ENHANCING AMBITION OF CLIMATE ACTION IN THE AFRICAN CONTEXT: AFRICA-FOCUSED ANALYSIS OF THE FIRST GLOBAL STOCK OUTCOMES

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CHAPTER 1: INTRODUCTORY AND FRAMING CHAPTER

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1. Introduction

The adoption of the Global Stocktake (GST) decision at COP28 (decision 1/CMA.5) marked a critical juncture in the global response to climate change and in the implementation of the Paris Agreement (UNFCCC, 2023a). The Global Stocktake is a mechanism established under Article 14 of the Paris Agreement to assess collective progress toward achieving the Agreement's long-term goals every five years, and a critical part of the 'ambition mechanism'. It provided the first comprehensive assessment of collective progress toward achieving the Agreement's long-term goals, particularly in limiting global warming to well below 2°C while pursuing efforts to stay within 1.5°C. Anchored in Article 14 of the Paris Agreement, the GST-1 was intended not only to assess ambition and action gaps, but also to inform the next phase of climate commitments (NDC 2.0), and to promote enhanced international cooperation for climate action. For African countries, GST-1 came at a critical juncture - amid rising climate impacts, growing debt burdens, and increasing calls to align climate action with the continent's development priorities and structural transformation goals.

The political negotiations for the outcome of the first Global Stocktake (GST-1) were conducted on the heels of dire scientific findings from the most recent and best available science. The GST's Technical Assessment process concluded that the world was not on track to achieve the temperature goals of the Paris Agreement, that global emissions needed to peak by 2025 to limit warming to 1.5°C, and that there needed to be deep, rapid and sustained reductions of global GHG emissions by 43 percent by 2030 and 60 percent by 2035 relative to 2019 levels (IPCC, 2023). These findings were particularly alarming given that a synthesis of the most recent NDCs showed only a 5.9 percent reduction by 2030 even if all Parties fully implemented their commitments.

2. African Circumstances

According to the IPCC Sixth Assessment Report, Africa contributes the least to climate change-causing GHG emissions, accounting for only 3 percent of global emissions from energy and industrial sectors, but with land use, land-use change and forestry (LULUCF) about 7 percent of the global total (IPCC, 2022a). Africa's GHG emission pattern clearly reflects the under-development in the continent, where more than half of its population lacks access to energy, clean and safe water, primary health facilities, and the majority depend on unsustainable livelihood systems based on climate-sensitive natural resources (AfDB, 2023). Africa possesses significant renewable energy potential and substantial land-use/forestry emissions reduction and carbon sequestration potential that could contribute to global climate goals (IRENA, 2024).

The continent is warming at a rate that is at least twice the global average and increasingly faces cascading risks under current levels of climate change (IPCC, 2018). As such climate impacts in one area trigger additional risks and impacts in other interconnected systems. It has limited resilience and adaptive capacity to be safe under a 1.5°C increase in warming and faces existential risks at 2°C

warming levels. The development gap Africa has with the rest of the world is being compounded by these impacts, causing African governments to divert significant public resources away from development to finance adaptation at a cost of 5-15 percent of GDP (AfDB, 2022).

These costs are singularly and unfairly borne by the continent yet driven by global emissions. Despite efforts by African countries, the continent is still the least developed and very unlikely to meet its SDGs 2030 targets (UNECA, 2021) unless it secures the development policy space, financial support and just transition solutions tailored to address the continent's sustainable development priorities. Currently Africa receives the lowest share of global climate finance, has the lowest adoption rates of climate technologies, faces challenging economic conditions with limited access to affordable financing, and confronts disinvestment pressures in oil and gas sectors (CPI, 2024).

3. African Group GST-1 negotiating position

Africa's development aspirations have always been constrained by structural deficiencies in food sovereignty, energy sovereignty and trade in low-value primary goods. In response to climate change, the Convention emphasizes the legitimate right of developing countries to pursue development, while Article 2.1 of the Paris Agreement underscores that basic human right by placing global climate action within the overriding objective of achieving sustainable development and poverty eradication. The Right to Development, established in 1986, declares that development is an inalienable human right and the equality of opportunity for development is a prerogative both of nations and of individuals (UN General Assembly, 1986).

The African Group entered these negotiations with a common position founded on the principles of equity, the right to development, and the need for a just transition as primary considerations for guiding Party contributions to implementing GST outcomes (African Group, 2023). A just transition refers to a framework ensuring that the shift toward a sustainable economy is fair and inclusive, leaving no one behind. It revolved around the notion that if the transition is just and equitable, each country's pathway to achieving PA goals will be shaped by their contributions to global GHG emissions, national circumstances, development level and capabilities, and obligations under the Convention.

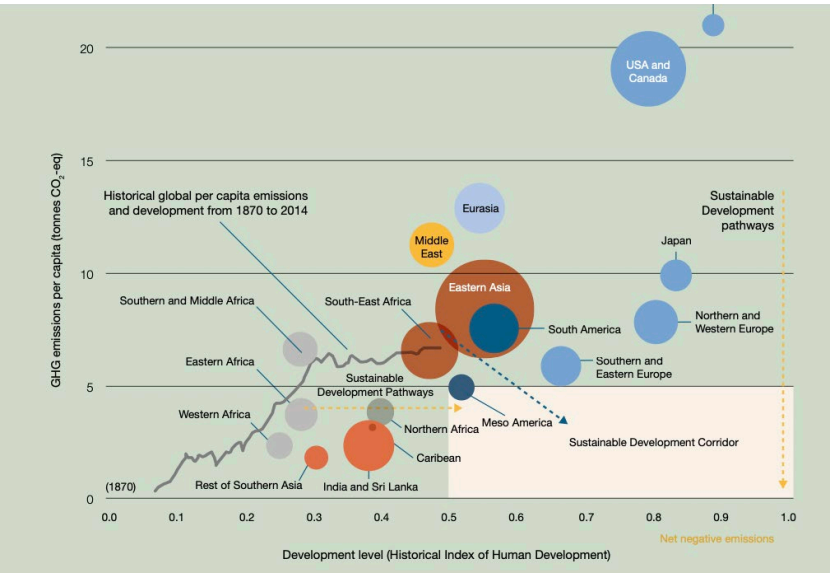

Figure 1. Sustainable development pathways towards fulfilling the Sustainable Development Goals. Pathak, et al (2022)

The figure shows the different challenges countries face in the transition towards low carbon further showing that, in respect of emissions and development, a global sustainable development corridor is where per capita emissions are below 5 tons per capita, with a HDI of 0.5 and above. Except for Southern and Middle (Central) Africa, African countries have always been within range of sustainable emissions per capita, with the common challenge across all African countries being how to close the development gap. It is therefore unsurprising that many African countries prioritise increasing the availability of modern energy, and addressing the impacts of climate change,

For most African countries, their sustainable development pathway will be to achieve developmental objectives without increasing emissions, while for major and advanced economies, bringing emissions/consumption down while sustaining development will be their pathway (UNECA, 2024). Given the nexus between development level and resilience, and Africa's current socio-economic status, the Group's position was clear: climate change is a development issue for Africa. Africa will pursue sustainable development pathways where achieving SDGs becomes a condition for achieving peaking and net zero emissions, but with support, aim to do so in a low emissions manner. The GST decision should facilitate tailored approaches that create enabling conditions for Africa to achieve just and equitable climate resilient, low-GHG development.

4. Political Messages of GST-1 decision

The GST-1 outcome adopted recommended measures and global political messages seeking to address findings from the technical assessment and close ambition and implementation gaps before the close of "this critical decade" (UNFCCC, 2023a). The GST decision noted with significant concern that global GHG emissions trajectories are not yet in line with the Paris Agreement's temperature goal, and that there is a rapidly narrowing window for raising ambition and implementing existing commitments. It resolved to take urgent action to address this gap and achieve the 1.5°C target.

The landmark outcome was the political agreement to transition energy systems away from the use of all fossil fuels towards renewable energy and low to net zero emission energy systems. This represents the first time the international community explicitly agreed to move away from all fossil fuels, not just coal. There was also a new mid-term target of halting and reversing global deforestation and forest degradation by 2030, contingent on enhanced means of implementation, including through results-based payments from REDD+ (UNFCCC, 2023a).

The decision called for all Parties in a differentiated manner - not just developed countries - to communicate NDCs with economy-wide emission reduction targets covering all gases, sectors and categories, aligned with modelled pathways to 1.5°C. In adaptation, Parties adopted the United Arab Emirates Framework for Global Climate Resilience (EFGCR), which: sets time-bound targets for achieving the global adaptation goal, including preparation of National Adaptation Plans (NAPs) by all Parties by 2030; established a 2-year UAE-Belem Work Programme to compile progress indicators; and invites support to achieve universal coverage of Early Warning Systems by 2027.

On finance, the decision agreed that the New Collective Quantified Goal (NCQG), which was to be finalized at COP 30 the year after the adoption of the GST decision), will consider costs of implementing the GST outcomes, current NDCs and NAPs, and the evolving needs of developing

countries. At COP 29 the parties agreed to mobilise US$300 billion in finance per annum by 2035, and scale up financing for climate action to at least US$1.3 trillion. The GST decision also established a Technology Implementation Programme (TIP) to strengthen support for technology priorities identified by developing countries.

The GST decision recalls Article 2.1 of the PA and the right to development, reiterating that implementation of GST outcomes must not be at the expense of sustainable development and poverty eradication efforts. This understanding is exemplified by provisions like paragraph 26 where Parties agreed that pursuing recommended global pathways did not imply peaking in all countries within the same timeframe, and that peaking timeframes may be shaped by sustainable development, poverty eradication needs and equity. The decision therefore emphasized key principles including Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) and equity "in the light of different national circumstances, which suggest that there is no "one size fits all" approach to achieve PA goals.

5. African Considerations in response

The 2024 NDC synthesis report showed projected emissions of 51.5 gigatonnes of CO2 equivalent in 2030 - only 2.6 percent lower than 2019 - if all current commitments are implemented (UNFCCC, 2024). The WMO confirmed that 2024's global average temperature exceeded the 1.5°C threshold above pre-industrial levels (WMO, 2024). Pressure on governments to align their NDC 2.0s with 1.5°C pathways is critical for the interest of Africa. Africa needs to implement GST-1 outcomes and contribute to enhancing global climate action under its unique circumstances and development challenges.

The GST-1 decision reflects elements relevant to Africa's unique circumstances that should guide African countries in updating NDCs and developing climate finance strategies. These include,

- Recognition of special circumstances through specific needs of developing country Parties, especially those particularly vulnerable to climate change effects, with Africa being the only region mentioned under the Convention (Art.4.1(e));
- Sustainable development context: many sections operationalised sustainable development and poverty eradication as context for climate actions by countries struggling to achieve SDGs - a key African Group ask;
- Nationally determined pathways: the chapeau of paragraph 28, which clearly states that climate actions are nationally determined, in the context of sustainable development and poverty eradication, and countries may follow different pathways according to national circumstances;
- Energy transition flexibility where paragraphs 28-29 aim to transition away from all fossil fuels, paragraph 28(d) recognizes the need for just, orderly and equitable transitions with paragraph 29 providing space for using natural gas as transitional fuel - a key African Group ask to use natural resources to finance SDG achievement;
- Enhanced support recognition, which recognises the needs for enhanced support in forest/land sectors, including finance and technologies, and consideration of social and environmental safeguards in sustainable development contexts;
- Technology and finance provisions which established the Technology Implementation Programme and underscores importance of reforming multilateral financial architecture, recognising that international cooperation is critical for addressing climate change in sustainable development contexts.

This outcome provides space for African countries to undertake climate actions within their development circumstances. However, while decision 1/CMA.5 reaffirms key principles and need for enhanced support to developing countries, these provisions remain largely general and lack binding commitments or structural implementation roadmaps. From an African perspective, the decision reflects persistent gaps in international cooperation. International cooperation has failed to address systemic deficiencies—limited access to affordable finance, fragmented support frameworks, weak technology transfer mechanisms, and unequal integration into global value chains. Furthermore, whilst it recognises climate action urgency, the decision lacks specificity required to deliver truly inclusive and development-centered just transitions for Africa. As noted by UNECA (2024), unless international cooperation is fundamentally restructured to align with Africa's needs and capacities, the vision of equitable global progress will remain elusive.

CHAPTER 2: KEY REPONSES FROM AFRICA

By Xolisa Ngwadla, Nagmeldin El Hassan, Yaw Osafo

This analysis examines Africa's strategic response to the First Global Stocktake (GST-1) outcomes from COP28 and their implications for the continent's second Nationally Determined Contributions (NDC 2.0). The analysis synthesizes key messages from eleven thematic chapters, develops a comprehensive Methodological Framework to guide NDC 2.0 preparation, and outlines the critical role of regional organizations in supporting the preparation and implementation of NDCs. The analysis reveals that Africa contributes about 3% of global emissions from energy and industry but faces disproportionate climate impacts. The continent requires $2.8 trillion between 2020-2030 for climate action but receives only 4% of global climate finance. GST-1 provides both opportunities and challenges for Africa's sustainable development trajectory, while regional cooperation and enhanced international support are essential for successful NDC 2.0 implementation.

1. Key Messages from each Chapter

Chapter 1. Introductory and Framing Chapter

The introductory chapter establishes that GST-1 marks a critical juncture requiring Africa to balance global climate ambitions with legitimate development needs while securing enhanced international support. Africa accounts for only 3% of global energy emissions but faces warming rates twice the global average. The continent diverts 5-15% of GDP to climate adaptation costs despite minimal contribution to emissions. The GST-1 decision provides policy space for nationally determined pathways within sustainable development contexts, while recognition of Africa's "special circumstances" under the Convention creates opportunities for differentiated approaches. The strategic imperative emerging from this analysis is that Africa must leverage GST-1 provisions that recognize sustainable development and poverty eradication as context for climate actions while advocating for enhanced means of implementation.

Chapter 3: Methodological Framework for NDC 2.0 Preparation

Chapter 4: Transition to Climate Resilient Economies

This chapter emphasizes that Africa requires transformative adaptation financing and institutional capacity to achieve the Global Goal on Adaptation while maintaining development momentum. Climate impacts cost African countries 2-5% of GDP annually, with adaptation needs reaching $50 billion annually by 2050. Only 22 African countries have submitted National Adaptation Plans despite 51 providing NDC implementation costs. Current adaptation responses are fragmented and unequally distributed across regions, while the UAE Framework provides guidance but requires enhanced financial and technical support for implementation. African countries must develop comprehensive adaptation strategies linked to development planning while demanding predictable, grant-based financing for resilience building.

Chapter 5: Energy Transition

The energy transition chapter demonstrates that Africa can pursue GST-1 energy objectives according to national circumstances, conditional on receiving adequate financial support and technology transfer. Africa requires over $200 billion annually for energy transition but receives only 3% of global climate finance. The continent possesses vast renewable potential including 10 TW solar, 350 GW hydropower, and 110 GW wind capacity. Transitioning away from fossil fuels presents risks for oil-dependent economies requiring just transition support, while GST-1 objectives represent political encouragement rather than binding mandates. Africa must strategically leverage renewable potential while managing fossil fuel transition risks through differentiated pathways and enhanced international cooperation.

Chapter 6: Economy-Wide Targets

This chapter reveals that African countries should progress toward economy-wide targets while maintaining sectoral approaches where appropriate, ensuring development co-benefits and adequate MRV systems. Currently, 40% of African NDCs include economy-wide targets, with remainder focusing on key sectors. Over 70% of mitigation potential is conditional on international support. Diversity in development levels influences NDC approaches across low-income to upper-middle-income economies, while economy-wide targets require strengthened institutional capacity and data systems. Countries should sequence the transition to economy-wide targets based on capacity and development level while ensuring climate action accelerates rather than constrains development.

Chapter 7: Carbon Markets

The carbon markets analysis establishes that Article 6 mechanisms present opportunities for climate finance mobilization but require strengthened governance frameworks and regional cooperation for effective participation. Carbon markets can unlock new climate finance sources for Africa's low-carbon projects, though limited MRV capacity and fragmented regulatory frameworks constrain participation. COP29 decisions provide clearer authorization processes and transparency frameworks, while regional coordination can enhance Africa's position in global carbon markets. African countries must strengthen institutional capacity for carbon market participation while advocating for fair pricing and equitable benefit-sharing mechanisms.

Chapter 8: Forest and Land-Use

The forest and land-use chapter demonstrates that GST-1 recognises forests as essential component for achieving the goals of the Paris Agreement that requires transformed international cooperation and substantial financing increases to halt and reverse deforestation. Africa's forests provide $30-55 billion annually in climate services but receive only $170 million in support. The continent's net carbon sink capacity declined from 12.3 $GtCO_2$ to 2.75 $GtCO_2$, while 970 million Africans depend on wood fuel, creating complex socio-economic dynamics. The AFR100 initiative targets 100 million hectares restoration by 2030. Africa must articulate collective vision for forest protection while demanding reformed international cooperation that respects African leadership and provides adequate financing.

Chapter 9: Climate Finance

The climate finance analysis reveals that Africa faces an 88% climate finance shortfall requiring fundamental transformation of global financial architecture and enhanced access to concessional

financing. Africa needs approximately $250 billion annually but receives only $29.5 billion. Fifty-one percent of climate finance to Africa consists of loans, with half at market rates. Private finance accounts for only 18% of tracked climate finance to Africa, while the NCQG outcome of $300 billion annually by 2035 represents progress but remains inadequate. African countries must advocate for grant-based, highly concessional finance while building continental financial architecture to reduce dependence on traditional donor mechanisms.

Chapter 10: Technology Development, Transfer and Diffusion

The technology chapter establishes that the Technology Implementation Programme provides opportunities for enhanced technology support, but success depends on addressing financial constraints and capacity gaps. Over 1,000 technology action plans developed in 100+ developing countries require implementation. Financial constraints and lack of technical capacity remain primary barriers, while CTCN technical assistance can be integrated into NDC 2.0 conditional components. Systems approach linking policy, innovation, finance, and social dimensions are essential. African countries must leverage TIP opportunities while building multidisciplinary teams and advocating for enhanced international technology cooperation.

Chapter 11: Reporting Cycles and Transparency

The reporting and transparency chapter demonstrates that GST-1 integration is now mandatory for NDC 2.0, requiring systematic alignment of global guidance with national circumstances while strengthening transparency systems. All 2025 NDCs must demonstrate how GST-1 informed their preparation. Less than half of African countries submitted first Biennial Transparency Reports, while the Enhanced Transparency Framework provides opportunities for evidence-based policymaking. Capacity building remains inadequate despite improvements in support provision. African countries must leverage GST-1 guidance while investing in institutional capacity for long-term transparency system sustainability and advocating for support.

Chapter 12: Just Transition, Response Measures and International Cooperation

This chapter analysis the GST-1 outcomes in relation to the structural inequities requiring transformed international cooperation that prioritizes equity, accessibility, and African development priorities. Global fossil fuel transition risks stranding assets worth $1.4 trillion in Africa by 2050. Africa's 0.96t CO_2 per capita emissions contrasts sharply with the global average of 4.7t CO_2. Trade measures like CBAM may inadvertently penalize African exports, while adaptation costs escalate non-linearly with temperature increases. Africa must advocate for differentiated transition pathways supported by enhanced international cooperation that recognizes historical responsibility and current vulnerabilities.

Annex: Role of Regional Organisations

CHAPTER 3. METHODOLOGICAL FRAMEWORK FOR NDC 2.0 PREPARATIONS

[**PLACEHOLDER: Introductory paragraphs for Methodological Framework]

In developing NDCs, this study recommends that African countries consider all aspects of their commitments following the logical flow in the decision-making process outlined below in Figure 1, as a means of balancing national priorities with international imperatives.

Figure 1: African NDC 2.0 generic decision-making process

2.1. Foundational Principles Framework

Drawing from the introductory chapter, the foundational framework centers on climate justice integration where NDC 2.0 must embody climate justice principles ensuring developed countries fulfil their finance, technology, and capacity-building obligations. The sustainable development context requires all climate actions to be framed within sustainable development and poverty eradication objectives. Nationally determined pathways should leverage GST-1 recognition that countries may follow different pathways according to national circumstances. Implementation guidance recommends categorising NDC components as conditional and unconditional based on support availability, integrating climate commitments with national development plans and SDG frameworks, and maintaining policy space for responsible natural resource use during transition periods.

2.2 Sectoral Integration Framework

The sectoral integration framework draws from multiple chapters to create a comprehensive cross-sectoral approach. The energy transition component requires assessing current energy landscapes and identifying gaps from previous NDCs, defining renewable energy targets that leverage Africa's vast potential, planning just transition strategies for fossil fuel-dependent economies, and including transitional fuel provisions where appropriate for energy security. The adaptation and resilience component involves undertaking detailed risk, vulnerability, and impact assessments using IPCC methodologies, developing adaptation needs assessments linked to temperature scenarios, establishing monitoring and evaluation systems for dimensional targets, and creating adaptation investment strategies aligned with development priorities.

The AFOLU component encompasses conducting ecosystem assessments and baseline development for robust MRV systems, integrating social safeguards and community agency considerations, aligning forest protection with poverty reduction objectives, and leveraging continental initiatives like AFR100 and Great Green Wall. Carbon markets integration requires developing national Article 6 strategies covering cooperative approaches and centralized mechanisms, establishing governance frameworks for ITMO authorization and tracking, creating revenue-sharing mechanisms ensuring community benefits, and aligning carbon market participation with NDC priorities and sustainable development.

2.3. Implementation Support Framework

The implementation support framework addresses means of implementation through a comprehensive finance strategy. This involves identifying and prioritizing funding needs across mitigation, adaptation, and loss and damage, exploring international finance options prioritizing multilateral climate funds and concessional sources, accounting for transition risks and domestic resource mobilization efforts, developing coherent funding strategies with clear timelines and targets, aligning funding with national development blueprints and long-term strategies, and matching NDC ambition to predictable financing forecasts. The technology component includes all CTCN technical assistance in conditional NDC components, develops national multidisciplinary teams linking policy, innovation, finance, and social dimensions, leverages Technology Implementation Programme opportunities, and creates systems approaches for technology deployment and diffusion. Transparency and reporting requirements involve demonstrating explicit GST-1 integration in NDC preparation, strengthening institutional capacity for Enhanced Transparency Framework compliance, developing synergies between reporting systems and evidence-based policymaking, and investing in national statistical systems underpinning transparency requirements.

2.4. Ambition and Coverage Framework

The ambition and coverage framework distinguishes between economy-wide and sectoral targets based on development level. Low-income economies should focus on sectoral targets in key areas such as energy, AFOLU, and waste with clear progression pathways. Lower-middle-income economies can transition toward economy-wide targets with strengthened MRV systems, while upper-middle-income economies should adopt economy-wide absolute or intensity targets with comprehensive coverage.

Target setting methodology involves conducting comprehensive GHG emissions baselines identifying major sources, defining measurable, time-bound targets with conditional and unconditional components, considering conditional ambition triggers based on support threshold achievement, and aligning targets with Long-Term Low Emission Development Strategies.

2.5. Regional Cooperation Framework

Continental coordination leverages African Union Climate Change and Resilient Development Strategy, aligns with AfCFTA protocols for sustainable trade promotion, coordinates through African Group of Negotiators for unified positions, and develops knowledge exchange and resource pooling mechanisms. Sub-regional integration enhances cooperation through Regional Economic Communities, develops shared MRV systems and carbon market participation, creates regional power pools and cross-border energy projects, and establishes transboundary adaptation and ecosystem management.

2.6. Monitoring and Evaluation Framework

Performance tracking establishes national climate impact inventories with multilateral finance support, develops systems for collecting dimensional targets information, enhances systematic observation networks for early warning systems, and creates adaptation investment tracking platforms. Adaptive management includes review mechanisms for target adjustment based on support availability, establishes feedback loops between implementation experience and policy refinement, creates learning networks for best practice sharing across countries, and develops capacity for regular GST input preparation.

3. Summary of Regional Organizations' roles

[**PLACEHOLDER: 2 introductory paragraphs that link this section to Annex]
- sub-section needs to be restructured
- Consider separate chapter for Regional organisations; could come at end of paper

The African Union Commission serves as the continental coordinating body, providing policy frameworks during the preparation phase through harmonized climate policies and technical guidance on renewable energy targets while coordinating continental initiatives like APRA. During implementation, AUC supports Agenda 2063 green economy goals, facilitates policy coordination, and promotes unity and integration across climate actions. Key initiatives include the Climate Change and Resilient Development Strategy, Clean Cooking Programme, and Great Green Wall coordination.

The UN Economic Commission for Africa focuses on economic and social development, providing development statistics, policy briefs, capacity-building training, and economic modelling during NDC preparation. In the implementation phase, UNECA supports green industrialization strategies and provides development tools and technical assistance. Key contributions include analytical tools, emissions modelling, and scenario development expertise.

The African Union Development Agency-NEPAD facilitates development programmes by offering technical support for policy development, regional coordination mechanisms, and capacity building during preparation. Implementation support includes programme coordination, regional infrastructure development, and technology transfer facilitation, with focus areas encompassing development programme facilitation and infrastructure coordination.

The African Development Bank serves as the continent's primary development finance institution, providing climate and finance advisory services, technical assistance for bankable projects, and energy sector assessments during NDC preparation. Implementation involves delivering direct financing for renewable energy projects, implementing blended finance mechanisms, and supporting Mission 300 implementation. Key programs include the Africa Adaptation Acceleration Program mobilizing $25 billion over five years and comprehensive NDC development support.

Climate Investment Funds for Africa accelerates climate action through country investment planning, transformational program design, and just transition planning support during preparation. For implementation CiF provides concessional finance, mobilizes private sector investment, and implements renewable energy scale-up programs with strategic focus on innovative financing mechanisms.

The African Energy Commission promotes regional energy cooperation by compiling energy data, conducting regional planning and modelling, and developing policy frameworks during NDC preparation. Implementation involves regional energy project development, facilitating cross-border energy trade, and coordinating energy efficiency programs including the AU's Clean Cooking Programme.

The African Renewable Energy Initiative specifically targets renewable energy potential through national planning, technology assessments, and capacity needs assessments during preparation. For implementation AREI provides project development support, technology deployment assistance, and skills development with particular focus on renewable energy potential realization.

The Alliance for Green Infrastructure in Africa promotes sustainable infrastructure through planning frameworks, climate risk assessments, and sustainable financing mechanisms during preparation. Its implementation support encompasses green infrastructure projects, climate adaptation integration, and nature-based solutions deployment across the continent.

Regional Economic Communities serve cross-cutting functions including policy harmonization through developing regional standards and frameworks for climate action, trade facilitation promoting sustainable trade practices and green value chains, infrastructure development coordinating cross-border climate infrastructure projects, and capacity building facilitating knowledge sharing and technical expertise exchange. ECOWAS contributes through regional power market development and sustainable agriculture promotion. The East African Community focuses

on cross-border renewable energy projects and regional adaptation strategies. SADC provides regional infrastructure bank support and mining sector transformation initiatives. COMESA facilitates trade in climate technologies and coordinates carbon market activities.

The Africa Forest Forum enhances transboundary forest resource coordination with focus on forest governance, restoration initiatives, and capacity building. The Central African Forest Commission coordinates Congo Basin Forest management through transboundary conservation and sustainable forest use initiatives. Climate Policy Initiative Africa provides climate finance analysis and policy support focusing on financial architecture reform and investment facilitation.

With all that said, knowledge management and capacity building involves facilitating technical expertise exchange between countries, developing regional training programs for climate professionals, creating platforms for best practice sharing and peer learning, and supporting development of regional academic and research networks.

Financial coordination encompasses pooling resources for large-scale regional projects, developing risk-sharing mechanisms for climate investments, coordinating access to international climate finance, and supporting development of regional financial instruments.

Advocacy and negotiation functions include presenting unified African positions in international climate negotiations, advocating for enhanced international support and fair treatment, coordinating responses to international climate policies affecting Africa, and promoting African interests in global climate governance.

Implementation support provides technical assistance for NDC development and implementation, supports MRV system development and harmonization, facilitates regional cooperation on Article 6 mechanisms, and coordinates transboundary climate action initiatives.

4. Conclusion

The GST-1 outcomes provide both opportunities and challenges for Africa's climate and development trajectory. While recognizing the urgent need for enhanced climate action, African countries must balance global commitments with legitimate development aspirations. The comprehensive framework developed from this analysis provides a roadmap for NDC 2.0 preparation that leverages GST-1 guidance while ensuring climate action serves Africa's sustainable development objectives. Success requires transformed international cooperation, enhanced regional coordination, and sustained commitment to climate justice principles. Regional organizations play crucial roles in facilitating this transformation through technical support, resource mobilization, and advocacy coordination. The path forward demands collective action, strategic partnerships, and unwavering commitment to ensuring Africa's voice and agency in global climate governance. The continent's 1.4 billion people and vast natural resources position Africa as both a critical solution provider and a region requiring substantial support for just transitions. The frameworks and recommendations outlined provide essential guidance for realizing this potential while building climate-resilient, sustainable economies that serve African development priorities and contribute meaningfully to global climate stability.

African countries should pursue integrated NDC development using the comprehensive framework provided, ensuring explicit GST-1 integration while maintaining development priorities. Enhanced

regional cooperation through leveraging continental and regional organizations for technical support, resource mobilization, and unified advocacy is essential. Strategic finance mobilization requires collective advocacy for transformed climate finance architecture while building continental financial mechanisms. Capacity building investment should prioritize institutional capacity development for long-term transparency and implementation sustainability.

Regional organizations must strengthen coordination mechanisms between continental, regional, and sector-specific organizations while expanding technical assistance programs addressing specific African capacity gaps. Financial mechanism development should create innovative regional financial instruments reducing dependence on traditional donors. Advocacy coordination requires maintaining unified African voice in international negotiations while supporting country-specific needs.

International partners should align support frameworks with African-led priorities and frameworks while supporting fundamental reforms addressing cost of capital, debt sustainability, and accessibility. Technology transfer enhancement must facilitate genuine technology partnerships recognizing African innovations and capabilities. Capacity building investment should provide sustained, predictable support for institutional capacity development.

CHAPTER 4: TRANSITION CLIMATE RESILIENT ECONOMIES

By Funanani Muremi, Sumaya Zakieldien, [Alpha Kaloga] and Patience Damptey

Executive Summary

The Global Goal on Adaptation (GGA) established under Article 7 of the Paris Agreement aims to enhance global adaptation efforts, increase resilience, and reduce vulnerability to climate change. The GGA objectives include enhancing adaptive capacity, strengthening resilience, and reducing vulnerability while contributing to sustainable development and ensuring adequate adaptation responses within the Paris Agreement temperature goals.

The Global Stocktake (GST) assessment scope extends beyond the GGA to recognize developing countries' adaptation efforts and review of the adequacy and effectiveness of adaptation planning and support. Most developing countries, including African nations, have funded adaptation planning and implementation through domestic expenditure while integrating adaptation responses into national development plans. However, accessing finance for implementing adaptation remains a key challenge for African and other developing countries.

Climate change adaptation and sustainable development are intrinsically linked. Without adequate adaptation responses, climate change undermines sustainable development efforts, threatening food security, poverty alleviation, human health, and other critical development determinants across Africa.

1. African Context and Vulnerability

The African Group of Negotiators (AGN) championed the GGA development due to Africa's exceptional vulnerability to climate variability and change. The IPCC Sixth Assessment Report confirms with high confidence that despite being among the lowest contributors to global greenhouse gas emissions, Africa has experienced widespread losses and damages from human-induced climate change, including biodiversity loss, water shortages, reduced food production, loss of lives, and decreased economic growth. Africa is warming faster than the global average over both land and oceans. The continent's limited adaptive capacity means climate change may undermine and reverse decades of development gains. Africa's exposure and vulnerability to climate change is multidimensional, intersecting socioeconomic, political, and environmental sectors. Climate change has already reduced economic growth across Africa while increasing inequality between African countries.

The World Meteorological Organization reports that climate-related hazards cause African countries to lose 2-5% of their GDP annually, with many diverting up to 9% of their budgets to respond to climate extremes. Climate change threatens to derail development gains and impose further costs, with adaptation alone projected to cost the continent at least $50 billion annually by 2050. In 2022, approximately 52% of African countries were impacted by climate change, with over 110 million people directly affected by climate, weather, and water-related hazards, resulting in an estimated $8.5

billion in economic damages. While Africa has made progress in reducing poverty, multiple crises including COVID-19 have offset these gains. Regarding the Sustainable Development Goals, Africa is not on track to achieve most SDGs by 2030, with only a small percentage of measurable targets progressing adequately.

The Paris Agreement establishes collective goals in Article 2 and Article 7.1 (Global Goal on Adaptation). Article 7.14 specifies adaptation aspects for GST assessment, including recognition of developing countries' adaptation efforts, overall adaptation progress toward achieving the GGA, and adequacy and effectiveness of adaptation support. Article 7.10 requires parties to submit adaptation communications through various vehicles including NDCs, providing opportunities for raising adaptation ambition. Of 54 African countries that submitted NDCs, 51 provided implementation cost data, representing over 93% of Africa's GDP. However, only 22 African countries have submitted National Adaptation Plans (NAPs), while others remain at various formulation and implementation stages. Despite gaining attention in climate finance, adaptation and resilience, and policy implementation, many African countries still face challenges developing comprehensive NDC investment strategies.

2. Global Stocktake Analysis and Outcomes

The GST-1 outcomes in decision 1/CMA.5 recognize increasing adaptation planning and implementation efforts as reflected in national adaptation plans and adaptation communications. At assessment time, 51 parties submitted national adaptation plans and 62 submitted adaptation communications, with 22 and 21 African countries submitting plans and communications respectively. Decision 1/CMA.5 indicates that most observed adaptation responses are fragmented, incremental, sector-specific, and unequally distributed across regions. Despite progress, significant adaptation gaps persist across sectors and regions and will continue growing under current implementation levels.

The assessment highlighted several critical areas: gaps in implementation support and collective assessment of adaptation adequacy and effectiveness; need for national climate change impact inventories and user-driven early warning systems; requirement for accelerated financial support to developing countries as a critical adaptation enabler; and emphasis on adaptation as a global responsibility requiring multi-sectoral solutions.

The framework guides GGA achievement and progress review, identifying thematic targets (water, agriculture and food production, biodiversity, infrastructure and human settlements, heritage, poverty and livelihoods, ecosystems) and dimensional targets (impact, vulnerability and risk assessments, planning, implementation, monitoring and evaluation). The UAE-Belem work programme will develop specific, standardized indicators for measuring progress toward these targets.

3. Challenges and Limitations

The thematic targets' sector-specific approach risks fragmenting adaptation efforts given unequal sector distribution across regions. Tracking collective progress requires aggregating metrics from different contexts and scales, making assessment difficult given countries' different vulnerabilities, priorities, and circumstances. This approach may shift adaptation responsibility to individual parties, potentially reversing African Group progress in establishing adaptation as a global responsibility. It is for that reason that African countries should focus on paragraph 10 indicators which are global in their orientation, rather than 'SDG-like' thematic targets with no associated means of implementation.

African countries face significant challenges: between 4-7% of annual GDP is redirected to meet urgent climate costs; African GDP per capita is projected to decrease by 10% by 2050 due to climate change; limited capacity for data and information collection; inadequate climate observation networks; and barriers to comprehensive climate information collection that hinder early warning systems development and evidence-based policymaking.

4. Methodological Framework for NDC 2.0

Step 1 - Risk and Vulnerability Assessment: Undertake detailed risk, vulnerability, and impact modelling on key African adaptation sectors using IPCC methodologies, considering country context, best available science, and socio-economic impact assessments.

Step 2 - Adaptation Needs Assessment: Assess actions and resources required for complete adaptation processes, from risk assessment to addressing climate vulnerability causes, providing fundamental climate resilience planning linked to UAE Framework implementation.

Step 3 - Objectives and Priorities: Communicate overall adaptation objectives and detailed priorities for NDC duration, covering key African sectors promoting environmental, social, and economic resilience through bottom-up approaches without forcing global targets into African agendas.

Step 4 - Monitoring and Evaluation: Outline progress monitoring processes without imposing additional reporting burdens on African countries, including information collection methods and systems development for dimensional targets data collection.

African countries should establish national climate impact inventories supported by multilateral finance mechanisms; develop systems and methodologies for collecting dimensional targets information; enhance systematic observation networks to improve early warning systems aligned with WMO's "Early Warning System for All"; and develop detailed regional adaptation priorities with quantified resource requirements.

5. Investment and Implementation Support

The UNEP Adaptation Gap Report 2024 estimates aggregate adaptation costs at $215 billion annually for all developing countries through 2030, with Africa requiring $20-30 billion annually over 10-20 years despite contributing less than 4% to global GHG emissions. Between $2.6-2.8 trillion is needed by 2030 to implement Africa's NDC climate commitments.

While climate finance to Africa increased by 24% annually between 2011-2021, Africa receives only around 2% of total global climate finance. Over two-thirds of needs are in areas typically financed by the public sector, requiring increased grant-based adaptation support while investigating other instruments.

Enhanced systematic observation networks for strengthening early warning systems; improved monitoring, evaluation, and information management systems; strengthened research and scientific institution capacity for evidence-based adaptation planning; development of adaptation needs

assessment and costing methodologies; creation of adaptation investment strategies and platforms; and support for artificial intelligence applications in climate response.

The African Development Bank provides financial support for NDC development and implementation through the Africa Adaptation Acceleration Program, mobilizing $25 billion over five years. The Africa Adaptation Initiative facilitates access to support for NDC and NAP development and implementation. AGNES provides technical expertise for adaptation priorities identification and implementation support. ICLEI Africa supports cities in developing adaptation plans and building urban climate resilience.

6. Conclusion

Africa's adaptation challenge requires urgent, coordinated action across multiple dimensions. While significant progress has been made in adaptation planning, substantial gaps remain in implementation, financing, and institutional capacity. The UAE Framework for Global Climate Resilience provides important guidance, but success depends on maintaining adaptation as a global responsibility while ensuring adequate financial and technical support for African countries. The second round of NDCs presents a critical opportunity to raise adaptation ambition through comprehensive risk assessments, needs-based planning, and robust monitoring systems. However, this ambition must be matched by correspondingly enhanced means of implementation, particularly increased climate finance and institutional support, to ensure Africa can build resilience while pursuing sustainable development goals.

CHAPTER 5: ENERGY TRANSITION

By Enzi Ijayo

Executive Summary

The Global Stocktake 1 (GST-1) represents a watershed moment in international climate negotiations, marking the first time countries agreed to specific sector-level mitigation activities and directly addressed fossil fuels in UNFCCC and Paris Agreement texts. For African nations, these outcomes present both significant opportunities and complex challenges as they prepare enhanced Nationally Determined Contributions (NDCs) by November 2025.

While these targets in paragraph 28 and 29 of decision 1/CMA.5 are not binding mandates, they create strong political momentum for enhanced climate action. African countries can pursue these objectives according to their national circumstances, with implementation conditional on receiving adequate financial support, technology transfer, and capacity building assistance. The reality is that Africa requires over USD 200 billion annually for energy transition, with USD 120 billion specifically for renewable energy deployment (AfDB, 2024). Currently, the continent receives only 3% of global climate finance despite possessing vast renewable potential (10 TW solar, 350 GW hydropower, 110 GW wind) (IRENA, 2024).

1. Energy Transition GST-1 Outcomes

The provisions relating to the energy transition were some of the most contested, controversial and celebrated of the GST-1 outcomes (UNFCCC, 2023). Key among them was an agreement, "calling" on (not requiring) countries to pursue various sector specific measures in a manner they deem most appropriate to their national circumstances. This marked the first time that countries had agreed to specific sector mitigation related activities, noting that the GST-1 has greater significance than other COP outcomes because of its consequential impact on NDCs (Climate Analytics, 2024). It also marked the first time that a UNFCCC and Paris Agreement text had addressed the issue of fossil fuels directly (IISD, 2023).

The 8 objectives in paragraph 28 include the following specific sectors/energy sources (UNFCCC, 2023):

- tripling renewable energy capacity globally and doubling the average annual rate of energy efficiency across the world by 2030
- accelerating efforts towards the phase down of coal power that does not have abatement measures like carbon capture and storage (CCS)
- pursuing net zero energy systems that use either net zero or low carbon fuels by or before 2050
- "transitioning away" from the use of fossil fuels in energy systems in a 'just, orderly and equitable' way, focusing on this decade and aiming for net zero by 2050

- Accelerating the use of zero- and low-emission technologies, this includes nuclear, as well as abatement and removal technologies like CCS
- achieving a substantial reduction in GHG emissions that are not carbon dioxide, particularly methane emissions
- reducing transport emissions; and
- the phase out of "inefficient" fossil fuel subsidies, which would include subsidies to the energy sector

In paragraph 29, it also expressly recognises the role that "transitional" fuels play in the energy transition and ensuring energy security, although not expressly named these could include natural gas, hydrogen, biofuels and other lower carbon synthetic fuels (UNFCCC, 2023).

In the context of the language in which they are framed, the above targets and goals are not independently binding on African countries. They are global objectives, which countries can choose whether to pursue, and can self-determine the manner in which they do so. Going into the negotiations African nations were hesitant to have new sector targets thrust upon them without the requisite means of financial support, technology transfer and capacity building, and many were reluctant to move away from the bottom up, country-determined design of the Paris Agreement.

In this sense while countries are legally required to pursue their "most ambitious" NDCs in the context of their differentiated circumstances, the GST-1 does not introduce new targets or sector goals that countries must now incorporate in their NDCs. Instead, they are "called upon" or encouraged to do so in the context of their differing circumstances. This is underscored by the many qualifiers added to each of the objectives. In that context, it would be justified to make the pursuit of any of the above targets/objectives within an NDC 2.0 conditional upon the receipt of additional support, subject to timeframes that are more suited to domestic circumstances, or quantified targets/objectives that are considered more achievable and suitable to the national energy landscape.

2. Analysis of sectoral provisions

Tripling Renewable Energy Capacity and Doubling Energy Efficiency: This objective delivers the numerical target that many developed states had hoped to infuse within the negotiations for several years, by setting quantitative and time bound outcomes. It is one of the few mitigation related targets with a 2030 timeframe that parties have agreed to, and is seen to be more politically acceptable given that it is more about phasing in instead of phasing out forms of technologies and processes. Discussions around its implementation, like other aspects of §28, remain opaque, with much being left to countries to self-determine in their NDCs. With respect to the enhanced deployment of renewable energy, it could be supported by investments in infrastructure, technology development and policy development, where appropriate, and other measures discussed elsewhere in this report. It is noted that the Nairobi Declaration's call for 300 GW of renewable energy for Africa represents a considerably greater increase than the GST-1 target of tripling renewable energy (African Union, 2023).

Meeting the target of doubling energy efficiency, measured in the form of global primary energy intensity - would mean doubling global primary energy intensity from 2% (at the time of the GST-1) to 4% by 2030 (IEA, 2024). To achieve this, countries could, for example, include the support of energy efficient measures across a range of sectors through regulatory standards, and/or incentives. Examples include energy efficiency policies, building codes, appliance standards, and fuel economy

standards. More Africa relevant options could include clean cooking measures that align with the Clean Cooking Project that was endorsed as a flagship programme by the African Union in February 2025 (African Union, 2025). While an important step in the mitigation effort, and while energy efficiency may reduce energy demand and alleviate supply constraints, it is noted that ensuring energy access, and related generation and grid connection are likely to remain the immediate priority in many African NDCs.

Transitioning Away from Fossil Fuels: Although there was subsequently a global dip in support for this measure across multiple negotiation forums during 2024, the GST-1 decision to transition away from fossil fuels remains a significant accomplishment for negotiators, through the inclusion of the subject for the first time in an outcome text. Notably it does not require the complete "phase out" of fossil fuels, as this was not agreed to by some states. Instead, it encourages countries to collectively embark on a process to consider the extent to which they rely on these sources of fuel and to implement measures to transition away from them. The exact timing and extent of such measures is for countries to self-determine. Some parties had hoped to address these details at COP29, however it could not be agreed to.

For African countries, this outcome presents a significant imperative to rethink their energy strategies. However, in the context of its national priorities, the continent has been consistent in its prioritisation of energy access, sustainable development, poverty eradication and the removal of barriers to renewable energy investment and financing. This means Africa must balance the global call to transition away from fossil fuels with its domestic priorities, especially given that many African economies still rely on oil and gas for critical government revenue. The emphasis on a "just, orderly, and equitable" transition that goes beyond workers and adopts an all of society approach, is paramount for Africa, requiring careful management of socio-economic impacts and ensuring alternative livelihoods, particularly for African nations reliant on fossil fuels.

Accelerating the Phase Down of Coal Power: Several African countries rely on coal power for electricity generation. A country's ability to phase out coal power is directly contingent on its ability to replace this energy with alternative sources. The GST-1 outcome highlights that only unabated coal power stations should be phased out, meaning those equipped with carbon capture and similar abatement technologies could continue to operate. However, for most African countries these types of technologies are financially or technologically unfeasible or inaccessible, noting that most of these technologies are still in their pilot or early development phases. In this context, any phase down within an NDC would need to be accompanied by a comprehensive just transition support package and associated strategy.

Low Carbon and Net Zero Fuels and the Acceleration of Zero- and Low-emission Technologies: The GST expressly acknowledges the low carbon hydrogen production as a form of zero emissions technology, and its importance in the race to decarbonise. It also includes nuclear. These are both technologies that some African countries have actively pursued and the GST-1 outcome endorses them in that capacity. Forms of low carbon fuels would also potentially include biofuels, hydrogen, and some synthetic fuels that have lower associated emissions.

Methane Reductions: The stocktake highlighted the importance of methane reductions, not only from the oil and gas industry, but also in its emphasis on sustainable land-use management and agricultural practices. This aligns with the Global Methane Pledge from COP21 (UNEP, 2021). The text introduces a time bound goal calling on countries to reduce their methane emissions by at least

30% by 2030 (UNFCCC, 2023). In the energy context, this objective has particular relevance for African countries that are exploiting their oil and gas reserves and could entail the implementation of the various recommended measures under the Global Methane Pledge and/or similar initiatives.

3. Energy transition provisions

Call for Enhanced Nationally Determined Contributions (NDCs) and Economy-Wide Decarbonisation: This outcome directly mandates African countries to prepare updated and enhanced NDC 2.0s by November 2025, reflecting higher ambition. It signifies a need for African nations to consider economy-wide GHG emission reductions where possible, including methane from the energy sector, and to develop or revise Long-Term Low Emission Development Strategies (LT-LEDS) towards net-zero by mid-century. Despite the continent's vast untapped renewable energy potential (e.g., 10 TW of solar, 350 GW of hydropower, and 110 GW of wind), its energy systems are currently dominated by fossil fuels, and its energy efficiency potential remains significantly untapped due to outdated infrastructure (IRENA, 2024). Therefore, the enhancement of NDCs must strategically leverage this renewable potential while addressing the continent's foundational energy access challenges and industrial development needs.

Urgent Need for Scaled-Up International Finance and Technology Transfer: This outcome is particularly critical for Africa, as insufficient financing and technological gaps are identified as major challenges impeding its energy transition. Africa requires over USD 200 billion annually for its energy transition, with USD 120 billion specifically for renewable energy deployment, yet it only receives 3% of global climate finance (AfDB, 2024; Climate Policy Initiative, 2023). The African perspective emphasises that mobilisation of finance and access to technology are top needs for deploying renewable energy and delivering on NDCs (AUDA-NEPAD, 2024). Therefore, the GST-1 outcomes necessitate reforms of the multilateral climate finance architecture to ensure long-term, concessional capital and easier access to funds for African countries, including through risk-sharing mechanisms for private sector involvement and streamlined processes for cross-border energy projects.

Integration of Sustainable Development and African Specific Circumstances: This aligns directly with Africa's stance that climate obligations must be consistent with the purpose of the Paris Agreement, which includes sustainable development and poverty eradication. For Africa, this means the energy transition measures from GST-1 must be contextualised within Africa's broader development agenda, addressing widespread energy poverty (Sub-Saharan Africa's electricity access is only 51%, with 83% of people without electricity globally residing in Africa) and low per capita electricity consumption that constrains economic development (IEA, 2024; World Bank, 2024). It also implies leveraging Africa's abundance of critical minerals (such as copper, lithium, and cobalt) for resource-based industrialisation and local value addition in clean energy technologies, ensuring green industrialisation drives job creation and economic resilience (UNECA, 2023). The GST-1 outcomes, therefore, need to foster an enabling environment that supports a transition unique to Africa's diverse regions and developmental needs.

Fossil Fuel Subsidies: The text calls on countries to phase out "inefficient" fossil fuel subsidies that are not needed to address energy poverty or just transitions. This objective stems from a G20 pledge dating back to 2009, which has been challenging to implement (G20, 2009). There is no timeframe in GST-1, simply a call for it to be as soon as possible. G7 members previously committed to 2025, and are unlikely to meet this goal (OECD, 2023). There is no clear definition of

what makes a subsidy "inefficient", although some have interpreted it as one which encourages wasteful consumption (IMF, 2023).

In a climate change context, almost all such subsidies to the energy sector could be seen as inefficient, save for those needed to ensure universal energy access and to avoid the risks of an energy transition. Subsidy reforms work best when tailored to national circumstances, and any introduction of a subsidy reform within an NDC should be based on a comprehensive economic and social assessment - including its impact on domestic revenue generation and potential regressive impacts on vulnerable sectors of the society, coupled with related planning measures for such a transition.

4. Methodological Framework to NDC 2.0

When addressing energy transitions within NDC 2.0, the decision-making process by African countries should consider a systematic approach, where:

Assessment and Stocktaking: countries review their current energy landscapes, identifying gaps and opportunities from the last round of NDCs, in tandem with GST-1 outcomes.
Strategy Development: countries should define their energy transition pathways, setting ambitious targets, where relevant and possible, for renewable energy, energy efficiency, use of clean fuels and low carbon technologies, their timelines and process for transitioning away from fossil fuels and phasing out coal power, and their approach to addressing fossil fuel subsidies, if any, taking into account their own domestic constraints and needs. This should be informed by a strong evidence base, including energy and economic modelling, where feasible, and reflective of existing challenges and opportunities for different sectors.
Implementation Planning: strategies are converted into action or implementation plans, that clearly articulate prioritised measures and identify and where possible quantify needs (including financial, capacity or technology related) which culminate into tangible and financeable transition plans that can attract climate-friendly investments and just transition support.
NDC 2.0 Formulation: countries will formally draft their updated climate commitments, reflecting enhanced ambition and consistency with national strategies. Ideally NDCs should address each of the sector/fuel and technology objectives of the GST-1, as discussed above, where relevant to their economies and energy sectors.

5. Africa-focused Regional Organisations

Continental and regional policy coordination is led by several key institutions that provide strategic frameworks for NDC development and implementation. The African Union Commission (AUC) promotes unity and integration across the continent, offering continental policy frameworks, harmonization of climate policies, and technical guidance on renewable energy targets during NDC preparation, while coordinating continental initiatives like APRA and supporting Agenda 2063 green economy goals during implementation. The UN Economic Commission for Africa (UNECA) focuses on economic and social development, providing development statistics, policy briefs, capacity-building training, and economic modelling for NDC preparation, then supporting implementation through development tools, technical assistance, and green industrialisation strategies. The African Union Development Agency-NEPAD (AUDA-NEPAD) facilitates development programmes by offering technical support for policy development, regional coordination mechanisms, and capacity building during preparation, followed by programme implementation support, regional infrastructure coordination, and technology transfer facilitation.

Financial institutions play a critical role in both planning and funding energy transitions. The African Development Bank (AfDB) spurs sustainable economic development by providing climate and finance advisory services, technical assistance for bankable projects, and energy sector assessments during NDC preparation, then delivering direct financing for renewable energy projects, blended finance mechanisms, and Mission 300 implementation. The Climate Investment Funds (CIF) - Africa accelerates climate action through country investment planning, transformational program design, and just transition planning support during preparation, followed by concessional finance provision, private sector mobilisation, and implementation of renewable energy scale-up programs.

Sector-specific technical organizations focus on energy and infrastructure implementation. The African Energy Commission (AFREC) promotes regional energy cooperation by compiling energy data, regional planning and modelling, and developing policy frameworks during NDC preparation, then implementing regional energy projects, facilitating cross-border energy trade, and coordinating energy efficiency programs including the AU's Clean Cooking Programme. The African Renewable Energy Initiative (AREI) specifically targets renewable energy potential through national planning, technology assessments, and capacity needs assessments during preparation, followed by project development, technology deployment support, and skills development during implementation. The Alliance for Green Infrastructure in Africa (AGIA) promotes sustainable infrastructure through planning frameworks, climate risk assessments, and sustainable financing mechanisms during preparation, then implements green infrastructure projects, climate adaptation integration, and nature-based solutions.

6. Conclusions

The GST-1 outcomes represent a pivotal moment for African energy transitions, creating unprecedented opportunities while acknowledging the continent's unique development imperatives. Several key conclusions emerge from this analysis:

Flexibility Within Global Ambition: GST-1's "calling upon" rather than mandating approach provides African countries with crucial flexibility to align global climate objectives with national circumstances. This framework allows for conditional implementation based on support availability, appropriate timeframes, and achievable quantified targets suitable to national energy landscapes.

The Critical Finance Gap: The stark disparity between Africa's financing needs (USD 200+ billion annually) and current climate finance receipt (3% globally) represents the most significant barrier to implementing GST-1 objectives (AfDB, 2024; Climate Policy Initiative, 2023). Addressing this gap requires fundamental reforms to multilateral climate finance architecture, emphasizing long-term concessional capital and streamlined access mechanisms.

Just Transition as Development Strategy: Africa's approach to GST-1 implementation must center on just transition principles that extend beyond worker protection to encompass all-of-society impacts. This includes managing socio-economic consequences of fossil fuel dependency while ensuring alternative livelihoods and leveraging Africa's critical mineral resources for green industrialization (UNECA, 2023).

Energy Access Remains Foundational: With Sub-Saharan Africa's electricity access at only 51% and 83% of globally unelectrified people residing in Africa, energy transition strategies must

prioritize universal access alongside decarbonization (IEA, 2024; World Bank, 2024). This dual imperative requires careful balancing of immediate development needs with long-term climate objectives.

Regional Coordination Essential: The comprehensive institutional landscape demonstrates Africa's capacity for coordinated climate action. Effective NDC 2.0 implementation will require leveraging these regional organizations' complementary mandates, from AU Commission's policy coordination to AfDB's financing capabilities and AREI's renewable energy expertise.

Technology and Innovation Opportunities: Africa's vast renewable potential (10 TW solar, 350 GW hydropower, 110 GW wind) combined with abundant critical minerals positions the continent as a potential global leader in clean energy technologies (IRENA, 2024; UNECA, 2023). Realizing this potential requires strategic technology transfer, capacity building, and local value addition in clean energy supply chains.

CHAPTER 6: ECONOMY-WIDE TARGETS

By Veronica Gundu

Executive Summary

African nations have submitted ambitious Nationally Determined Contributions (NDCs) with improved clarity and transparency yet face significant implementation challenges. Limited institutional capacity, fragmented data, and insufficient finance hinder effective formulation of economy-wide mitigation targets and low-carbon emissions pathways. Key challenges include under-representation of agriculture and land-use sub-sectors due to inadequate disaggregated data, while sectors like renewable energy and forestry offer substantial mitigation potential with adaptation and economic co-benefits. A layered policy framework is needed to align climate ambitions with national development strategies, integrating NDCs with long-term low-emission plans. Regional organizations and development finance institutions are crucial for fostering collaboration, capacity building, and investment mobilization to achieve Africa's climate objectives while promoting sustainable development.

1. Introduction

Africa faces the complex challenge of being a low contributor to global emissions while remaining highly vulnerable to climate impacts. The continent's susceptibility stems from high poverty levels, limited adaptive capacity, and reliance on climate-sensitive sectors like rain-fed agriculture. The 2023 Global Stocktake (GST-1) established that global greenhouse gas emissions must be reduced by 43% by 2030 and 60% by 2035 (relative to 2019 levels) to limit warming to 1.5°C. The decision encouraged countries to align their NDCs with Long-Term Low Emissions Development Strategies (LT-LEDS) and the Paris Agreement's temperature goal. Developed countries should lead with economy-wide absolute emission reduction targets, while developing countries are encouraged to enhance mitigation efforts and move toward economy-wide targets considering their national circumstances. The Mitigation Work Programme (MWP) complements the Global Stocktake by urgently scaling up mitigation ambition during this critical decade. Africa must pursue mitigation strategies that contribute to fair emissions reduction while balancing sustainable development, food security, resilience building, and poverty eradication.

2. Context and NDC Analysis

Global net anthropogenic GHG emissions reached 59 GtCO2eq in 2019, representing a 12% increase from 2010. Africa accounted for 4% of total emissions, with 56% from Land Use, Land Use Change and Forestry (LULUCF), 36% from Energy and Fossil Fuel-based Industry (FFI), and 2.8% from Industrial Processes and Product Use (IPPU). Africa's per capita emissions remain below 2.5 tCO2eq compared to the global average of 6.3 tCO2eq (2019). The continent's emissions nearly doubled between 1990 and 2020, from 720 MtCO2eq to over 1.4 GtCO2eq, reflecting gradual industrialization, urbanization, and population growth. Current NDCs will only reduce global emissions by about 8% from 2019 levels, far short of the required 43% reduction. Over 70% of mitigation potential in African NDCs is conditional on international finance, technology transfer, and capacity building, yet only 2% of global renewable energy investments have reached Africa in the past two decades.

African countries demonstrated significant progress from initial Intended NDCs to updated versions, showing increased ambition and improved clarity. According to the NDC Partnership (2022) review of 49 African NDCs, approximately 40% included economy-wide GHG mitigation targets, generally framed against business-as-usual (BAU) scenarios, while the remainder focused on key sectors. The diversity in African countries' development levels significantly influences their NDC approaches. Twenty-six low-income economies, including Burundi, Malawi, Niger, and the Democratic Republic of Congo, typically prioritize sectoral targets due to data limitations and capacity constraints. Twenty-one lower-middle-income economies such as Kenya, Ghana, Nigeria, and Senegal demonstrate stronger movements toward economy-wide targets, while eight upper-middle-income economies including South Africa, Botswana, and Algeria benefit from more established MRV systems. Only Seychelles qualifies as a high-income economy in Africa.

Economic profiles further shape NDC characteristics across the continent. Resource-dependent economies encompass oil and gas exporters like Nigeria, Angola, and Algeria, alongside mining-focused nations such as South Africa, Botswana, and the Democratic Republic of Congo. Agriculture-dominated economies including Ethiopia, Tanzania, Kenya, Uganda, and Malawi face different mitigation challenges compared to diversified and industrializing economies like South Africa, Egypt, and Morocco. Service and tourism-driven economies such as Seychelles, Mauritius, and Tunisia present yet another distinct profile for climate action planning.

Many countries articulated renewable energy commitments and long-term visions, with South Africa and Nigeria outlining net-zero targets by 2050 and 2060 respectively, conditional on international support.

Sectoral mitigation targets in energy, land use, and agriculture currently dominate African NDCs, reflecting progression aligned with Article 4.4 of the Paris Agreement. This approach enables countries to prioritize interventions delivering both mitigation and socio-economic co-benefits. Least Developed Countries such as Malawi, Liberia, and Burkina Faso focus on land use, clean cooking, and sustainable agriculture, while middle-income countries including Morocco, South Africa, and Ghana move toward economy-wide targets supported by established MRV systems. Oil-exporting nations like Nigeria and Angola typically include energy intensity targets often linked to conditional components due to economic dependencies on fossil fuel revenues.

Countries across the continent have articulated specific mitigation measures aligned with their comparative advantages and development priorities. Morocco has concentrated on solar energy development, while Kenya emphasizes geothermal energy expansion and reforestation initiatives. Ethiopia focuses primarily on reforestation efforts, and Rwanda promotes sustainable agriculture practices alongside green urban development initiatives. South Africa pursues renewable energy deployment coupled with energy efficiency improvements, while Senegal develops solar and wind power capacity. Ghana has adopted climate-smart agriculture practices and clean cooking solutions while exploring carbon market opportunities.

3. Framework for developing NDC 2.0

African countries preparing NDC 2.0 should undertake comprehensive progress assessments of their previous NDCs, evaluating implementation of unconditional elements, private sector engagement, feasibility of prioritized activities, and effectiveness of resource mobilization efforts. This assessment

forms the foundation for informed decision-making on target scope, where countries must weigh political, institutional, economic, and developmental considerations beyond technical feasibility alone. Countries must carefully decide between economy-wide and sectoral targets by conducting thorough GHG emissions baselines that identify major sources and sectors, then defining clear, measurable, time-bound targets with both conditional and unconditional components. Consideration should be given to conditional ambition triggers that automatically scale up commitments when certain thresholds are met, such as improved access to international climate finance.

Economy-wide targets are recommended for all countries as they help ensure movement toward low-carbon development across all sectors, leaving none behind. However, disaggregated data remains limited for some sectors, and most countries still have weak MRV systems. Sectoral targets can effectively identify potential sectors with leverage and benefits, such as the energy sector. Economy-wide absolute targets are ideal but very difficult for developing countries to implement as they still need to peak their emissions. Economy-wide deviation from BAU targets will help countries develop sustainably without slowing economic growth. Moving to economy-wide targets should not burden countries' development, slow energy access, enhance poverty, or exacerbate inequalities. Instead, it should foster inclusive, equitable, and sustained development.

Policy framework assessment involves evaluating existing climate legislation and policies, such as the climate Acts established in South Africa, Kenya, and Uganda, while assessing alignment with GST-1 outcomes and just transition principles. Countries should embed mitigation measures in national development plans and budgets to ensure coherent implementation. Fiscal space considerations are crucial given that most African countries face high debt levels and limited bandwidth for climate action implementation. Countries should design investment strategies that promote affordable technology access while leveraging Africa's critical mineral endowments and demographic dividend of young people who can be trained for green jobs.

Capacity building requirements encompass developing capabilities in emissions modelling, policy design, and MRV systems through targeted training and exchange programs. This should be accompanied by comprehensive multi-stakeholder engagement to ensure NDC ownership and assess private sector readiness for meaningful participation in implementation.

4. Institutional Support Framework

Effective NDC preparation requires coordinated support from multiple institutional actors, each contributing specialized expertise and capabilities. National governments play the foundational role by conducting comprehensive stakeholder consultations and embedding dynamic ambition triggers that allow for flexible progression of climate commitments based on available support. International and regional organizations provide crucial technical assistance, with the NDC Partnership offering technical guidance, capacity building, and knowledge sharing platforms that foster partnerships between countries and development partners. The UN Economic Commission for Africa (UNECA) contributes analytical tools, emissions modelling capabilities, and scenario development expertise that help countries understand their mitigation potential, while the African Development Bank supports the design of investment-ready NDCs through grants and technical assistance that bridge the gap between ambition and financeable projects.

Implementation success depends on sustained institutional engagement that translates NDC commitments into concrete actions and measurable outcomes. National governments must establish

enabling policy environments with appropriate incentives and tax breaks that encourage private sector participation and technology adoption. Development partners continue their support through the implementation phase, with UNECA providing data infrastructure and MRV systems that enable countries to track progress, while the African Development Bank mobilizes infrastructure funding and structures innovative climate finance instruments. The UN Development Programme facilitates capacity building and knowledge exchange programs alongside subnational planning frameworks, while the UN Environment Programme assists with ecosystem-based mitigation approaches and policy coherence across sectors. The Food and Agriculture Organization provides essential support for generating disaggregated data on livestock and agriculture sub-sectors, addressing critical data gaps that have historically limited sectoral target setting. Private sector engagement proves essential for implementing clean technologies and renewable energy projects that align with national targets, requiring supportive policy frameworks and clear investment signals from government institutions.

Strategic implementation should follow a phased approach over the coming decades. In the short-term period from 2025 to 2030, countries should prioritize strengthening institutional capacity and data systems while implementing sectoral targets with clear progression pathways. This period should focus on establishing enabling regulatory frameworks and developing market-pull mechanisms such as feed-in tariffs and tax incentives that create demand for clean technologies.

During the medium-term phase from 2030 to 2040, countries with improved capacity should transition to economy-wide targets while implementing climate-smart urban planning initiatives. This period should emphasize promoting green industries and value addition processes, enhancing regional cooperation mechanisms, and accelerating technology transfer between countries and international partners. The long-term phase from 2040 to 2050 should see the achievement of comprehensive net-zero roadmaps coupled with completed ecosystem restoration and conservation programs. Countries should establish comprehensive green financial systems during this period and position themselves as leaders in critical mineral value chains that support the global green transition.

5. Conclusion

Africa stands at a critical juncture in its climate journey. Despite contributing least to global emissions, the continent bears disproportionate climate impacts. The GST-1 findings demand that African countries articulate ambitious yet contextually appropriate mitigation strategies. Sectoral approaches in energy, agriculture, and land use offer practical, high-impact options aligning with development priorities. The transition toward economy-wide targets is necessary but must be sequenced wisely, ensuring sustainable development goals are not compromised. For many African nations, deviation-from-BAU targets provide a pragmatic bridge enabling economic growth while maintaining climate commitments.

Success requires the international community to mobilize predictable, accessible climate finance. Regional cooperation, private sector engagement, and strengthened MRV systems are essential. Africa's youth and natural resources must be viewed as assets for green transformation rather than challenges. Africa's low-emissions development strategies must be bold, inclusive, and anchored in socioeconomic realities. Climate action should accelerate development, not constrain it, ensuring a just and equitable transition that preserves the continent's right to sustainable development while contributing meaningfully to global climate goals

CHAPTER 7: CARBON MARKETS

By Mbaye Diagne

Executive Summary

The Global Stocktake (GST) serves as a critical tool for assessing global progress in achieving the objectives of the Paris Agreement (UNFCCC, 2015), particularly in increasing mitigation ambition, enhancing the implementation of adaptation action and international cooperation, strengthening climate finance, and improving transparency. This analysis examines the evolution of carbon markets and Article 6 mechanisms, highlighting key outcomes from the GST (UNFCCC, 2023) and their implications for Africa. The findings emphasize the role of carbon trading in facilitating the transition to a low-carbon economy while ensuring sustainable development and financial accessibility for developing nations.

The shift from the Kyoto Protocol's market-based mechanisms (UNFCCC, 1997) to the Paris Agreement's Article 6 framework has broadened participation in carbon markets. Article 6.2 enables bilateral and multilateral cooperation through Internationally Transferred Mitigation Outcomes (ITMOs), while Article 6.4 establishes a centralized crediting mechanism for emission reductions by public and private actors (Schneider et al., 2019). Additionally, Article 6.8 promotes non-market approaches, such as technology transfer and capacity building, to enhance climate action without relying on market-based transactions. The GST outcomes emphasize the importance of robust methodologies for ITMO tracking, strengthened governance for Article 6.4, and the need to ensure transparency and environmental integrity in all carbon trading activities (UNFCCC, 2023).

For African countries, Article 6 mechanisms present both opportunities and challenges (Ahonen et al., 2022). On the one hand, they can unlock new sources of climate finance, attract investments in low-carbon projects, and enhance mitigation actions in sectors such as renewable energy, afforestation, and waste management. On the other hand, Africa must address institutional, technical, and policy gaps to fully benefit from carbon markets (Michaelowa et al., 2021). Limited capacity in monitoring, reporting, and verification (MRV) systems, fragmented regulatory frameworks, and concerns over corresponding adjustments and double counting remain significant barriers. The GST recommendations urge African nations to strengthen their governance structures and align their Nationally Determined Contributions (NDCs) with the evolving rules under Article 6 (UNFCCC, 2023).

To effectively implement Article 6 in NDC 2.0, African countries must adopt a methodological framework that enhances transparency, strengthens institutional capacity, and fosters regional collaboration (Hare et al., 2021). Establishing harmonized MRV systems, developing clear carbon pricing strategies, and engaging in multi-country cooperative approaches will be crucial in maximizing the benefits of carbon markets. Regional organizations, particularly the African Union (AU) and Regional Economic Communities (RECs), UN institutions, regional alliances on Carbon Markets and Climate Finance, Multilateral and Development Banks and other regional sectoral initiatives must play a coordinating role in streamlining policies, providing technical support, and advocating for Africa's interests in international climate negotiations and strengthen their presence in the implementation phase (African Union, 2022).

The AU and RECs must take a proactive role in supporting Africa's engagement in Article 6 by developing a regional carbon market strategy, setting up capacity-building programs, and establishing transparent governance structures for carbon trading (ACMI, 2022). Strengthening Africa's position in global climate negotiations, ensuring equitable benefit-sharing, and mobilizing climate finance from both public and private sources will be crucial for long-term success. By addressing these challenges and capitalizing on carbon market opportunities, Africa can accelerate its transition to a sustainable, low-carbon economy while enhancing its climate resilience and economic growth.

1. Introduction

The Paris Agreement established a new global framework for addressing climate change (UNFCCC, 2015), with carbon markets and cooperative approaches under Article 6 playing a critical role in achieving ambitious emission reduction targets. As countries transition to the next phase of their Nationally Determined Contributions (NDCs), the Global Stocktake (GST) outcomes provide key insights into the effectiveness of current strategies and the need for enhanced climate action (UNFCCC, 2023).

This Chapter explores the evolving landscape of carbon markets, with a focus on Article 6 mechanisms, their role in advancing climate finance, and their implications for developing regions, particularly Africa. It examines the latest decisions from COP 29 and CMA 6 (UNFCCC, 2024), linking them to the GST findings and identifying challenges and opportunities for enhanced participation in international carbon trading mechanisms. By assessing the alignment of carbon market mechanisms with GST recommendations, this analysis aims to provide strategic insights for policymakers, regional organizations, and stakeholders seeking to leverage Article 6 for sustainable development, technology transfer, and economic transformation in a low-carbon future

2. GST-1 Outcomes and Carbon Markets

The First Global Stocktake (GST) at COP 28 assessed global progress under the Paris Agreement, revealing that while efforts in renewable energy deployment and policy development have increased, the world is not on track to meet the 1.5°C goal (UNFCCC, 2023). The findings called for greater ambition, faster emissions reductions, and increased climate finance, emphasizing the need for strengthened implementation of Nationally Determined Contributions (NDCs) and enhanced international cooperation. The GST recognized the role of carbon markets in facilitating global mitigation efforts (UNEP, 2023). It underscored the potential of Article 6 mechanisms to support cost-effective emissions reductions and climate finance but also highlighted concerns over transparency, environmental integrity, and double counting risks.

For Africa, the GST outcomes reinforce the importance of carbon markets in unlocking climate finance, promoting low-carbon technologies, and supporting sustainable development (AfDB, 2023). However, the report also stressed the need for strengthening institutional capacity, aligning NDCs with Article 6 mechanisms, and ensuring equitable access to market benefits. Moving forward, African nations must enhance regulatory frameworks, develop harmonized MRV systems, and engage in cooperative approaches to fully leverage carbon trading opportunities for climate resilience and economic growth.

3. About carbon markets

The global carbon market has undergone significant changes since the adoption of the Paris Agreement in 2015 (UNFCCC, 2015), particularly under Article 6, which focuses on international cooperation to mitigate climate change. Unlike the Kyoto Protocol (UNFCCC, 1997), where only developed countries had

emissions reduction targets, the Paris Agreement emphasizes that all countries, including those in Africa, must take steps to meet their Nationally Determined Contributions (NDCs). Both the Kyoto Protocol and the Paris Agreement clearly state that countries with commitments to limit or reduce greenhouse gas (GHG) emissions must primarily meet their targets through national measures (Schneider & La Hoz Theuer, 2019). As an additional means of compliance, both treaties introduced market-based mechanisms, giving rise to what is now known as the carbon market. Under the Kyoto Protocol, three flexibility mechanisms were established to assist developed countries in reducing GHG emissions (UNFCCC, 1997). The Emissions Trading (ET) system allowed countries with reduction obligations to trade emissions rights. The Joint Implementation (JI) mechanism facilitated emission reduction projects between developed or transitioning economies (Annex I countries). Meanwhile, the Clean Development Mechanism (CDM) enabled developed countries to meet their targets by financing emission reduction projects in developing countries, contributing to sustainable development (Sutter & Parreño, 2007). Africa has benefited from several CDM projects, primarily in sectors like renewable energy, clean cooking, forestry, and waste management (Lütken, 2012). However, the continent's participation has been limited, with the largest projects concentrated in emerging economies.

With the Paris Agreement, Africa must learn from the CDM experience to effectively participate in Article 6 mechanisms, which offer new opportunities for international cooperation (Greiner et al., 2019). Article 6 introduces three approaches to facilitate the achievement of NDC objectives. Article 6.2, also known as cooperative approaches, allows for bilateral or multilateral cooperation between countries, enabling the international transfer of mitigation outcomes (ITMOs) generated through such cooperation (Schneider et al., 2019). Article 6.4, the Paris Agreement Crediting Mechanism, is centrally operated by the Supervisory Body Mechanism (SBM) and the UNFCCC Secretariat, allowing public and private sector actors to generate emission reduction credits that can be transferred or used for other purposes (Hoch et al., 2019). Lastly, Article 6.8, the Framework for Non-Market Approaches, facilitates climate action through international cooperation focused on sustainable development and poverty eradication, without involving the trading of mitigation outcomes (Kreibich & Hermwille, 2021). One of the main and very important change brought with the adoption of Article 6 of the Paris Agreement is that certified emission reduction units authorised by a Party and transferred internationally for use by another Party to meet its NDC or for Other International Mitigation Purposes (like under the Carbon Offsetting and Reduction Scheme for International Aviation -CORSIA-) cannot be used by the host Party to meet its NDC to avoid double counting, hence a concept 'Corresponding Adjustment' (Schneider et al., 2017).

In parallel with the Article 6 mechanisms, the voluntary carbon markets (VCMs) have evolved as an alternative pathway for financing emission reductions (Goldstein et al., 2019). These markets, now referred to as independent standards, operate outside the compliance frameworks established by the Kyoto Protocol and the Paris Agreement, allowing businesses, organizations, and individuals to voluntarily purchase carbon credits to offset their emissions. Unlike Article 6 mechanisms, which are governed by UNFCCC regulations, voluntary markets are driven by private sector initiatives and operate under recognized independent standards such as the Verified Carbon Standard (VCS), Gold Standard, and the Climate, Community & Biodiversity Standards (CCBS), Global Carbon Council (GCC), etc. (Hamrick & Gallant, 2017). While VCMs provide flexibility and attract private sector investment in mitigation activities, ensuring transparency, credibility, and environmental integrity remains crucial (West et al., 2020). As African countries seek to maximize the benefits of carbon finance, aligning voluntary market participation with national climate policies and NDC priorities can enhance credibility and attract sustainable investments that support low-carbon development and climate resilience.

4. Implications for Africa

At COP29, significant progress was made in operationalizing Article 6 of the Paris Agreement, which provides a framework for international carbon markets (UNFCCC, 2024). These decisions are critical for ensuring transparency, environmental integrity, and the effective implementation of carbon trading mechanisms.

Under Article 6.2, Parties agreed on a clear authorization process for Internationally Transferred Mitigation Outcomes (ITMOs), ensuring that both the transferring (host) and acquiring countries must authorize the use of these units before they can be counted toward NDCs or other international mitigation purposes (OIMP) (UNFCCC, 2024). This measure prevents double counting and strengthens the accountability of carbon markets. A transparency framework was established, requiring regular reporting and review of ITMO transactions (Schneider et al., 2024). Countries must now develop national registries and align with an international tracking system to monitor ITMO generation, transfers, and usage. The reporting guidance as well as the treatment of the inconsistencies identified during the technical review of the reports submitted by participating Parties were clarified.

For Article 6.4, decisions focused on aligning the mechanism with scientific standards to ensure that Emissions Reduction and Removals methodologies remain robust and reflect the latest science (UNFCCC, 2024). The Supervisory Body overseeing the mechanism was also tasked with accelerating the revision of methodologies inherited from the Clean Development Mechanism (CDM) to fit the new framework under Article 6.4, to ensure a smoother transition and operationalization of Emission Reduction and Afforestation and Reforestation projects and programmes under the Paris Agreement. Additionally, host countries now have the possibility to authorize at different moments (registration, issuance or transfer) the certified emission reductions generated under the Article 6.4 mechanism, whether for their own NDCs or other international mitigation commitments (UNFCCC, 2024). This provides greater flexibility for countries to determine how carbon credits contribute to their national climate strategies.

The COP29 outcomes on Article 6 of the Paris Agreement hold significant implications for Africa and provides both opportunities and challenges for the continent, requiring strategic engagement to fully harness the benefits of international carbon markets (Michaelowa et al., 2024). The operationalization of Article 6 mechanisms provides African countries with new avenues to attract investments in low-carbon projects such as renewable energy, afforestation, reforestation, clean cooking solutions, waste management and sustainable agriculture (ACMI, 2022). By participating in cooperative approaches under Article 6.2, African nations can establish bilateral and multilateral agreements to generate revenue from Internationally Transferred Mitigation Outcomes (ITMOs), supporting the implementation of their Nationally Determined Contributions (NDCs) and sustainable development. Similarly, under Article 6.4, African nations can develop projects that generate UN-supervised carbon credits, which can be transacted in the global carbon market to finance climate resilience initiatives.

However, for African countries to effectively engage in these mechanisms, capacity building and institutional strengthening are essential (Greiner et al., 2022). The requirement for robust monitoring, reporting, and verification (MRV) systems under both Article 6.2 and 6.4 means that African nations must invest in technical expertise, national carbon registries, and governance frameworks. Without such infrastructure, there is a risk that African countries may struggle to meet transparency and environmental integrity standards, limiting their ability to benefit from carbon trading. International support in the form of technology transfer, training programs, and financial assistance will be crucial to address these gaps (UNFCCC, 2024).

5. Methodological Framework for carbon markets in NDC 2.0

Aligning with GST Outcomes Implementing Article 6 in NDC 2.0 requires establishing a well-structured methodological framework that ensures enhancing environmental integrity, strengthening transparency, and aligning with Global Stocktake (GST) outcomes (Hare et al., 2021). This approach must integrate market-based mechanisms, non-market approaches, emissions accounting, governance structures, and Measuring, Reporting, and Verification (MRV) systems. By developing a robust framework, countries can leverage carbon markets and cooperative approaches to achieve their NDCs while maintaining alignment with the long-term global climate objectives under the Paris Agreement.

To begin, countries must define their NDC 2.0 targets and design an engagement strategy for Article 6 mechanisms (Rocha et al., 2021). Governments should outline their mitigation and adaptation targets, specify how cooperative approaches (Article 6.2), the UN crediting mechanism (Article 6.4), and non-market approaches (Article 6.8) will support their climate goals. This requires identifying priority sectors such as renewable energy, forestry, agriculture, and blue carbon, where Article 6 transactions can be effectively applied. Countries must differentiate between conditional and unconditional NDC components, ensuring that market-based financing supports their most ambitious climate actions.

Additionally, developing sectoral baselines and mitigation scenarios using IPCC methodologies will be crucial in ensuring that Article 6 activities deliver real and additional emissions reductions (IPCC, 2023). To support effective implementation, governments must strengthen governance and institutional arrangements (Michaelowa et al., 2021). They should establish national Article 6 authorities to approve, authorize, and track Internationally Transferred Mitigation Outcomes (ITMOs). Creating national carbon registries will enhance transparency and prevent double counting of emissions reductions, a key requirement under Article 6.2.

To align Article 6 with the Global, Stocktake (GST) outcomes, countries must incorporate GST recommendations to accelerate decarbonization efforts (UNFCCC, 2023). Carbon market mechanisms must support deep, structural emissions reductions rather than simply offsetting continued emissions. Countries should enhance transparency and improve reporting to align Article 6 participation with the Enhanced Transparency Framework (ETF), ensuring detailed documentation of ITMO transfers, corresponding adjustments, and mitigation impacts (Schneider & Kollmuss, 2015). Moreover, governments should leverage Article 6 revenues alongside climate finance mechanisms to strengthen sustainable development, just transition efforts, and adaptation initiatives. Countries should also update baselines and crediting methodologies periodically, using GST insights to ensure emissions reductions remain scientifically sound and aligned with global temperature goals.

6. African Regional Organizations

Regional organizations in Africa, including the African Union (AU), African Development Bank (AfDB), African Carbon Markets Initiative (ACMI), Carbon Markets and Climate Finance Alliances and Regional Economic Communities (RECs), play a critical role in supporting Article 6 implementation (African Union, 2022). Their efforts in policy development, capacity building, private sector engagement, and transparency frameworks can enhance Africa's participation in carbon markets and maximize climate finance opportunities.

Capacity building is crucial, as many African countries lack technical expertise in carbon markets (Lütken, 2012). Regional organizations should provide training programs on carbon trading, monitoring, reporting,

and verification (MRV), and Article 6 transaction processes. Establishing knowledge-sharing platforms will allow African countries to exchange best practices and strengthen their negotiation positions. Policy harmonization is also essential—developing guidelines to align Nationally Determined Contributions (NDCs) with Article 6 frameworks will ensure transparency, prevent double counting, and create a clear governance structure for market participation.

Africa has immense potential to become a major supplier of high-integrity carbon credits through nature-based solutions, renewable energy, and sustainable land-use initiatives (ACMI, 2022). Regional organizations should facilitate carbon trading platforms, support bilateral and multilateral cooperation, and help establish regional carbon credit exchanges to link Africa with global carbon markets. Private sector engagement is key—connecting businesses, financial institutions, and investors with carbon finance opportunities will boost climate action (AfDB, 2023). Establishing regional funding mechanisms can support Article 6 pilot projects and de-risk private sector investments while ensuring local communities benefit from fair revenue-sharing mechanisms.

Transparency and governance support are vital for credibility in carbon markets (West et al., 2020). Regional organizations should help governments develop MRV systems to track Internationally Transferred Mitigation Outcomes (ITMOs) in line with UNFCCC guidelines and assist in preparing Biennial Transparency Reports (BTRs) under the Enhanced Transparency Framework (ETF). Strengthening regional climate governance will improve accountability and environmental integrity.

Beyond carbon markets, regional organizations should also support non-market approaches (Article 6.8), focusing on adaptation finance, technology transfer, and sustainable development initiatives (Kreibich & Hermwille, 2021). Facilitating South-South cooperation and regional collaboration through ECOWAS, EAC, SADC, and COMESA will ensure African nations speak with a unified voice in global climate negotiations and attract additional support for climate resilience and sustainable development efforts.

7. Conclusion

The analysis of carbon markets and Article 6 mechanisms in relation to the Global Stocktake (GST) outcomes highlights the critical role of international cooperation, transparency, and robust governance in advancing global climate goals (UNFCCC, 2023). While Article 6 provides a framework for market-based and non-market approaches, its effective implementation depends on clear methodologies, strong regulatory frameworks, and capacity building (Schneider et al., 2019). The outcomes from COP 29 and CMA 6 emphasize the need for greater ambition, integrity in carbon trading, and alignment with GST findings, ensuring that cooperative approaches truly support the Paris Agreement's objectives (UNFCCC, 2024). For Africa, the evolving carbon market landscape presents both opportunities and challenges but fully leverage Article 6 mechanisms, African nations must enhance institutional capacities, develop harmonized MRV systems, and foster regional cooperation (Michaelowa et al., 2021). Strengthening engagement with global carbon markets, attracting climate finance, and ensuring equitable access to benefits will be key to accelerating the continent's low-carbon development and climate resilience (ACMI, 2022). Moving forward, strategic investments, policy alignment, and stronger participation in climate negotiations will be crucial for Africa to position itself as a major player in international carbon markets while driving sustainable economic growth.

CHAPTER 8: AFRICA'S FOREST AND LAND-USE GOVERNANCE: GST-1 IMPLICATIONS ON NDC 2.0

By Zita Wilks

Executive Summary

The First Global Stocktake (GST-1) explicitly establishes that achieving global net-zero emissions requires ending deforestation and ecosystem degradation alongside phasing out fossil fuels, marking a fundamental shift from viewing forests as optional carbon sinks to essential components of global climate strategy. This represents a critical juncture for Africa, where forests provide $30-55 billion annually in climate services yet receive only $170 million in international support - a massive disconnect between value and investment. Africa faces a dual deforestation crisis driven by large-scale commodity agriculture and energy poverty, with 970 million Africans depending on wood fuel for daily cooking. The continent's net carbon sink capacity has declined dramatically from 12.3 $GtCO_2$ to only 2.75 $GtCO_2$ in recent decades, while the Agriculture, Forestry, and Other Land Use (AFOLU) sector represents 22% of global greenhouse gas emissions. Critical opportunities exist through restoration initiatives like AFR100, targeting 100 million hectares by 2030, with the IPCC estimating that global land-based mitigation could provide 20-30% of needed emissions reductions by 2050. However, implementation faces a critical financing gap—Africa requires approximately $250 billion annually for climate action but receives only $29.5 billion, creating an 88% shortfall that particularly constrains forest protection efforts.

Nearly all African countries have incorporated AFOLU sectors into their NDCs, but these commitments must embody climate justice principles ensuring developed countries fulfil finance, technology, and capacity-building obligations while Africa maintains agency over its natural resources. A systematic NDC 2.0 approach should encompass ecosystem assessment, social safeguards, realistic target setting, strategic financing, and infrastructure development with specified international support requirements. Africa is articulating coherent collective vision through continental frameworks, with regional initiatives like the Great Green Wall and strategic South-South partnerships enabling coordinated action. Success requires transformed international partnerships that respect African leadership, exceed financial commitments, and reform carbon markets to incorporate equitable pricing and direct community benefit-sharing.

1. GST-1 Outcomes and Scientific Imperatives

The GST-1 Key Finding 6 fundamentally reshaped forest governance discourse by providing unambiguous evidence that current global efforts are inadequate to meet Paris Agreement goals. The stocktake establishes that achieving net-zero requires transformative changes, including ending deforestation alongside fossil fuel phase-out - representing a shift from optional to essential forest protection status. Whereas the Sixth Assessment Report provides authoritative scientific foundation for urgent forest action, concluding that global emissions must peak between 2020-2025 with rapid decline thereafter. AR6 identifies several gigatons of CO_2e annual mitigation potential through reforestation, avoided deforestation, and improved agriculture by 2030, with options under $\$100/tCO_2$ yielding 31-44 $GtCO_2e$ reduction globally.

Despite overwhelming scientific consensus, Decision 2/CMA.5 illustrates persistent disconnect between scientific imperatives and practical frameworks. While acknowledging critical need for enhanced forest protection support, including financial resources and technology transfer to halt deforestation by 2030, it lacks explicit guidance for operationalizing GST-1 and AR6 recommendations, suggesting continuation of fragmented approaches. International forest governance remains characterized by fragmented approaches, with funding primarily channelled through bilateral ODA arrangements rather than centralized UNFCCC mechanisms. This creates inconsistencies in implementation standards as donors pursue strategic interests rather than unified international guidelines, undermining systematic forest protection efforts.

2. African Forest Crisis Context

Africa's forest loss stems from large-scale commodity agriculture (cocoa, palm oil, coffee, rubber) for export markets and critical energy poverty affecting 970 million people dependent on wood fuel and charcoal for daily cooking. This dual pressure from commercial agriculture and subsistence energy creates complex socio-economic dynamics where immediate survival conflicts with long-term environmental sustainability. Africa's vast forest resources, including the Congo Rainforest—one of the world's last major net carbon sinks—face unprecedented pressure. The continent's net carbon sink potential has declined dramatically from approximately 12.3 $GtCO_2$ to only 2.75 $GtCO_2$ in recent decades, as deforestation and degradation substantially outpace restoration efforts.

Restoration efforts through initiatives like AFR100 (targeting 100 million hectares by 2030) present significant opportunities. Africa's commitments reflect substantial potential, with IPCC estimates that global land-based mitigation could provide 20-30% of emissions reductions needed by 2050. Transforming agricultural practices offers additional gains while supporting food security through sustainable intensification and reduced food waste. These opportunities exist within challenging contexts of structural inequalities and resource constraints. Energy poverty, food insecurity, limited industrial capacity, and climate vulnerabilities are compounded by inequalities in global trade and finance, including dependence on low-value commodity exports and technological gaps hampering sustainable development pathways.

The Congo Basin forests alone provide climate services valued $30-55 billion annually through carbon sequestration, yet international support averages only $170 million annually. Even accounting for all pledges and market-based payments, total forestry funding barely exceeds $1 billion annually. Market-based mechanisms face obstacles including low pricing, procedural complexity, and certification costs often exceeding $50,000.

3. Climate Justice for NDC 2.0

Climate justice for Africa requires principles of restorative, distributive, and procedural justice where developed countries fulfill obligations providing finance, technology, and capacity building as climate reparations while fostering green economies promoting shared prosperity. This ensures Africa maintains agency over natural resource decisions while addressing global and intra-regional equity concerns. Just transition policies for land-dependent communities require comprehensive plans for regions dependent on charcoal production or subsistence farming in forest areas. Frameworks should include alternative livelihood programs employing communities in reforestation and agroforestry,

education initiatives for modern agricultural techniques, and robust social safety nets including grants and temporary income support.
Strengthening governance emerges as fundamental for effective implementation. National level requirements include increased funding for forestry agencies and agricultural extension services, advanced MRV systems utilizing satellites and community-based monitoring, and enhanced legal frameworks incorporating climate objectives with strengthened transparency and enforcement measures. Achieving equitable AFOLU finance requires fundamental reforms ensuring mechanisms serve as liberation tools rather than creating additional debt burdens. Fair approaches would shift toward grants and highly concessional funding for forest conservation, recognizing it as global public benefit while emphasizing community-level financing reaching Indigenous groups and local forest stewards.

Critical enablers include predictable long-term financing beyond project-based funding, scaled technology transfer and capacity building programs, regional cooperation frameworks enabling cross-border collaboration, reformed international carbon markets with fair pricing and direct community benefit-sharing, and enhanced technical support for baseline data development and institutional coordination. African countries should consider a five-stage approach in developing the forestry and land use component of their NDC 2.0 development:

Step 1 - Assessment of Potential and Baseline: Focus on public good value of forest ecosystems, indicating economic losses from degradation where possible. Baseline development serves as foundation for robust Monitoring, Reporting, and Verification (MRV) systems essential for credible commitments and international support access.

Step 2 - Social and Economic Development Analysis: Assess current development conditions and priorities, defining safeguards applicable to proposed actions covering land issues, pricing mechanisms, and community agency. Ensure alignment between forest protection measures and poverty reduction objectives while addressing potential trade-offs transparently.

Step 3 - Resource Assessment and Target Setting: Evaluate available resources both internationally and domestically, then establish conditional and unconditional targets based on realistic funding projections and identified sources. Differentiate between what can be achieved with domestic resources versus requiring international support for enhanced ambition.

Steep 4 - Financing Instrument Selection Determine appropriate spread of financing instruments for mitigation and adaptation outcomes with clear quantity assumptions from each instrument, justified on equity considerations. Balance grants for public goods, concessional loans for revenue-generating activities, and market mechanisms where appropriate.

Step 5 - Infrastructure Development Planning Provide for technical and institutional infrastructure development necessary for delivering established actions and targets, including specificities of planned interventions and types of international support required from the global community.

4. Regional Cooperation and Continental Leadership

Africa should articulate coherent collective vision through movements like Pan-African Climate Justice and the African Climate Change Strategy, positioning the continent as unified actor in global climate governance. Strategic unity encompasses knowledge exchange, resource pooling through AU

and AfCFTA, and presenting unified positions where African interests have historically been marginalized. African nations leverage collective strength through AU's Climate Change and Resilient Development Strategy and the African Group of Negotiators (AGN) as formidable voice in UN climate talks. Within AfCFTA, nations develop protocols encouraging trade in sustainably produced agricultural products while excluding deforestation-associated goods, transforming EU restrictions into branding opportunities.

Regional programs like the Great Green Wall (Senegal to Djibouti) and AFR100 restoration commitments exemplify integrated land restoration models requiring coordinated support across multiple countries. These demonstrate how shared ecological challenges can be addressed through harmonized standards, pooled resources, and unified implementation strategies. Africa forges strategic partnerships sharing best practices with countries like Brazil and Indonesia on rainforest conservation while collaborating with South Asian nations on climate-resilient agriculture techniques adaptable to African contexts. Strengthening institutions like the Africa Forest Forum and Central African Forest Commission enables better transboundary resource coordination.

Effective regional cooperation requires complementary international partnerships respecting African leadership and agency. This demands for developed countries exceed financial commitments, restructure technology transfer mechanisms toward genuine knowledge partnerships, and reform international frameworks addressing structural issues like debt burdens and trade barriers.

5. Reformed International Cooperation Framework

Beyond Traditional Donor Models: Evolution toward genuine partnership requires fundamental shift from donor-recipient relationships to collaborative models recognizing Africa as vital contributor offering innovative solutions to global climate crisis, not merely vulnerable region requiring assistance.

Carbon Market Reform: International carbon market rules under Article 6 must be reformed incorporating provisions enhancing existing forest conservation beyond narrow emissions metrics, creating incentives for early adopters while preventing unintended baseline deforestation increases. Framework must ensure equitable pricing, transparent governance, and direct community benefit-sharing. Reformed international carbon markets providing fair ecosystem service pricing, eliminating perverse deforestation incentives, and ensuring direct community benefit-sharing would create powerful economic incentives for ambitious AFOLU commitments aligned with development priorities.

Means of Implementation Architecture Transformation: The $200+ billion annual financing gap requires emergency mechanisms including debt-for-nature swaps, green bonds tailored to African contexts, and blended finance leveraging private investment while maintaining public oversight. Enhanced Green Climate Fund contributions and Loss and Damage Fund implementation are critical for near-term action. Technology transfer mechanisms must ensure African institutions have free access to satellite data, geospatial tools, and collaborative research opportunities, moving beyond traditional capacity-building toward genuine partnerships recognizing African innovations and indigenous knowledge systems.

Fair Trade Implementation: Recent EU regulations including deforestation-free import requirements and Carbon Border Adjustment Mechanism risk disproportionately impacting African producers if implemented without sufficient capacity-building support and financing assistance.

UNECA recommendations for new Global Compact extending beyond UNFCCC and WTO frameworks to address structural issues including debt burdens, trade barriers, and intellectual property constraints reflect needs for systemic international cooperation reform supporting African priorities. Through strategic diplomacy, Africa can advocate for comprehensive technical assistance enabling compliance rather than punitive barriers.

Governance Strengthening: Enhanced technical support for robust baseline data development, improved national forest monitoring systems, and institutional coordination between agriculture, forestry, and climate ministries provides foundational capacity for credible, measurable commitments. Cross-border collaboration frameworks enabling shared MRV systems, coordinated carbon market participation, and economies of scale must be strengthened while enhancing collective bargaining power in international negotiations.

6. Conclusion

The evidence reveals a critical juncture where GST-1 and IPCC AR6 scientific imperatives demand transformative action extending far beyond incremental adjustments. Africa's forests represent global climate infrastructure whose protection is essential for planetary stability, yet persistent disconnect between scientific urgency and implementation framework inadequacy threatens both global climate goals and African sustainable development.

Success requires fundamental reimagining of international cooperation moving beyond fragmented donor-recipient paradigms toward African-led solutions supported by genuine partnerships. The emerging unity through continental frameworks provides powerful foundation, but depends on complementary reforms in international finance, technology transfer, and market mechanisms serving African priorities.

Climate justice must be operationalized through concrete mechanisms recognizing Africa's dual role as critical solution provider and region requiring substantial just transition support. This means ensuring forest-dependent communities become beneficiaries rather than casualties of climate action while creating economic incentives making conservation more attractive than deforestation.

The window for transformative change is rapidly closing. IPCC findings that emissions must peak by 2025 leave no room for business-as-usual forest governance approaches. Africa's forests require immediate protection through emergency funding mechanisms, strengthened governance systems, and rapidly scalable regional cooperation initiatives.

As African countries prepare NDC 2.0 commitments, the systematic five-stage framework provides essential roadmap balancing ambition with realism while ensuring development priority alignment. These preparations must be grounded in recognition that ambitious forest protection commitments require guaranteed access to enabling factors: predictable long-term financing, scaled technology transfer, strengthened regional cooperation, reformed carbon markets, and enhanced technical support.

African negotiators must leverage collective strength demanding that NDC 2.0 commitments be matched by commensurate international support embodying climate justice principles rather than perpetuating dependency relationships. The continent's unique contributions—including nature-based solutions, indigenous knowledge, and youth-driven innovations—position Africa as essential

partner in developing globally applicable climate solutions whose full participation and leadership are indispensable for achieving planetary climate stability and sustainable development objectives.

CHAPTER 9: CLIMATE FINANCE

By African Future Policies Hub and David Kaluba

Executive Summary

The existing climate finance landscape in Africa is complex and faces numerous challenges. Africa requires a significant amount of funding to implement its Nationally Determined Contributions (NDCs) - the signature vehicle of the Paris Agreement. Decision 1/CMA.5 notes, with emphasis, the importance of finance as a critical enabler of climate action. Estimates suggest that the African continent needs around US$2.8 trillion between 2020 and 2030, [1] with a significant portion conditional on international financial support. Of the US$1.3 trillion global climate finance flows in 2021/22, Africa accounted for 4% (or US$ 44 billion) of this financing. This puts into perspective the substantial gap between levels of finance delivered, relative to the specific needs of African countries. All regions in Africa remain underfunded by at least three to six times their NDC needs. This reinforces the need to scale new and additional grant-based, highly concessional finance, and that non-debt instruments remain critical to supporting developing countries, particularly as they transition in a just and equitable manner as elaborated by Parties in the Global Stock Take (GST) COP28 outcomes.

Climate Finance has its establishment in the policy and the regulatory framework of the United Nations Framework Convention on Climate Change (UNFCCC) commonly known as the "Convention". The Convention has outlined the parameters for engagement on the subject by specifying the obligations of Parties, distinguished between the finance providers and recipients. The key expectations are that justice, or the polluter pay principle remains the core pillar of climate finance, with concessional financing and grants as key financial instruments. The indicators of success for which climate finance will target are mitigation, adaptation, capacity building and technology transfer in developing countries. Therefore, the delivery of climate finance currently has an understated lens of equity whose expectation is that developed countries that advanced earlier and developed through intensive fossil fuel-based industrial production will have the obligation to not only reduce emissions but also support developing country Parties through the provision of finance, to enable these countries to avoid following a similar trajectory of greenhouse gas (GHG) emissions acceleration [2]. Climate Finance as stated in articles 4 and 11 was to anchor the effective participation of Parties in GHG stabilisation and risk reduction measures through a balanced approach to the delivery of climate finance.

The more specific articulations of the climate finance challenge have followed various subsequent agreements intended to strengthen the delivery of the obligations of Parties under the Convention. More recently the GST of the Paris Agreement and the New Collective Quantified Goal (NCQG) have sought to quantify and qualify climate finance to achieve predictability, accessibility and adequacy. The GST outcome highlighted the growing gap between the needs of developing country Parties estimated at US$5.8–5.9 trillion for the pre-2030 period. Adaptation finance needs, as a share of total climate finance, are estimated at US$215–387 billion annually up to 2030, and approximately US$4.3 trillion per year needs to be invested in clean energy up to 2030, increasing thereafter to US$5 trillion per year to 2050, to be able to reach net zero emissions by 2050 [3]. This scenario again underpins the need for adequacy in the provision of finance foreseen by the Convention. Overall, climate finance

and the challenge of its access hinges on the strong and sustained political will of providers in one sense, and the inertia of the various pre-Convention architectures to adjust and provide financial resources at scale required to achieve the objectives of the UNFCCC.

Despite increases in the provision and mobilisation of global climate finance, including the replenishment of various multilateral funds in recent years, the pledge-based system of providing finance has meant that climate finance flows are both unpredictable and inadequate, with pledge volumes not commensurate with finance needs. The available financing is also largely available at commercial rates rather than concessional financing. This only adds to existing debt burdens. Therefore, higher NDC 2.0 ambitions will depend highly on the level of financial support that is adequate for effective implementation. The outcomes of the NCQG have drastically changed the tone of climate finance provision further dampening expectations for a just climate finance trajectory. The NCQG favours the adoption of new sources of finance that emphasize increasing the role of operating entities of the Financial Mechanism, multilateral development banks (MDBs), and bilateral agencies including domestic and south-south arrangements. This has been reinforced by the changing geopolitical landscape in the United States of America and Europe, where Official Development Assistance (ODA) is expected to drop drastically due to nationalist governance approaches in place of multilateralism thus signalling a shift in the conventional provision of climate finance from developed to developing countries. As such, the sustainable provision of climate finance in Africa requires a multi-layered approach.

Importantly, the climate finance architecture is embedded in a global financial system which governs access to finance, as well as the cost of capital. This has sparked various policy debates and reform proposals on how the financing ecosystem can be more responsive to the needs of developing countries and develop an array of instruments that are fit for purpose and ensure an appropriate allocation of climate finance across actors and sectors. The CMA.5 underscores, for example, the importance of reforming MDB's–an important piece of the financial architecture. The importance of system-wide changes to climate finance accessibility was notably recognised by the establishment of the Taskforce on Access to Climate Finance under the UK's COP26 presidency. The UNFCCC has also encouraged operating entities of the Financial Mechanism–which consists of some of the largest funds dedicated to climate–to scale finance, enhance access and effectiveness.

Some of the key factors impacting the ability of African countries to shift, unlock, scale and mobilise finance and investment for sustainability, include challenges associated with attracting private investment, the availability (or lack thereof) of scarce and highly concessional public finance, a widening financing gap for adaptation and resilience, and new transition risks that have a bearing on domestic resource mobilisation. Considering these challenges, and to address and reflect financial needs and enhance climate action in the preparation of the NDC 2.0, this analysis recommends that African policymakers and regional institutions broadly consider the following–which should remain guided by principles and obligations outlined by the UNFCCC:

- **Match ambition levels to predictable financing:** NDCs should rely on resource forecasts based on secured financing as a base for their unconditional commitments. This can for example include existing financial commitments from IFIs, climate funds and private sector investments while matching conditional commitments to other financial resources, including ODA considering its high volatility.

- **Facilitate and incentivise low carbon investments and reduce the cost of capital:** This includes targeted interventions from MDBs, international financial institutions (IFIs) and development finance institutions (DFIs), an enabling environment to scale access to multilateral climate funds (MCFs), tapping into Africa's green bond markets, and leveraging institutional capital.
- **Build an internal continental financial architecture:** A viable climate finance regime on the continent can only exist in the context of a larger and balanced regional framework for development coordination on the continent. A continental financial infrastructure will also very concretely necessitate mobilising both Africa's multilateral financial institutions at scale and act as a vehicle to re-channel financing from, for example, internationally collected levies aimed to support climate action.
- **Mitigating transition risks to support domestic resource mobilisation:** Recognising the constraints imposed by import standards, international agreements and international investment treaties that have an impact on revenue and can prevent countries from increasing their tax base is essential and requires more coherent international policymaking, enabling environments and taxation mechanisms that do not erode countries' tax base.
- **Mobilise trade and technology levers:** African countries and regional institutions should leverage international south-south cooperation in a manner that embeds climate-related trade and technology in investment and policy frameworks, to increase productive capacity and thus increase the domestic tax base and reduce the cost of access to technology.
- **Support reforms to the international financial architecture:** Structural and system-wide shifts would need to be driven if countries are to scale finance, and enhance climate finance accessibility, effectiveness and quality. This includes reforms to the global debt and tax architecture that assures the fiscal sovereignty of African governments.
- **Develop a framework for supportive philanthropic financing in line with country priorities:** While philanthropic financing remains limited in Africa and while it should not replace public financing, it could be leveraged for targeted small-scale interventions (e.g. feasibility studies, financing technical capacity). To promote alignment with country priorities, countries should develop a framework for philanthropic financing to promote transparent collaboration with the public sector while promoting adherence to good financing principles such as country ownership.

A framework to inform the efforts of African countries and regional organisations in integrating the relevant outcomes of GST-1 outcomes in line with their climate and developmental objectives into their NDC 2.0, should: (i) identify and prioritise funding needs, (ii) explore wide sources of finance, in particular international finance sources, (iii) account for new transition risks and domestic resource mobilisation efforts (iv) develop a coherent funding strategy, (iv) align funding with national development blueprints and long-term low emission development strategies and finally, (vi) match ambition with realistic funding forecasts for NDC 2.0.

1. Africa's Climate Finance Landscape

1.1 Unique Circumstances and Development Context

Africa's unique circumstances and development challenges exacerbate the need for climate finance. The continent is home to some of the world's most vulnerable countries to climate change, with many facing issues such as energy poverty, water scarcity, and food insecurity. Additionally, Africa's rapid urbanisation and growing population put pressure on already strained resources. The dilemma most

African countries face is how to realistically and pragmatically advance their economic transformation path while being responsive to climate change action.

Humanitarian crises, the devastation of critical infrastructure, or even the degradation of sovereign credit ratings and devaluation of currencies are amongst some of the consequences that place additional financial pressure on countries overexposed to climate impacts. Some of the most vulnerable African countries are already spending between 3-5% of their GDP on climate change, and in some cases more than 15%. Projections suggest that climate change could lower African GDP levels by between 2-4% by 2040.

The fiscal space of vulnerable countries–already highly limited–is increasingly at risk of a vicious-circle (a rise in financial constraints limits the capacity to invest in transition and adaptation projects, which increases the costs of natural shocks, which further restricts investments in other economic and social development areas). In the African context, therefore, climate finance is required to mutually support the climate and development agenda. At the centre of many African countries calls is a fundamental transformation of the financial system, both within and outside the UNFCCC, to rapidly mobilise, and increase access and scale of finance in Africa.

1.2 Access to International Climate Finance and Investment

African countries continue to face significant challenges in accessing international climate finance and investment. While the Paris Agreement galvanised support around the US$100 billion pledge and the subsequent NCQG of US$300 billion in Baku, much is still to be done to provide additional funding to meet increasing financing needs. This has overt recognition in the "Baku to Belém Roadmap to US$1.3 trillion per year by 2025." Africa not only receives a fraction of global climate finance flows, but the continent faces a climate investment deficit of 77% (i.e. only 23% of needs are currently being met). Lessons from the US$100 billion commitment further demonstrate the ambiguity between climate finance, development finance through MDB channels and development aid (classified as climate finance)–with consequences for accessing what is deemed as new and additional resources.

Access in the context of climate finance should be understood beyond the quantum of finance provided or mobilised. The quality of finance disbursed (or otherwise undelivered) raises fundamental questions about its form (i.e. concessionality of climate finance) and access channels through which recipient countries secure finance (i.e. this includes a multitude of bilateral, regional and multilateral actors within and outside of the UNFCCC regime).

Within the UNFCCC's Financial Mechanisms, less than 3% of climate finance to Africa is channelled through multilateral climate funds (MCFs), demonstrating that funds may not be adequately serving African countries. Although UNFCCC-linked funds are quantitatively small, they form a crucial part of the climate finance regime for a number of reasons. The MCF architecture and its processes have proven to be resource intensive, substantially bureaucratic and not designed for accessibility. Beyond cumbersome accreditation processes, obstacles to accessing necessary funding extend to limited institutional and technical capacity at recipient country level, and a lack of critical climate finance data to inform the design of 'investable' projects.

1.3 Key finance and Investment Issues

Challenges attracting private investment and addressing the 'green finance' premium: in the African context, climate finance is primarily derived from public sources. Yet the GST-1 outcomes note the significant role of public funds, but also the need to mobilise resources from private sources. The

AfDB estimates that 75% of investment is expected to come from the private sector. However, despite high-profile commitments and associated rhetoric on the role of the private sector, private capital contributions for climate, through blended finance, remain marginal. Private finance accounts for only 18% of tracked climate finance to Africa, and is not flowing at the scale, speed nor quality needed to support sustainable outcomes. Similarly, Africa receives only 2% of investment in renewable energy infrastructure demonstrating that less appetite for Africa's clean infrastructure projects, than stated. Therefore, in a global context of net-zero commitments, efforts to attract private-sector finance have demonstrated that it cannot be a complete substitute for public finance. Public financing is still dominant in several African countries, particularly in those lacking the capacity to attract private capital, due to political, legal and economic risks. Africa has also been commonly and systematically perceived as high-risk. This 'risk premium' significantly raises the cost of borrowing. African sovereigns and corporates access capital from international markets at rates that are four to eight times higher than advanced economies.

Availability of highly concessional public financing: fifty-one per cent of climate finance to Africa is disbursed as loans, with half of it being market-rate debt. Long-term, concessional financing is a prerequisite for supporting Africa's resilient growth, on terms that do not further debt distress. GST-1 outcomes similarly identify the importance of "grant-based, highly concessional finance and non-debt instruments" for ensuring an equitable transition and preserving fiscal space. Outside, but parallel to the UNFCCC climate finance regime are MDBs who play a prominent role in delivering multilateral climate finance and mobilising private investment. MDBs–who account for 43% of climate finance to Africa–have themselves proven to have a low-risk appetite and focus on premiums (40% of MDB climate finance lending to Africa is at market rates), leading to inefficiencies and ineffectiveness of incredibly scarce public capital.

Widening finance gap for adaptation and resilience: Adaptation finance flows fall significantly below the resources required to effectively adapt to the climate crisis today and in the future. The low appetite for financing adaptation and resilience (32% of Africa's total climate flows) is compounded by the prevalence of market-rate loans. While private sector finance for adaptation is especially difficult to track, it also proves to be particularly limited. There are several reasons behind limited private investments in adaptation, including that projects often bring social benefits but may not result in clear financial returns for private investors; many vulnerable communities are in areas with real and perceived political, currency, social, and other risks that deter private investment; and private investments are also impeded by inertia and a lack of long-term planning, technical capacity, and data.

New transition risks and domestic resource mobilisation: Beyond international financial support, African countries need to account for transition risks, created by global policy and regulatory shifts towards net zero, which could have impacts on their domestic fiscal mobilisation capacity, and therefore, their ability to meet their unconditional NDC commitments. These shifts could affect national revenues relative to flows and disproportionately impact African countries that are dependent on fossil fuel revenues, carbon-intensive industries, fossil-fuel-powered shipping activities, and certain agricultural practices.

2. Policy Findings & Recommendations for African Countries and Regional Institutions

The scale of Africa's investment gap simultaneously represents a US$3 trillion investment opportunity. With the right investment, the African continent is poised to become the material backbone of the climate transition. This necessitates mobilising resources through structured and equitable

partnerships, including with the private sector. Governments (and philanthropic capital) have a role to play in creating an enabling environment that enhances greater private sector activities and mobilises private investments that achieve co-benefits for development adaptation and mitigation outcomes. Access to private resources will depend on the availability of reduced cost of capital. In the context of shrinking bilateral aid and the financial burden of climate loans–new adapted models and innovative financing tools and instruments should remain guided by principles and obligations outlined by the UNFCCC. To that end;

Facilitate and Incentivise Low Carbon Investments and Reduced the Cost of Capital: Targeted interventions from MDBs, IFIs and DFIs: Boosting the mobilisation of long-term, concessional financing through MDBs, IFIs and DFIs is crucial for resolving the cost paradox and retaining the responsibility of public finance, in the context of Common But Differentiated Responsibilities (CBDR). The availability of guarantee instruments and 'upstream' investments is critical for altering the risk profile of climate-related investments and providing a more balanced allocation of risk.

Enabling environment to scale access to MCFs: Multilateral climate funds' provision of highly concessional resources, their signalling to catalyse climate investment in the broader climate financing ecosystem and required levels of accountability and transparency to the Conference of the Parties make them an important source of climate finance. Enhanced accreditation processes should be accompanied with improved capacity of accredited entities at national level that can effectively access and deploy funds.

Tap into local currency diaspora and green bond markets: Although Africa represents only 1% of the global green bond market, DFIs, including the AfDB account for a notable proportion of Africa's green debt. More collaboration between national regulators/policy makers with bonds issuances could help develop internal (regional and local) capital markets, as well as green taxonomies that align assets with projects and investment opportunities.

Leverage institutional capital: Institutional investors (e.g. pension and sovereign wealth funds) are an opportunity and source of long-term development capital, if pursued strategically. This will require well-structured climate mitigation and/or adaptation projects that provide the critical mass to engage institutional investors.

Build an Internal Continental Financial Architecture: Strengthening regional and continental bodies offers broadened markets for exports to generate foreign exchange earnings. However, foreign exchange earnings are a product of a viable international monetary system sustained by an accessible medium of exchange. As such, a viable climate finance regime on the continent can only exist in the context of a larger and balanced regional framework for development coordination on the continent. A continental financial infrastructure will also very concretely necessitate mobilising Africa's multilateral financial institutions at scale.

Such architecture could also be used as a vehicle to re-channel revenue from internationally proposed levies collected under trade frameworks. For example, the creation of an African Trade Decarbonisation Fund under an African-majority shareholder financial institution could act as a vehicle to re-channel levies collected to provide climate finance in the maritime sector. As some international partners also indicated their intention to recycle parts of the revenue collected for example through emission trading schemes, such African Fund could provide much-needed transparency for such recycled climate finance while allowing African-majority shareholder financial

institutions to deploy their leveraging capacity to raise more financing for mitigation and adaptation activities across the continent.

Mitigate Transition Risks to Support Domestic Resource Mobilisation: Recognising the constraints imposed by international agreements and international investment treaties that prevent countries from increasing their tax base is essential and requires more coherent international policymaking, enabling environments and taxation mechanisms that do not erode countries' tax base.

Leverage Trade and Technology Levers: African countries and regional institutions should leverage climate diplomacy and south-south cooperation in a manner that embeds climate-related trade and technology in investment and policy frameworks, in order to increase productive capacity. Such frameworks are critical for viable technology markets and integration in technology value chains to drive industrialisation and achieving the associated socio-economic benefits.

Support Reforms to the International Financial Architecture: While there's no formal governance relationship between climate finance and the global financial architecture, climate finance, whose principal objective is to address the impacts of climate change, must tap into a global financial system that is not fit-for-purpose in its current structure. Structural and system-wide shifts would need to be driven if countries are to scale finance, enhance climate finance accessibility, effectiveness and quality. This includes reforms to the debt architecture that assures the fiscal sovereignty of African governments.

3. Methodological Framework

Step 1- Identify Funding Needs: Determining the funding required to implement the NDCs, NAPs and the outcome of the GST is a critical first step in the methodological framework. This step enables countries to identify their most critical needs, informed by robust data and evidence. This step should also inform their prioritisation based on their potential for impact on achieving developmental aspirations and on reducing greenhouse gas emissions and enhancing climate resilience. Closing the adaptation finance gap, for example, will require developing frameworks that re-visit existing assumptions, sources, modes, and enabling conditions for scaled adaptation financing (and funding for loss and damage)–in a manner that is localised, with nuance to the specific needs of countries and communities.

Step 2 - Explore International Finance Options: Exploring a wide range of international finance sources is a natural second step, given its criticality in supporting the implementation of NDCs. This includes prioritising options that offer concrete access to affordable finance through various instruments with primary emphasis on operating entities of the financial mechanism such as the Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund (AF), Fund for Responding to Loss and Damage (FRLD), Climate Investment Funds, MDB windows and bilateral agencies. Other avenues include private-public partnerships offering long-term but low-cost financing options that do not exacerbate existing and future debt burdens.

Step 3 - Account for New Transition Risks and Domestic Resource Mobilisation Efforts: This step should consider the possibilities and limitations of domestic resource mobilisation to complement international sources, particularly in the context of a shifting global policy and regulatory landscape towards net-zero that could put significant pressure on the fiscus and revenue generation and therefore, government's ability to meet unconditional NDC commitments.

Step 4 - Develop a Coherent Funding Strategy: Institutional and human capacity building is required to develop an adequate strategy. The strategy should leverage priorities contained in the NDCs and NAPs such as implementation frameworks, plans and investment frameworks that outline the funding sources, amounts, targets and timelines. This step assumes concrete scrutiny of outcomes of the Conferences of the Parties, such as the Paris Agreement, GST and the NCQG.

Step 5 - Align Funding with National Development Blueprints and Low Emissions Strategies: Aligning funding strategies with national development plans and long-term low carbon development pathways should also ensure multi-stakeholder participation and inclusive consultations. Integral to this step is the establishment of a funding coordination mechanism to ensure that funding from different sources is coordinated and aligned with the country's national development blueprint and long-term low emission development. The coordination mechanism builds upon partnerships with international finance institutions, bilateral and multilateral agencies, and private sector entities to facilitate funding and technical assistance.

Step 6 - Match the ambition of the NDC 2.0. to predictable financing: NDCs should be consider realistic and predictable financing as a basis for unconditional commitments. Conditional commitments could be adapted based for example on flows (rather than pledges) of ODA. Therefore, monitoring and evaluation systems are invaluable additions to concretizing the steps to develop NDC 2.0 and ensure measuring, verification and reporting mechanisms are captured to provide learning feedback loops.

4. Conclusion: Transforming Africa's Climate Finance Landscape

Africa's climate finance crisis represents both an existential threat to the continent's development aspirations and a massive investment opportunity requiring fundamental transformation of global financial architecture. The US$2.8 trillion financing need between 2020-2030 contrasts sharply with current flows of US$44 billion annually, demonstrating the inadequacy of existing approaches and urgent need for systemic reform.

The six-step methodological framework provides essential guidance for African countries preparing NDC 2.0 submissions that balance ambition with realistic financing projections while ensuring alignment with development priorities. Success requires matching unconditional commitments to secured financing while advocating for enhanced international support enabling ambitious conditional commitments.
Climate justice principles must guide financing transformation, ensuring that historical responsibility for emissions translates into adequate, predictable, and accessible financing for African countries pursuing low-carbon, climate-resilient development pathways. The shift toward loans and market-rate financing contradicts Convention principles and undermines just transition objectives.

Continental financial architecture development represents a critical opportunity for African countries to reduce dependence on traditional donor mechanisms while building institutional capacity for climate finance mobilization and deployment. Regional cooperation frameworks can enhance access, reduce costs, and improve effectiveness of climate investments. Whereas international financial architecture reforms extending beyond UNFCCC mechanisms to address debt burdens, tax sovereignty, and trade barriers are essential for enabling African countries to mobilize domestic

resources complementing international climate finance. These reforms must recognize Africa's unique circumstances and development imperatives.

The success of NDC 2.0 implementation depends on African countries' ability to leverage this framework while advocating collectively for transformed international cooperation embodying climate justice principles. Africa's climate and development future requires not incremental improvements in existing financing mechanisms but fundamental transformation creating accessible, adequate, and equitable climate finance architecture serving the continent's 1.4 billion people and global climate stability.

CHAPTER 10: TECHNOLOGY DEVELOPMENT, TRANSFER AND DIFFUSION

By Omedi Jura

Executive Summary

The first Global Stocktake (GST 1) has established critical foundations for technology development, transfer, and diffusion in developing countries, particularly across Africa. The key outcome is the mandated Technology Implementation Programme (TIP), which aims to strengthen support for technology priorities identified by developing countries and address challenges in the Technology Mechanism.

CMA decisions 1/CMA.5 and 18/CMA.6 have established the framework for TIP, with elaboration ongoing through SBI 62 for adoption at CMA 7 in 2026. Over the years more than 1,000 technology action plans and project ideas have been developed through UNFCCC processes in more than 100 developing countries. More recent developments in the round table dialogues identified financial constraints and lack of technical capacity as primary barriers to technology transfer. The 2025 NDC 2.0 cycle presents unprecedented opportunities for African countries to integrate climate technologies into national development strategies, questions however remain as to how the technology can facilitate the integration of African countries in technology value chains in pursuit of their sustainable development objectives.

From an African perspective, it is important to integrate TIP within the Paris Agreement Technology Framework's four key themes: innovation, support, enabling environment and capacity building, and collaboration. Establish mandatory five-year reviews of TIP performance prior to subsequent Global Stocktakes. Include all CTCN technical assistance and beyond in NDC 2.0 as part of the conditional component in support of implementation. Develop national multidisciplinary teams to lead NDC 2.0 preparation with systems approaches linking policy, innovation, finance, and social dimensions

The success of these initiatives depends on enhanced international cooperation, targeted financial support, and capacity building measures tailored to African countries' unique circumstances and development priorities. Success is further contingent on African economies not being net importers of technologies and effectively exploiting the socio-economic opportunities offered by the transition to low-carbon and climate resilient development

1. Introduction

This Chapter examines the technology outcomes of the first Global Stocktake (GST 1), including the round table dialogues conducted in 2022 and the relevant technology-focused decisions reached in 2023 and 2024. It also explores support mechanisms from the United Nations Framework Convention on Climate Change (UNFCCC) to address the technology needs of developing countries and examines how these could be integrated into the upcoming cycle of Nationally Determined Contributions (NDC

2.0) to support Africa's energy transition and improve access to technologies necessary for achieving climate and development objectives, including the Sustainable Development Goals (SDGs). The recent facts and figures presented in this analysis are primarily derived from the 2024 SDG report (UN, 2024).

2. Technology Development, Transfer and Diffusion in GST-1

The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) has taken several significant decisions regarding technology implementation. At CMA 5, Parties decided to establish a Technology Implementation Programme and invited the Subsidiary Body for Implementation (SBI 61) to consider this programme within the context of the Poznan strategic programme on technology transfer, with the goal of recommending a draft decision for consideration and adoption at CMA 6 (Decision 1/CMA.5, para. 110). Subsequently, CMA 6 decided to launch a formal process for elaborating the technology implementation programme (Decision 18/CMA.6, para. 1). Building on these decisions, CMA 6 requested SBI 62 to consider the technology implementation programme based on the results of parties' deliberations at CMA 6, as documented in the draft text available on the UNFCCC website. This consideration aims to recommend a draft decision for adoption at CMA 7, which will inform and further elaborate the technology implementation programme (Decision 18/CMA.6, para. 2).

The Technology Implementation Programme (TIP) has been mandated to strengthen support for implementing technology priorities identified by developing countries and to address challenges identified in the first periodic assessment of the Technology Mechanism. The TIP is expected to actualize the implementation of prioritized climate action and relevant technology-supported services, with particular focus on scaling up their application across Africa to achieve positive continental transformation. However, the programme is still under development through ongoing negotiations (UNFCCC, 2024). The implementation of TIP must occur within the context of the Technology Framework established under the Paris Agreement. It is crucial that the framework's key themes - innovation, support, enabling environment and capacity building, and collaboration and stakeholder engagement - are fully integrated into the Technology Implementation Programme design and implementation (Paris Agreement Technology Framework, 2018).

To ensure the effectiveness of the TIP in the long-run, it would be advantageous for Africa to secure a CMA decision mandating a review and assessment of the programme's performance and impact every five years, prior to subsequent Global Stocktakes. This would ensure that the TIP provides meaningful input to future GST processes and maintains its relevance and effectiveness over time. The TIP implementation should encompass piloting quantifiable scaled-up climate action that deploys low-emission technologies capable of enhancing climate resilience in development contexts. The programme should support services and interventions addressing climate change across the entire African continent. Implementation considerations should incorporate the consideration of African economies' integration in technology value chains, extensive technical assistance previously provided by the Climate Technology Centre and Network (CTCN) in respective African countries, relevant completed Green Climate Fund (GCF) readiness programmes in Africa, technology-enabled NDCs of African countries, and relevant NDC 2.0 proposals (CTCN, 2024).

The UNFCCC conducted three round table dialogues as part of the first Global Stocktake, preceded by World Café sessions. These dialogues emphasized, under key finding 16, the critical need for enhanced international cooperation in technology development and transfer. The discussions

addressed significant barriers including financial constraints and lack of technical capacity, while exploring opportunities to accelerate the deployment and transfer of climate technologies (UNFCCC, 2023).

The dialogues highlighted the urgent need for rapidly deploying cleaner technologies, coupled with accelerated innovation, development, and transfer of new technologies to support developing countries' needs. This includes implementing the more than 1,000 technology action plans and project ideas developed through UNFCCC processes in over 100 developing countries. The insights gathered from the World Café sessions, along with other stakeholder dialogues, informed the synthesis report and subsequent decisions under the CMA (UNFCCC Synthesis Report, 2023).

3. Technology related opportunities for Africa in NDC 2.0

The 2025 cycle of Nationally Determined Contributions presents a significant opportunity for ambitious climate action plans that can drive economic and social progress across Africa. Based on GST 1 outcomes, implementing strategies for low-emission energy and green manufacturing represent key opportunities. These initiatives require collaboration, cooperation, and approaches tailored to each country's unique strengths and circumstances and must be pursued with urgency both within and outside the UNFCCC framework.

African countries have the opportunity to include all implementable technical assistance previously provided by the CTCN in their new NDCs for conditional implementation through necessary support mechanisms. These technical assistance areas encompass but are not limited to investments in industry, infrastructure, clean cooking solutions, agro-forestry, sustainable mobility, water resources management, and food and energy security sectors (CTCN Technical Assistance Database, 2024).

Developing NDC 2.0 with strong climate technology applications in Africa requires aligning national climate goals and priorities with innovation strategies for low-emission, climate-resilient development. The preparation of NDC 2.0 demands a systems approach that links policy frameworks, innovation ecosystems, finance mechanisms, and social dimensions within the context of sustainable development, with technological transformation at scale as the primary objective. This comprehensive approach must be grounded in national circumstances and should be spearheaded by a national multidisciplinary technical team or taskforce. Such teams should integrate expertise from relevant sectors and stakeholders to ensure that NDC 2.0 represents a holistic and implementable pathway toward climate resilience and sustainable development (NDC Partnership, 2024).

4. Conclusions

The outcomes of the first Global Stocktake represent a pivotal moment for technology development, transfer, and diffusion in developing countries, with particular significance for Africa's climate and development trajectory. The establishment of the Technology Implementation Programme marks a fundamental shift toward more systematic and coordinated approaches to addressing technology gaps in climate action.

The CMA decisions establishing TIP demonstrate strong political commitment to addressing technology transfer challenges identified in previous assessments. However, the programme's effectiveness will depend on its successful elaboration and implementation, requiring continued political will and adequate financial backing. Despite significant progress in developing over 1,000

technology action plans across more than 100 developing countries, implementation remains constrained by persistent barriers including limited financial resources, inadequate technical capacity, and insufficient enabling policy environments. These challenges are particularly acute in African contexts where, infrastructure and institutional capacity limitations compound implementation difficulties.

The 2025 NDC cycle presents an unprecedented opportunity for African countries to mainstream climate technology considerations into national development planning. The integration of CTCN technical assistance, GCF readiness outcomes, and technology action plans into NDC 2.0 could catalyse transformational change across the continent. African negotiators should advocate for expedited completion of TIP elaboration, ensuring the programme includes specific provisions for African technology needs and circumstances while securing CMA agreement for mandatory five-year TIP performance reviews. Increase targeted financing for technology implementation, particularly for piloting and scaling successful innovations in African contexts, coupled with expanded technical assistance programmes that address specific capacity gaps identified through GST 1 processes. Develop collaborative mechanisms that facilitate technology transfer, adaptation, and innovation between developed and developing countries, ensuring continuous improvement and alignment with evolving technology landscapes and development priorities.

The success of these technology initiatives will significantly influence Africa's ability to achieve both climate and development objectives. The integration of climate technology considerations into NDC 2.0 represents a critical pathway for transforming national development trajectories toward low-emission, climate-resilient futures. However, realizing this potential requires sustained commitment from national governments, enhanced international support, and continued innovation in technology transfer mechanisms.

CHAPTER 11: REPORTING CYCLES AND TRANSPARENCY

By Andrew Marquard

Executive Summary

The First Global Stocktake (GST-1) outcome from COP28 provides critical guidance for African countries preparing their second Nationally Determined Contributions (NDCs) in 2025. Article 14.3 of the Paris Agreement specifies that the GST shall "inform Parties in updating and enhancing, in a nationally determined manner, their actions and support", establishing a direct link between global assessment and national climate commitments. All NDCs submitted in 2025 will have common five-year timeframes (2031-2035) under Decision 6/CMA.3, with enhanced information to facilitate Clarity, Transparency and Understanding (ICTU) requirements, including specific provisions for countries to explain how GST-1 findings informed their NDC preparation. This represents a significant evolution in NDC architecture requiring systematic integration of global guidance with national circumstances. The GST-1's mitigation guidance emphasizes 1.5°C alignment with specific global efforts including tripling renewable energy capacity, doubling energy efficiency improvements, transitioning away from fossil fuels "in a just, orderly and equitable manner," and achieving net-zero energy systems by mid-century. Paragraph 39 of decision 1/CMA.5 provides strong encouragement for ALL Parties to submit NDCs covering all sectors and gases aligned with limiting global warming to 1.5°C, while maintaining differentiation principles and support provisions.

African countries face significant transparency and reporting challenges in implementing the Enhanced Transparency Framework (ETF). Less than half of African countries submitted their first Biennial Transparency Reports (BTRs) by December 2024, highlighting capacity constraints. While almost all 53 African countries have submitted first National Communications, only 19 have submitted BTRs, demonstrating the transition challenges to new reporting requirements. The reporting ecosystem provides opportunities for evidence-based policymaking through synergies between transparency systems and national climate policy development. Systematic information gathering for ETF requirements on greenhouse gas emissions, mitigation, adaptation, and support also provides essential evidence bases for effective climate policy formulation and implementation.

Key challenges include developing technical reporting capacity and national statistical systems underpinning transparency requirements. While consultants have played vital roles in developing country reporting, long-term benefits favour developing internal governmental reporting capabilities requiring multilateral support for capacity-building and institutional development. Support provision through the Global Environment Facility (GEF), Consultative Group of Experts (CGE), and Capacity Building Initiative for Transparency (CBIT) remains inadequate despite improvements. The UNFCCC Secretariat's mandate for training and capacity-building can only be partially fulfilled due to resource constraints, creating persistent gaps in African countries' reporting capabilities.

African countries must leverage GST-1 guidance while addressing three critical areas: determining appropriate NDC forms and coverage; identifying domestic mitigation measures contributing to global goals; and establishing appropriate ambition levels balancing 1.5°C alignment with national circumstances, equity principles, and available support.

1. Legal Context and NDC 2.0 Requirements

Three key decisions apply to African countries' second NDCs: Decision 4/CMA.1 containing annexes on ICTU requirements and accounting guidance; Decision 18/CMA.1 referencing accounting for NDC reporting; and Decision 6/CMA.3 establishing common five-year timeframes. All 2025 NDCs will have implementation periods from 2031-2035, creating standardized assessment timelines for the next GST cycle. The ICTU annex includes a critical provision requiring Parties to "provide information on how the preparation of their nationally determined contribution has been informed by the global stocktake". This transforms GST-1 from advisory guidance to mandatory consideration requirement, fundamentally altering how African countries must approach NDC 2.0 preparation and justification. Paragraph 168 of the GST outcome references both ICTU and accounting guidance, emphasizing that GST integration must be both transparent in communication and trackable in implementation. This dual requirement ensures that GST influence extends beyond target-setting to measurable action and reporting.

Section I of the GST decision affirms the 1.5°C long-term temperature goal with commitment to "accelerate action in this critical decade" while maintaining Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) principles. The IPCC Sixth Assessment Report conclusions are highlighted, providing scientific foundation for enhanced ambition expectations. Paragraph 28 of the GST outcome calls on Parties to contribute to global efforts "in a nationally determined manner" including:

- Tripling renewable energy capacity and doubling energy efficiency improvements by 2030
- Accelerating coal phase-down and achieving net-zero energy systems by mid-century
- Transitioning away from "fossil fuels in energy systems, in a just, orderly and equitable manner"
- Deploying low- or zero-emissions technologies including renewables, nuclear, carbon capture and storage, and green hydrogen
- Substantially reducing non-CO_2 greenhouse gases and road transport emissions
- Phasing out fossil fuel subsidies

Relevant paragraphs of decision 1/CMA.5 include, paragraph 38 which affirms Article 4.4 of the Paris Agreement, on developed countries taking the lead through economy-wide absolute emission reduction targets, with developing countries moving toward this approach over time, whereas paragraph 39 provides strong encouragement to ALL Parties to submit NDCs covering all sectors and gases aligned with 1.5°C limitations, informed by latest science and considering national circumstances. Furthermore, paragraph 40 encourages NDC alignment with long-term low greenhouse gas emission development strategies, while Paragraph 42 urges communication of Long-term Low Emission Development Strategies (LEDS) toward just transitions to net-zero by or around mid-century.

Albeit adaptation is not obligatory in NDCs, and countries may choose alternative communication channels Article 7.11 of the Paris Agreement provides for Adaptation Communications to be

communicated as a component of an NDC, which most African countries follow. The African Group of Negotiators' (AGN) position emphasizes that Adaptation Communications (ACs) should constitute NDC adaptation components, with implementation progress reported in BTRs rather than duplicating information across multiple channels. GST-1 reiterates Article 7 references to ACs in paragraph 57 and references the Global Goal on Adaptation (GGA) in paragraph 64. The decision establishes synthesis reports on adaptation information in paragraph 60 and loss and damage in paragraph 134, primarily focused on BTR information, significantly improving adaptation and loss and damage ecosystem coherence.

2. Strategic Implications for African NDC 2.0 Preparation

Taking the GST outcomes into account, African countries are required to address three fundamental areas: NDC form and coverage; domestic mitigation measures; and appropriate ambition levels. These considerations must be expressed within Paris Agreement principles including differentiation, equity, and support provision while demonstrating explicit GST-1 integration.

NDC form is referenced in paragraph 39's encouragement for economy-wide coverage. Close relationships exist between NDC coverage and countries' tracking capabilities for key indicators measuring implementation and achievement progress. Including sectors without mitigation measures can obscure effective measures' impacts, while data gaps constrain effective mitigation policy development. Good practice involves mapping long-term strategy reporting infrastructure and data-gathering functions alongside domestic mitigation measure development and implementation. Countries should consider reporting challenges for specific NDC targets when determining target forms and scope, with goals of moving toward full coverage and absolute greenhouse gas terms.

GST-1 proposes global goals rather than national requirements. It is not possible or desirable to translate these directly to national levels since many African countries will need to exceed global targets (e.g., tripling renewable energy capacity) due to exponential energy demand growth and renewable energy cost advantages. Countries should clearly demonstrate that NDC target-setting has considered how domestic measures contribute to global goals and what potential exists for enhanced contributions. Many countries may lack capacity for this analysis, creating opportunities for regional cooperation and technical support. Countries may report in ICTU sections what contributions their mitigation measures make to listed global goals or what plans exist for developing responsive mitigation measures and required support for both planning and implementation.

Paragraph 39 references "alignment with limiting global warming to 1.5°C" in the context of current collective ambition inadequacy for 2030 targets. The question of "alignment" is fundamentally normative, with helpful benchmark studies from Climate Action Tracker (CAT) and other organizations attempting to relate national emissions trajectories to temperature levels. Two problems exist with benchmarking approaches: i) benchmarks vary widely depending on UNFCCC/Paris Agreement principles application (historical responsibility versus capability weighting); and ii) these are unavailable for most African countries, focusing primarily on G20 countries and key emitters. Most benchmarking studies are severely hampered by African data gaps or data derived from downscaled global integrated assessment models. Top-down approaches are necessary but insufficient. While connecting national action with global effort is essential, consideration of domestic mitigation measures (current and planned) is critical. Countries need in-depth analysis for all African countries to support NDC practitioners in determining appropriate ambition levels reflecting both global requirements and national circumstances.

3. Enhanced Transparency Framework Implementation

The Enhanced Transparency Framework (ETF) under the Paris Agreement plays a central role in the Agreement's architecture as part of the "ambition cycle." National reporting generates vital information for GST consideration, with comprehensive greenhouse gas information underpinned by detailed UNFCCC/Paris Agreement rules and IPCC Technical Support Unit guidance. BTRs have common Modalities, Procedures and Guidelines (MPGs) in decision 18/CMA.1 covering greenhouse gas inventories, NDC implementation progress, climate impacts and adaptation, support information, and technical expert review guidelines.

Despite common MPGs, three distinctions exist between country groups: Developed countries must report on support provided and mobilized, with this information subject to review; Developing countries have flexibility to report less information where specified due to capacity challenges; whereas LDCs and SIDS are not bound by two-year reporting timetables and may report when capable.

Technical Expert Review (TER) teams comprise reviewers from the UNFCCC Roster of Experts who completed required training courses. The review process promotes transparency, improves reporting through expert consideration, and provides capacity-building for reviewers, especially from developing countries.

African countries have submitted National Communications more than any other reporting vehicle. Almost all 53 African countries submitted first NCs, 50 submitted second NCs, and 42 submitted third NCs. 47 African countries submitted at least one Biennial Update Report (BUR), including 29 LDCs, with nearly 70% submitted from 2021 onward. Only 19 African countries have submitted BTRs, including 5 LDCs, highlighting significant transition challenges to ETF requirements. Correlation exists between LDC status and reporting frequency but not strongly: non-LDC African countries submitted an average of 4.7 reports while African LDCs averaged 4.3 reports each.

Figure 1: Reports submitted per year by African countries

Figure 1 illustrates the dramatic improvement in African countries' reporting frequency over the past decade, with approximately 70% of BUR submissions occurring from 2021 onward, likely resulting from multilateral support measures implementation. However, the decline in 2024 reflects transition challenges to BTR requirements, with less than half of African countries successfully submitting their first BTRs. The transition to ETF has been and remains enormously challenging for many developing countries including African nations. Less than half of African countries submitted BTRs by the December 2024 deadline, demonstrating persistent capacity constraints despite multilateral support measures.

Opportunities for African countries lie in synergies between evidence-based national policymaking and reporting systems. Systematically gathering ETF-required information on greenhouse gas emissions, mitigation, adaptation, and support also provides evidence bases for effective climate policy. Integrating national policy development, NDC target formulation, and ETF reporting provides necessary coordination for national climate action. Two key challenges exist in developing effective reporting capability: developing technical teams familiar with ETF requirements (IPCC guidelines, Paris rulebook familiarity, required expertise); and developing national systems underpinning reporting activity including energy statistics, population data, and agriculture/land use statistics. The second challenge is far more difficult, especially for LDCs lacking most or all these capacities. While consultants played vital roles in developing country reporting, long-term benefits favour developing internal governmental capabilities. This requires multilateral support for capacity-building including institutional capacity and effective use of reporting support to resource governmental functions. Continuity benefits in institutional reporting infrastructure are significant and will dramatically lower long-term reporting costs.

Support provision (financial and technical) is central to African countries' UNFCCC/Paris Agreement transparency system participation. Support has been provided multilaterally via UNFCCC/Paris Agreement, other UN agencies including UNEP and UNDP, the African Union and African Development Bank, and bilaterally by developed countries including through initiatives like Partnership on Transparency in the Paris Agreement (PATPA). GEF provides support for compiling National Communications, BURs, and now BTRs. Capacity-building is provided through the Consultative Group of Experts (CGE) and Capacity Building Initiative for Transparency (CBIT): CGE provides technical support while CBIT provides funding for developing country transparency capacity-building. Standing agenda items under both COP and CMA address financial and technical support for reporting and CGE mandate and activities. This space has been effectively used by developing countries, particularly the AGN, to raise and pursue support provision issues. Results include increased reporting allocations, extended CGE mandates, and addressing new reporting software challenges.

Massive challenges remain despite improvements, with support provided to developing countries still woefully inadequate. The UNFCCC Secretariat's mandate to provide required training levels to developing country practitioners on new reporting tools and other capacity-building mandates can only be partially fulfilled due to resource constraints. The CGE faces identical resource problems. Other persistent problems include GEF funding use restrictions making it difficult for developing countries to use GEF reporting funding to sustain internal capacity. These restrictions prevent countries from building institutional capacity necessary for long-term reporting sustainability. Training

and capacity-building gaps particularly affect African countries given limited existing institutional capacity and technical infrastructure. The complexity of new reporting tools and requirements has not been matched by proportional increases in capacity-building support, creating implementation bottlenecks.

4. Conclusions

The intersection of GST-1 outcomes, NDC 2.0 requirements, and enhanced transparency obligations creates both opportunities and challenges for African countries. The mandatory requirement to demonstrate GST-1 integration in NDC preparation represents a fundamental evolution in international climate governance requiring sophisticated technical and political responses. African countries must balance enhanced ambition expectations with national circumstances, development priorities, and capacity constraints. The emphasis on 1.5°C alignment and economy-wide coverage should be approached strategically, demonstrating commitment to global goals while maintaining differentiated responsibilities and ensuring adequate support provision.

Transparency system development provides opportunities for strengthening evidence-based policymaking while meeting international obligations. Investment in institutional capacity and national statistical systems pays dividends both for international reporting and domestic climate policy effectiveness. Strategic use of multilateral support mechanisms can accelerate capacity development while reducing long-term dependence on external technical assistance with the enabling support of the UNFCCC and its Financial Mechanism.

CHAPTER 12: JUST TRANSITION, RESPONSE MEASURES AND INTERNATIONAL COOPERATION

By Ama Essel, Fatuma Husseini, Xolisa Ngwadla

Executive Summary

The Global Stocktake (GST-1) outcome, adopted under Decision 1/CMA.5 at COP28, marks a historic milestone in global climate action. For the first time, it acknowledged the need to transition away from fossil fuels while tripling renewable energy deployment and accelerating low-emission technologies. The decision addressed gaps in adaptation through the UAE Framework for Climate Resilience with Global Goal on Adaptation targets, operationalized the Loss and Damage Fund, and acknowledged implementation gaps in finance, technology, and capacity building. This Chapter provides African-focused analysis of GST-1 implications for just transitions in energy, mitigation, adaptation, finance, and international cooperation.

The Chapter identifies key findings and actionable recommendations for African countries preparing NDC 2.0 by 2025. The analysis aligns with Africa's climate narrative that action must pursue sustainable development, poverty eradication, and SDG achievement, consistent with Article 2 of the Paris Agreement. Africa contributes less than 4% of global energy-related emissions yet faces among the highest climate vulnerability. While GST-1 provides an enhanced ambition framework, it exposes structural inequities in finance, technology access, trade rules, and energy development. Africa faces critical challenges:

Energy Transition and Industrialisation: The global call to triple renewables creates opportunities and risks. Africa has abundant renewable resources and critical minerals essential for global energy transition but lacks industrial and financial capacity to harness benefits at scale, attracting only 2% of global clean energy investment. Early-stage capital constraints, weak infrastructure, and exclusion from clean technology value chains hinder progress. Several African economies depend on fossil fuel exports, making the transition away from fossil fuels risky for stranded assets, foreign exchange loss, and reduced fiscal space. These risks require differentiated pathways, just transition financing, and strategic planning.

Adaptation and Loss and Damage: Climate impacts are reversing African development gains. While GST-1 recognizes adaptation and loss and damage needs, Africa remains underfunded for GGA target implementation. Current finance flows are 70% debt instruments, with over 50% of Africa's adaptation finance being debt-based, undermining resilience-building.

Finance and Cost of Capital: The New Collective Quantified Goal (NCQG) from COP29 represents progress but commitments fall short of ambition. Africa faces disproportionately high capital costs, limited concessional finance access, and debt-based instrument overreliance, exacerbating fiscal vulnerabilities and restricting transformative climate investment. Just transition requires reforming global climate finance structure, governance, and delivery to prioritize equity, accessibility, and development impact.

International Cooperation Gaps: Africa's fair participation in global climate action is constrained by an international cooperation ecosystem that doesn't reflect continental needs or agency. Trade, finance, and technology system reforms are essential for equitable transitions.

1. Background and Context

GST adoption at COP28 (decision 1/CMA.5) marked a critical juncture in global climate response and Paris Agreement implementation. It provided the first comprehensive assessment of collective progress toward limiting warming to well below 2°C while pursuing 1.5°C efforts. For African countries, GST-1 came amid rising climate impacts, growing debt burdens, and increasing calls to align climate action with continental development priorities. Decision 1/CMA.5 reaffirms key principles like equity and common but differentiated responsibilities (CBDR-RC), and enhanced developing country support. However, provisions remain largely general without binding commitments or structural implementation roadmaps. From an African perspective, the decision reflects persistent international cooperation ecosystem gaps, failing to address systemic deficiencies in affordable finance access, fragmented support frameworks, weak technology transfer, and unequal global value chain integration. Paragraph 28 of Decision 1/CMA.5 marks the first collective agreement to "transition away from fossil fuels in energy systems" as global mitigation strategy. While acknowledging "just, orderly and equitable" implementation, it doesn't define or operationalize these principles for developing countries with diverse economic and energy profiles. From an African perspective, this presents major equity concerns. The mitigation burden must not fall disproportionately on countries with historically low emissions and urgent development needs.

The decision addresses minimizing adverse impacts of climate response measures, but treatment remains heavily procedural with little acknowledgment of trade-related risks faced by African economies. Global low-carbon shifts carry serious trade diversion, exclusion, and market loss risks. Policies like CBAM and green trade standards may inadvertently penalize African exports, especially from emission-intensive but under-capitalized sectors. Decision 1/CMA.5 sections on adaptation and loss and damage show the most pronounced equity deficit. While acknowledging disproportionate developing country climate impacts, it falls short of articulating robust frameworks addressing historical and structural inequities leaving African countries most vulnerable. The decision reaffirms the Global Goal on Adaptation and calls for scaling adaptation action but remains vague on concrete financing pathways and accountability mechanisms. On Loss and Damage, the decision calls for Fund operationalization but lacks scale and source clarity. Voluntary contribution emphasis and binding obligation absence raise effectiveness and sustainability concerns. These sections don't sufficiently integrate equity principles in assessing who pays and receives, nor account for Africa's limited fiscal space, debt stress, and capacity constraints.

The finance section reaffirms finance's critical role in supporting developing countries but falls short of resolving persistent barriers hindering African access to timely, adequate, affordable resources. While calling for "scaled-up, new, additional, predictable and adequate" financial support, it lacks specific source, modality, and timeline commitments. The NCQG outcome at COP29 established USD 300 billion annually by 2030 from developed countries, with aspirational USD 1.3 trillion by 2035 targets. While representing progress, the bifurcation between pledged and aspirational raises serious predictability, equity, and responsibility-sharing concerns.

2. Analysis of Key Concepts and Outcomes

Tripling Renewable Energy and Low Emission Technologies: The GST outcome states that scaling renewable energy and phasing out unabated fossil fuels are indispensable just energy transition elements to net zero emissions. To achieve tripling goals, IRENA states global annual renewable capacity additions must average 1,044 GW (16.4% compound annual growth) through 2030. NDCs in 2025 must more than double existing renewable targets, falling 5.8 TW short of 2030 tripling goals.
New environmental products are more likely to emerge from countries with strong innovation ecosystems - mostly developed countries. In 2012-2017, OECD countries filed 90,762 of 105,110 worldwide environment-related technology patents (86.35%). For Africa, this means paying high royalties for importing transition technologies, requiring adequate foreign exchange. This could be addressed through leveraging critical mineral access for favourable technology licensing agreements or exploring additional financing sources for renewable energy technology imports. WTO rules don't prohibit mandating technology transfer as investment conditions. African economies could negotiate with developed countries to provide incentives for IPR holders to transfer green technology. Options for enhancing green technology access includes: access without patents; limiting patent protection to 5 years; capping royalty payments; and simplified compulsory licensing mechanisms.

Transition Away from Fossil Fuels: Transitioning from fossil fuels to clean energy sources has become key for sustainable futures and climate objectives. International trade is viewed as an important climate mitigation channel. With declining foreign fossil fuel demand from renewable transitions, many African countries risk foreign exchange reserve erosion. Without new foreign exchange sources, importing green technologies becomes extremely difficult. However, phasing out fossil fuel imports could ease forex positions where these constitute substantial foreign exchange shares, assuming renewable sources are domestically obtained or renewable imports cost less than fossil fuels. Economies facing balance of payment problems from fossil fuel export phase-outs should be allowed WTO price-based measures or quantitative restrictions for limited duration, noting African economies' minimal carbon contribution - a restorative justice imperative.

Trade- related measures: African states rich in transition critical minerals lack national policies ensuring maximum economic, social, political gains from processing mineral wealth, risking exploitative trade and investment regimes perpetuating past structural injustices. Measures like CBAM, EU Forestry Regulations, and environmental standards potentially undermine African economies' ability to grow and earn required foreign exchange. The EU introduced regulation 2023/1115 for products associated with deforestation, ensuring cattle, cocoa, coffee, oil palm, rubber, soya, and wood don't contribute to deforestation. Most developing countries likely cannot comply, causing sharp export declines, significantly impacting West African countries.

Solar PV value chain comprises: (i) quartz/silica extraction; (ii) solar grade silicon manufacture; (iii) polysilicon molding into ingots/wafers; (iv) solar cell manufacture; and (v) solar module assembly. African participation is limited, importing most renewable technologies with businesses primarily in imports, sales, and services. African economies lack significant presence in stages (ii)-(iv), with some entities in final assembly. Twenty solar module companies are active in Africa - Egypt (5), Nigeria (4), South Africa (4), and others in Ghana, Algeria, Tunisia. Despite vast resources, Africa's global critical mineral export share remains low: 8.3% raw, 3.8% processed. Global value chains are largely confined to exploration, extraction, and some processing. Low processing degrees relegate African

countries to price takers, which can be mitigated. DRC's local cobalt processing boosted unit prices from $5.8 per kg at extraction to $16.2 per kg processed, reaching $6 billion in processed exports (2022) versus $167 million unprocessed.

3. Considerations by African Countries in NDC 2.0

Transition Away from Fossil Fuels: The global call to transition away from fossil fuels represents a critical climate action moment. For Africa, this presents unique developmental, economic, and geopolitical challenges. While contributing minimally to global emissions, the continent remains disproportionately vulnerable to climate impacts and increasingly expected to adopt low-carbon pathways despite persistent development deficits.

Differentiated Emission Reduction Pathways: Africa's development requires differentiated emissions reduction approaches. The continent accounts for 17% of global population but only 3.8% of global CO_2 emissions. Per capita emissions average 0.96t CO_2, compared to global average 4.7t CO_2 and North America's 13.4t CO_2. These disparities underscore CBDR-RC principles and reinforce Africa's right to equitable atmospheric space for sustainable development.

Transition Risks for Fossil Fuel Exporters: Several African economies remain structurally dependent on fossil fuel exports for fiscal revenues, employment, and foreign exchange. Oil revenues account for over 90% of exports in Nigeria and Angola, with fossil fuels contributing significantly to GDP in Algeria, Mozambique, and Libya. Global energy system shifts risk stranded assets, revenue losses, and macroeconomic instability.

UNECA estimates stranded fossil fuel assets in Africa could reach USD 1.4 trillion by 2050 under aggressive decarbonization scenarios. Fossil-based income erosion could drastically reduce fiscal space, undermining adaptation, health, education, and social protection investments.

4. Transition to Climate Resilient Economies

This section analyzes COP28 adaptation outcomes from an African perspective, focusing on achieving mitigation-adaptation parity. While GGA operationalization and GST established important global targets, significant gaps remain in addressing Africa's adaptation needs.

COP28 adaptation outcomes are understood through decisions 1/CMA.5 and 2/CMA.5, reflecting the African Group's adaptation vision from Paris 2015. Central to this vision is pursuing material parity between mitigation and adaptation in action and support, including codifying adaptation needs-temperature goal links through a global goal galvanizing multilateral momentum. COP28 represented convergence on adaptation, concluding GGA operationalization work and conducting the first GST assessing adaptation progress for enhanced action, support, and international cooperation. Outcomes are assessed from broader mitigation-adaptation parity perspectives.

The African position built GGA outcomes from minimum information in decision 9/CMA.1, setting global (not national) targets on risk reduction, planning, implementation, and implementation means as 'north star' toward adaptive capacity, resilience, and reduced vulnerability. Key political limitations include non-explicit international climate action and support obligations. However, paragraph 10's chapeau language, especially with paragraph 29, reaffirms global target perspectives.

Thematic targets in paragraph 9 advance in-country adaptation prioritization, shifting responsibility from multilateral facilitation to country pursuit.

Beyond finance commitments, missing links toward realizing African vision include adaptation needs-temperature goal connections and needs-implementation means relationships, particularly finance;

Temperature Goal and Climate Resilience Pathways: Adaptation needs must be understood in temperature pathway contexts. This includes at least mitigation, adaptation, and finance pathways. In AdComms/a-NDCs, adequately establishing needs requires considering realizable temperature scenarios directly impacting vulnerability, adaptive capacity, and resilience. Adaptation costs escalate non-linearly with temperatures. Costs at 2°C are projected 1.5-2 times higher than 1.5°C, while 3°C costs could be 3-5 times higher. Loss and damage show similar exponential growth, particularly impacting agricultural productivity, infrastructure, and public health.
Global annual adaptation costs are estimated at:
1.5°C pathway: $70-100 billion annually by 2030, rising to $140-300 billion by 2050
2°C pathway: $120-160 billion annually by 2030, rising to $280-500 billion by 2050
3°C pathway: $220-330 billion annually by 2030, rising to $480-840 billion by 2050

Africa faces particularly severe challenges across temperature pathways despite contributing less than 4% of global emissions. In African a-NDC 2.0, highlighting needs according to 1.5°C, 2°C, and 3°C scenarios would provide useful GST information, as mitigation ambition can inform associated adaptation needs.

Climate Adaptation Finance: Climate adaptation finance faces significant growing gaps between available resources and actual needs, particularly in Africa. UNEP estimates developing countries need $215-387 billion annually for adaptation, yet international public flows have plateaued at $21-24.5 billion. Total adaptation financing reaches only $40-49 billion annually, less than 20% of lower-bound needs estimates. Africa faces adaptation costs of $50-100 billion annually by 2030 but receives only $11.4-19.5 billion annually, creating minimum $30.5 billion gaps. Current adaptation financing utilises: loans (51%), grants (33%), and equity/other instruments (16%). Heavy loan reliance is problematic given climate vulnerability and debt distress often coincide.

Adaptation as Global Responsibility: Climate adaptation has traditionally been framed as local challenges requiring localized solutions. However, Africa should argue adaptation increasingly demands international coordination based on Paris Agreement legal prescripts, particularly Articles 7.2 and 7.4. African governments should leverage their agency as key shared prosperity and just adaptation transition elements while providing information tracking collective progress toward goals without shifting burdens to developing countries.

COP28 adaptation outcomes represent incremental progress toward African Group's vision of material mitigation-adaptation parity. While GGA operationalization and GST established important global targets, significant gaps remain in addressing Africa's needs. The Dubai decisions fall short of establishing clear adaptation needs-temperature goal links despite compelling evidence of non-linear cost escalation. For Africa, contributing less than 4% of global emissions but facing disproportionate impacts, this disconnect represents fundamental climate justice challenges.

The persistent adaptation finance gap further undermines progress. With African needs estimated at $50-100 billion annually by 2030 but actual flows reaching only $11.4-19.5 billion, shortfalls threaten both climate resilience and development gains. Moving forward, African nations must leverage the UAE Framework while addressing critical missing links through temperature-differentiated adaptation needs in a-NDC 2.0 submissions, detailing appropriate financing instruments, and framing adaptation as global responsibility by highlighting legal basis, transboundary risks, and Africa's strategic global value chain role.

5. Conclusions and useful actions for NDC 2.0

In considering the Strategic actions to inform NDC 2.0 and regional cooperation development, African countries could include:

Develop Context-Specific NDC 2.0 - Supporting low-emission and climate-resilient development must be rooted in Africa's broader development agenda. Just transition pathways can advance inclusive growth, promote decent work, reduce inequalities, and strengthen socio-economic resilience. African countries should align enhanced NDCs with national development plans, incorporating GST-1 outcomes while ensuring energy access, poverty eradication, and industrial growth aren't compromised.

Support Differentiated Energy Transition Pathways - Global mitigation should respect Africa's development needs, allowing phased fossil fuel transitions backed by transition financing, economic diversification, and long-term human capital investment. African countries must retain policy space for responsible natural resource use as a bridge toward low-carbon development.

Scale Renewable Energy and Local Manufacturing - International cooperation should prioritize concessional financing for renewable projects, support African participation in clean technology value chains, and enhance local industrial capacity for critical mineral value addition. This requires coordinated effort to expand renewable infrastructure through regional power pools, grid resilience investment, and localized energy access solutions.

Enhance Adaptation and Loss and Damage Implementation - Integrate adaptation including GGA targets and loss and damage within NDC 2.0, with clear, costed targets aligned with national development plans. Adaptation finance must be prioritized through scaled-up, grant-based financing. Countries should establish national tracking systems for adaptation monitoring. Africa must advocate for immediate Loss and Damage Fund operationalization with accessible, non-debt finance mechanisms.

Scale Up Implementation Means, Particularly Finance - African countries must integrate financing needs addressing both quantity and quality of climate finance for mitigation, adaptation, and loss and damage investments. Developed countries must provide grants and highly concessional loans with enhanced access under NCQG goals. African countries should leverage NDC 2.0 to call for innovative financing mechanisms reducing capital costs and crowding in private investment.

Strengthen International Cooperation for Just Transitions - Africa's just transition ability hinges on deep, equitable, sustained international cooperation moving beyond rhetoric to deliver tangible support aligned with development priorities. This includes strengthening multilateral mechanisms

for finance, technology transfer, capacity-building, and fair trade while ensuring African countries aren't left behind in emerging green value chains.

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
African Union Commission (AUC) https://au.int/en/commission	Promote unity, solidarity, cohesion and cooperation among African peoples and countries; accelerate political and socio-economic integration of the continent	• Continental policy frameworks and strategies • Harmonisation of climate policies across member states • Technical guidance on renewable energy targets • Facilitate peer-to-peer learning	• Mobilise resources for energy infrastructure • Support implementation of Agenda 2063 green economy goals • The African Union's Climate Change and Resilient Development Strategy and Action Plan (2022-2032) provides a continental framework for collective action and cooperation in addressing climate change across Africa. It aims to harmonize the continent's response to climate change, setting out key principles, priorities, and intervention areas. The strategy emphasizes both adaptation and mitigation, with a focus on building resilient capacities for adaptation and exploiting the continent's mitigation potential • The African Energy Commission (AFREC) is a continental specialised energy agency of the African Union (AU), under the Commission for Infrastructure and Energy, mandated to develop the African energy sector by coordinating, harmonising, protecting, conserving, developing, commercialising, integrating, and promoting rational exploitation of energy resources on the African continent.
UN Economic Commission for Africa	Promote the economic and social development of its member States, foster intra-regional integration, and	• Development statistics of African countries • Policy/Technical brief on specific topics • Provide capacity-building training.	• Development of tools for development decision making • Supports data infrastructure, tracking tools, capacity building for MRV systems, and economic modelling for NDC implementation.

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
African Climate Policy Centre https://archive.uneca.org/acpc **ACPC vision is "to make Africa's development sustainable, inclusive and climate-resilient". "to influence, strengthen and enable the transition to climate-resilient development in Africa through responsive policies, plans and programmes towards transformed economies, healthy ecosystems and human wellbeing".**	promote international cooperation for Africa's development ACPC overall goal is to contribute to poverty reduction through successful mitigation and adaptation to climate change in Africa and to improve the capacity of African countries to participate effectively in multilateral climate negotiations.	• Provides analytical tools, policy briefs, technical support on emissions modelling and scenario development. • Poverty, Inequality and Social Policy program contributes to the achievement of sustainable, inclusive and equitable human and social development in Africa.	• ECA's Technology, Innovation, Connectivity and Infrastructure Division (TICID) facilitates the formulation, adoption, and implementation of new technology and innovation policies for African member states towards improving the competitiveness of institutions, welfare of citizens, and collective and individual security. • Climate Change, Food Security and Natural Resource Division (CFND) Supports the efficient management of natural resource endowments; reducing the negative impacts of climate change by moving towards green transitions and climate-resilient development and harnessing new technologies in the context of sustainable development. • The Weather and Climate Information Services for Africa (WISER) was conceived by DfID in 2015 to stimulate the uptake of climate information by policy makers and vulnerable groups including the youth and women. • Climate information services – the packaging and dissemination of climate information to specific users – are vital in supporting Africa's response to climate change. With robust climate information, Africa can safeguard the economic gains and advances in social development seen across the continent over the last decade.

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
African Development Bank (AfDB) https://www.afdb.org/en/topics-and-sectors/sectors/climate-change	A major institution in Africa that provides funding for sustainable development projects, with a focus on infrastructure, energy, and trade initiatives. The AfDB's High 5 initiative prioritizes: - Light up and power Africa: Improving access to reliable electricity - Feed Africa: Enhancing agricultural productivity and food security - Industrialize Africa: Promoting industrialization and economic diversification - Integrate Africa: Fostering regional integration and trade - Improve the quality of life for Africans: Enhancing healthcare, education, and living standards	• Alignment with Climate Change Strategies, which aims to support countries in addressing climate change and promoting green growth. • Provides technical assistance and capacity building • Mobilization of climate finance to support countries enhance NDCs • Technical assistance support for mitigation and adaptation projects. The AfDB has launched a Technical Assistance Facility to unlock climate finance for vulnerable regions, providing awards ranging from $260,000 to $1.3 million per project • Supports design of investment-ready NDCs and low-emission strategies through grants and technical assistance. • AfDB has a mandate to support African countries in addressing climate change, and climate technology plays a central role in this. • The Bank's climate and green growth strategy has prioritized, "Power Africa", "Feed Africa", and "Improve the quality of life for the people of Africa.	• **Africa NDC Hub:** A platform established to help African countries fulfil their commitments under the Paris Agreement. The Hub provides a resource pool for African countries and coordinates sector activities to support NDC implementation. • **Fostering Long-term Climate Action:** The AfDB supports countries in transforming NDCs into bankable and implementable projects/programs, aligning country-NDCs with national development agendas, and exploring options to raise ambition for low-carbon and climate-resilient growth. • **Mobilizing Means for Implementation:** The AfDB mobilizes finance, capacity building, technology development, and transfer to support NDC implementation. This includes engaging global climate funds and the private sector to cater to both conditional and unconditional pledges of African NDCs. The AfDB is essential for unlocking catalytic capital through targeted de-risking instruments and scaling local currency financing facilities. • **Coordination, Advocacy, and Partnerships**: The AfDB coordinates with national, sub-national, non-state actors, and private sector representatives to deliver climate change commitments under the Paris Agreement. • **Climate Action Window:** The African Development Fund (ADF) established the Climate Action Window under its 16th replenishment cycle to mobilize public and

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
			private sector resources for adaptation (75%), mitigation (15%), and technical assistance (10%) projects. • **Africa50 and African Investment Forum:** These investment platforms can be leveraged to connect partners/investors to investment ready project pipelines, in critical sectors including for infrastructure, energy and agriculture. • **The Africa Adaptation Acceleration Program (AAAP)** is a joint initiative of the African Development Bank and the Global Center on Adaptation (GCA). It aims to mobilize $25 billion, over five years, to accelerate and scale climate adaptation action across the continent. • Desert to Power Initiative: Aims to provide 10 GW of solar energy across the Sahel region. • Funds infrastructure aligned with low-emissions pathways; helps structure climate finance instruments and regional cooperation.
United Nations Development Programme (UNDP) https://www.undp.org/africa/projects-and-initiatives	Supports African countries in various ways to achieve sustainable development and reduce poverty. UNDP's support for African countries is guided by the organization's commitment to promoting	• **Climate Promise 2025**: This initiative helps developing countries prepare their climate action plans under the Paris Agreement • Developed in collaboration with the NDC Partnership and over 30 other partners, this interactive tool assists countries in raising NDC ambition and accelerating implementation. • The UNDP offers tailored packages of expertise, technical assistance, and funding	• **NDC Implementation Plans**: UNDP has supported countries in developing NDC implementation plans, which outline the steps needed to achieve NDC targets. • **Climate Finance Access:** UNDP has helped countries access climate finance, including through the Green Climate Fund (GCF), to support NDC implementation. • **Climate Finance:** UNDP helps countries mobilize climate finance to support NDC implementation, including accessing

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
	sustainable development, reducing poverty, and achieving the SDGs.	to support countries in developing and implementing their NDCs. • Helping countries develop high-quality, comprehensive requests for support and providing access to a wide range of resources to adapt to and mitigate climate change. • Assists in stakeholder consultations, integration of NDCs with development plans, and identifying priority sectors. • Is a partner in Global Initiatives including: UNFCCC's Technology Mechanism's (CTCN); Mission Innovation; NDC Partnership; and UNEP's CTCN	international climate funds and leveraging private sector investment. • **Partnerships:** UNDP partners with other organizations to support countries in implementing NDCs, including the NDC Partnership, which provides technical and financial support to countries. • Supports implementation through capacity building, knowledge exchange, and subnational planning frameworks. • Supports solar mini-grids in Africa.
United Nations Environment Programme (UNEP)	Helps African countries adapt to and mitigate the impacts of climate change, promoting low-carbon development and resilience, strengthening environmental governance, including policy development, institutional capacity building, and stakeholder engagement. UNEP helps African countries reduce the	• Technical assistance to countries to develop and implement NDCs, including support for greenhouse gas inventory development, mitigation and adaptation analysis, and NDC implementation planning. • Builds capacity in countries to develop and implement NDCs, including training and knowledge sharing on NDC development, implementation, and tracking progress. • UNEP's Global NDC Support Programme provides technical assistance and capacity building to countries to develop and implement NDCs, with a focus on enhancing ambition and implementation.	• **Low Emissions Development Strategies**: UNEP supports countries in developing and implementing low emissions development strategies, as seen in the EU-UNEP Africa LEDS Project, which helped seven partner countries establish structures to inform investment decisions on NDCs. • **Climate Change Mitigation:** UNEP works with countries to promote climate change mitigation through projects such as clean cooking solutions, renewable energy, and sustainable land use. • **Sustainable Development:** UNEP supports countries in achieving sustainable development goals, including poverty reduction, education, and environmental protection.

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
	risk of disasters, including those related to climate change, and promotes resilience and adaptation. UNEP supports African countries in transitioning to a green economy, promoting sustainable economic growth, and creating jobs.	• UNEP, through the CCAC, supports countries in reducing short-lived climate pollutants, which can contribute to NDC implementation. • UNEP partners with other organizations to support countries in developing and implementing NDCs, including the NDC Partnership, which provides technical and financial support to countries. • Supports GHG inventory development, data systems, and long-term emissions scenarios. • Assist countries with ecosystem-based mitigation, nature-based solutions, and enhancing policy coherence.	• **Climate Resilience:** UNEP helps countries build climate resilience through adaptation and mitigation efforts, including climate-resilient agriculture and infrastructure. • **Environmental Governance:** UNEP supports countries in strengthening environmental governance, including policy development, institutional capacity building, and stakeholder engagement. • **Clean Energy:** UNEP promotes clean energy solutions, including renewable energy and energy efficiency, to support countries in achieving their NDC targets. • **Sustainable Land Use**: UNEP supports countries in implementing sustainable land use practices, including reforestation, sustainable agriculture, and conservation of biodiversity. • Assist countries with ecosystem-based mitigation, nature-based solutions, and enhancing policy coherence.
Africa Risk Capacity (ARC) https://www.arc.int/	The African Risk Capacity (ARC) Group aims to enable countries to strengthen their disaster risk management systems and access rapid and predictable financing when disaster strikes to protect the food security and	• **Disaster Risk Reduction:** ARC enables participating African governments to insure themselves against natural disasters, such as droughts and floods, which can impact their ability to implement their NDCs. • **Climate Adaptation:** By providing access to state-of-the-art early warning technology and contingency planning, ARC helps countries build their resilience to climate-related shocks and stressors,	• **Insurance Coverage**: ARC provides insurance coverage of up to $30 million per country per season for drought events that occur with a frequency of 1 in 5 years or less. • **Contingency Planning**: Countries develop contingency plans to access ARC's insurance coverage and receive payouts in the event of a disaster. • **Capacity Building Support:** ARC supports countries in building their capacity to manage climate-related risks through training and technical assistance.

Institution	Mandate/Remit	Preparation of NDC	Implementation of NDC
	livelihoods of their vulnerable populations.	aligning with the adaptation goals of their NDCs. • **Capacity Building:** ARC offers capacity building services to support countries in developing their contingency plans and risk transfer parameters, enhancing their ability to manage climate-related risks. • **Risk Pooling and Transfer Facilities**: ARC provides risk pooling and transfer facilities, allowing countries to share and manage climate-related risks more effectively.	
Africa Finance Corporation (AFC) https://www.africafc.org/	AFC's investments aim to promote sustainable development, job creation, and economic growth in Africa, while also supporting the African Continental Free Trade Area (AfCFTA) and a fair energy transition. AFC invests in both conventional and renewable energy projects to enhance energy access across the continent.	• **Climate Finance Mobilization**: AFC could help mobilize climate finance for NDC projects, leveraging its expertise in infrastructure development and resource mobilization. • **Capacity Building and Technical Assistance**: AFC could provide capacity building and technical assistance to countries to enhance their ability to develop and implement NDCs.	• **Project Development and Implementation**: AFC might support the development and implementation of NDC projects, particularly in sectors like energy, transportation, and infrastructure. • **Partnerships and Collaborations**: AFC may partner with other organizations, like the African Development Bank (AfDB), to support NDC implementation and leverage resources and expertise. • **Power:** AFC invests in both conventional and renewable energy projects to enhance energy access across the continent. • **Transport and Logistics:** AFC finances infrastructure projects like roads, railways, and ports to facilitate trade and movement.
African Export-Import Bank	Provides trade financing to support cross-border business	• **Climate-Resilient Initiatives:** Although not directly linked to NDCs, Afreximbank's initiatives in areas like	• **Trade Finance and Project Financing:** Afreximbank provides trade finance solutions to support intra-African trade, industrialization,

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(Afreximbank) https://www.afreximbank.com/	operations and promote intra-African trade. Afreximbank has launched initiatives such as the African Trade and Development Finance Program to facilitate trade and economic integration	health systems strengthening and vaccine research might contribute to building resilient systems that can withstand climate-related shocks. • **Partnerships and Collaborations:** Afreximbank partners with other organizations to support development initiatives in Africa. These partnerships could potentially be leveraged to support NDC implementation	and economic development. This could indirectly support countries in achieving their NDC targets by promoting sustainable economic growth and development. • **Adjustment Fund for AfCFTA**: Afreximbank has established a $10 billion Adjustment Fund to support countries in effectively participating in the African Continental Free Trade Agreement (AfCFTA). This fund could help countries adapt to climate-related policies and regulations • **$1 Billion AfCFTA Support Facility:** The bank has also provided a $1 billion AfCFTA adjustment facility to enable countries to adjust to sudden significant tariff revenue losses resulting from the implementation of the agreement.
Banque Ouest-Africaine de Développement (BOAD) https://www.kfw-entwicklungsbank.de/Global-commitment/Subsahara-Africa/BOAD/	A regional development bank that provides financing for development projects in West Africa. BOAD has issued sustainability bonds to support its development mandate	• **Climate Change Mitigation**: BOAD is involved in initiatives that promote climate change mitigation and adaptation, including supporting projects that reduce greenhouse gas emissions and promote sustainable development • **Promote Economic Development:** BOAD supports the economic development of its member states through financing projects and programs in various sectors, such as infrastructure, agriculture, and industry. • **Improve Living Standards:** By financing development projects, BOAD aims to	• **Project Financing:** BOAD provides financing for projects in various sectors, such as energy, transportation, and agriculture. • **Infrastructure Development:** BOAD supports the development of infrastructure, including roads, bridges, and energy facilities. • **Agricultural Development:** BOAD promotes agricultural development by financing projects that improve agricultural productivity and food security. • **Private Sector Support:** BOAD supports the private sector by providing financing and technical assistance to small and medium-sized enterprises (SMEs).

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		improve the living standards of the people in its member states. • **Foster Regional Integration:** BOAD promotes regional integration by supporting projects that enhance economic cooperation and integration among its member states	
Africa Adaptation Initiative (AAI) https://www.africaadaptationinitiative.org/	To strengthen collaboration on adaptation across the continent through high-level pan-African and regional dialogues, adaptation action on the ground, and addressing the adaptation financing gap.	• **Facilitate access to support** for the development and implementation of a-NDCs and NAPs in African countries.	• Support projects development under the NDC priority areas for implementation.
African Group of Negotiators Experts Support (AGNES) https://www.agnesafrica.org/	The AGNES seeks to facilitate the exchange of ideas between experts and negotiators at the international level especially within the framework of the UNFCCC.	• Provide technical and expertise inputs towards the identification of adaption priorities.	• Provide technical support for the implementation of adaptation goals/objectives inclusive of information collection.
Food and Agriculture Organization (FAO)	Agriculture and Forestry support	• Conduct studies to inform countries on climate smart agriculture and forestry systems, technologies and practices.	• Help countries generate disaggregated data on livestock and related agriculture sub-sectors

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African Private Sector	Drives innovation, investment, and implementation of climate technologies.	• Can participate in consultative processes and align corporate sustainability strategies with national commitments including NDCs and low emission pathways.	• Implement cleaner technologies, renewable energy, energy efficiency, and decarbonisation projects aligned with national targets. • Implement cleaner technologies, renewable energy, energy efficiency, and decarbonisation projects aligned with national targets.
African Centre for Technology Studies (ACTS) **https://acts-net.org/programme/science-technology-innovation-knowledge-and-society/**	ACTS's mandate in climate change encompasses conducting research, providing policy advice, building capacity, facilitating climate finance, and bridging the gap between research and policy.	• ACTS contributes significantly to Africa's sustainable development by integrating science, technology, & innovation into climate change strategies such as NDCs.	• ACTS contributes significantly to Africa's sustainable development
African Centre of Meteorological Application for Development (ACMAD) **https://acmad.org/**	ACMAD serves as Africa's premier institution based in Niger, for the application of meteorological & climate science in development. Its mandate encompasses the provision of climate information, capacity building, research and development,	• It collaborates with organizations like the World Meteorological Organization (WMO) and the African Union Commission (AUC) to align its activities with global frameworks such as the Paris Agreement	• Provides early warnings on extreme weather events such as droughts and tropical cyclones, necessary for disaster risk reduction and climate resilience • Through programs like SAWIDRA, ACMAD facilitates the development of infrastructure to access high-resolution satellite data for early warning and climate resilience

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	technology transfer, & integration with global climate initiatives.		
African Union Development Agency-NEPAD (AUDA-NEPAD) https://www.nepad.org/	Facilitate and coordinate development programmes and mobilise resources and partners in support of Africa's development priorities	• Technical support for policy development • Regional coordination mechanisms • Capacity building programmes • Best practice sharing platforms	• Programme implementation support • Regional infrastructure development coordination • Technology transfer facilitation • Multi-country project coordination
African Energy Commission (AFREC) https://au-afrec.org/	Promote regional cooperation in energy development, enhance energy security, and facilitate sustainable energy access across Africa	• Energy data and statistics compilation • Regional energy planning and modelling • Policy harmonisation frameworks • Technical standards development	• Regional energy project implementation • Cross-border energy trade facilitation • Renewable energy deployment support • Energy efficiency program coordination, including the AU's Clean Cooking Programme
Climate Investment Funds (CIF) – Africa https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/climate-investment-funds-cif	Accelerate climate action by empowering transformations in clean technology, energy access, climate resilience, and sustainable forests	• Country investment planning • Transformational program design • Stakeholder engagement frameworks • Just transition planning support	• Concessional finance provision • Private sector mobilisation • Renewable Energy Scale-up Program • Just Transition Initiative implementation

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African Renewable Energy Initiative (AREI) https://www.arei.info/eng	Scale up and accelerate harnessing of Africa's renewable energy potential to contribute to poverty eradication and sustainable development	• National renewable energy planning • Technology assessments and roadmaps • Investment opportunity identification • Capacity needs assessments	• Project development and financing • Technology deployment support • Skills development and training • Regional cooperation facilitation
Alliance for Green Infrastructure in Africa (AGIA) https://www.afdb.org/en/topics-and-sectors/initiatives-and-partnerships/alliance-green-infrastructure-africa	Promote sustainable infrastructure development across Africa through green infrastructure approaches and climate-resilient investments	• Green infrastructure planning frameworks • Climate risk assessments • Sustainable financing mechanisms • Technical advisory services	• Green infrastructure project implementation • Climate adaptation integration • Sustainable urban development • Nature-based solution deployment
The United Nations Educational, Scientific and Cultural Organization (UNISCO)	focuses on preventing, mitigating, and recovering from the loss of cultural heritage and diversity, particularly in emergency	• Assist African countries in identification of responses for addressing non-economic loss particularly loss of cultural. • Integration of cultural protection into L&D actions. • Strengthen national capacities for preparedness/response, and to raise	• Support implementation of approaches to address loss and damage.

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https://www.unesco.org/en	situations. This includes addressing the impact of conflicts, disasters, and climate change.	awareness about the importance of cultural heritage	
International Organization for Migration (IOM) https://www.iom.int/	Mandates on loss and damage IOM work on addressing the social, economic, and cultural loss and damage related to climate change impacts on human mobility. This includes averting, minimizing, and addressing displacement due to natural disasters and environmental change, promoting migration as an adaptation strategy, and assisting vulnerable populations, including those displaced by climate change .	• Assist countries in: • Closing data gaps in vulnerable countries • Develop methodologies for assessing and addressing migration across different regions in Africa • Build/strengthen capacities related to mapping, assessing and addressing internal/across border migration • Integration of displacement in the context of climate change into national laws, policies and strategies, including on disaster response, building on mappings and lessons learned	• Partnership with countries in implementation of approaches to address Loss and damage including as role of implementing entities
The Platform on Disaster	PDD specific mandate on Loss and damage: specifically	• Assist countries in assessing/addressing displacement related to climate change in	• Support implementation of Project 'Action and to Avert, Minimize and Address displacement

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Displacement (PDD) https://environmentalmigration.iom.int/platform-disaster-displacement	addresses loss and damage in the context of disaster displacement and climate change. It focuses on.	the context of both Extreme events and slow onset event • Creation of database on human mobility in the context of disasters, climate change and environmental degradations • supporting states and other stakeholders to formulate responses to prevent, reduce, and address displacement related to the adverse impacts of climate change	related to the adverse effects of Climate Change'
Members of SNLD https://santiago-network.org/about/members	support the implementation of loss and damage approaches at the local, national and regional level in developing countries that are particularly vulnerable to the adverse effects of climate change.	• Provision of technical assistant to African countries upon their request for assessment and identification for approaches for AMA loss and damage.	• Provide support as Appropriate
Intergovernmental Authority on Development (IGAD) https://igadcaep.org/loss-and-damage/	The IGAD Centre of Excellence for Climate Change Adaptation and Environmental Protection (IGAD CAEP) is an IGAD-specialized institution mandated to coordinate Climate Change Adaptation, Loss and damage, and	• Supports Member States in undertaking loss and damage research and capacity development. • Supports regional efforts to raise awareness of loss and damage and promote coordinated and enhanced action across climate change and in support of those most impacted by climate disasters. • Advocate for and support efforts to anchor Loss and Damage in Nationally Determined Contributions (NDCs) or national climate change plans and policies,	• The Centre supports the implementation of National Adaptation Plans (NAP), Updated NDCs and other relevant adaptation-related policies of member states. The Centre's goal is to catalyse coordinated and sustained adaptation planning, decision-making and action across the IGAD region and to support the region in preparing for and adapting to the impacts posed by the changing climate, including frequent droughts, floods, cyclones, sea level rise, sandstorms, and desert locust infestation among other effects.

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	Environmental Protection efforts in the IGAD region.	thus providing an opportunity for holistic climate action at the national level.	• The Centre also serves as the focal institution for knowledge management and capacity development to study, replicate and scale appropriate adaptive solutions and strengthen climate resilience. • Support Member States and communities in advocating for reliable and comprehensive loss and damage funding to address the ever-increasing cost of climate impact-related loss and damage burden, which is unsustainable.