IndabaXSudan 2025 Climate Challenge

Predicting dry spells in Algadarif (July–October)

Sudan's rain-fed farmers in **Algadarif** plant at the start of the season hoping the rains will keep coming. But when rainfall suddenly pauses for days, **young crops lose moisture, seedlings fail, and what farmers planted can die before it ever reaches harvest**. This challenge is about building an early-warning model that can help anticipate **dry spells during the July–October growing season** so decisions can be made earlier, not after losses happen.

Why join?

You'll work with real climate data, solve a real Sudanese problem, and build something that could genuinely support communities and food security. You will:

- Build ML models using high-quality climate datasets
- Learn hands-on climate-AI workflows (time series, geospatial grids, validation)
- Compete on a real leaderboard (hosted on **CodaBench**)
- Get recognition, certificates, and visibility
- Contribute to climate resilience work that can translate into real tools

What will you be predicting?

Your mission is to prototype an early-warning tool that can **identify and predict dry-spell risk during July–October** in Algadarif.
You're not just building a model—you're helping define the foundation of a decision-support tool that could later be delivered through simple dashboards, SMS alerts, or extension-worker guidance.

Data provided

We will provide a curated package of climate and environmental data aligned to the July–October season, including:

- **Daily rainfall observations**
- **Gridded hourly climate predictors** (surface and ocean/atmospheric variables)
- **Daily near-surface temperature**
- Time, location/grid coordinates, and documentation to help you start quickly

These are the kinds of datasets widely used by researchers, NGOs, and climate centers across Africa.

How it works

Your journey in 4 phases

1) Register (18–20 December)
Sign up through our official form. After registration closes, you'll receive:

- The private **CodaBench** competition link + access instructions
- Data download steps
- Submission format + rules

2) Build your solution (20–23 December)

On CodaBench, you will: explore the data, train models, and submit predictions to the leaderboard.

3) Wrap-up & final submission

You'll submit your source code (reproducible), plus brief documentation and a few supporting plots/insights.

4) Celebrate! (26 December)

Winners are announced and next steps are shared.

Who can join?

Everyone can join. Especially:

- Students in Computer Science, AI, Data Science, Engineering
- Young professionals in geospatial, climate, or agri-analytics
- Researchers/practitioners in agriculture or environmental science
- Enthusiasts who want real-world experience

Basic Python + practical ML familiarity is enough. You may join individually or in teams (max 4).

How will solutions be evaluated?

Leaderboard metric: **Accuracy**.
(We'll also check basic reproducibility and clarity of your submission for final review.)

Timeline

- **18 Dec** — Registration opens
- **20 Dec** — Registration closes
- **20 Dec** — CodaBench access + data instructions sent

- **20–23 Dec** — Competition window (build + submit) + real-time support
- **23 Dec (11:59 PM)** — Final submission deadline
- **24–25 Dec** — Evaluation
- **26 Dec** — Winners announced

Ready to register?

Click **Register** to join. Once registration closes, we'll email the CodaBench link and everything you need to start (data access, baseline notebook, and submission format).