



DERPin DATA CHALLENGE 2025

**Hack for Resilient & Nutritious
Food Systems in Africa**



Visit Our Website:



<https://derpin-challenge.netlify.app/>

1. Official Rules

The DERPin Data Challenge is a virtual innovation competition for enthusiastic data users to showcase their analytical skills and tap into their creativity by using data and other resources from the DERPin project to develop innovative knowledge products or solutions that address challenges in African agrifood systems and nutrition policy.

Objective: Use DERPin data and tools to create a prototype, dashboard, visualization, AI solutions, mobile/web app, or policy interface.

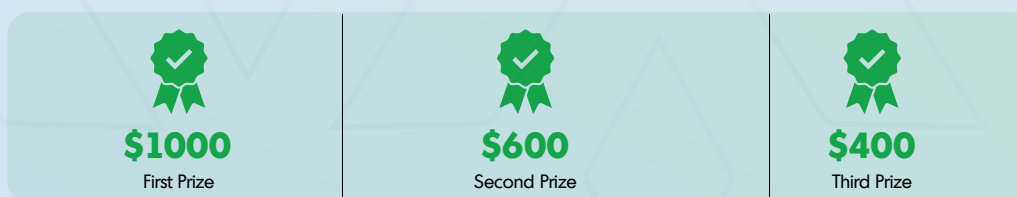


- (1) Strengthening development and communications capacities of participants.
- (2) Raising awareness among developers of the DERPin products and information resources- Raise awareness of DERPin's digital platforms and data resources.
- (3) Translating DERPin outputs into usable applications and knowledge products - Generate innovative, user-centered applications based on DERPin data.

Each solution must directly support food system resilience, and nutrition outcomes(as stated in the 3 tracks).

2. Eligibility

The challenge is open to all Africans within the continent and in the diaspora. The challenge welcomes Data Scientists, Researchers, Developers , AI Engineers, Machine Learning Engineers and Designers to take part in this competition for an exciting prize pool of \$2,000.



Each participant's submission, along with all accompanying materials provided for the DERPin Data Challenge, will be referred to as an "application." The competition will include an open application phase, a selection phase, the announcement of winners, and the presentation of awards to the most innovative projects from each challenge track during the Final Presentations and Award Ceremony on 23rd August 2025.

View the timelines below:

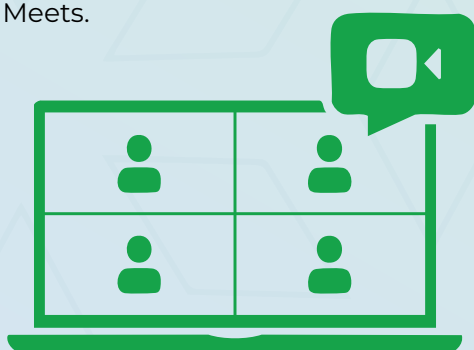
3. Dates and Times

Applications open on August 11, 2025, and close on August 16, 2025. A summary of the schedule for the data challenge is presented below:

DATE:	MILESTONE / ACTIVITY
August 16, 2025	Info session, Team Formation & Access to DERPIIn data challenge resources
August 16–21, 2025	Development Phase (Hackathon period)
August 21, 2025	Submission Deadline (End of day)
August 21-22, 2025	Project Review, Judging Feedback
August 23, 2025	Final Presentations & Award Ceremony

4. Location

Happening virtually via Google Meets.



5. How to Participate

To enter the competition:

- Submit one application either as an individual or as a team
- You may participate in **ONLY ONE (1)** category, whether as an individual or a team.
- Applications not submitted in accordance with the instructions provided on the DERPIIn Data Challenge document.
- Join our Slack channel to stay updated on competition timelines and access real-time support.:Slack Link
- Submit a complete application before the deadline.

6. Participants Requirement And Setup

Developer Pack

To participate for the the DerpIn Data Challenge Hackathon 2025 as a contributor, one needs to be in possession of the following and not limited to:

Make sure you have:

- Google account, google meet
- A laptop with microphone, webcam
- Good internet for your calls presentation
- Setup Git, Github
- Joined our slack community
- A quiet environment almost (if not) void of distraction

7. Challenge Tracks

The hackathon will focus on leveraging the DERPIN project's data and tools as stated in the resource section to develop solutions that are accessible to a wide range of stakeholders, including those with limited digital literacy and access.

The following are proposed challenge tracks and problem statements based on the project's focus areas:

➤ Track 1: Field Delineation Modelling for Climate-Smart Agriculture

Background

Farmers need clear maps of their fields to make better decisions about planting, irrigation, and harvesting. This process field delineation -involves identifying and drawing the exact boundaries of farmland.

Why this matters:

- 🕒 Better resource management (water, seeds, fertilizer).
- 🕒 Improved crop monitoring.
- 🕒 More effective climate adaptation strategies.

Climate-Smart Agriculture uses technology to improve farming in sustainable ways. With accurate field maps, we can help farmers increase yields, reduce waste, and adapt to changing climates.

Main Objective

- 🕒 Build a field delineation model that can detect and outline field boundaries from`.ti` geospatial data.
- 🕒 Integrate your model into a mobile app, interactive dashboard, or another user-friendly tool.

Deliverables

1. Field Delineation Model

- 🕒 Input: `.tif` geospatial data from the AGWAA API or portal.
- 🕒 Output: Accurate maps showing field boundaries.

2. Prototype Application

- 🕒 Mobile app, dashboard, or another interface.
- 🕒 Displays the model's results on a map.
- 🕒 Allows users to zoom, explore, and interact with field boundaries.

3. Technical Documentation(one pager)

- 🕒 How the model works (methods, algorithms).
- 🕒 How `.tif` files were processed.
- 🕒 How the AGWAA API or portal was used.
- 🕒 Instructions for running the project.

4. Short demo of your built solution (showing how it works)

- 🕒 5–10 minute showing your solution and how it works.

Access the data resource and detailed instruction for Track 1 here:

<https://drive.google.com/drive/folders/1YRDQcagzM2CLE51VejDwbBrx7V1iCJD7>

➤ Track 2: Community Vulnerability Analysis & Early Warning Systems

Background

The DERPin project's vulnerability indicators now include climate exposure and nutrient adequacy data. However, policymakers often lack intuitive tools to explore and use this data.

There is a need for an interactive communication tools to visualize and track community-level vulnerability, helping decision-makers:

- 🕒 Anticipate shocks.
- 🕒 Design targeted interventions.
- 🕒 Strengthen community resilience.

Main Objective

Create communication tools that visualise vulnerability indicators interactively.

Deliverables

1. Communication Tool:

Option 1: Dissertation/Report.

Option 2: Interactive Dashboard(Visualizations)

Access the data resource and detailed instruction for Track 2 here:

<https://drive.google.com/drive/folders/1YRDQcagzM2CLE51VejDwbBrx7V1iCJD7>

➤ **Track 3: Inclusive Nutrition Policies — Nutrition & Hidden Hunger Insights**

Background

Policymakers and community leaders often lack applications that:

- Identify where nutrient gaps exist.
- Prioritize the most vulnerable populations.
- Simulate the impact of interventions.
- Present results clearly for diverse stakeholders.

By turning DERPin's nutrient adequacy data into practical guidance, decision-makers can craft inclusive, targeted nutrition policies.

Main Objective

- Build mobile applications or dashboards to predict nutrition gaps.
- Display predictions in mobile apps or interactive dashboards to guide policy and community action.

Deliverables

1. Prediction Model for nutrient gaps.
2. Mobile application or Dashboard to visualize results and simulate interventions.
3. Documentation explaining data sources, methods, and usage.

Access the data resource and detailed instruction for Track 3 here:

<https://drive.google.com/drive/folders/1YRDQcagzM2CLE51VejDwbBrx7V1iCJD7>

8. Hackathon resources –DERPin Resources and Datasets

➤ **AAGWa API Documentation**

<https://www.aagwa.org/docs/derpin-api.html>

Customized AAGWa

<https://www.aagwa.org/Benin>

<https://www.aagwa.org/Senegal>

<https://www.aagwa.org/Ghana>

<https://www.aagwa.org/Uganda>

Other sources of data specific to the DERPin countries

<https://www.aagwa.org/Senegal/data?p=Senegal>

<https://www.aagwa.org/Ghana/data?p=Ghana>

<https://www.aagwa.org/Benin/data?p=Benin>

<https://www.aagwa.org/Uganda/data?p=Uganda>

<https://www.aagwa.org/Malawi/data?p=Malawi>

🔗 Food System Crisis Observatory and Response (FS-COR)

<https://fs-cor.org/Ghana/>

<https://fs-cor.org/Malawi/>

<https://fs-cor.org/Uganda/>

<https://fs-cor.org/Senegal/>

<https://fs-cor.org/Benin/>

9. Your submission

Your submission will include:

GitHub Repository

Code, documentation, and any supporting files.

Video Screen Recording

Short demo of your built solution (showing how it works)

10. Evaluation Criteria

Criteria	Track 1: Field Delineation Model	Track 2: Vulnerability Visualization	Track 3: Inclusive Nutrition Policies
Model Accuracy / Data Accuracy	How well your model performs - that is it can detects and outlines field boundaries from .tif data - evaluation metrics to use dependent on the solution you build.	Are the visualizations based on reliable, up-to-date vulnerability data	How well does the tool predict nutrient gaps from available data?
Integration / Simulation	How smoothly the model is embedded in the app/dashboard	<div></div>	Can it model the impact of proposed interventions?
Usability / Accessibility	Is it simple and intuitive for farmers, planners, or policymakers?	Is the tool usable by local policymakers and community members?	Is it easy for policy and community stakeholders to use?
Clarity of Visualization / Presentation	<div></div>	How easy is it for non-technical users to interpret the data?	Are results easy to understand for diverse audiences?
Innovation	Creative approaches or unique features	Unique features or creative design elements	<div></div>
Impact / Policy Impact Potential	Potential to benefit farming communities	Potential to strengthen resilience strategies	Potential to improve nutrition policy decisions

NOTE:

**Any document submitted explaining the concept and/
or realization
of a project should not exceed 2,500 WORDS.**

**BY SUBMISSION OF YOUR MATERIALS,
YOU INDICATE YOUR ACCEPTANCE OF THE GUIDELINES
ABOVE.**

To participate visit:



<https://derpin-challenge.netlify.app/>



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#DERPin Data Challenge 2025