessed and assigned two ratings: Firstly, the health score which is based on their attention to six health categories: Integrated governance, Health impacts, Health sector action, Health co-benefits, Economics and finance, and Monitoring and implementation. Three points were available for each category with a total possible 'health score' of 18. Secondly, the climate ambition rating was based on the overall climate ambition as the factor with the greatest ultimate on health taken from the Climate Action Tracker website.

Health Score Rating

i. **Integrated Governance rating**: Reflecting on the intersectoral cooperation, this rating assesses coordination between government departments and holistic approaches to health and climate change in the NDC.

ii. **Health Impacts**: Scoring for health impacts involves recognizing the health implications of climate change. A single point given for acknowledging these impacts generally or specifying a specific health issue. Two points granted for acknowledging both general and specific health impacts, or for highlighting two or more specific health issues. An additional point provided if the NDC mentions any form of monitoring or quantification of health impacts, or includes a specific goal or target related to health impacts. Points are only awarded when health is explicitly mentioned for factors affecting health that also have broader impacts, such as flooding.

iii. **Health in Adaptation**: In assessing health in adaptation, one point is awarded for acknowledging the importance of addressing health during adaptation efforts. Two points awarded to countries that either conducted or committed to conducting a vulnerability assessment related to health, outlined health adaptation actions in their plans, or have incorporated health into their overall adaptation strategy. Three points awarded to countries with comprehensive health adaptation plans or actions, or for meeting three or more of the criteria mentioned for lower scores. Adaptation efforts in the health sector and other relevant sectors like housing and sanitation are also considered.

iv. **Health Co-benefits**: Health co-benefits stem from mitigation measures across various sectors, contributing to improved health outcomes. A point is awarded for any mention or implication of health co-benefits or specifying a particular health co-benefit. Two points were awarded for mentioning both general health co-benefits and a specific co-benefit, for naming multiple co-benefits, or for highlighting health as a co-benefit across multiple sectors. An additional point was available for quantifying or monitoring health co-benefits, mentioning specific goals or targets related to health, or for emissions reductions in the healthcare sector.

v. **Economics and Finance**: Evaluating economics and finance involves considering the financial aspects related to health impacts and interventions. One point was awarded for mentioning the economic costs of

health impacts due to climate change or savings from interventions. Additionally, points are awarded for budget allocation, investment, or resource allocation for the health sector or water and sanitation adaptation actions, as well as for quantifying or alluding to returns on investment for health co-benefits of climate change mitigation, with a maximum score of 3 points. Specific financial figures are not required for scoring.

vi. **Monitoring and implementation**: Points for monitoring and implementation were awarded and distributed across the 5 working categories.

Climate Ambition Rating

The information regarding climate ambition was sourced directly from the Climate Action Tracker where an evaluation of the country's climate commitments has been conducted, resulting in a confirmed temperature rise rating. It is important to note that the CAT does not cover all countries, and due to data unavailability for all countries, the information on climate ambition was not factored into the scoring.

The scorecard includes information on governments' overall climate ambition, reflecting the most recent analysis of the Climate Action Tracker. These ratings consider domestic targets, policies and action, fair share of emissions reductions, climate mitigation finance, and land use and forestry. Analysis of NDCs reveals that the overwhelming majority (90%) acknowledge the interconnection between health and climate to varying degrees. Noteworthy is that among the 16 countries scoring 11/18 or higher for health inclusion, all belong to low- and middle-income brackets. In terms of regional performance within the UNFCCC, Parties from the United Nations Latin America and Caribbean Region achieved the highest average scores (10.2 points), followed by the Africa region (9.4 points), Asia-Pacific (6.3 points), Eastern Europe (2.3 points), and Western Europe and Others Group (1.2 points).

8. DEAL Score Card

DEAL is a universal framework designed to help in assessing the progress of countries towards implementation of their NDCs vis-à-vis the transformation towards low carbon emission pathways in line with their respective NDCs. The DEAL scorecard is not designed to measure the impact but rather on what enables the implementation and transformation that countries are seeking through their NDCs.

The DEAL assessed the NDCs and their implementation into four main categories: Decision-making, Economic growth, Alignment and Livelihood (DEAL). A country's DEAL score (i) provides a framework for evaluating the implementation of climate change action against the commitments stated (ii) assigns a score between zero and one and (iii) establishes a starting point for identifying weaknesses in the existing NDCs with a view to strengthening them. DEAL is a scorecard that confirms what minimal factors, policy options and choices the Paris Agreement signatories must make to implement their NDCs and achieve the objective of national/global low-carbon economic transformation.

The DEAL Score Card represents a comprehensive approach distinct from existing scorecards. It amalgamates governance, institutional capacity, stakeholder engagement, and economic growth cohesively to facilitate the necessary transformation and international financing for NDC implementation. The score card puts emphasis on establishing governance measures and enhancing institutional capacity. The scorecard uses indicators that stem out from practical state experiences and are relatively new in climate change or environmental indexes.

The adopted approach employs policy counting, assigning a maximum score of 1 if a country fully meets fundamental requirements for all indicators. Each element of the DEAL Score comprises up to three components. Indicators are assessed across three levels: On track, partial, and lagging. A score of less than 1 is assigned if partial progress is achieved, while a score of zero is given if the country is lagging. The scorecard was used to analyze the Ghana NDCs looking specifically at the overview of Ghana economic and environmental condition and its main vulnerabilities to the climate change.

9. Clean Air Scorecard

The Clean Air NDC Scorecard evaluates how effectively air quality aspects and health are incorporated into Nationally Determined Contributions (NDCs). In the buildup towards COP 28, decisive climate actions with aspirations for reinforced pledges to phase out fossil fuels was made. This Scorecard serves as a litmus test, whether or not countries recognize the connection between health, clean air, and climate initiatives. The results of the scorecard highlight nations that are successfully intertwining climate measures with air quality improvements, showcasing global frontrunners while identifying missing opportunities to advance ambitious climate agendas and health benefits simultaneously. Notably, low- and middle-income countries (LMICs) are spearheading progress in this regard.

NDCs were assessed based on their attention to five categories to give a total clean air score: health impacts, air pollution, source sectors, economics and finance, and bonus points. The Clean Air NDC scorecard borrows from the Healthy NDC scorecard but focuses on safe air. The analysis followed a point award system that was based on five categories, as follows:

- **Health impacts of air pollution**: Points are awarded if there is any quantification of this burden and any action by the health sector to respond to associated diseases.
- **Source Sectors**: If there are any named sectors of air pollution and actions within the named sectors to improve air quality. Additional points are general references to air pollution not covered by other categories.
- **Air pollutants**: Points are awarded if there are air pollutants and targets or efforts to monitor air quality.
- **Economics and Finance**: include discussions of the cost of air pollution, cost and/or budget for actions in improving air quality or returns on investment from action to improve air quality.
- **Bonus sections**: these points are awarded if there is a reference to WHO Air Quality Guidelines, the Climate and Clean Air Coalition, or the Breath Life Campaign, as well as discussions regarding the number of lives saved or other health benefits derived from enhancing air quality, addressing inequalities, or vulnerabilities in exposure to air pollution or its associated outcomes.

Out of the 170 NDCs examined, 164 referred to air pollution. Colombia and Mali are leading in the integration of air pollution into their NDCs, each scoring 12 out of 15 possible points. They are closely followed by Chile, Côte d'Ivoire, Togo, and Nigeria, each scoring 10 out of 15 points. On the contrary, six NDCs received a score of 0 out of 15 points, including Saudi Arabia (ranking among the top 10 global emitters for both total and per capita emissions), North Korea (with the highest rate of air pollution mortality worldwide), Bahrain (the second-highest per capita emitter of greenhouse gases globally), Nauru, Palau, and the Solomon Islands.

10. NDC Tracking Tool – Food and Agriculture Organization of the United Nations (FAO)

The NDC Tracking Tool developed by FAO serves as a crucial resource for countries aiming to monitor and assess their progress in implementing their Nationally Determined Contributions (NDCs) as part of the Paris Agreement. This Excel-based tool is designed to be user-friendly and adaptable to various national contexts. It assists government officials, experts, and practitioners involved in NDC preparation, implementation, enhancement, and reporting across all relevant sectors. The tool covers both mitigation and adaptation aspects of NDCs, offering a comprehensive approach to tracking progress. The Tools' structure corresponds to the requirements of the Modalities, Procedures and Guidelines of the Paris Agreement's Enhanced Transparency Framework (ETF) and, therefore, supports countries to collect the necessary information needed for the submission of Biennial Transparency Reports (BTR).

For mitigation, the tool allows for the comparison of planned versus implemented actions across various sectors, enabling users to evaluate the effectiveness of measures taken to reduce greenhouse gas emissions. In terms of adaptation, the tool enables the tracking of planned and implemented policies and measures across 13 sectors, including agriculture. This feature allows users to monitor how countries are addressing climate change impacts and building resilience in key vulnerable areas. By providing a systematic framework for tracking NDC implementation, the FAO Tracking Tool helps countries identify achievements, shortcomings, and areas for improvement. It facilitates evidence-based decision-making and enhances transparency in reporting progress towards meeting climate targets. Overall, NDC Tracking Tool is openly available and allows users to collect information required to track progress made in implementing a country's NDC and SDGs.

The NDC Tracking Tool comprises five modules along with result and dashboard sections. Its structure aligns with the requirements outlined in the Modalities, Procedures, and Guidelines (MPGs), specifically addressing Chapter III, Sections B, C, D, and Chapter IV (Decision 18/CMA.1). Additionally, the tool's approach draws on supplementary information from Decision 4/CMA.1 and Decision 5/CMA.3, which offer further guidance on reporting mitigation actions and utilizing common tabular formats for NDC electronic reporting.

Tracking NDC progress relies on indicators deemed relevant by each country for its NDC targets (Chapter III, Section C). These indicators may be either qualitative or quantitative. For instance, if a quantitative indicator like a country's net greenhouse gas (GHG) emissions and removals is chosen, it must be compared to pre-implementation levels (MPGs, paragraph 65). Moreover, quantitative indicators may encompass measurable parameters beyond GHGs, provided that the methodology and assumptions used to estimate resultant GHG emission reductions or increases in GHG removals are clearly described and reported. Qualitative indicators may also be employed, which should be tracked in terms of implementation progress.

The NDC Tracking Tool presents methodological approaches outlined in both Chapter III, Section C, and Section D of the MPGs. Determining the suitable methodology for each country's context depends on various factors, such as the nature of mitigation commitments specified in the NDC, accessibility of data for progress tracking, and the technical and financial resources. The tool was developed to support governments, national experts, and

practitioners involved in the preparation, implementation, updating, revision, and reporting of all sectors covered by the NDC.

11. Greenhouse Gas Abatement Cost Model (GACMO)

The Greenhouse Gas Abatement Cost Model (GACMO) is an Excel-based tool originally developed by the UNEP-Copenhagen Climate Centre and later updated for the Initiative for Climate Action Transparency (ICAT). GACMO enables countries to conduct rapid and thorough evaluations of the greenhouse gas (GHG) impacts of various mitigation options. It calculates GHG reductions resulting from specific mitigation actions, allowing for comparisons with a BAU scenario. GACMO focuses specifically on assessing the cost associated with implementing various mitigation actions outlined in countries' NDCs.

The tool can estimate expected and achieved GHG reductions from policies and measures making it suitable for NDC tracking purposes and the preparation of biennial transparency reports, which are key reporting mechanisms under the Paris Agreement. A notable feature of GACMO is its minimal data requirements for initial calculations. It comes with a set of default values pre-loaded into the tool, eliminating the need for users to update them unless they possess more accurate inputs for more precise estimates. As countries gather additional data specific to their contexts, they can add data into the tool, and the values will automatically adjust accordingly.

GACMO comprises 40 sheets covering various sectors such as agriculture, biomass energy, household energy efficiency, forestry, solar, and wind energy. With over 20 years of research, it has been successfully utilized in numerous countries worldwide. GACMO incorporates a set of formulas and macros that automate the calculations conducted within the tool. Consequently, users do not necessarily need to understand the intricacies of these calculations to utilize GACMO effectively. Instead, users only need to be familiar with inputting data and interpreting the generated results. In summary, the essential data required to operate GACMO include:

- Energy balance data, encompassing production/consumption figures for fossil fuels and electricity within a country (region or city). These details should be inputted into the "Start Year Balance" sheet.
- GHG emission data for key sectors such as Agriculture, Forests, Waste, and Industrial processes are also in the "Start Year Balance" sheet.
- Activity data concerning quantities and costs associated with each energy source and electricity. These specifics should be incorporated into the "Assumptions" sheet.
- Fundamental country data, like the local currency, exchange rate with the dollar, and discount rate. These particulars should be entered into the "Assumptions" sheet.
- The quantity of units for each selected mitigation option is projected for the years 2025, 2030, and/or 2050. This information must be provided in the respective "Main25," "Main30," or "Main50" sheets.

In Sri Lanka, the GACMO tool facilitated the successful update of both NDC targets. Sri Lanka's revised NDC in 2021 aims to reduce greenhouse gas emissions from the energy sector by 20% by 2050, identifying seven mitigation options. The ICAT project further evaluated these measures, identifying two additional potential options totaling nine measures. Utilizing available data through GACMO, Sri Lanka prioritized and revised its energy related NDCs with a potential 25% reduction in GHG emissions by 2030.

Similarly, Viet Nam utilized GACMO to assess GHG mitigation potential in its agricultural sector. In its updated NDC in 2022, Viet Nam committed to reducing sector emissions by over 63 million tons CO_2-equivalent (CO_2e) by 2030. Viet Nam identified 11 areas requiring mitigation activities and input all relevant information into GACMO, including expected growth in GDP, population, and energy consumption. GACMO utilized this data to develop a BAU scenario, calculating emissions with growth factors for each sector over three time periods.

12. IWMI Water Resilience Tracker

The role of water is diluted across sectoral responses to climate change. The IWMI Water Resilience Tracker brings these responses together for a cohesive climate action leading to an ambitious NDC focus on water. It also allows for concerted action across different implementation agencies.

Planning for resilience to climate change does not explicitly integrate water into those plans together with proper technical capacity building including access to climate finance to manage water security.

The Water Tracker allows governments to recognize the central role of water in climate action. It integrates water into national climate plans, addresses institutional frameworks for water governance, integrates water into sector specific plans such as energy security, and provides a sound foundation for climate financing and project implementation based on scientific rigor.

An improved understanding of water in different sectoral responses as well as the impact of climate change on water resources, will lead to improved water governance and water security.