

Presentation:

Hello everyone, my name is Salomon Obahoundje, and I'll briefly present our work on "Evaluating Drought and Dry Spells Effects on Crop Productivity in Northern Ghana."

Northern Ghana's rainfed agriculture is highly vulnerable to climate variability.

In 2024, the region recorded the longest dry spells in 40 years, leading to widespread crop failure and water scarcity.

Using CHIRPS rainfall data over the past 40 years (1984–2024), we analyzed dry and wet spell trends across three agro-ecological zones: the Sudan Savanna, Guinea Savanna, and the Transitional Zone.

Our key findings:

- In the Sudan Savanna, the maximum consecutive dry days (CDD) declined over time, while in the Guinea and Transitional zones, CDD increased, peaking dramatically in 2024.
- Dry spells became shorter but more frequent, affecting key sowing and harvesting periods.
- Extended dry spells during July and August in 2024 led to moisture deficits, while prolonged wet spells during September and October caused waterlogging and post-harvest losses.

The impacts were severe:

Over one million people and 980,000 farmers were affected, with estimated crop losses worth GHS 22.2 billion.

Our conclusion stresses the urgent need for:

- Drought-tolerant crops,
- Efficient water management,
- And supplemental irrigation to stabilize yields under increasingly unpredictable rainfall patterns.

Thank you for your attention!