CROPGEN –
AI BASED CROP MONITORING & ADVISORY PLATFORM

Agriculture

Pilot District
Washim, Maharashtra, India

Geospatial Innovation Accelerator
SINE, IIT Bombay

Technology Summary

CropGen is an AI and Satellite-based Crop Monitoring and Advisory System (AAS System) designed to deliver real-time, localized agronomy insights to farmers.

It combines Sentinel imagery, weather satellite data (ERA5 & NASA POWER), SoilGrids, and local field validation to monitor 18+ parameters such as soil moisture, vegetation health, and nutrient status.

The system computes 12+ indices (NDVI, EVI, NDWI, SAVI, MSAVI, etc.) and provides BBCH-scale nutrient management and LLM-powered agronomic advisories to farmers — enabling self-decision-making for fertilizer, irrigation, and pest management.

Technology Readiness Level
7

Value Proposition

Real-time, AI-driven crop advisory based on 18+ live parameters BBCH-scale nutrient management for stage-specific NPK optimization LLM-powered localized advisory in multiple Indian languages

Reduces fertilizer cost by up to 30%, improves yield by 15%

Enables farmers to make self-decisions using satellite and AI data

Market Potential / Deployment Plan

CropGen targets small and medium farmers, FPOs, agri-input companies, and agri-fintech platforms.

Post pilot validation in Washim, deployment will scale to 10,000+ acres across Maharashtra in partnership with FPOs and agri-input stakeholders. Long-term plan includes API integration with government & corporate agri platforms for advisory automation.

Applications

Precision nutrient and irrigation management.

Crop health monitoring using satellite indices.

Real-time farmer advisory via LLM and app Carbon footprint and fertilizer efficiency tracking. (Coming soon)

Regional yield estimation and risk alerts.

Environmental/Social Impact

25–30% fertilizer reduction → lower nitrate pollution
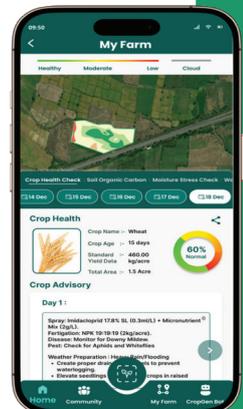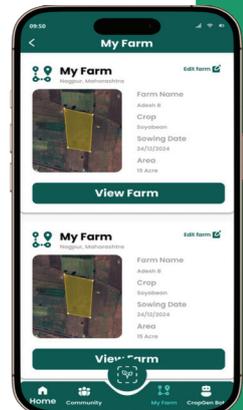10–15% yield increase → improved farm profitability
Reduction in CO_2 emissions via optimized NPK usage
Promotes data-driven, sustainable farming practices
Empowers rural farmers with digital agronomy access

Contribution to Sustainable Development Goals (SDGs)

SDG 2, 12 & 13

Mahesh Gote
www.cropgenapp.com

www.geo.intel.iittnif.com