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Accelerating the Impact of CGIAR
Climate Research for Africa



Is adaptation tracking on track?

Insights from 53 African countries

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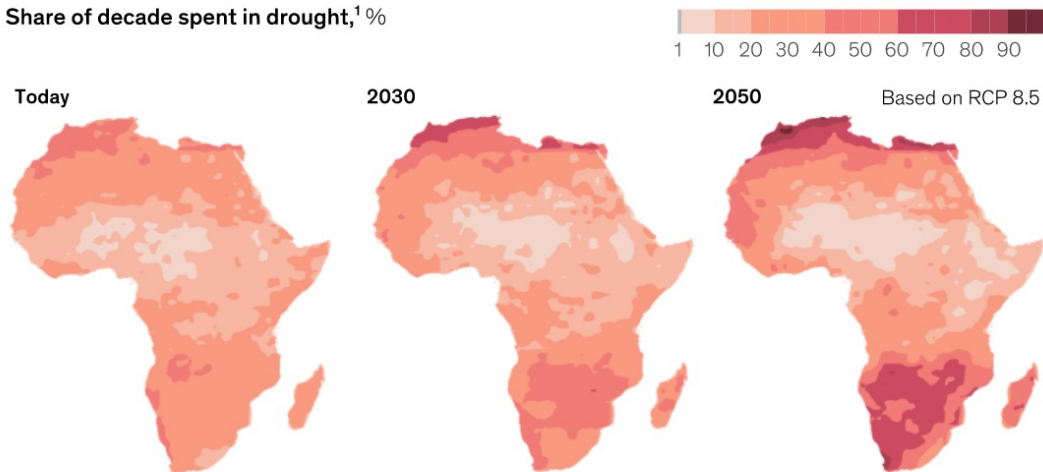
Partners: AGNES, BC3, iCatalyst



Climate risks are imminent, climate action for agriculture is not optional

Expected evolution of drought differs by region in Africa, with the most affected areas in the north and south.

Share of decade spent in drought,¹ %



Note: See the Technical Appendix of the full report for why we chose RCP 8.5. All projections based on RCP 8.5, CMIP5 multimodel ensemble. Heat data bias corrected. Following standard practice, we define current and future (2030, 2050) states as average climatic behavior over multidecade periods. Climate state today is defined as average conditions between 1998 and 2017, in 2030 as average between 2021 and 2040, and in 2050 as average between 2041 and 2060. ¹Drought is defined as a rolling 3-month period with Average Palmer Drought Severity Index < -2. PDSI is a temperature- and precipitation-based drought index calculated based on deviation from historical mean. Values range from +4 (extremely wet) to -4 (extremely dry). Source: Woods Hole Research Center; McKinsey Global Institute analysis

(How) Do we know if African agriculture is adapting to climate change?



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Adaptation tracking means more than counting actions and finance or finding “the perfect indicator”

Count actions

(what are we doing to adapt?)

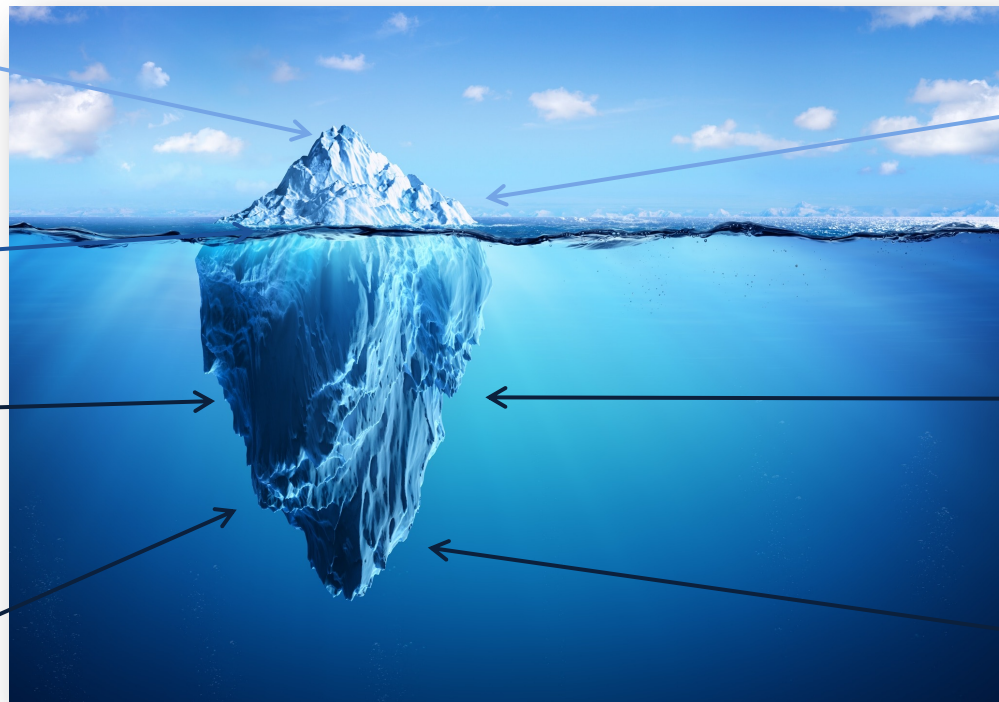
Identify the “best” indicator (proxy)

Understand the climate context

(why adapt?)

Develop coherent impact pathways

(what does a well-adapted system look like?)



Counting finance

(how much \$ is being invested in adaptation?)

Develop data systems and institutions

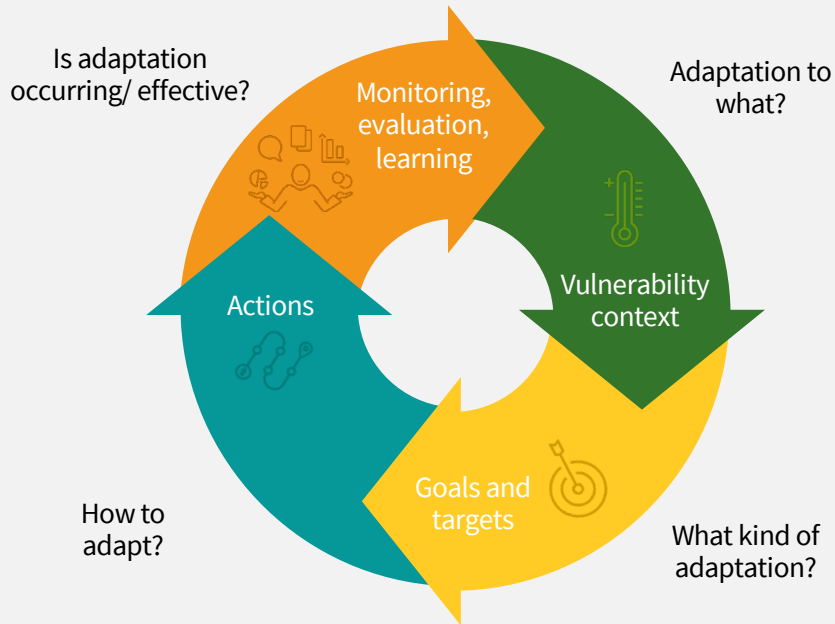
(clear data roles and responsibilities)

Allocate finance

(to sustain monitoring and evaluation efforts in time)

A framework for tracking adaptation through adaptation pathways

The iterative adaptation cycle*



The adaptation tracking framework

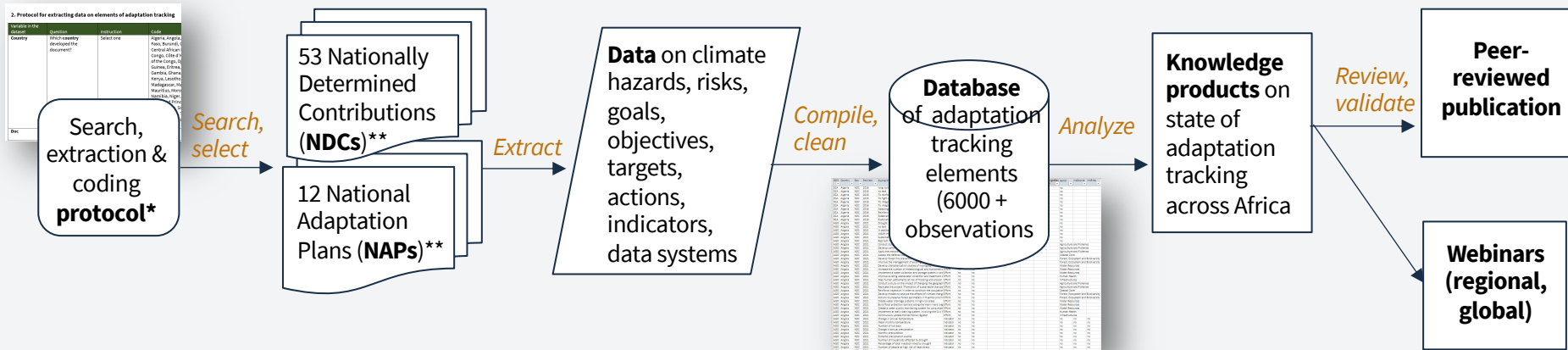


* Adapted from Adaptation Committee, 2019; Park et al, 2012; Berrang-Ford et al., 2019

How is adaptation tracking organized and operationalized across the African continent?

Objectives of the review:

identify **on-going national tracking efforts** that could contribute to the global stocktake and national reporting
assess **entry-points for improvement** of existing systems



* Data extraction and coding protocol based on Berrang-Ford et al (2021), doi 10.1038/s41558-021-01170-y

** Document inclusion criteria: NDCs with Adaptation components (or sections) and NAPs; NDCs and NAPs submitted by African governments by September 30, 2022 and available online (UNFCCC repository).

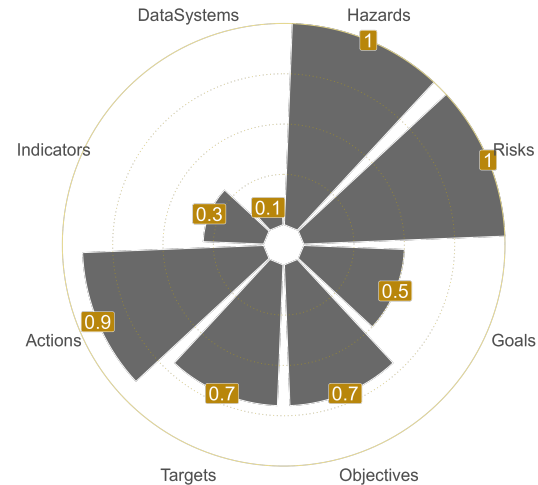
Significant foundations exist for understanding if and how African countries and sectors are adapting

Most countries identify hazards and risks, many set goals, objectives and targets, and plan actions to adapt.
Many opportunities for improvements exist.

Adaptation tracking elements across African countries (n=53)



Adaptation tracking elements (% countries, n=53)
All sectors



* Sector categorization adapted from Berrang-Ford et al (2021) and IPCC AR6 (2022)

Examples of how adaptation elements are featured in NDCs and NAPs

Benin NAP

du Bénin

Ressources à mobiliser

- Huit secteurs du PNA identifiés
- Ressources financières
- Ressources humaines
- Ressources matérielles

Activités → Extraits → Effets

Activités	Extraits	Effets
Promouvoir un système résilient de gouvernance des secteurs de développement aux CC	<ul style="list-style-type: none"> • Un système de gouvernance efficace de l'ACC dans les secteurs est fonctionnel • Les données scientifiques et statistiques probantes relatives aux changements climatiques sont disponibles • Un cadre institutionnel efficace de gestion des CC est promu 	<ul style="list-style-type: none"> • Un système de gouvernance efficace de l'ACC dans les secteurs est fonctionnel • Les données scientifiques et statistiques probantes relatives aux changements climatiques sont disponibles • Un cadre institutionnel efficace de gestion des CC est promu
Promouvoir un système résilient de gestion et d'exploitation des ressources naturelles	<ul style="list-style-type: none"> • Un dispositif de management • Les modes de production et de consommation durable 	<ul style="list-style-type: none"> • La vulnérabilité des ressources naturelles est réduite • Le bien-être socio-économique s'est accru
Développer des mécanismes socio-économiques durables, inclusifs et climato-sensibles (compatibles)	<ul style="list-style-type: none"> • Les infrastructures et équipements sont climato-compatibles • Un mécanisme adéquat de protection des moyens de subsistance des personnes vulnérables est fonctionnel 	<ul style="list-style-type: none"> • La résilience des infrastructures et des équipements est accrue • La vulnérabilité des personnes et des biens est réduite

Impacts

Toutes les politiques publiques mises en œuvre sont climato-compatibles

Le cadre institutionnel de gouvernance des CC est jugé satisfaisant par les acteurs

La résilience des secteurs de développement est accrue

La résilience et la capacité d'adaptation du pays aux changements climatiques sont accrues

La transformation économique et sociale est durable

Ethiopia NDC

Adaptation Actions

Adaptation Intervention (Commitment)	Indicator(s) ¹	Baseline (2018)	2030 Target
SECTOR: AGRICULTURE			
Enhance food security by improving agricultural productivity in a climate-smart manner (promote yield increasing techniques)	Productivity of rain fed crop land (based on average for teff, wheat, barley and corn)	28.9 quintals ² /Ha	45.9 quintals ² /Ha
Area under irrigation (based on corn, wheat, tomatoes and onions) ²	Crop production through irrigation ³	62,050 Ha*	225,913 Ha*
		8 million quintals*	38 million quintals*
Diversify livestock and animal mix, including promotion of poultry and small ruminants	Productivity of poultry and small ruminants (Tons)	Specialized poultry commercial - 33,100 Tons	Specialized poultry commercial - 80,900 Tons
		Household - 13,200 Tons	Household - 16,200 Tons
		Sheep - 66,000 Tons Goat - 44,000 Tons	Sheep - 324,000 Tons Goat - 282,000 Tons
Enhanced climate resilience in livestock	Percentage of improved livestock number (dairy)	Dairy - 2.7%*	Dairy 17%*
		Dairy - 11%	Dairy - 42%
		Beef - 7%, Small ruminants - 7%	Beef - 28%, Small ruminants - 28%
Prevent and control the spread of climate-driven vector-borne diseases	Percentage reduction of crop and animal disease cases	To be established	30% reduction from 2022/2023 baseline (to be established)

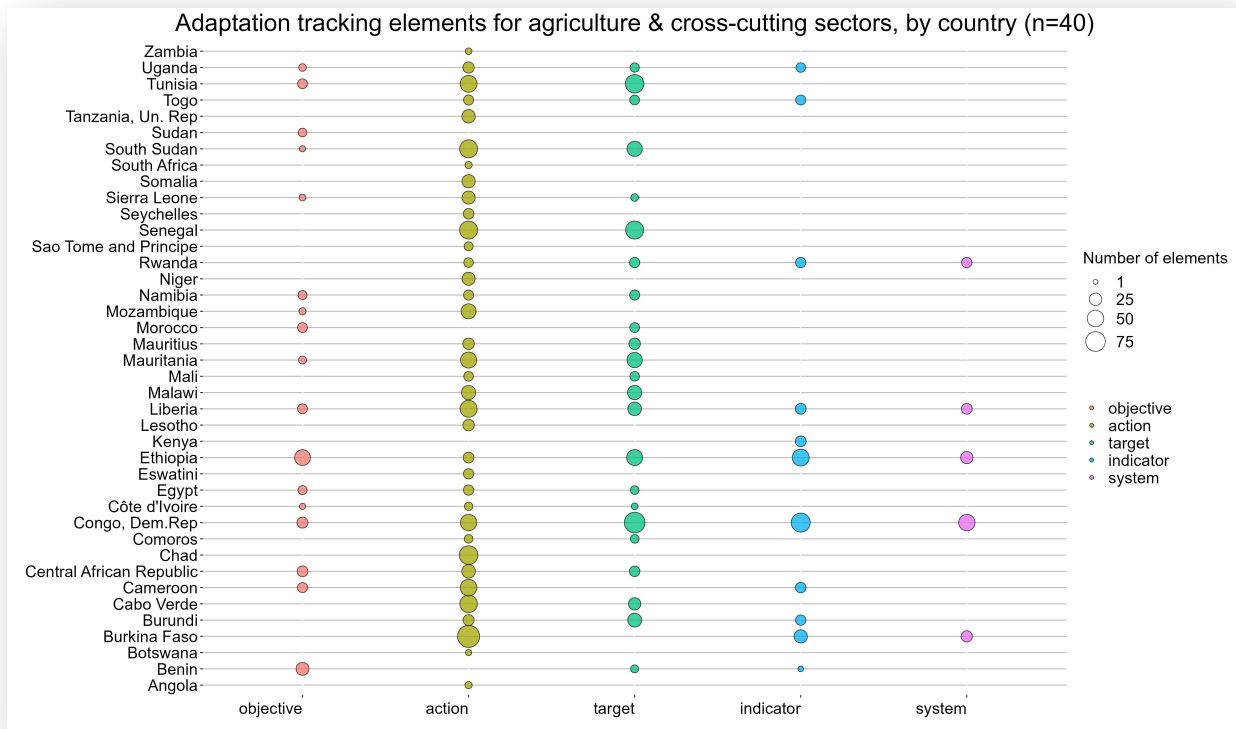
Results

Senegal NDC

Impacts et mesures d'adaptation prioritaires actuelles et préventives par secteur

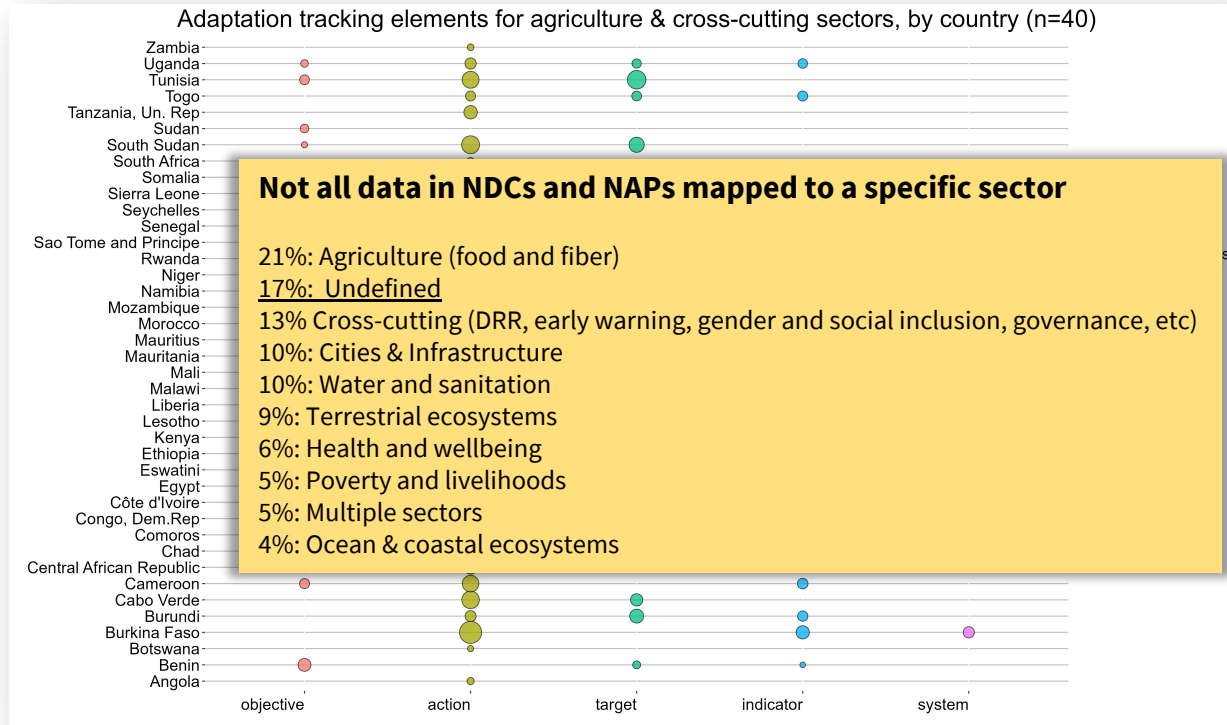
IMPACTS ET VULNERABILITE PAR SECTEURS		MESURES D'ADAPTATION PRIORITAIRES	
Impacts actuels- Scénario 2°C	Impacts futurs-scénario 4°C	Principales mesures d'adaptation prioritaires actuelles (horizon 2025-2030 pour 2°C)	Principales mesures d'adaptation prioritaires préventives (horizon 2040-2050 pour 4°C)
<ul style="list-style-type: none"> • Augmentation de l'évapotranspiration • Perturbation de la carte variétale • Perturbation du calendrier cultural • Recrudescence des mauvaises herbes et des insectes ravageurs • Baisse de la fertilité des sols • Réduction des terres agricoles (2 500 000 ha de terres arables dégradées en 2014) • Baisse production agricole 	<ul style="list-style-type: none"> • Perturbation de la carte variétale • Perturbation des habitudes alimentaires • Baisse de 30% de la production céréalière attendue à l'horizon 2025 • Hausse de l'évapotranspiration potentielle de l'ordre de 5% en Afrique de l'Ouest • Baisse de 8% en 2050 des rendements pour le mil 	<ul style="list-style-type: none"> • Système d'alerte précoce • Gestion Durable des Terres (défense et restauration des terres dégradées; restauration de la fertilité organique des sols; agroforesterie...) • Récupération des terres salées • Utilisation de variétés adaptées (cycle court et température) • Promotion de systèmes de production intégrée agriculture-élevage-agroforesterie • Renforcement de la résilience par la diversification des systèmes de production (amélioration sécurité alimentaire et nutritionnelle...) • Maîtrise de l'eau (Promotion de l'irrigation locale, développement de bassins de rétention pour irrigation de complément) • Promotion et Utilisation de l'information et des services climatiques • Gestion des risques et catastrophes liés au climat • Assurance agricole • Stratégies et gestion du post récolte (stockage, séchage...) • Planification de la production agricole • Transformation et valorisation des produits agricoles 	<ul style="list-style-type: none"> • Système d'alerte précoce • Renforcement de la recherche sur les variétés adaptées (cycle court et température) • Renforcement de la résilience par la diversification des systèmes de production (promotion de système intégré) • Institutionnalisation de l'utilisation de l'information et des services climatiques • Gestion des risques et catastrophes liés au climat • Promotion de l'assurance agricole • Stratégies et gestion du post récolte (stockage, séchage...) • Spécialisation des zones agro-écologiques en fonction des projections climatiques • Pluies artificielles • Planification de la production agricole • Transformation et valorisation des produits agricoles

40 of 53 countries explicitly plan for agriculture and cross-cutting sectors*



*Sector categorization based on Berrang-Ford et al (2021) and IPCC AR6 (2022)

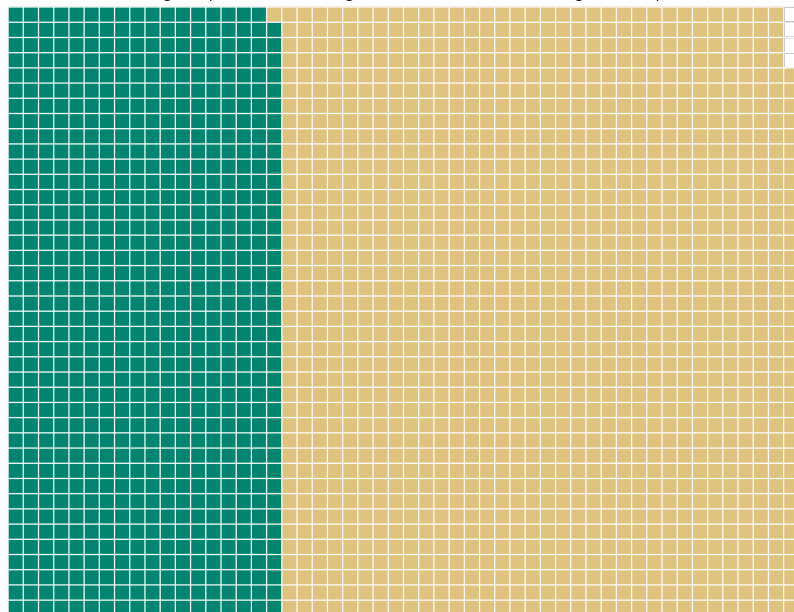
40 of 53 countries explicitly plan for agriculture and cross-cutting sectors*



*Sector categorization based on Berrang-Ford et al (2021) and IPCC AR6 (2022)

2000+ adaptation objectives and actions for agriculture across 40 countries, less than half (45%) establish targets

Elements with targets (40 countries, agriculture and cross-cutting sectors)



n=2076, 1 square = 1 element

■ with target ■ no target

*“Improve livestock diet through **supplementary feeding**”*

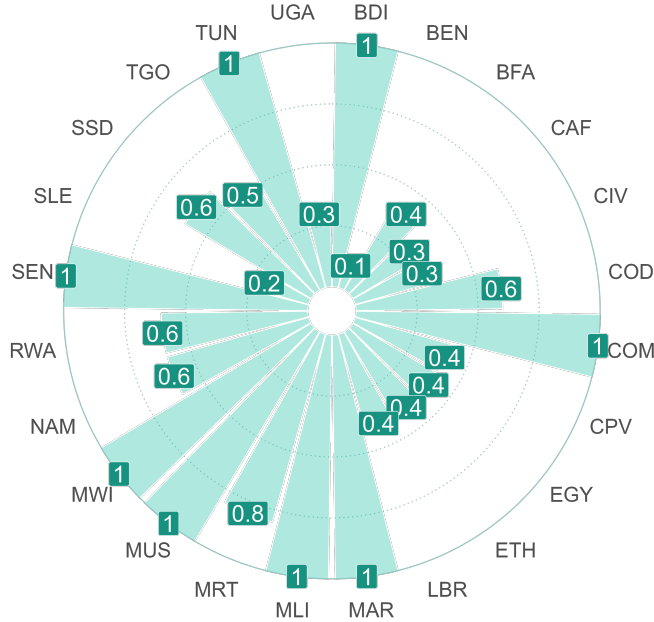
*“**Reduce vulnerability** of the agriculture, livestock and aquaculture sector*

*“**By 2030, a multi-risk early warning system is put** in place and operational (bush fires, flood, drought)”*

*“**Establish a national research institution** focusing on new climate smart seed varieties and improving livestock breeding by 2030”*

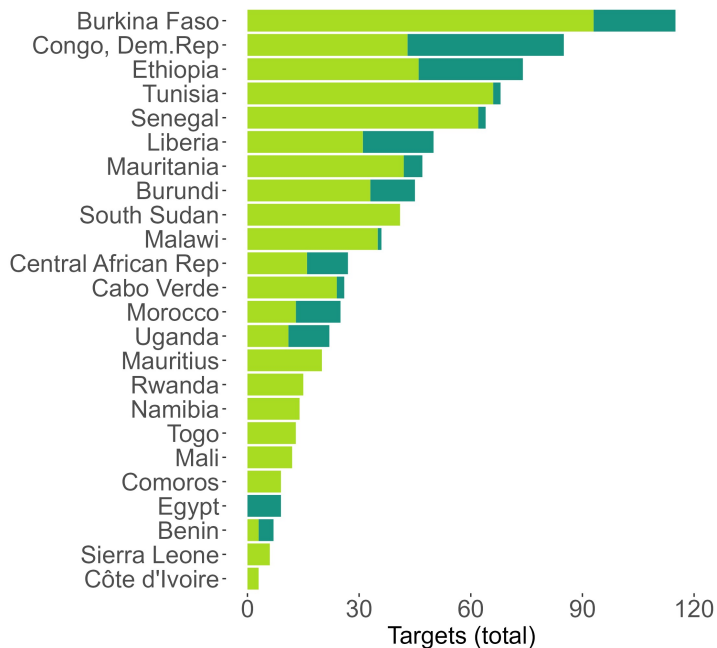
Best-practice examples for target setting exist throughout the continent


Less than half of the countries (24) have agriculture adaptation targets
% of adaptation elements, by country with targets





Most targets (75%) set timeframes for achieving adaptation objectives and actions; few are quantitative


Adaptation target types (agriculture & cross-cutting)





- 

*“Develop **750 ha** of irrigated perimeters in the Niger basin”*
- 

*“**Three** Livestock Production Intensification Areas have been established and are operational. ”*
- 

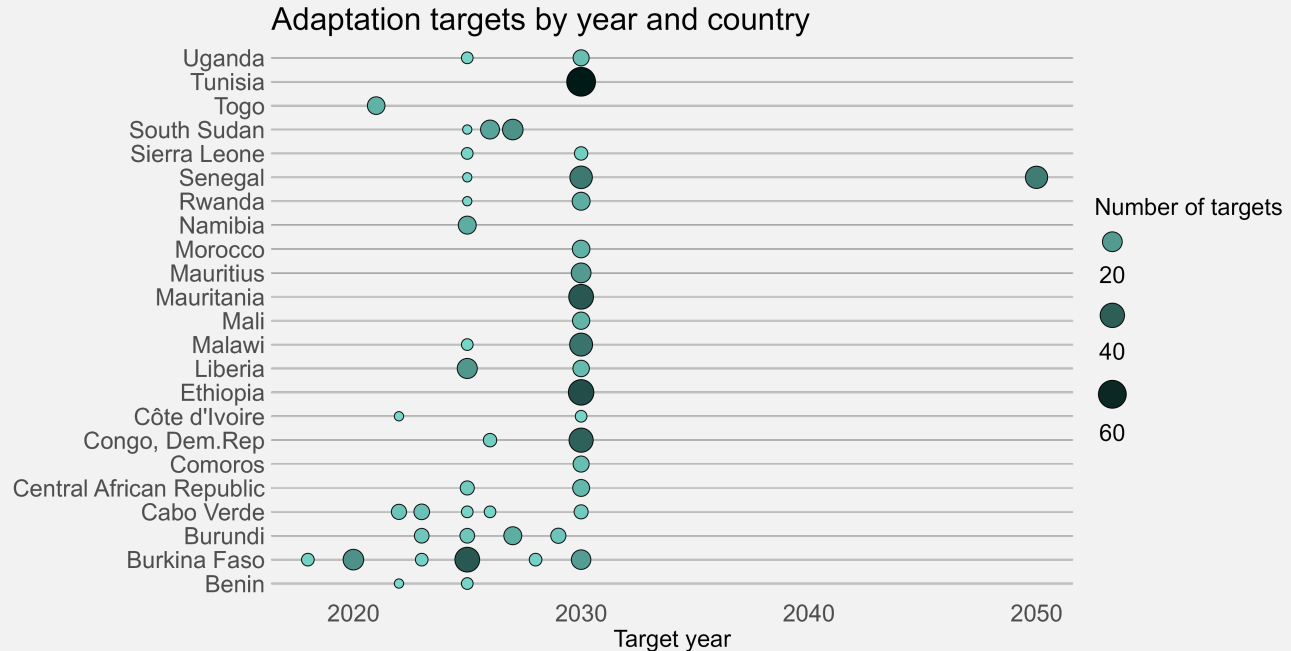
*“Establish or strengthen crop and livestock insurance systems by **2025** ”*
- 

*“Develop and promote climate smart agriculture practices by **2030**”*
- 

*“**Establish 100 farmer field schools** and **train 5,000** farmers in climate-resilient agricultural and livestock practices by **2025**”*
- 

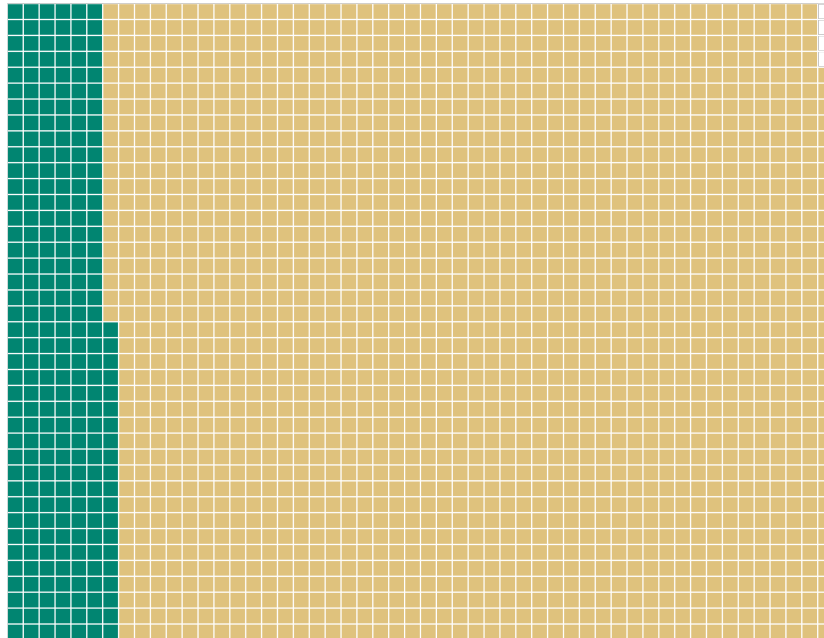
*“By **2030, 100% of farmers** use techniques and varieties adapted to climate change”*

Most time-bound targets for agriculture and cross-cutting sectors are set for the next 10 years



There are more than 250* ways to measure how African agriculture is adapting to climate

Indicators vs adaptation elements (40 countries, agriculture and cross-cutting sectors)



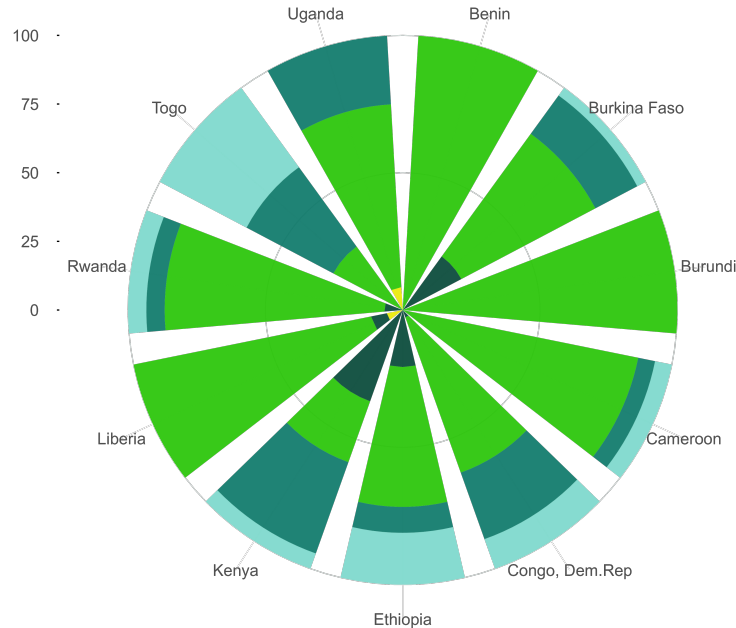
■ indicator element ■ other elements (objectives, actions)

* this represents a third of all indicators suggested for adaptation across the 53 countries (general or other sectors)

Many indicators suggested measure activity implementation and immediate results

Adaptation indicators for agriculture and cross-cutting sectors

Type (% all indicators) input process output outcome unclear



- *Proportion of the budget allocated to the Climate Change Adaptation in development plans at the national level increased from X% in 2017 to Y% in 2021”*
- *“Progress in the development and implementation of the monitoring system”*
“Number of gender strategy and/or action plan developed and implemented”
- *“Agricultural risk and vulnerability monitoring system deployed”*
“Number of staff at the Bureau of National Fisheries trained”
- *“Rate of recovery and restoration of the fertility of degraded soils”*
“Improved anticipation capacities of the early warning system”
- *“Synthetic index of 11 indicators adaptability proposed by UNEP”*
“Spatially develop marine protected areas”

There is limited evidence of existing data systems to operationalize adaptation tracking

Mali NDC			
N°	Indicateurs	Institutions responsables	ODD de rattachement
Indicateurs issus de la base de données du SNGIE			
1	Taux d'Accès à l'Electricité Rurale	DNE	ODD 7 ^{et} 9
2	Taux d'Accès à l'Electricité Urbaine	DNE	ODD 7 ^{et} 9
3	Part des énergies renouvelable dans le mixte énergétique	DNE	ODD 7 ^{et} 9
4	Taux d'évolution de la consommation du gaz butane	DNE	ODD 7 ^{et} 9
5	Nombre de centrales solaires installées au Mali	AER- Mali	ODD 7 ^{et} 9
6	Superficie agricole aménagée en maîtrise totale d'eau	DNGR/DNA	ODD 2
8	Superficiés des terres cultivées dans les zones humides	DNA	ODD 15
9	Superficiés défrichées annuellement par l'agriculture	DNA/DNEF	ODD 15
10	Quantité de Polluants organiques persistants stockée/utilisée	DNA DNACPN	ODD12
11	Quantité de pesticides utilisée	DNA/DOUANE	ODD 6 ;
12	Superficie des terres dégradées	DNA/DNEF	ODD 15
13	Superficie des jachères	DNA/DNEF	ODD12
14	Taux d'accroissement du parc de véhicules routiers	DNTTMF/OT	ODD12
15	Superficie de zones défrichées/an	DNEF/SIFOR	ODD 15
16	Taux de couverture forestière du pays	DNEF/SIFOR	ODD 15
17	Superficiés brûlées par les feux de brousse	DNEF/SIFOR	ODD 15
18	Production ligneuse des formations boisées	DNEF/SIFOR	ODD 15
19	Superficiés reboisées	DNEF/SIFOR	ODD 15

Rwanda NDC		
RBME code	Indicateur	Source (Metadata)
International and regional good practices (Selected for National communication to UNFCCC)		
07 ECC01	Percentage change in national climate change vulnerability index	Source: Vulnerability Index study report
01 ECC02	Number and Percentage of districts at high risk of suffering major climate change effect	Source: Vulnerability Index study report
National framework: (i) NST1; (ii) Sector strategic Plans (SSPs) and District Development Plans (DDSS); and (iii) Programs and Projects		
02 ECC04	Percentage of the rural population living in Green Villages	Source: Green Assessment tool
05 MET06	Average level of satisfaction of major Weather and Climate information institutional users with METEO RWANDA Weather and Climate information	Source: Weather and Climate information Users Survey
LAM20	Percentage of compliance of land use development plans to the NLUUMP	Source: Department of Surveying, land use plans and Mapping, (RLMUA)
GEM23	Number and % of a) Mines, and b) Processors/ Exporters, using appropriate technologies to ensure industry standard recovery rates	Source: Adapted Inspections Process or Mining Sites and Processors Survey/Assessment
WRM05	Water storage per capita	Source: IWRM, Water Monitoring and Development Unit
WRM06	Number (%) of (a) Households, and (b) Institutions with a Rain Water Harvesting (RWH) system installed.	NISR, EICV
FNC10	Proportion of land surface covered by forest [Forest cover]. This excludes agro-forestry area.	RWFA, Forestry department-GIS Report (FMES : IND005)
MET11	Percentage of extreme weather events for which advance warning was provided at least 30 min in advance	Rwanda Meteo, Quarterly high impact weather report
FON07	Total amount of finance mobilized for Green Investments (by major category – Climate Change mitigation; Green Energy production etc.)	MOUs and MINECOFIN Reports
-	Soil erosion and soil loss (To be further elaborated and confirmed)	RWFA/IWRM
-	Ha of crops under insurance (To be further elaborated and confirmed)	MINAGRI

However, most documents mention plans for developing an adaptation-focused M&E system

What does it take to close the gap?



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An iceberg floating in the ocean, with only the tip visible above the water surface. The background is a bright blue sky with light clouds. The text is overlaid on the image.

Key reflections

Knowing the destination is key; tracking progress towards it is only possible with benchmarks (**targets**)

The shortest way to the “perfect” indicator is by looking at the *why* (**adaptation pathway**), before the *how*.

More space for dialogue is needed, for learning from **existing approaches** and tracking systems.

National circumstances are key enablers of operational, sustainable tracking systems (see MDGs, SDGs).

An agenda for advancing adaptation tracking (preliminary thoughts)

Scale	Convene	Strengthen capacity	Build robust evidence
Global	<ul style="list-style-type: none"> Agreement on the Global Stocktake UNFCCC/GLaSS + national govts. 	<ul style="list-style-type: none"> Guidance for consistent planning and reporting; Cross-country knowledge sharing; Massive online courses to enable training at scale UNFCCC + NWP, AGNES, CGIAR, ICAT, others 	<ul style="list-style-type: none"> Global evidence synthesis and online platform to expose progress on adaptation and tools IPCC + Adaptation Committee, WASP, AAA/IPAM, CGIAR, GAMI+, others
National and subnational	<ul style="list-style-type: none"> Cross-country knowledge sharing and learning dialogues AGNES + AGN, National Governments, CGIAR, GCA, AAA 	<ul style="list-style-type: none"> Curriculum and training programs for design of robust policy pathways and tracking systems; Target setting Design of data protocols and capacity building to implement them Government champions + GCA, CGIAR, CCARDESA, ICAT, development partners 	<ul style="list-style-type: none"> Implementation of data protocols and tracking systems (e.g., TAILs); National and subnational governments + development partners (WB, FAO, etc.), research and academia (CGIAR, univ, etc.), Initiatives (LSMS-ISA, 50 x 2030)
Project	<ul style="list-style-type: none"> Community of practice Agreement on tracking definitions and metrics; Data protocols Univ. of Arizona, TANGO, USAID, BMGF, IPAM, NGOs, SME Accelerators, others 	<ul style="list-style-type: none"> Training systems to design pathways, select indicators, and Standard Operating Procedures; capacity building to implement protocols CGIAR + development partners (WB, FAO, GIZ, Mercy Corps, etc.), others 	<ul style="list-style-type: none"> Validation studies to evaluate adaptation rationale and impacts (tracking systems) Data from the field on adaptation and maladaptation; Research & academia (CGIAR, univ, etc.) + partners (WB, FAO, GIZ, etc.), private sector (incl SMEs), others

Each field contains preliminary suggestions of activities and actors (lead + partners) that could advance the agenda on adaptation tracking at global, national, subnational and project scales. The list is a conversation starter. It is neither definitive nor exhaustive and does not present the information in any preferred order.

Thank you!

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