Hackathon Challenge Track 2: Community Vulnerability Analysis & Early Warning Systems

1. 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 communication tools, inform of interactive dashboard or reports to visualize and track community-level vulnerability, helping decision-makers:
- Anticipate shocks.
- Design targeted interventions.
- Strengthen community resilience.

Data Sources:

1. Food System Crisis Observatory and Response (FS-COR) Platform

- 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/

2. AGWAA API Documentation: https://www.aagwa.org/docs/derpin-api.html

AGWAA API Documentation 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

Country Specific Portals:

1. https://www.aagwa.org/Benin

2. https://www.aagwa.org/Senegal
3. https://www.aagwa.org/Ghana
4. https://www.aagwa.org/Uganda
5. https://www.aagwa.org/Malawi

2. Main Objective

1. Create communication tools that visualizes vulnerability indicators interactively.
2. Make the platform clear and accessible for local policymakers, NGOs, and community planners.

3. The Challenge

- Collect vulnerability and nutrition data from FS-COR or AGWAA.
- Process and analyze the data to identify trends and high-risk areas.
- Build interactive visualizations (maps, charts, dashboards) that make the data easy to explore.
- Enable insights that help anticipate community-level risks and guide interventions.

4. Deliverables

1. Communication Tool:
  - Option 1: Dissertation/Report.
  - Option 2: Interactive Dashboard.

2. The tool should transform complex vulnerability and nutrition data into actionable visual insights.

5. Judging Criteria

Criteria	**Description**
Clarity of Visualization	How easy is it for non-technical users to interpret the data?
Data Accuracy	Are the visualizations based on reliable, up-to-date data?
Accessibility	Is the tool usable by local policymakers and community members?
Innovation	Are there unique features or creative design elements?
Policy Impact Potential	Does it help drive effective community resilience strategies?

6. Notes for Participants

What is vulnerability data?
It includes indicators like climate exposure, food security, and nutrition adequacy, often linked to specific communities or regions.

Getting Started:

1. Explore FS-COR and AGWAA portals to understand available indicators.
2. Choose a region or set of communities to focus on.
3. Use visualization tools (e.g., Power BI, Tableau, Plotly, Leaflet, or GIS software) to build interactive maps and charts.
4. Ensure your visuals highlight high-risk areas and trends clearly.
5. Test your dashboard with non-technical users for clarity and usability.

7. Final Output Expectation

By the end of the challenge, each team should have:

- A functional dashboard or detailed report visualizing vulnerability indicators.
- Clear, actionable insights that can inform early warning systems and resilience planning.
- Documentation of your methods and data sources.