



कृषि एवं किसान
कल्याण मंत्रालय
MINISTRY OF
AGRICULTURE AND
FARMERS WELFARE



Agri Sandbox Project of NeGPA

Implementation Agencies





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AgHub Foundation

Professor Jayashankar Telangana Agricultural University

Rajendranagar, Hyderabad

Telangana - 500 030

<https://ag-hub.co>

AgriSandbox is a pilot-led, innovation-first initiative launched under the National e-Governance Plan in Agriculture (NeGPA) by the Department of Agriculture, Government of Telangana, to support the testing, validation, and field deployment of innovative agritech solutions under real farming conditions.

Funding Agency:

Department of Agriculture,
Government of Telangana under
the NeGPA, Ministry of
Agriculture & Farmers Welfare,
Government of India

Project Coordinator:

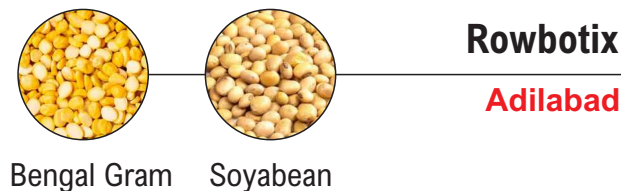
AgHub Foundation, PJTAU

Project Duration:

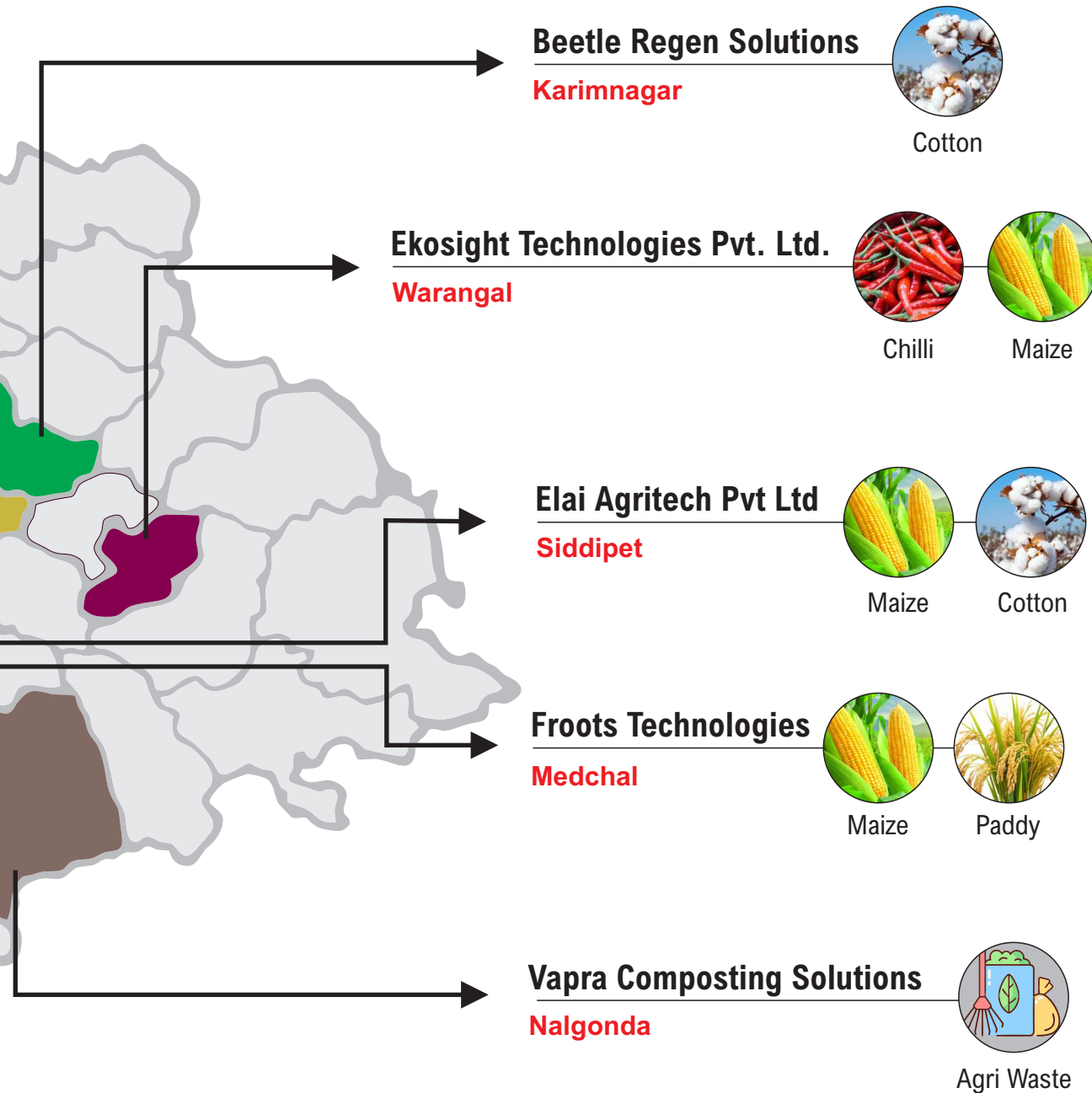
12 Months

Total Funding:

₹2 Crores



Implementation Agencies



of Agri Sandbox Project

Agri Sandbox Committee

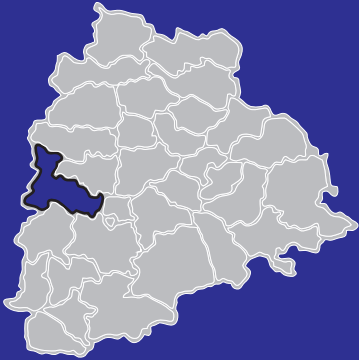
Dr. G. Venkateshwarlu
Managing Director, AgHub

Dr. B. Balaji Naik
Director, Centre for Digital Agriculture and Technology, PJTAU

Mr. G. Ravi Kiran
Director, Food & Agriculture, RICH

1

Smart pest management through AI & IoT solutions



Focus Crops

Location

Mogudampally, Zaheerabad, Sangareddy Dist

Deployment Partner

*Narinja Raithu Mitra Farmer Producer
Company Limited*

Acreage covered

100 Acres (50 Cotton, 50 Ginger)

Technical Mentor:

Dr. Kiran Babu

Sr. Scientist (Pathology), Agricultural Research Institute, PJTAU



Objectives of the Pilot

1. Deploy AI-enabled TrapSnap and iTrapper devices across 100 acres.
2. Develop data interoperability model for pest prediction devices
3. Provide threshold-based pest advisory alerts.
4. Validate system performance under real farming conditions.



Technology intervention

- IoT-based pest monitoring and prediction systems for sustainable pest management in ginger and cotton.

Key Deliverables

- Installation of AI-enabled TrapSnap and iTrapper devices
- Real-time pest monitoring and advisory system
- Farmer awareness and capacity building on smart pest management
- Comparative analysis of the reduction in pesticide sprays against control plots

2 Irrigation management through IoT based automation



Focus Crop

Location

Balanagar, Mahabubnagar Dist

Deployment Partner

Pre Unique India Pvt Ltd

Acreage covered

10 Acres (2 acres each for 5 different age groups)

Technical Mentor:

Dr.K.Suresh

Principal Scientist Agronomy, Water Management Unit,
C-NARE, Rajendranagar





Implementation Agency

Objectives of the Pilot

- Integrate hyper-local village-level weather data with on-farm sensor intelligence
- Quantify crop-wise water requirements at different phenological stages
- Automate irrigation decisions using motor control and flow meter data
- Establish a data-backed irrigation advisory model for farmers



Technology intervention

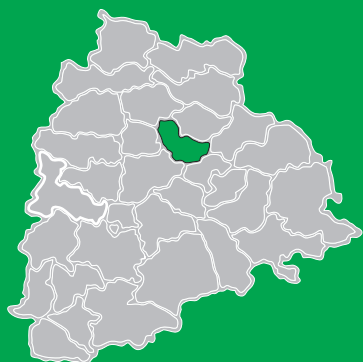
- IoT based smart irrigation system and a community-level weather station for predictive irrigation in Oil Palm crop

Key Deliverables

- Installation of an IoT-based smart irrigation system and community-level weather station
- Sensor-based irrigation monitoring and automation
- Farm-level irrigation advisory system
- Water-use efficiency and irrigation performance assessment

3

Waste to value technologies through biochar in regenerative agriculture



Focus Crop

Location

*Manikyapoor Village, B D Pally Mandal,
Karimnagar Dist*

Deployment Partner

Navakranti Farmer Producer Company Limited

Beneficiaries

50 Farmers

Technical Mentor:

Mr. R.K. Mehta

Chairman, Progressive Biochar Society, Hyderabad



Beetle Regen Solutions

Implementation Agency



Objectives of the Pilot

- Integrate biochar production with smallholder farming systems in Telangana
- Develop a digital MRV platform for carbon sequestration tracking
- Quantify soil organic carbon increase and certify carbon credits



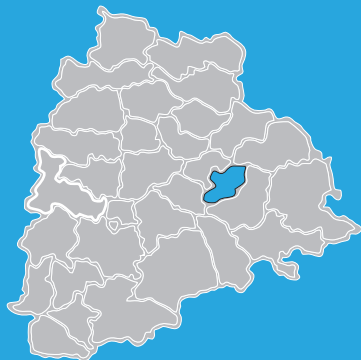
Technology intervention

- dMRV based climate-tech solution that converts cotton stalk waste into high-integrity artisanal biochar

Key Deliverables

- Deployment of artisanal biochar production systems (Kon-Tiki/Earth Cone Pits)
- Biochar production from cotton stalks and field application
- Farmer training on biomass management and biochar production

4 Soil Nutrient management through Digital Soil Intelligence



Focus Crops

Location

Peddathundla, Warangal Dist

Deployment Partner

Peddathundla Farmer Producer Company Limited

Beneficiaries

400 Farmers

Technical Mentor:

Dr. Sreedevi

Professor, Dept. of SSAC, College of Agriculture, PJTAU, Rajendranagar



Objectives of the Pilot

- To provide rapid, on-field soil testing using AI and IoT-enabled digital soil intelligence technology.
- To generate soil health reports and deliver customized fertilizer recommendations based on soil nutrient status.
- To optimize fertilizer and input use, thereby reducing input costs and improving nutrient use efficiency for farmers.



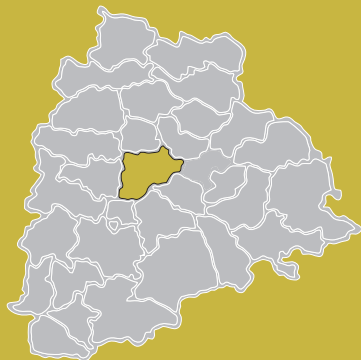
Technology intervention

- AI and IoT-based portable soil testing and “soil intelligence” platform for real-time, plot-level advisory on NPK & micro nutrients for farmers and FPOs.

Key Deliverables

- Deployment of an AI-enabled portable soil testing kit
- Digital soil health reports and customized fertilizer recommendations
- Farmer/FPO awareness program on soil health management

5 Climate Risk mitigation through AI & Remote sensing



Focus Crops

Location

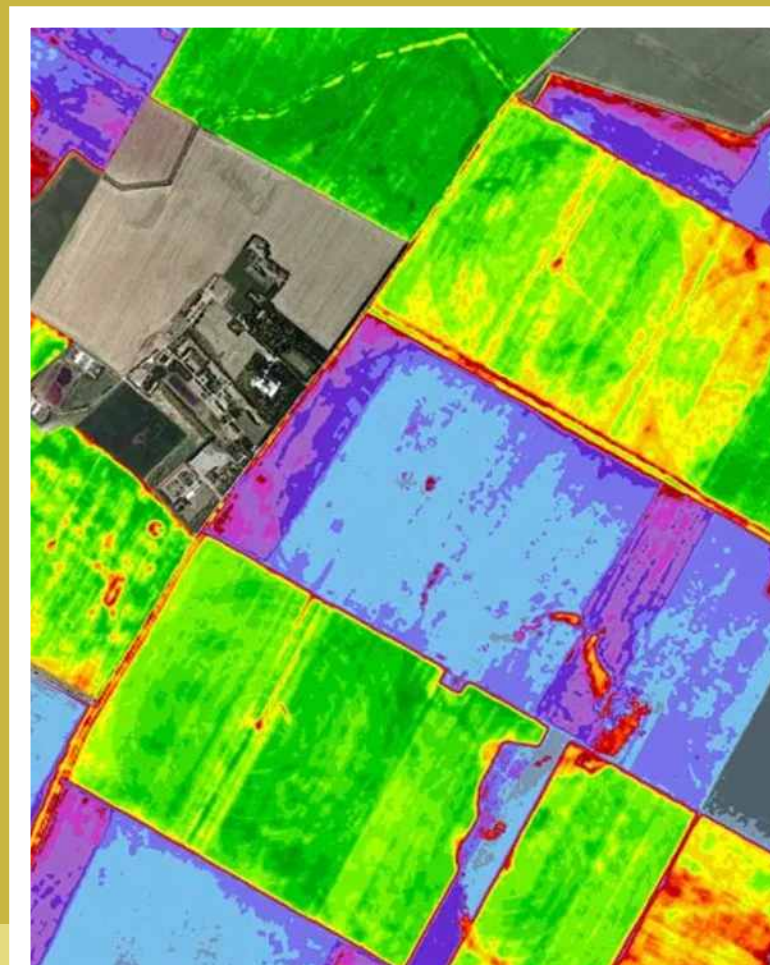
Prashanthnagar, Siddipet Dist

Deployment Partner

Siddipet Kisan Agro Producers Company Ltd

Acreage covered

400 Acres (200 Cotton, 200 Maize)



Technical Mentor:

Dr. T.L. Neelima

Sr. Scientist (Agronomy), Centre for Digital Agriculture & Technology, PJTAU

ELAI Agritech Private Limited

Implementation Agency



Objectives of the Pilot

- To deploy and validate AI and remote sensing technologies for real-time crop monitoring in cotton and maize under field conditions
- To provide timely pest and disease risk predictions and field-level advisories to support informed crop management decisions
- To monitor crop growth, vegetation health, and estimate crop yield using satellite imagery and AI-driven analytics



Technology intervention

- AI and Remote Sensing - based data for pest and disease prediction and advisory for Cotton and Maize crops

Key Deliverables

- Farmer onboarding and digital mapping of pilot farms
- AI and remote sensing-based crop monitoring and pest/disease surveillance
- Generation of field-level advisories and dissemination to farmers

6 Precision Sowing system for field crops



Focus Crops

Location

Gondguda, GP Kothaguda Utnoor, Adilabad Dist

Deployment Partner

Utnoor Farmer Producer Company Limited

Acreage covered

100 Acres

Technical Mentor:

Dr. Raghuveer, SMS, KVK Adilabad, PJTAU

Dr. Shravan Kumar, Scientist, FIM, PJTAU



Objectives of the Pilot

- Deployment and validate an IoT-based sowing implement under real field conditions in Telangana
- Evaluate machine performance in terms of precision, efficiency, and operational feasibility
- Collect field data to refine and improve the product design



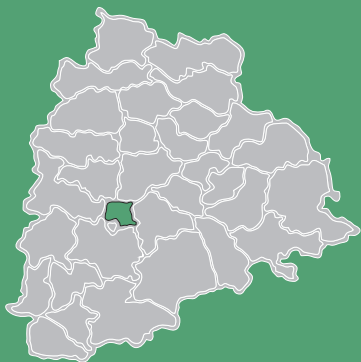
Technology intervention

- IoT based precision sowing of Soyabean and Bengal gram

Key Deliverables

- Deployment of IoT-based precision sowing equipment
- Comparative assessment with conventional sowing methods
- Farmer feedback and machine performance assessment
- Awareness and sensitization on precision sowing

7 Rapid food quality and safety assessment



Location

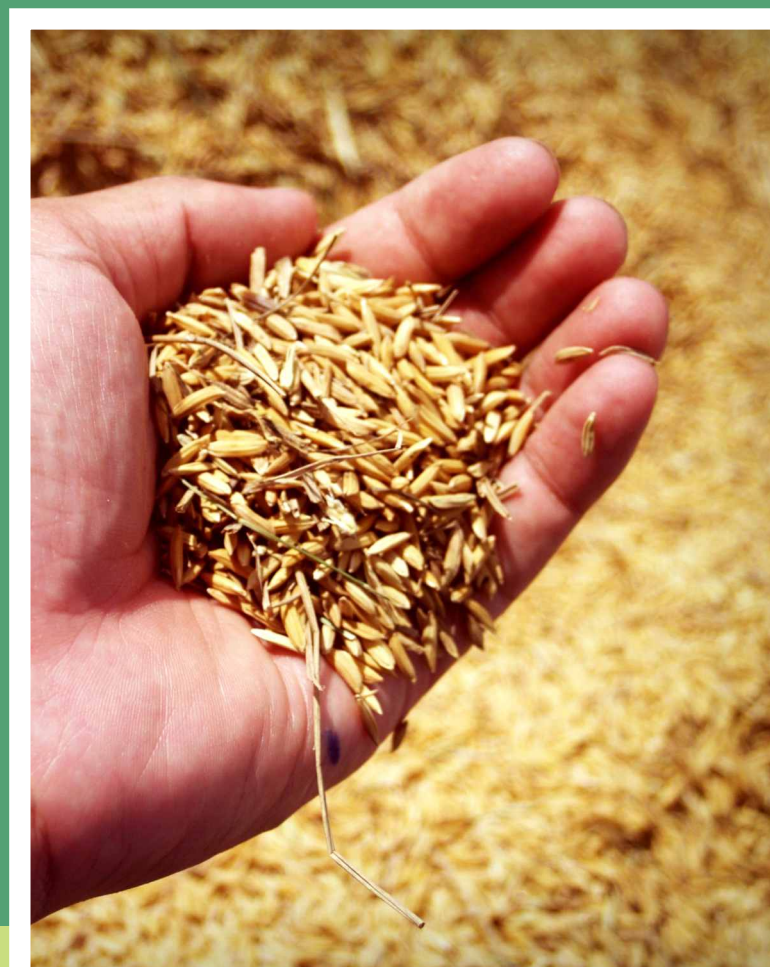
Medchal Dist

Deployment Partner

Seed Research and Technology Centre, PJTAU



Focus Crops



Technical Mentor:

Dr. K. Lakshmi Prasanna, Assistant Professor,
Seed Research and Technology Centre (SRTC), PJTAU, Rajendranagar

Objectives of the Pilot

- Validate AI-based grading against manual and laboratory benchmarks
- Test the grain quality including key physical parameters and aflatoxin detection
- Build a central image repository and data pipelines to strengthen and customize ML models



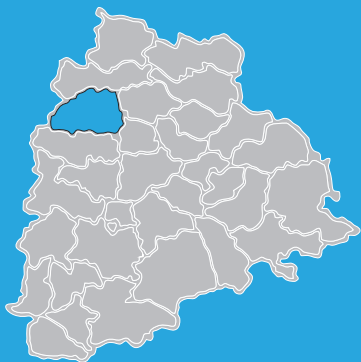
Technology intervention:

- AI-powered computer vision platform for automated grain quality assessment and digital agri-procurement

Key Deliverables:

- Validation of AI-powered grain quality assessment
- To build digital seed quality analysis platform
- Develop AI model using grain image datasets
- Standardized grain quality assessment protocols

8 Post Harvest management through automation technologies



Focus Crop

Location

Jakranpally, Nizamabad Dist

Deployment Partner

JMKPM Farmers Producer Company Limited

Beneficiaries

500+ Farmers



Technical Mentors:

Dr. T. Supraja, Scientist & Head, MFPI – Quality Control Laboratory

Shiniunicorns Solar Technologies Pvt.

Implementation Agency



Objectives of the Pilot

- Demonstrate energy-efficient turmeric drying under Telangana climatic conditions
- Reduce drying time and post-harvest losses while improving product quality and marketability
- Establish techno-economic feasibility of decentralized turmeric drying units for scalable deployment across Telangana production clusters



Technology intervention:

- IoT integrated solar energy based drying technology for horticultural crops

Key Deliverables:

- IoT-integrated solar-assisted drying system
- Energy-efficient turmeric drying technology
- Quality assessment of dried turmeric (curcumin)
- Techno-economic feasibility assessment

9 Drone Uberization and AI based route optimization



Location
Vikarabad Dist

Deployment Partner
AgHub, PJTAU

Acreage covered/Beneficiaries
10,000+ Acres spraying 3000+ Farmers



Field Crops



Technical Mentor:
Dr. T. Kiran Babu,
Sr. Scientist (Pathology), Agricultural Research Institute, PJTAU

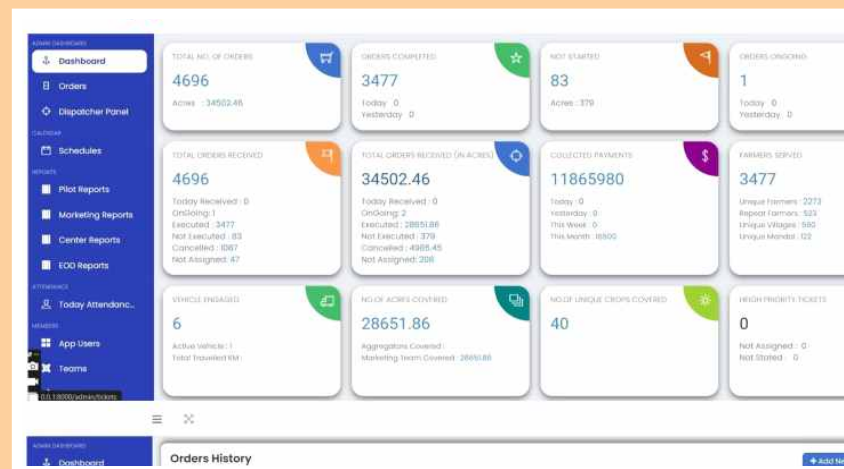
Ila Agri Services Private Limited

Implementation Agency



Objectives of the Pilot

- Enable on –demand drone spraying as a service for farmers through FPOs
- Improve spraying efficiency, cost savings and timeliness
- Increase drone operator utilization and income
- Validate scalable marketplace model for rural precision agriculture



Technology intervention

- Agri tech value chain and drone Uberization platform leveraging technology for farmer enablement

Key Deliverables

- Development of application for Uberization of drone services
- AI-based route optimization
- Onboarding of farmers and drone service providers to the platform
- Platform-based farmer booking and validation of drone spraying services through registered drone pilots

10

Rapid Composting Technology for Organic Waste



Location

Nalgonda Dist

Deployment Partner

Nakrekal Farmers Producer Company Limited



Agri Waste



Technical Mentor:
AgHub, PJTAU

Future Step Enterprise LLP (Vapra Composting Solutions)



Implementation Agency

Objectives of the Pilot

- Demonstrate efficient conversion of farm organic waste into nutrient-rich compost using decentralized composting technology.
- Convert organic waste from agriculture into high-quality compost.
- Enable Farmer Producer Organizations (FPOs) to establish decentralized composting as a sustainable business model.



Technology intervention

- Decentralized waste management and composting solutions that convert organic waste into high-quality compost

Key Deliverables

- Installation of a decentralized composting system
- Digital monitoring of the composting process
- Organic waste-to-nutrient-rich compost conversion
- Farmer training and capacity building



Agri Sandbox Committee with the representatives from implementation agencies



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