Project Title: Storix – Solar-Powered Smart Storage Tracker

Category: Agric-Tech

Problem Statement

Post-harvest losses remain one of the biggest challenges for farmers in Nigeria, with up to 40% of harvested crops lost due to poor storage, heat, humidity, and lack of real-time monitoring. This problem reduces farmer income, increases food insecurity, and limits agricultural growth.

Solution: Storix

Storix is a **solar-powered smart storage tracker** designed to help smallholder farmers and local businesses protect their harvests and manage inventory efficiently. Using affordable IoT technology (ESP32, sensors, and GSM/WiFi modules), Storix continuously monitors storage conditions and alerts users of risks before damage occurs.

Key Features

- **Smart Monitoring:** Tracks temperature, humidity, and critical thresholds.
- **Alerts & Notifications:** LED indicators, mobile app notifications, and optional GSM SMS alerts for low-connectivity areas.
- **Energy Independent:** Powered by solar with rechargeable battery, ensuring 24/7 operation.
- **User-Friendly:** Simple display and bilingual app (English + Hausa).
- **Scalable:** Can be deployed across rural communities, markets, and storage facilities.

Impact & Benefits

- Reduce crop spoilage and financial loss.
- Increase food security and farmer resilience.
- Provide affordable, sustainable technology for rural communities.
- Create opportunities for local tech-driven Agric solutions.

Technology Stack

- **Hardware:** ESP32 microcontroller, DHT22/Si7021 sensors, GSM/WiFi module, solar panel + Li-ion battery.
- **Software:** Mobile App (Flutter/Django backend), IoT dashboard, bilingual UI.
- **Communication:** WiFi (primary), GSM (optional fallback).

Expected Outcomes

Storix will reduce post-harvest losses, empower smallholder farmers with actionable data, and contribute to a sustainable food system in Northern Nigeria and beyond.