

State of Water Governance in Changing Climate

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Water and Climate in Africa – 6th IPCC Report



East Africa

- **Rainfall:** Over Equatorial East Africa, the short rains (October-November/December) became wetter from the 1960s until 2017. By contrast, the long rainfall season (March-April-May) became drier between 1986 and 2007. In the northern, summer rainfall region (June-September), there has been a rainfall decline since the 1960s.
- **Extreme rainfall and flooding:** East Africa has experienced strong rainfall variability and intense wet spells leading to widespread flooding events hitting most countries, including Ethiopia, Somalia, Kenya and Tanzania (medium confidence)
- **Drought:** Since 2005, drought frequency has doubled from once every six to once every three years. Drought has also become more severe during the long and summer rainfall seasons than during the short rainfall season. Several long droughts have occurred predominantly within the arid and semi-arid parts over the past three decades.



Southern Africa

Rainfall and drought: At 1.5°C global warming, the frequency and length of droughts is projected to increase over large parts of southern Africa. At 2°C, unprecedented extreme droughts are projected to emerge. Above 3°C global warming, average annual rainfall is projected to decrease by 10–20% in the summer rainfall region, particularly in the western parts. **The length of meteorological droughts is also projected to double from 2 to 4 months.**

Extreme rainfall: Heavy rainfall events will become more frequent and intense at all levels of global warming (except in the southwestern region), increasing exposure to flooding (high confidence).

Tropical cyclones: Tropical cyclones making landfall are projected to become less frequent, but have more intense rainfall and higher wind speeds at increasing global warming (medium confidence).

Rainfall and river discharge have been extremely variable in southern Africa recently, as in the rest of Africa – between 50% above and 50% below historic levels. This has caused deep and mostly negative impacts across water-dependent sectors: from freshwater supply to people and agriculture, to availability of water for hydropower and tourism.



West Africa

- **Rainfall and river discharge variability** as in the rest of Africa – between 50% above and 50% below historic levels.
- River flows variability are due **declining rainfall and increasing temperature, drought frequency and increasing water demand.**
- Water challenges led to negative impacts across water dependent sectors **from fresh water supply to people and agriculture and water for hydropower and tourism.**



North Africa



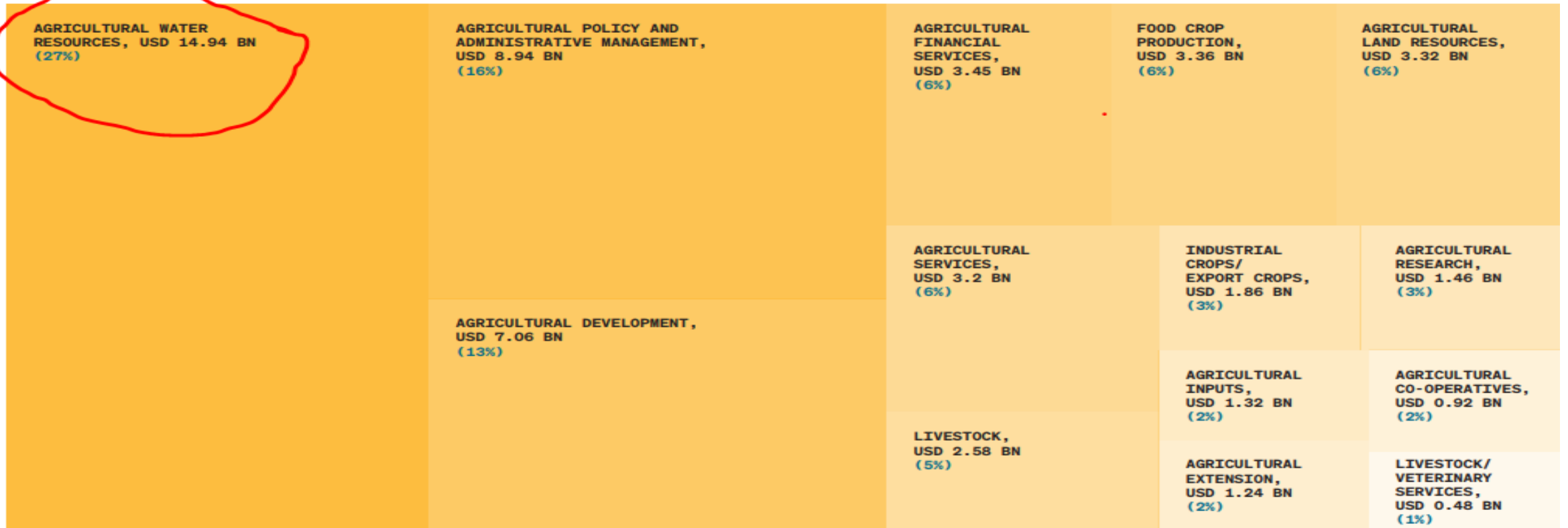
- There is increasing demand for water for **agricultural** and energy production in the eastern part of North Africa.
- The biggest risk to the production of irrigated crops is in the **eastern Nile where irrigation revenue could be 34% lower in the driest scenario and 11% higher in the wettest scenario**, compared to a scenario without climate change.
- In the upper White Nile basin, increased rainfall (originating in the Lake Victoria Basin) under a mid-range warming scenario could **lead to variability in future river discharge of 5 to 26%**.
- In the upper Blue Nile basin, models indicate an increase in runoff of up to 15% during the wet season, with an accompanying higher risk of flash floods, from 2021–2040, under the highest global warming scenario.

Central Africa

- **Rainfall and extreme rainfall:** At between 1.5°C and 2°C, there is low confidence in projected changes in average rainfall over Central Africa.
- **Extreme rainfall** is projected to increase the likelihood of widespread flooding before, during and after the mature monsoon season.
- **Drought:** There is low confidence in changes of drought frequency over Central Africa.



IFI Agricultural Water Investment



Source: OECD Common Reporting Standard (OECD, 2021).



International Financing



1. There is a clear increase in the funding of agricultural water investments following the 2007-2008 food crisis.
2. This period overlapped with the 2005-2015 UN International Decade for Action on Water for Life, which may have influenced the funding priorities towards water.
3. The years 2016-2025 are the International Decade for Action on Nutrition.
4. The IDA and IBRD could largely have gone into address water related climate impacts

CAADP tracks Water for Agricultural Indicator which has underperformed in most countries since its inclusion in 2012

Challenges in Water Governance in Africa

- **Climate Variability:** How to align Water management with unprecedented changes in climate variability.
- **Multiplicity of Water Management agencies:** Blurs lines of accountability and reduces transparency.
- **Agriculture competes for water with other sectors** – some in short terms fiscally more important than Agriculture e.g. energy
- **Corruption:** Largely triggered by huge procurement in water infrastructure
- **Dismal adherence to safe-guards** and inadequate participation of targeted population or related CSOs, leading to unrests and litigation in some cases.
- **Africa-focussed Climate Resilient Research:** From 1990–2019, research on Africa received just 3.8% of climate-related research funding globally. (IPCC 6th Report).



Recommendations and Conclusion

- **Climate uncertainty** means intentional investments in agricultural water aligned with respective climate scenarios. Do we need water or rain?
- **Stimulate participation of private sector** for big water management projects while ensuring social and environmental safeguards.
- **New technologies such as ICT, biotechnology, and innovations** in irrigation can improve productivity and resiliency by saves on water and energy, particularly in drought-ridden areas.
- **Enhance R and D for climate smart technologies** to respond to country specific climate situation.
- **Enhance irrigation investment from the current 7%** of arable land compared to 38% in Asia



THANK YOU

