

Terrafarm - Basic Knowledge

Terrafarm is an AI-powered personalized assistant designed to help farmers with tailored recommendations based on their crop, location, and specific agricultural conditions.

Core Functions:

- **Personalized Crop Guidance:** Terrafarm provides farming tips and recommendations that are specific to each farmer's crops, helping optimize growth and productivity.
- **Location-based Insights:** By leveraging geographic data, Terrafarm offers insights specific to the farmer's location, accounting for local weather patterns, soil conditions, and potential climate threats.
- **Adaptation to Rural Areas:** Farmers in remote or rural areas often face challenges in interpreting complex Earth observation data (e.g., satellite data from NASA). Terrafarm simplifies this data into easy-to-understand information.

Key Challenges:

1. **Interpreting Complex Data:** Earth observation data can be difficult for farmers to interpret without proper tools or expertise. Terrafarm converts this data into simple recommendations.
2. **Intermittent Network Access:** In many rural areas, network connections are unreliable. Terrafarm is designed to function with limited connectivity, offering offline capabilities and syncs when the network is available.
3. **Unpredictable Farming Conditions:** Farmers must deal with varying conditions such as unpredictable weather, pests, and diseases. Terrafarm helps predict and prepare for such conditions using real-time data.

Development Background:

Terrafarm was developed as part of the NASA International Space Apps Challenge 2024 by a team of developers consisting of Austin Gabriel Pardosi, Michael Leon Putra W., Manuella Ivana Uli S., Arleen Chrysanthia G., Nathan Tenka, and M. Fadhil Amri—students from the Informatics Engineering department at Institut Teknologi Bandung.

Problem Statement:

Farmers in remote areas struggle to:

- Interpret complex Earth observation data quickly enough to act.
- Access timely data updates due to unreliable network connectivity.

Solution Highlights:

Terrafarm leverages advanced AI and Earth observation data to provide actionable insights that help farmers make informed decisions quickly, regardless of their network conditions.