

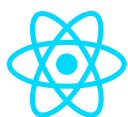


sparrow

# Sparrow Farm

From Soil to Cloud – Smart  
Farming with Machine  
Learning

Tools

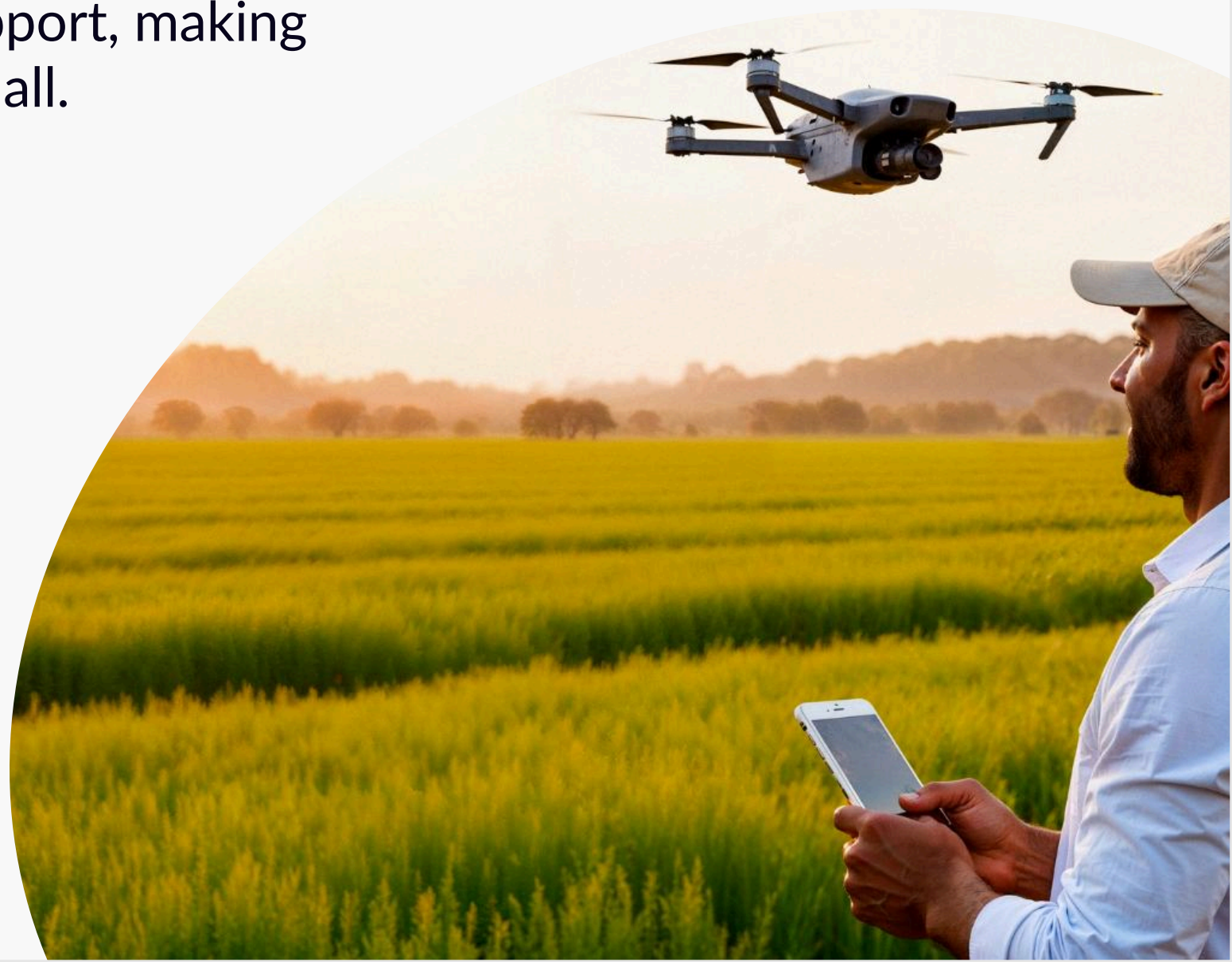


# Project Overview

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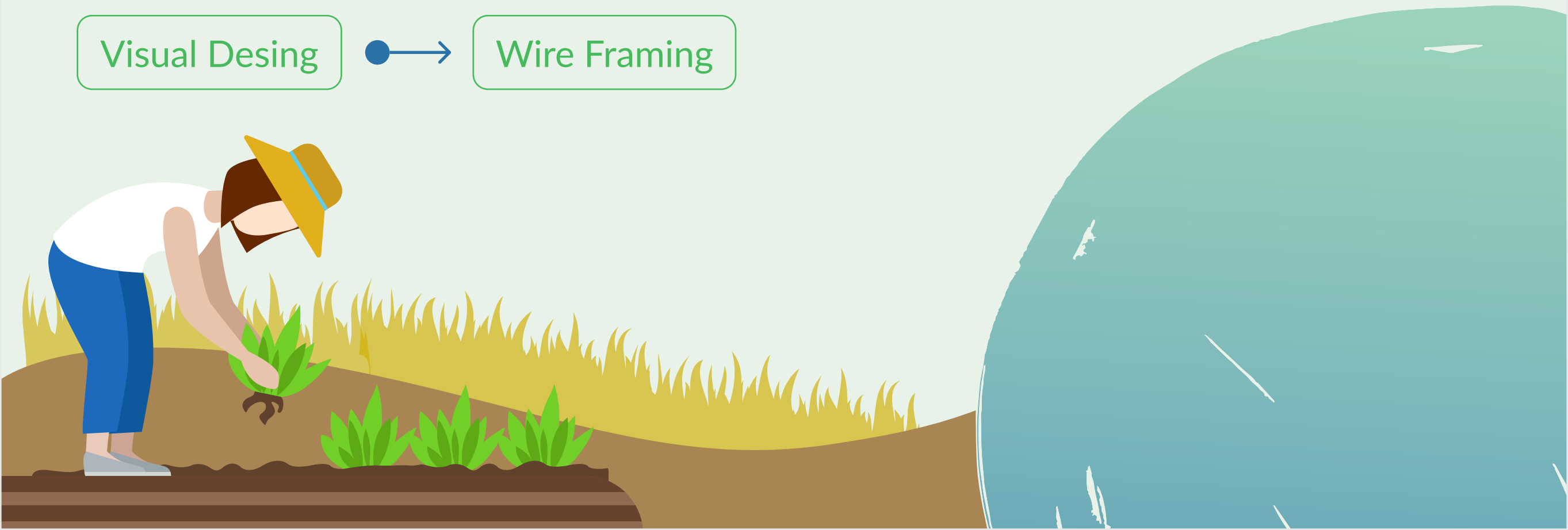
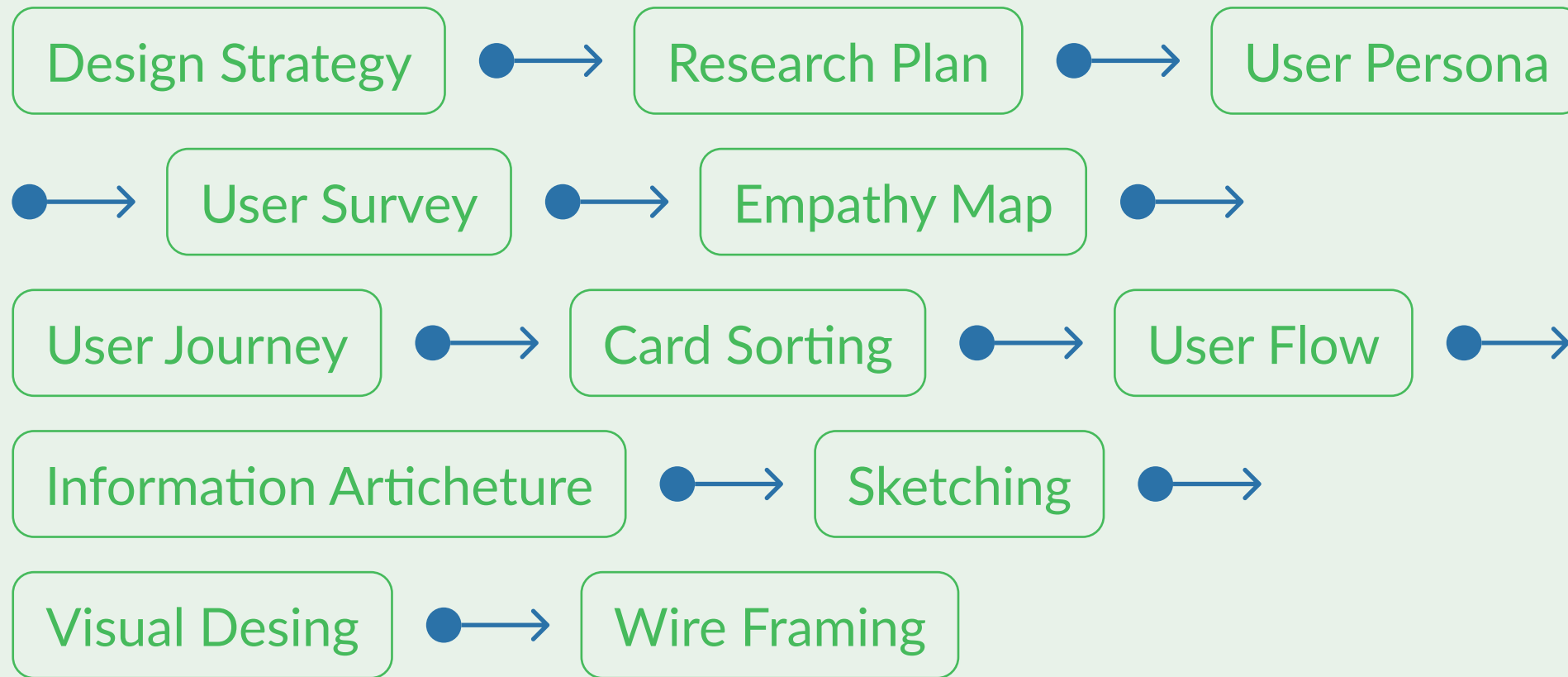
Sparrow Farm is a smart farming mobile application that combines machine learning, drone imaging, and real-time sensor data to empower farmers with intelligent crop monitoring and decision-making tools. Designed specifically for Indian rural users, the app provides visual insights, offline capabilities, and local language support, making high-tech agriculture accessible to all.

The goal was to build a mobile-first UI that simplifies advanced agri-technology while remaining usable by low-literacy and tech-novice farmers. The app bridges the gap between on-ground crop data and cloud-powered AI analytics.



# My Responsibilities

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# Problem Statement

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Small and mid-sized farmers face ongoing challenges like unpredictable weather, crop diseases, poor irrigation, and lack of real-time data. While technologies such as drones, machine learning, and IoT sensors can help, they are often too complex or inaccessible for rural users with limited digital skills, poor connectivity, and few language options. Most agri-tech tools are not designed for field use or user-friendly enough for non-tech-savvy farmers. Sparrow Farm solves this by offering a mobile-first, multilingual app that transforms drone and sensor data into simple, visual, and actionable insights—making smart farming practical and accessible to all.

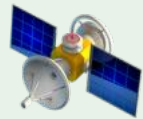


# Solution

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To solve these challenges, **Sparrow Farm** was designed as a **smart, mobile-first farming application** that simplifies complex agricultural intelligence using an intuitive, farmer-friendly interface.

1



## Drone + ML Integration

Visual field scans detect crop stress, diseases, and pests using AI, shown with easy-to-understand color-coded maps.

2



## User-Centric Mobile UI

Designed for low-literacy users with icon-based navigation, minimal text, and voice hints.

3



## Multilingual Support

Supports English, Hindi, Marathi, and Gujarati with contextual translations.

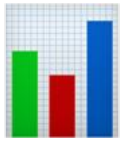
4



## Offline-First Architecture

Allows field use with no internet; syncs data automatically when reconnected.

5



### Smart Insights & Recommendations

Provides real-time tips on irrigation, fertilizer, pest control, and harvesting based on AI analysis.

6



### Crop Timeline & Forecasting

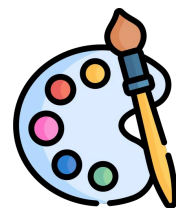
Guides farmers from sowing to harvest with stage-specific actions and yield predictions.

## Our Process

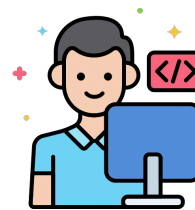
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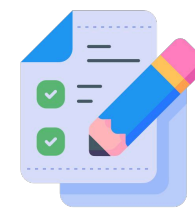
Concept & Planning



UI/UX Design



Development



QA



Deployment

# Outcome

Metric	Impact
App Adoption	500+ farmers onboarded during pilot launch
Usability Score	92% of users completed key tasks without external help
Crop Health	Farmers reported ~30% increase in yield via better planning
Water Usage	Reduced by 40% due to smarter irrigation timing
Scan Accuracy	Drone + ML system delivered 90% accurate predictions for disease/stress

The Sparrow Farm app proved that even small-scale farmers could leverage AI when the interface is built with their real-world constraints in mind.





Welcome to  
Smart Farming

... farming tasks with drone-  
... time, water, and effort  
... fields.

Upload Profile Picture  
JPEG, PNG & PDF are allowed

Enter Phone Number \*

Enter Alternate Phone Number

Select State \*

Take a Photo

Choose from Library

Cancel

Account

User Profile

Change PIN

Change Language

Notifications

Change Language

Logout

Equipment Number  
8865715243

RC Number  
8865715243

Edit Document

JPEG, PNG & PDF are allowed

Image 1222570.jpeg

Cancel

Submit

Equipment Number  
8865715243

RC Number  
8865715243

Edit Document

JPEG, PNG & PDF are allowed

Image 1222570.jpeg

Cancel

Submit

Dashboard

Hello! Manish Singh

24°

Today is party sunny day!

77% Humidity

< 0.01 in Precipitation

6 mph/s Wind Speed

My Field

Tomatoes 1.2 Ha

Lettuce 1.6 Ha

Tasks To Do

Watering

Spraying

Dashboard

Manage Farmer

Schedule

My Account

Syma w2

150m Range

90% Battery

41° Temperature

Navigation

Sun Street, 19 New York

Sun Street, 19 New York

Map

Land Area #1  
Corn Field

16.3 ha Field Area

4.39 km Perimeter

4.39 km Wind

Rent Now

Add Service Offerings

Drone Information

XAG Drones \*

TS886FTZ6 \*

Class \*

Payload Capacity \*

Flight Controller

Power \*

DAN / UIN \*

Farmer Details

Personal Information

Name Basavraj Venk

Phone Number +91 98870

Address Chityala V

Adhaar Number 12345

PAN Number BBA

All Farmlands

Farmland ID X

Acerage

Chityala village

Nalgonda Dist

India, Pin : 5

Survey Num

Passbook

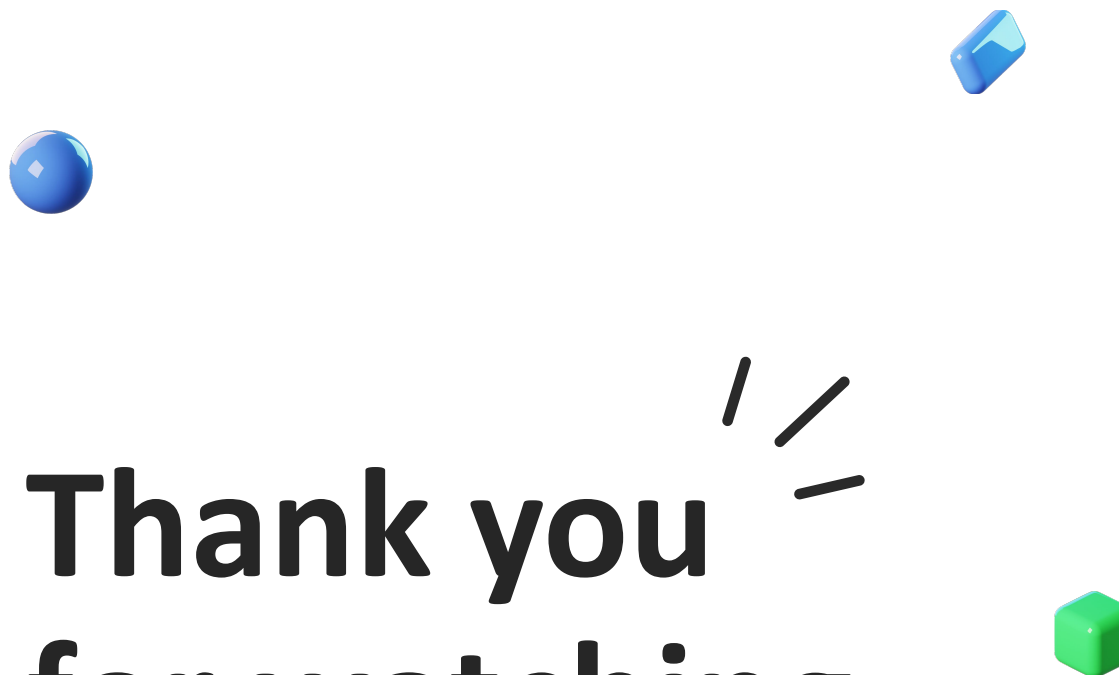


# Feature

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1. **Drone Integration:** View vessel positions with AIS data updated in real-time.
2. **ML-Powered Forecasts:** Predicts pest outbreaks, harvest dates, and irrigation needs
3. **Smart Crop Timeline:** Tracks each stage with customized AI advice
4. **Multilingual UI:** Supports English, Hindi, Marathi, Gujarati
5. **Offline Capability:** Works without internet and auto-syncs when reconnected
6. **Voice Guidance & Icons:** Helps non-literate users easily navigate app functions
7. **Cloud Dashboard Sync:** Data accessible by farmers, agronomists, and NGOs remotely.





# Thank you for watching

We are available for new projects

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