IIT Tirupati Navavishkār I-Hub Foundation | भारतीय प्रौद्योगिकी संस्थान तिरुपति TIRUPATI | विज्ञान एवं प्रौद्योगिकी विभाग DEPARTMENT OF SCIENCE & TECHNOLOGY | SINE IIT Bombay

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GEO-INTEL LAB

TERRASTACK - RURAL LAND INTELLIGENCE

Transportation and Infrastructure

Pilot District
Washim, Maharashtra

Geospatial Innovation Accelerator
SINE, IIT Bombay

Technology Summary

Terrastack is a rural land intelligence and management platform that brings together analytics on agricultural productivity, land record fit, climate stress, water access, infrastructure, commercial activity, and land valuation - all mapped at the parcel and village level.

Users can analyze trends and indicators at a hyper-local scale through the Terrastack Extensive Report and visualize geospatial data - both Terrastack datasets and their own (such as customer locations or branch catchments) - using filters, heatmaps, and analytics panels in the Terrastack Map View (available both in user-grade and enterprise-grade versions).

Banks and insurance companies use Terrastack for credit underwriting, portfolio risk assessment, and branch strategy, while government departments find potential in it to identify climate-vulnerable farmers, enable targeted relief or credit, and plan interventions with plot-level precision.

Technology Readiness Level:

7

Value Proposition

The Terrastack product suite helps financial institutions such as banks and NBFCs digitally assess plot-level risk and potential during credit underwriting, reducing turnaround time, risk, and bias in lending decisions. It also improves sales targeting and branch catchment utilization, promoting transparency and efficiency across operations from the RMs to the executive team.

For government institutions, Terrastack enables accurate targeting of DBT and insurance schemes and supports data-driven planning at village to state levels. It provides water and energy planning agencies with detailed insights into drought and flood exposure for more effective resource management.

Market Potential / Deployment Plan

Terrastack has strong market potential across the financial and public sectors. The platform is already in paid pilot deployments with NBFCs for agricultural and micro-enterprise lending, and in a government pilot in Washim, Maharashtra under Operation Dronagiri. With a presence across 6 states from a product perspective already, the platform is rapidly expanding, with the aim of covering >75% of Indian mainland within a year.

The next phase includes expanding to multiple districts and states through partnerships with banks, insurers, and government departments. Terrastack will be deployed as a Geo-SaaS product with monthly district-wise subscriptions, offering dashboards, reports, and APIs for large-scale integration. Its scalable architecture allows adoption across millions of land parcels and farmers nationwide, supporting India's digital and climate-resilient agriculture initiatives.

Applications

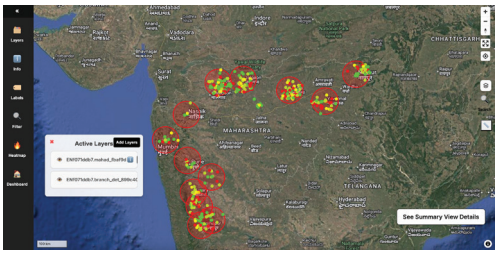
- Credit underwriting: Assess plot-level agricultural and commercial potential for loans.
- Risk assessment: Identify high-risk areas for drought, flood, or low productivity.
- Insurance and DBT targeting: Support accurate beneficiary identification for government schemes.
- Branch and cluster planning: Help financial institutions optimize branch catchments and sales strategies.
- Policy and planning: Enable data-driven decisions for agriculture, water, and rural development departments.
- Monitoring and reporting: Provide dashboards and analytics for tracking interventions and outcomes.

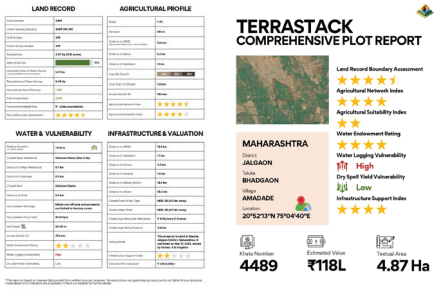
Environmental / Social Impact

Terrastack promotes climate-resilient and data-driven agriculture by identifying vulnerable areas and enabling early intervention. It helps reduce crop losses, supports fair access to credit and relief, and encourages efficient use of water and land resources. By improving transparency and targeting in government and financial programs, Terrastack contributes to inclusive rural growth and sustainable resource management.

Contribution to Sustainable Development Goals (SDGs)

SDG 2, 6, 8, 13 & 15





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