

BHOOMICROP ANALYTICS SAAS AND MOBILE PLATFORM

Pilot District

Vizianagaram, Andhra Pradesh

Geospatial Innovation Accelerator

IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF)

Technology Summary

Bhoomicam integrates satellite remote-sensing, drone multispectral imaging, IoT-based soil sensors, and AI/ML models into a unified precision-agriculture platform. Satellite imagery (e.g., Sentinel-2, PlanetScope) is used to compute vegetation and moisture indices (NDVI, NDWI, NDRE). Drone flights enable high-resolution plot-level mapping of crop stress and pest zones. Custom soil-moisture and temperature sensors feed real-time ground data. Our AI engine correlates these multi-modal inputs to detect crop phenology, stress, and yield potential—and

generate actionable advisories via dashboards and multilingual WhatsApp alerts.

Alignment with Operation Dronagiri Goals :

Through the BhoomiCrop Analytics platform, we harness high-resolution satellite data, advanced AI-based land parcel segmentation, and time-series analytics to detect, map, and quantify fallow land areas. The project is designed to assist state and district agricultural departments in optimizing land use, facilitating data-driven crop planning, and minimizing underutilized farmland across the region.

Technology Readiness Level:

7

Value Proposition:

Bhoomicam offers agribusiness clients, FPOs and research institutions a data-driven decision-support system that reduces input waste, optimises irrigation, improves yields, and validates product performance (e.g., bio-fertilisers). The platform turns remote sensing and sensor data into clear, plot-specific recommendations, reducing scouting cost and enabling evidence-based agronomy. Its modular architecture supports customisation across crops and regions, making it ideal for fragmented small-holder landscapes.

Market Potential / Deployment Plan:

India's agri-tech market is projected in the tens of billions of USD, and Bhoomicam's niche in geospatial-AI for agriculture positions it strongly. Initial deployment targets include states such as Uttarakhand, Rajasthan, Maharashtra and Andhra Pradesh, with partnerships via government schemes (e.g., Operation Dronagiri) and input/seed companies. The B2B model (SaaS + APIs + services) allows rapid scale-up across Indian districts and neighbouring Asian markets. Targeting smallholder clusters, FPOs and agribusiness value-chains gives Bhoomicam access to a large, underserved market.

Applications:

- Precision irrigation management using soil-sensor + spectral data
- Crop health monitoring, stress detection and yield prediction
- Variable Rate Application (VRA) map generation for fertiliser/pesticide
- Product efficacy validation (bio-fertilisers, seeds)
- Crop acreage verification, sowing compliance for contract farming
- Integration into AgriTech platforms via APIs for broader distribution

Environmental / Social Impact:

Bhoomicam's technology promotes water savings, reduced chemical input use, and higher yields, thereby supporting sustainable farming. For smallholder farmers—especially in marginalised rural areas—it provides access to data-based advisories previously reserved for large farms. This contributes to improved farm incomes, reduced environmental footprint, and greater resilience to climate variability.

Contribution to Sustainable Development Goals (SDGs):

SDG 2, 6, 12, 13, 8

Product / Application Image

