



nurture.farm

GIS as a pillar of Agritech



nurture.farm Overview

nurture.farm is an **open, digital platform** for agriculture that offers integrated solutions – farm mechanisation services & advisory, agri-input e-commerce marketplace, financial solutions and market linkages – to secure **sustainable outcomes** for the entire ecosystem.

Our Vision

By nurturing a sustainable ecosystem that intervenes at every step of the farming life cycle, we can foster the growth of resilient growers, everywhere.

Our Mission

To make agriculture **sustainable, resilient** and **profitable**, for generations to come through technology-led solutions.



Our Solution Offerings



Farm Services

- Spraying & Soil Testing Services
- Farm Advisory
- Insurance Solutions
- Financial inclusion
- Rural Livelihoods



Sustainability

- Crop Residue Management Program
- Sustainable Rice & Sugarcane Programs
- The Carbon Platform
- The Green Label Initiative (Reduce Scope 3 emissions & source sustainably)



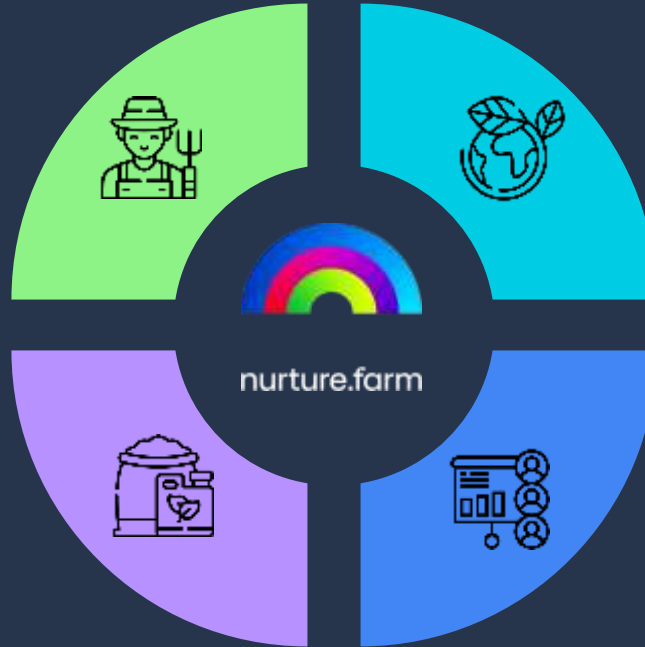
Ag-Input Commerce

- A digital marketplace with over **20,000+** products
- More than **100,000** retailers onboarded
- Delivering across **14** states of India in less than **48** hours
- **60** day credit line for retailers



Market Linkages

- Connect with responsible growers
- Access to Market Intelligence
- Marketplace to buy & sell produce
- Bulk Handling & Storage Management
- **3rd** Party Quality Check
- Fair value for the growers





Solving for the grower throughout the crop cycle

II. Sowing

- Weather & Crop Insights
- Farm Mechanization as a Service
- Weather Insurance

I. Pre sowing

- Geo-tagging
- Remote Monitoring
- Soil Sampling

VII. Ecosystem

- Access to Capital
- Occupational Risk Mitigation
- End to End Project Implementation
- Capacity Building
- Community Development

III. Growing

- Package of Practices
- Crop Health Monitoring
- Pest & Disease Alerts
- Input Recommendations & Delivery
- Weather insurance

IV. Harvesting

- Acreage & Yield Insights

V. Post Harvest

- Supply Chain Management
- Residue Management
- Market Intelligence

VI. Trading

- Access to Markets
- Gradation & Transparency
- Traceability
- Fair Value
- Income via Carbon Credits



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GIS Applications: Sustainable Practices

Conventional Paddy Cycle

Puddling

Transplanting

Flowering



1 week



60 to 100 days



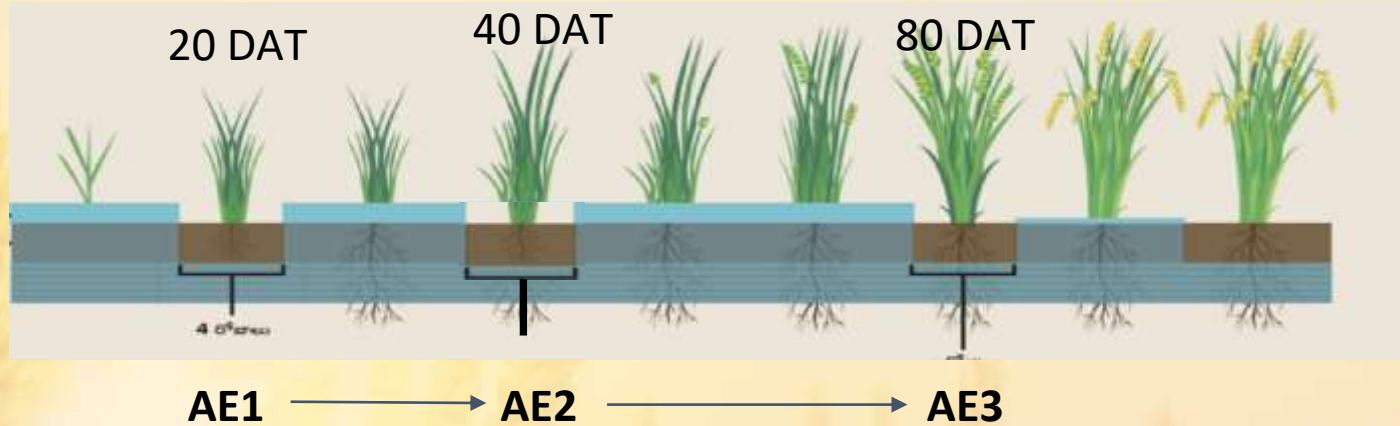
30-35 days



Harvest

- Flooding continues until the last 30-35 days of crop cycle.
- Flooding-related challenges:
 - Inconvenience of arranging water.
 - Standing water releases large amounts of methane (a primary greenhouse gas).

Sustainable practice 1: Alternate Wetting and Drying (AWD)



DAT: Days after Transplanting

AE: Aeration Event

- **Aeration event:** Field is dried upto 10 cm below ground at intervals of 20-40 days. A pipe is installed in every field to monitor drop in water level.
- **Benefits of AWD:**
 - Irrigation not required continuously.
 - Methane production chain breaks (emission reduction by 40-60%).

Sustainable practice 1: Alternate Wetting and Drying (AWD)

Portal for pipe and farm landmark validation -> Geofencing



Farmer Id

Geofenced Plots

6 / 6



Congratulations, you are all done! Please close this tab to start activity for a new farm.

Validation Progress of Selected Image

✓ Pipe Installation

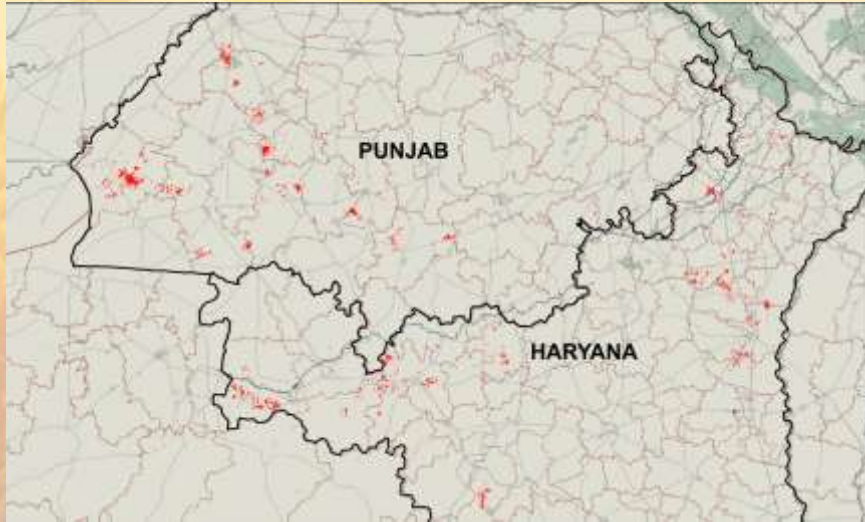
✓ Geofencing



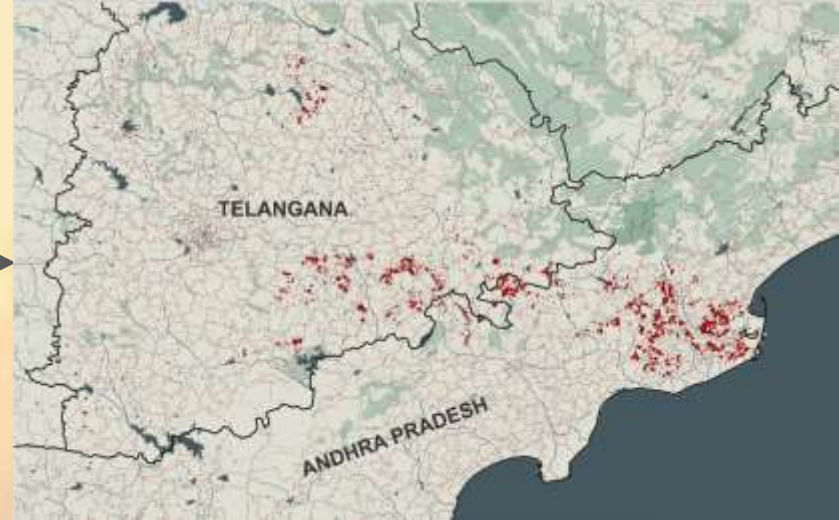
- **Coming up:** Machine Learning Model for classification of Dry vs Wet field.


SCALE OF OPERATIONS

KHARIF 2021: 20,000 acres



RABI 2021: 1,45,000 acres



 **Farm boundaries**

- **Kharif 2022:** All 4 states combined, the scale will reach upto **4,00,000** acres.

Sustainable practice 2: Directly Seeded Rice (DSR)

Direct sowing, no transplanting



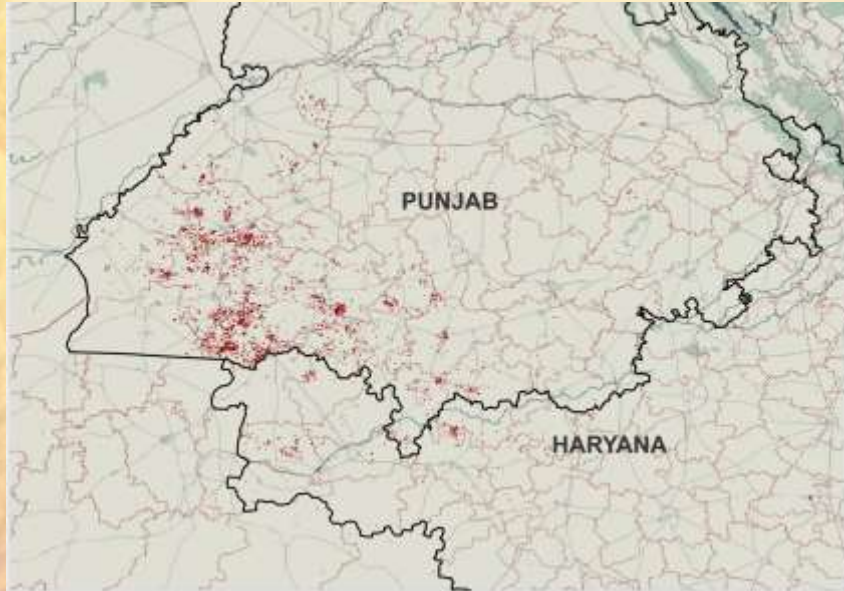
- **Post sowing:** Normal irrigation, no flooding.
- **Saves water by 30%.**


SAR imagery based monitoring



- **DSR verification:** Sentinel 1 C-Band polarizations.

SCALE OF OPERATIONS KHARIF 2022



 **Farm boundaries**

- **Target : 80,000 acres**
 - **Geofenced: 44,000 acres**
 - **DSR detected: 92% of geofenced acres with 93% accuracy**
- Updated DSR acreage to be evaluated post completed geofencing.

A cause for ending paddy stubble burning



- **Post harvest:** Fungi-based decomposer spraying followed by tilling.
- **Accelerates the decomposition rate of stubble, hence forestalling burning.**

Optical imagery based monitoring






- **Burn detection:** Sentinel 2 Visible and Infrared band combinations.
- **Target districts:** Selection through historic RS based highest burn %.
- **Post operations:** RS based burn detection in enrolled farms.

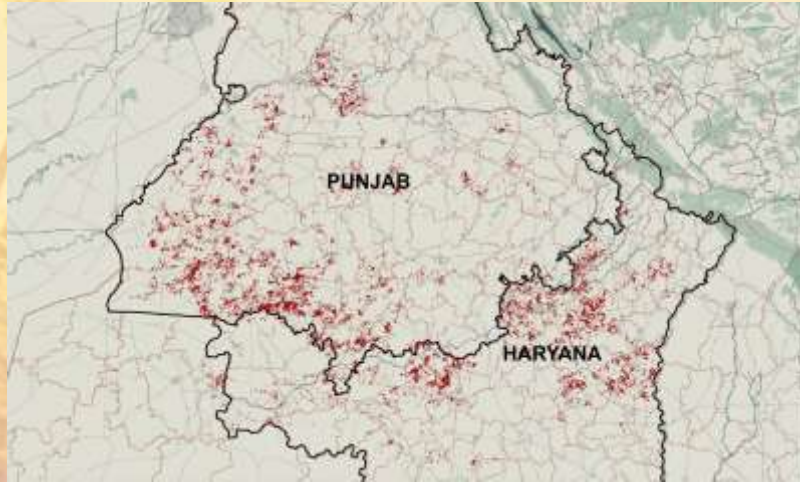
Sustainable practice 3: Crop Residue Management (CRM)

Stubble burn Raster Heatmap



-  Farm boundaries
-  Paddy locations
-  Burnt paddy locations

SCALE OF OPERATIONS KHARIF 2021



Farm boundaries

- **Sprayed : 4,20,000 acres**
- **Burn detection: 8% acreage with 90% accuracy**

- **Kharif 2022:** Our operations could not scale up due to heavy rains and delay in harvest.

Thank you!

