Climate science to adaptation planning gap in East Africa

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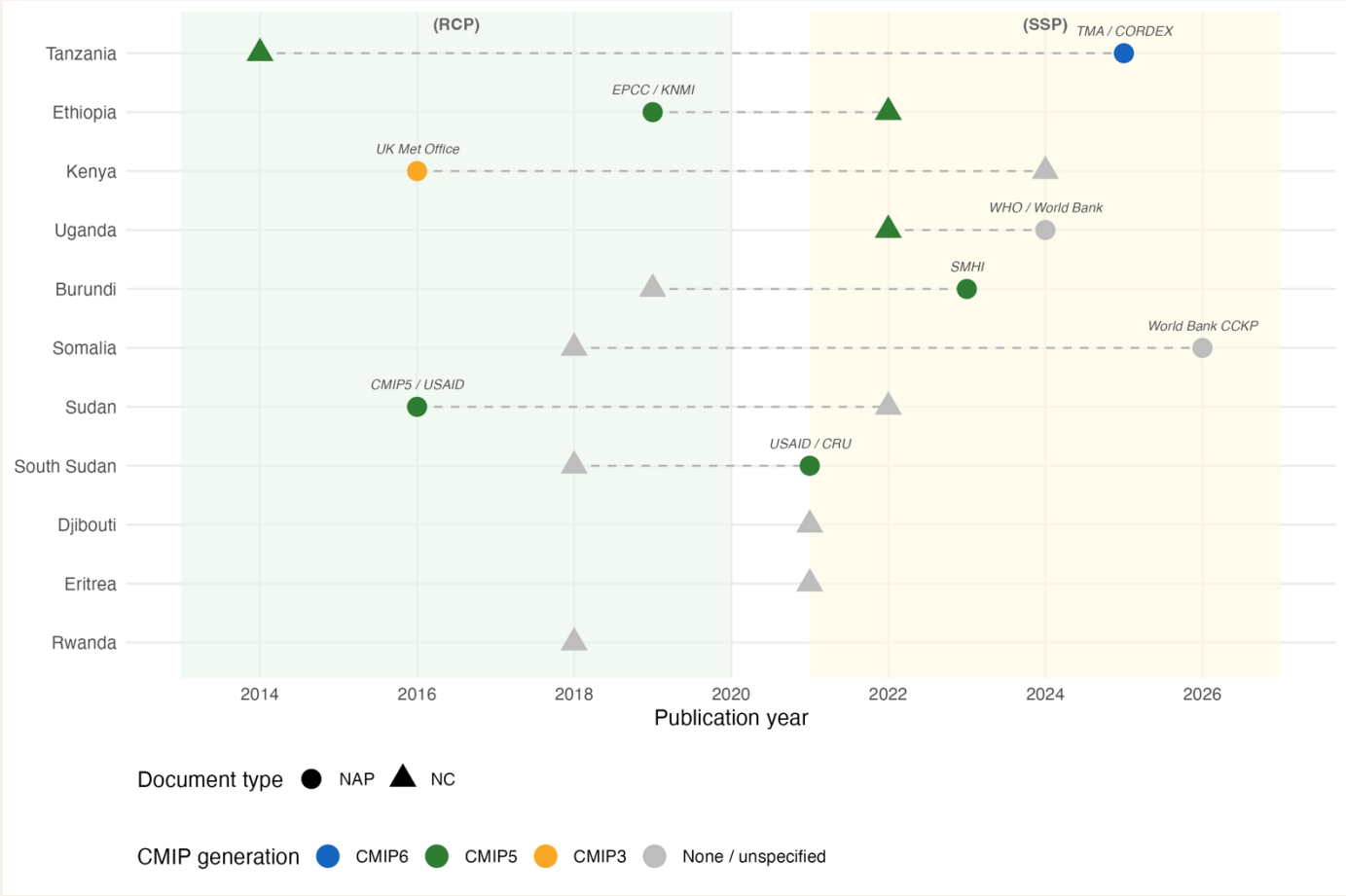
The science exists. The question is whether it is reaching the people who need it.

11	34	8	3
East African countries	Documents analysed	NAPs submitted	No NAP submitted

- Four analytical themes (science base, uncertainty, science-to-planning linkage, institutional architecture)
- Analysis covers publicly available documents only, not what happened informally

No two National Adaptation Plans (NAPs) draw on the same climate science base

- No NAP uses SSP-based projections except Tanzania (2025)
- Kenya's NAP relies on CMIP3 science already 5 years old at publication
- NAP and NC rarely use the same climate data source in any country
- Djibouti, Eritrea and Rwanda have no NAP at all



NAPs and National Communications are not drawing on the same science

Tanzania

NAP: CMIP6 -> NC: CMIP5
11-year gap between documents

Uganda

NC: 25-model ensemble -> Agriculture NAP: secondary studies
Same country, two different science bases

Kenya

NAP: CMIP3 -> NC: no independent projections chapter
Documents produced nearly a decade apart

Without coordination, the science base diverges across every planning cycle.

Climate variable's uncertainty is not communicated in forms planners can use

- Only Tanzania completes all five pathway steps
- Cross-document coherence fails in 8 of 9 countries
- Science-to-adaptation translation is weak or absent in 7 of 9 countries
- Without future projections, Uganda (H-NAP) cannot progress beyond partial across all steps
- South Sudan breaks down at step 2 - hazard identification is not climate-informed
- Strong projections do not guarantee strong planning: Sudan deploys 22 CMIP5 GCMs yet scores partial from step 2 onward

	1. Climate projections present	2. Hazard identification climate-informed	3. Vulnerability assessment conducted	4. Adaptation options explicitly derived	5. Cross-document coherence (NAP-NC)
Tanzania	CMIP6 / TMA	9-sector risk assessment	Sectoral VAA	Explicit (cross-referenced)	CMIP6 ▼ CMIP5
Ethiopia	CMIP5 / KNMI	Dedicated section	Sectoral	Im▼cit	Both CMIP5/CORDEX
Kenya	CMIP3 / Met Office	Chapter 3	20 sectors	Im▼cit	CMIP3 vs no projections
Uganda (H-NAP)	Observed ▼cords only	VAA: 716 facilities	Facility-level	Explicit (VAA-derived)	No projections in NAP
Uganda (Agric.)	Second▼ studies	Secondary studies	Partial	Implicit	CMIP5 vs CORDEX grand ensemble
Burundi	CORDEX / SMHI	Sectoral	P▼al	Implicit	CORDEX vs observed only
Somalia	CCKP ▼delphi	Sectoral / sub-national	Partial	Implicit	8-year gap; different sources
Sudan	22 CMIP5 GCMs	State-level ▼articipatory	State-level	Implicit	CMIP5 vs station/CHIRPS
South Sudan	CRU ▼SAID	Non-climate factors dominant	Policy-driven	Absent	Both CRU-based

Absent / not achieved | Partial / implicit | Achieved / explicit

The gap is at the decision point, not the entry point

- **EXPLICT**, 2 NAPS - Projections cross-referenced to adaptation options
- **IMPLICT**, 5 NAPS - Same hazards addressed, no documented cross-reference
- **ABSENT**, 1 NAP - Priorities grounded in existing policies, not projections

The gap is at the decision point, not the entry point

3

of 11 countries have an operational National Framework for Climate Services

Where frameworks exist

- Explicit linkage between hazards and adaptation options
- Greater coherence between NAPs and NCs science
- Standing mechanism connects science to planning across cycles

Where frameworks are absent

- Science reaches NAPs through external products or project partnerships
- No continuity across planning cycles
- 8 of 11 countries - the Global Goal on Adaptation target is 2027

Three questions

- Does the option selection gap reflect a genuine disconnect, a documentation convention, or a resource constraint?
- Were planners shown the full range of model outcomes for key climate variables - and what would make that information usable in planning?
- What is the binding constraint preventing National Framework for Climate Services development in the eight countries that lack one?

The priority is not more data - it is building the processes through which existing data reaches decisions

Institutional

- Build NCSFs or the coordinating function they provide
- 8 countries lack this infrastructure

Relational

- Sustain boundary spanner roles beyond project cycles
- When the project ends, the connection breaks

Technical

- Develop planning-ready products that communicate climate variable uncertainty
- The gap is widest where it matters most

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