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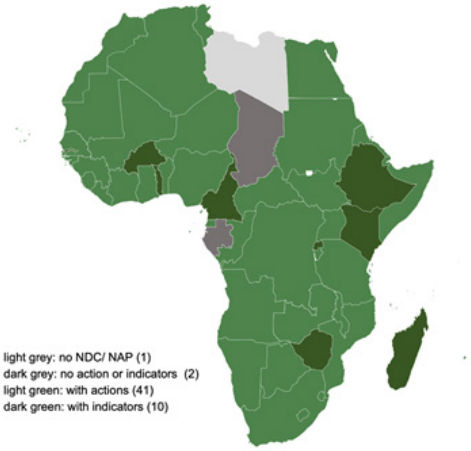
Indicators for Tracking the Global Goal on Adaptation: Insights from 50+ African Countries



KEY MESSAGES

1. **Measurement and tracking of adaptation at the national level is important in assessing adaptation progress towards achieving the Paris Agreement goals.**
2. **More than 400 indicators for tracking adaptation progress are included in Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) of African countries.**
3. **Most of the indicators focus on measuring and tracking short- and medium-term adaptation results (outputs).**
4. **More efforts are required to develop robust indicators for measuring and tracking adaptation along it's various dimensions and facilitate long-term adaptation planning.**
5. **A thematic approach towards adaptation tracking allow countries to measure context-sensitive indicators while allowing aggregation and comparison at different scales in the context of the Global Goal on Adaptation (GGA).**

Introduction

The Paris Agreement (PA) marks an important milestone in the history of climate change under the United Nations Framework Convention for Climate Change (UNFCCC), by linking adaptation, resilience and mitigation (Art. 2). The PA establishes a Global Goal on Adaptation (GGA) founded on three elements: enhancing adaptive capacity, strengthening climate resilience and reducing vulnerability to climate change (Art. 7). The GGA is intended to ensure adequate adaptation response in the context of the temperature goal (mitigation) and to contribute to sustainable development and poverty eradication. The PA also sets up a harmonized reporting mechanism, the Enhanced Transparency Framework (ETF) (Art. 13), through which all parties should report on climate actions. The first global stocktake (GST) shall be undertaken in 2023 and thereafter every five years. For the adaptation component, countries will be expected to report on progress towards the GGA.

To date, there are no standard reporting requirements in relation to the GGA. Tracking progress in adaptation through a global metric or a simple and comparable set of metrics has proven difficult due to many factors, including, halies: a lack of conceptual agreement on the three elements of the GGA; ambiguity in what counts as climate adaptation; the difficulty in aggregating information from very heterogeneous contexts and narrow sets of actions; and the futility of setting absolute targets for adaptation, given that adaptation actions do not produce uniform effects across time and space (Dilling et al., 2019; Dupuis & Biesbroek 2013; Bours et al. 2013). Moreover, available frameworks designed for aggregation often use proxy indicators for adaptation outcomes that may be plausible and measurable at the project level but are unsuited to scaling up to the national level (UNEP, 2016).

Several proposals to address these challenges have emerged, suggesting principles, criteria, stocktaking methodologies, and scorecard approaches to inform the GST, thus enriching the conversation on adaptation measurement and tracking in a global context (e.g., Tompkins et al. 2018, Craft and Fisher, 2018, Christiansen, 2018). However, a majority of the recommendations are based on a top-down, theoretical approach to the GST, hence downplaying the role of national experiences in defining what and how to report adaptation under UNFCCC. This calls for a paradigm shift towards a country-informed, bottom-up process to inform the

operationalization of the GGA, by complementing existing adaptation monitoring and reporting methodologies and approaches. To move discussions towards country-driven and bottom-up processes of tracking adaptation progress, a review of indicators included in National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs) of African countries. This brief presents key findings and reflections from the review. It aims to provide a deeper understanding of current adaptation tracking approaches across the continent, and to discuss opportunities to enhance these approaches for the effective tracking of national climate policies and the GST.

The review

The review focused on mapping and assessing adaptation indicators in national planning-oriented adaptation instruments, namely Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) submitted by African countries by December 2020[1]. The choice of NDCs and NAPs was based on their centrality to the implementation of the Paris Agreement and their role as the main adaptation communication vehicle used by developing countries to date. Each NDC and NAP was screened for adaptation indicators and metrics, distinguishing these from broader adaptation goals and adaptation actions set by countries (Box 1).

A total of 417 adaptation indicators were identified in five NAPs and six NDCs. Additional information was extracted for each adaptation indicator, including sector of applicability, intervention area, unit of measurement, nature of target (quantitative or qualitative), timeframe, data source, data collection frequency, and institutional responsibilities. To facilitate the assessment of the results, several typologies from the literature were used to characterize adaptation indicators by sector (e.g., Ford et al, 2015), by indicator function (e.g., Makinen 2018, Ford 2013), adaptation component (e.g., Adger 2006; Bene et al 2012), and thematic area (e.g., GIZ, 2017)[2].

Box 1: Adaptation goals, actions and indicators

Adaptation goal refers to the macro-level objective that establishes the vision of the NDC/ NAP. The goal is typically long-term, broad in scope, and not strictly measurable (Leiter et al., 2019). Examples: "Increase climate resilience and decrease vulnerability for enhanced sustainable development." (Ghana NDC); "Build the necessary institutional capacity for climate change response planning and implementation for the period 2020 to 2030" (South Africa NDC, Goal 3).

Adaptation action (or intervention) represents an action or a process geared towards achieving the adaptation goal(s), helping systems to respond to the positive and negative impacts of specific climatic risks (Berrang-Ford et al., 2011). Examples: "Expanding extension services" (Uganda NDC); "Potable water supply" (Mauritania NDC); "Strengthening management of water resources and irrigation" (Zimbabwe).

Adaptation indicator is defined as a "quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor" (UNEP, 2016). Examples: "Number of people vulnerable to climate change impacts" (Zimbabwe NDC); "Hectares of crops under insurance" (Rwanda NDC); "The country has an alert system early and effective intervention capable of intervening throughout the territory in the event emergence of new disease vectors." (Comoros NDC).

Highlights

Results from the analysis indicate a richness of approaches to measure and track adaptation at the national level. While these approaches vary significantly across countries due to the context-specificity of adaptation measures and resources available to implement them, various trends were identified and discussedd below.

Highlight 1: Adaptation remains the highest priority for most African countries with varying clarity on indicators to track adaptation progress

Climate change adaptation is the cornerstone of Africa's climate policies. Of the 53 countries with NDCs and NAPs submitted by December 2020,

[2]*Sectors include: agriculture, forestry and other land uses (AFOLU) (livestock, biodiversity and ecosystems included), business and industry, coastal ecosystems, disaster & risk management, energy, fisheries and aquaculture, health and social security, infrastructure and buildings, tourism, water, cross-cutting (national/ multi-sectoral institutions, policies, laws, plans). M&E objective covers process, output and outcome indicators. Adaptation objectives refer to adaptive capacity, vulnerability, and resilience. Thematic area covers five dimensions of socio ecological systems: social, ecological, economic, physical, and institutional.*

forty-one (41) set national adaptation goals and actions that aim to reduce climate change vulnerability and increase adaptive capacity, in line with national development priorities (Figure 1). Ten (10) countries defined adaptation indicators and metrics with varying degrees of specificity, laying out a pathway towards more robust measurement and performance tracking of adaptation under the UNFCCC. Of these ten (10), three (3) countries identified some quantifiable adaptation targets[4], five (5) set timeframes for adaptation indicators, and four (4) defined clear institutional responsibilities for data management.

These findings suggest that, in light of an increased need for urgent climate action, for accountability and transparency in adaptation planning and reporting, many countries will need to step up efforts to define appropriate actions and indicators to track adaptation outcomes and impacts.

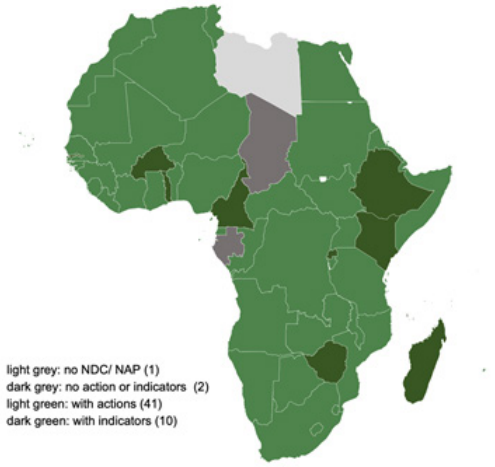


Figure 1. Adaptation actions and indicators for measuring and tracking performance included in NDCs and NAPs across African countries submitted by December 2020.

Highlight 2: More than a half of indicators are not mapped to a sector

Fifty percent (50%) of the indicators reported are not directly linked to a specific sector. Overall, AFOLU is the sector with most adaptation indicators (14%), followed by water (10%), health and social security (4%), infrastructure and buildings (4%), energy (2%), fisheries and aquaculture (2%), disaster and risk management (1%), and business and industry (0.2%). At least 12% of the indicators are reported as cross-cutting, covering two or more sectors. In addition, the analysis also shows the varying context-specificity and magnitude of climate risks, impacts, and solutions (Figure 2). For instance, in water-scarce countries like Morocco, most indicators are geared towards water-related sectors (water, sanitation and hygiene, fisheries and aquaculture, and AFOLU).

In countries that are highly vulnerable to natural disasters and epidemics such as Comoros, disaster and risk management and social aspects (health, social security) are prioritized. Where climate change is expected to have detrimental effects on various sectors of the economy, the diversity is reflected in sectors included in the planning and tracking of adaptation (see Burkina Faso, Comoros, Morocco, Rwanda and Zambia).

As such, robust vulnerability and impact assessments are needed to identify the full spectrum of national and sector-specific risks, impacts, and actions required; these will help to clarify how sectors will engage in adaptation and the support needed. Such a sectoral focus could also help in identifying indicators that are aligned to monitoring and evaluation (M&E) frameworks already embedded in sectoral policies and plans; this will help to establish sectors' roles in adaptation tracking and ensure accountability of the process.

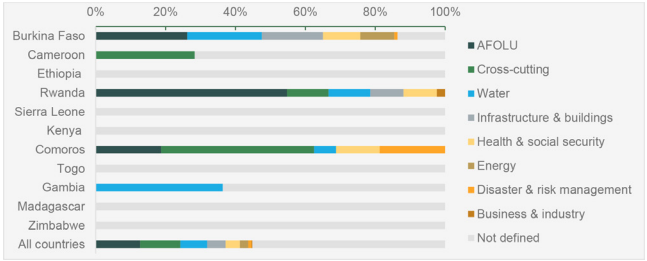


Figure 1. Adaptation actions and indicators for measuring and tracking performance included in NDCs and NAPs across African countries submitted by December 2020.

Highlight 3: Most adaptation indicators are activity-level indicators, which are not suited for long-term adaptation planning

Sixty percent (60%) of the indicators monitor direct

[3]These countries refer to Burkina Faso (NDC, NAP), Cameroon (NAP), Comoros (NDC), Ethiopia (NAP), Gambia (NDC), Kenya (NAP), Madagascar (NDC), Rwanda (NDC), Togo (NAP) and Zimbabwe (NDC). By September 2021, six updated NDC submissions from Angola, Ethiopia, Cabo Verde, Ethiopia, Liberia, and Zambia include adaptation indicators, which shall be considered in updated analyses of indicators.

[4]Quantifiable targets: Burkina Faso, Comoros, Madagascar; timeframes: Burkina Faso, Comoros, Madagascar, Rwanda, and Togo; clear institutional responsibilities: Cameroon, Ethiopia, Rwanda, and Togo.

results of adaptation actions (output indicators), eighteen percent (18%) of the indicators focus on monitoring progress in adaptation policy processes (i.e., process indicators), while twenty-three percent (23%) assess outcomes (Figure 3). Countries' focus on monitoring short-term, activity-based indicators is not surprising, given that key UNFCCC climate funds such as the Green Climate Fund (GCF), Global Environmental Fund (GEF) and the Adaptation Fund (AF) monitor portfolio indicators at output level (UNEP, 2020).

Process and output indicators are important in their own right—particularly for tracking progress towards improved adaptive capacity— but are insufficient and inadequate to measure progress towards higher-level, longer-term objectives, such as reduced vulnerability and increased resilience (which can be tracked using outcome indicators). At least sixteen (16) of the 20 countries reporting adaptation indicators had outcome indicators. These relate primarily to social aspects (e.g., food, nutrition and water security of the population, poverty rates, community empowerment, etc.) and built environment (e.g., energy efficiency, resilience of infrastructure, etc.) (Figure 3).

For long-term adaptation planning, greater emphasis on measuring outcomes will be needed to complement the current focus on short-term measures, thus allowing measurement of adaptation results (outputs, outcomes) across multiple timescales. This will likely require additional investment and capacity to collect and report data on indicators, which are more resource-intensive, but essential for demonstrating results in the long run and to support national/ global aggregation efforts.

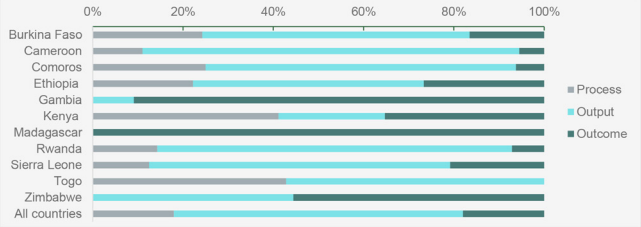


Figure 3. Relative importance of process, output and outcome adaptation indicators in African NDCs and NAPs (percentage of all indicators in NDC/ NAP)

Highlight 4: Most adaptation indicators measure processes and results linked with improved adaptive capacity.

Improving adaptive capacity remains a high climate priority of most African countries. Almost three quarters (72%) of the indicators track results related to improved adaptive capacity, sixteen percent (16%) measure resilience results and twelve percent (12%) refer to reduced vulnerability (Figure 4). The importance of each adaptation component in national adaptation planning and tracking processes will depend on a country's needs and priorities. Thus, identifying indicators that directly align to the assessed risks, adaptation targets and actions will be critical to ensure adequacy, consistency and coherence of adaptation tracking against commitments.

In this sense, the use of theories of change and impact pathways in defining indicators will help link climate adaptation planning with monitoring and evaluation frameworks. Robust risk assessments, including vulnerability analyses and climate impact assessments are important in informing , the priorities and determine the weight assigned to each of the three adaptation components—adaptive capacity, reduced vulnerability and improved resilience—in planning and tracking processes. Nonetheless, a combination of these three components is more likely to enhance the adequacy of adaptation responses across timescales and uncertain contexts.

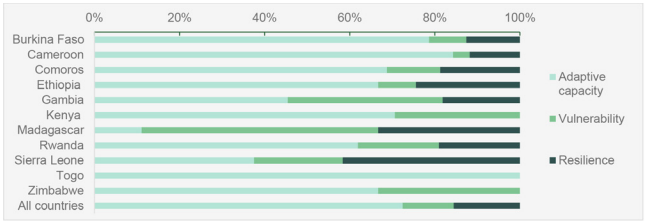


Figure 4. Relative importance of adaptive capacity, vulnerability, and resilience in adaptation indicators of African NDCs and NAPs (percentage of all indicators in NDC/ NAP)

Highlight 5: Several indicator themes emerge, and they can inform national and global aggregation processes

Adaptation indicators fall into five major themes that match key domains of socioecological systems (Figure 5). Social aspects are typically linked to efforts to build adaptive capacity and resilience, and include aspects of food and nutrition security, health, education, and social capital. The economic dimension of adaptation indicators is largely tied to indicators for incomes and income-generating activities, resources and endowments. Adaptation

in ecological (natural) systems is less prevalent across countries' proposed metrics but provides an essential reference point for measuring changes in the diversity and state of the natural environment. Further, measurements for developing and assessing the institutional environment for adaptation have been identified as of critical importance. Given their prevalence in current adaptation metrics, such recurring themes can lay the foundation for defining the scope of adaptation tracking across the continent (and potentially globally), allowing countries to measure context-sensitive indicators within coherent global patterns and with a collective consciousness. However, building consensus and guidance on these themes will be required, to ensure relevance and adequacy to national processes and capacities.

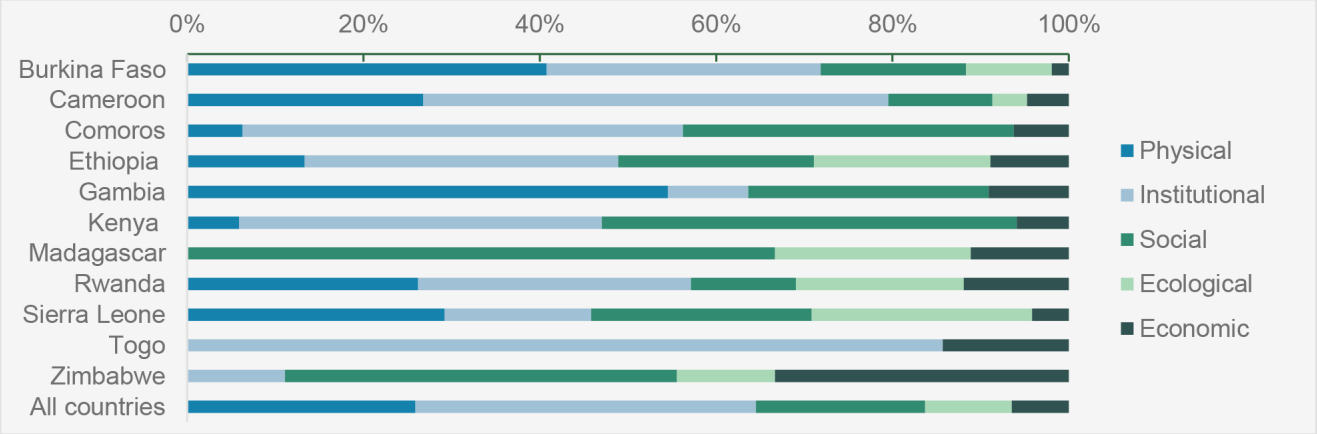


Figure 5. Adaptation indicators by socioecological systems themes (percentage of all indicators in NDC/ NAP)

Way forward

More than 400 adaptation indicators are proposed by African countries to measure and track adaptation in national climate policies, particularly NDCs and NAPs. The wide diversity of indicators is reflective of the context-specificity and diversity of adaptation needs and actions, demonstrating the difficulty to aggregate information at higher levels (national, global) and to operationalize the GGA through a single indicator or a simple set of proxy indicators. However, this should not hold back efforts to improve national adaptation tracking, which can then provide a solid basis for informing the GST. Many opportunities exist in this sense. With review of the submitted new or updated NDCs showing that current ambition is by far inadequate in meeting the Paris Agreement goals, there is a strong momentum to develop or strengthen adaptation indicators to assess progress in managing climate risks, and to ensure accountability and transparency of adaptation planning processes. Key areas of improvements lie in the use of indicators that serve various functions (i.e., track adaptation processes, outputs and outcomes), respond to clearly-defined adaptation priorities and actions (i.e., improved adaptive capacity, reduced vulnerability, enhanced resilience), align to broadly defined and commonly used adaptation themes (e.g., socio ecological dimensions), establish clear metrics and quantifiable targets, and clearly define how sectors and institutions will engage in the tracking and reporting process. Combined, these can help ensure that adaptation tracking is adequate to different priorities, timescales, and uncertain contexts and would provide a basis for collective aggregation processes.

Further Reading

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