

AI-Deep tech and Bio-informatics driven  
quality assessment and management  
of agriculture crops post harvest

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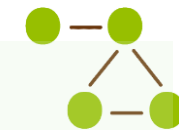
**RootsGoods Pvt. Ltd.**



[www.rootsgoods.com](http://www.rootsgoods.com)



#1647, 2nd Floor, 8th A Main Rd, B Block, CQAL Layout  
Sahakarnagar, Bengaluru  
Karnataka 560092, India



## Wider Problems



22% loss of maize in sales pipeline

- Match make between farmer & buyer
- Quality tagging of maize for sales pipelining
- Warehouse storage, **loss reduced to 5% from 22%**



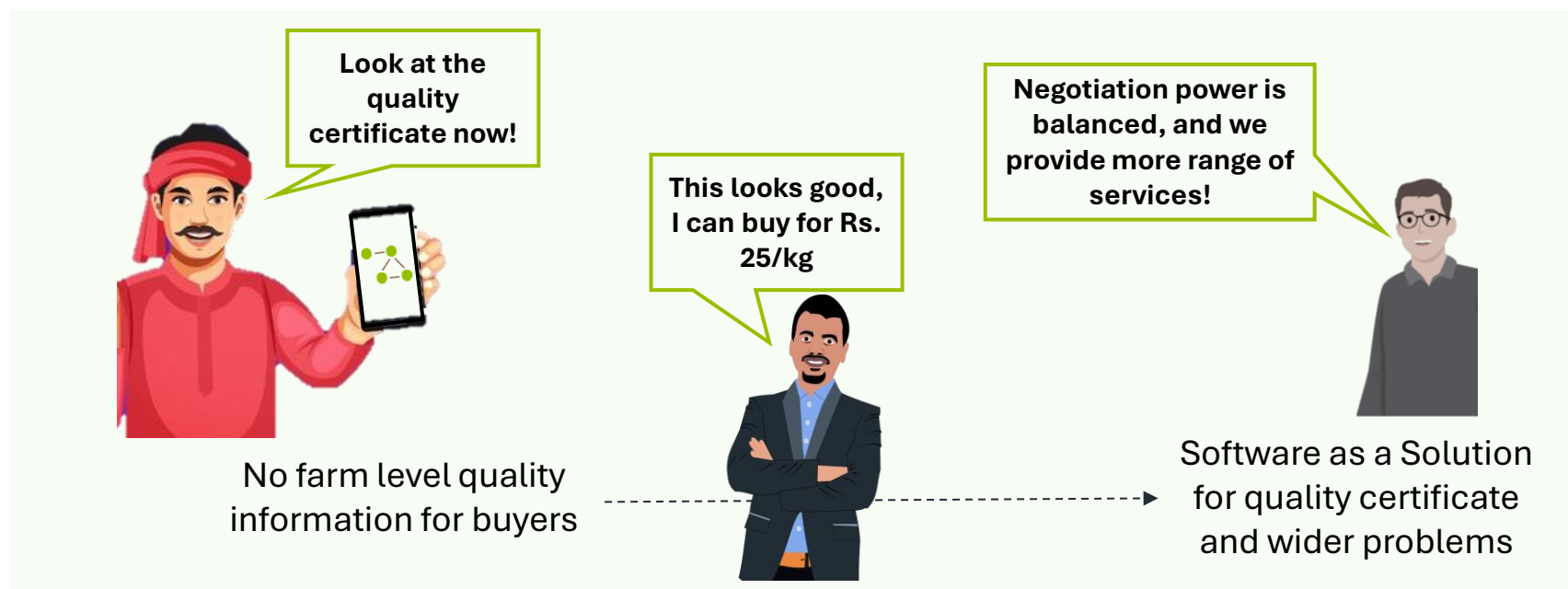
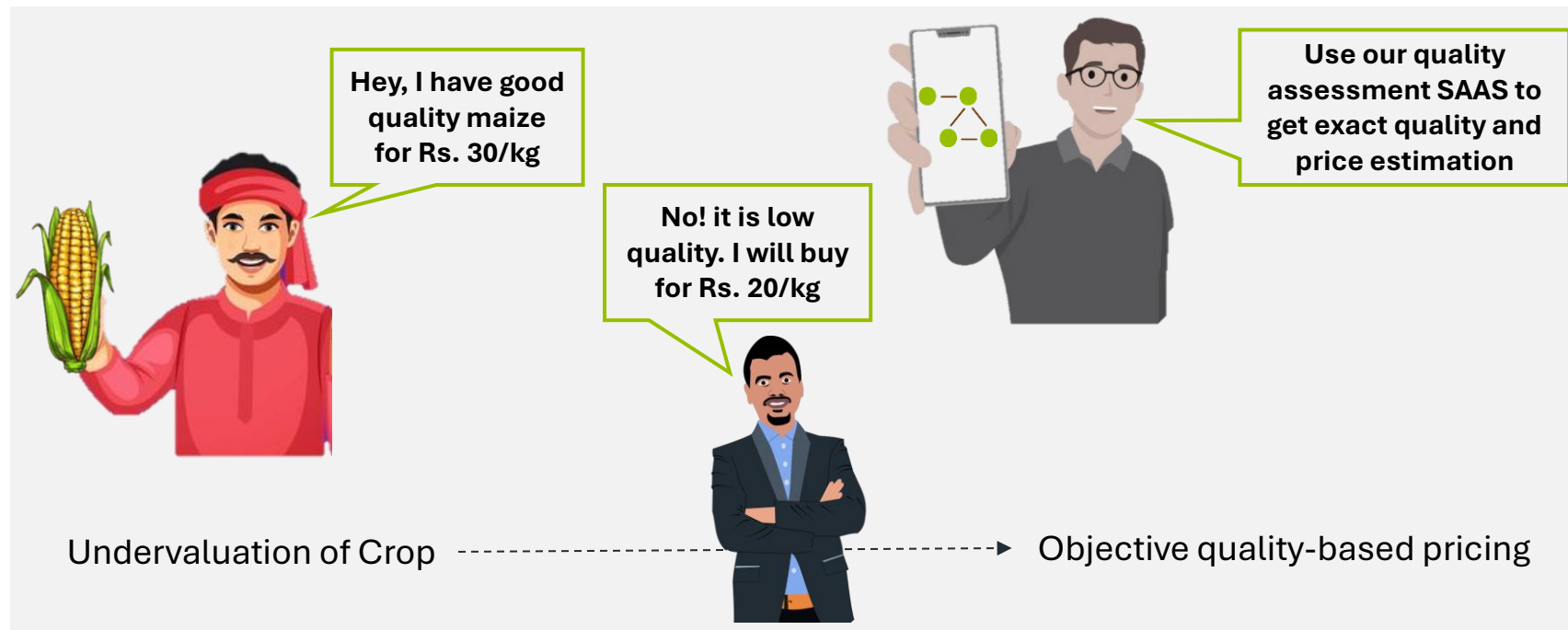
From undervaluation of the crop to increased livelihood of farmers

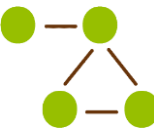
- On-spot payment to solve **Credit** problems



### AI-based Realtime Advisory

- Maize GPT for agent-based advisory to sales and transaction management for both farmers and buyers.





# Farm / FPO Level Solutions



## Pre-Harvest

Pre-harvest maize quality assessment (colour, size, fungus, foreign material, moisture) leverages farming community level data analysis to predict yield, detect crop issues, and ensure optimal crop outcomes.

**KEY: Buyer's can buy at reduced rate per quintal, approximately 10 rupees due to our work in pre-harvest**

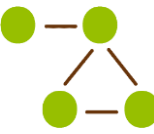
## Post-Harvest

The App detects grain traits and evaluates maize quality to predict shelf-life and price using image processing and deep learning.

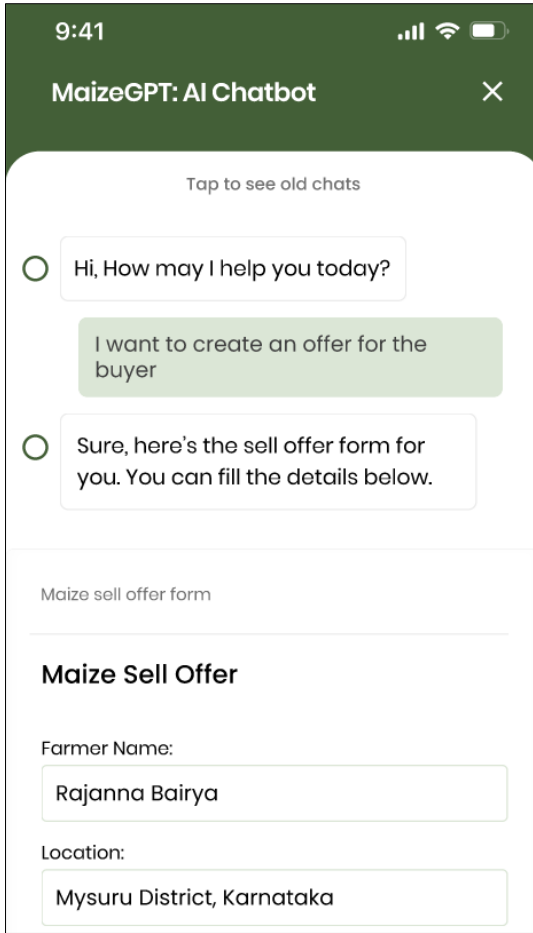
**KEY: Buyer's can buy at reduced rate per quintal, approximately 20 rupees due to our work in post-harvest**



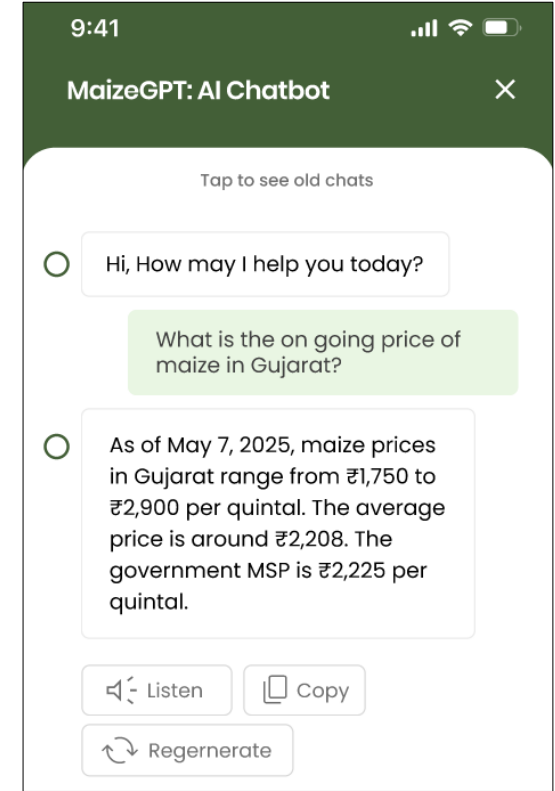
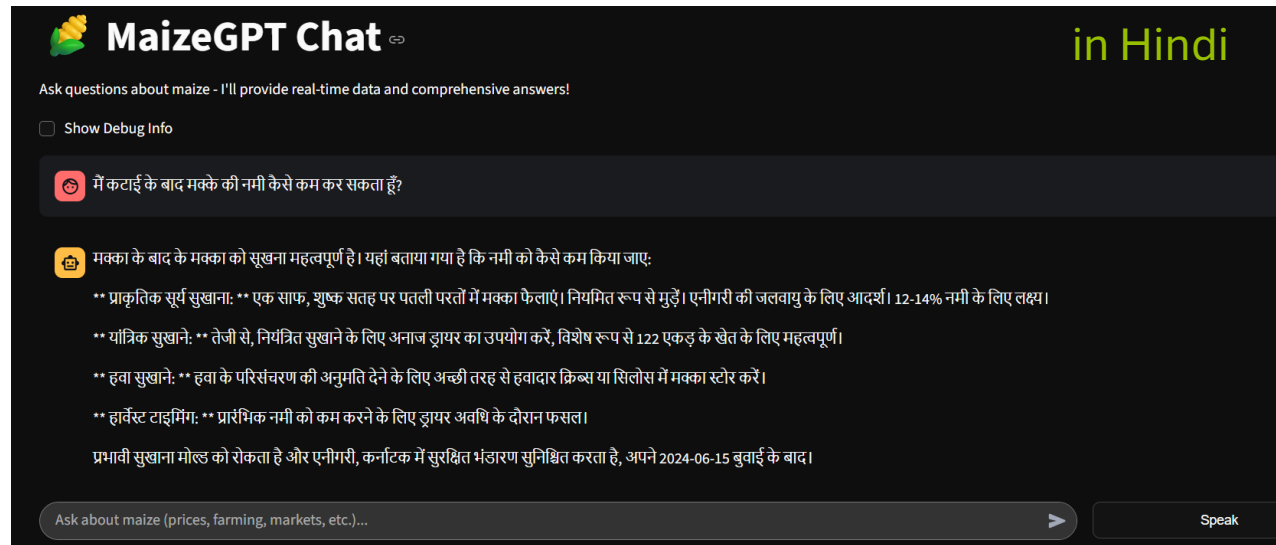
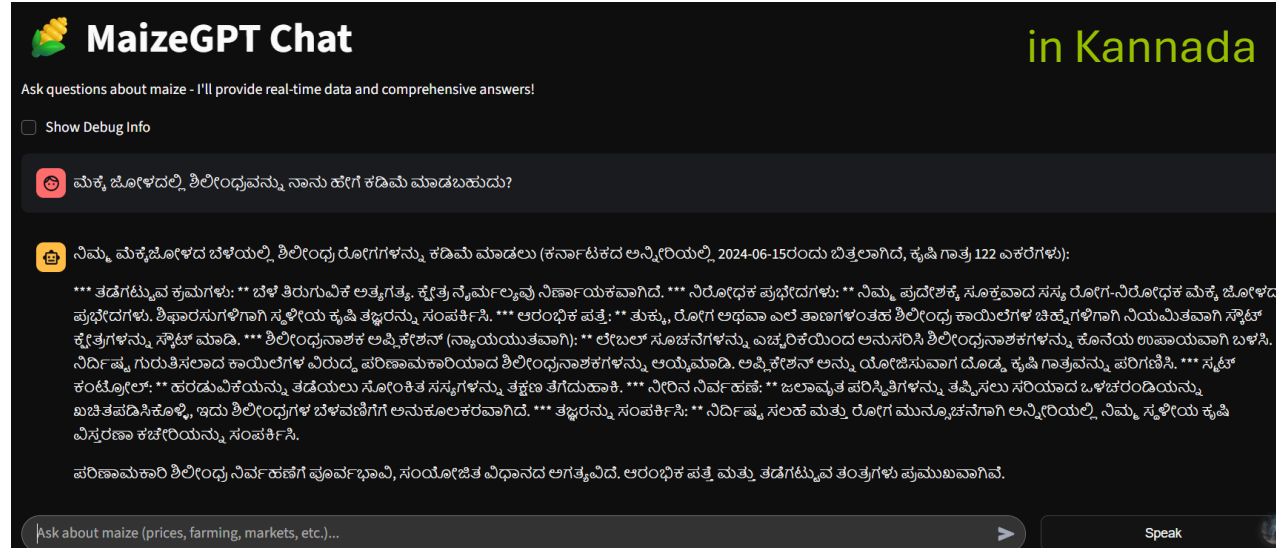
- **COLOUR DETECTION:**  
Light Yellow : 0.64 % , Medium Yellow : 0.23 %
- **FUNGUS DETECTION:**  
Black Fungus:-1.550387596899225 %  
Fungus:-2.3255813953488373 %
- **FOREIGN MATTER:**  
0.7751937984496124 %
- **SIZE:**  
Small Size : 0.23 % , Medium Size : 0.23 %



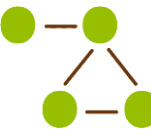
# AI-Agentic Advisory System Maize GPT



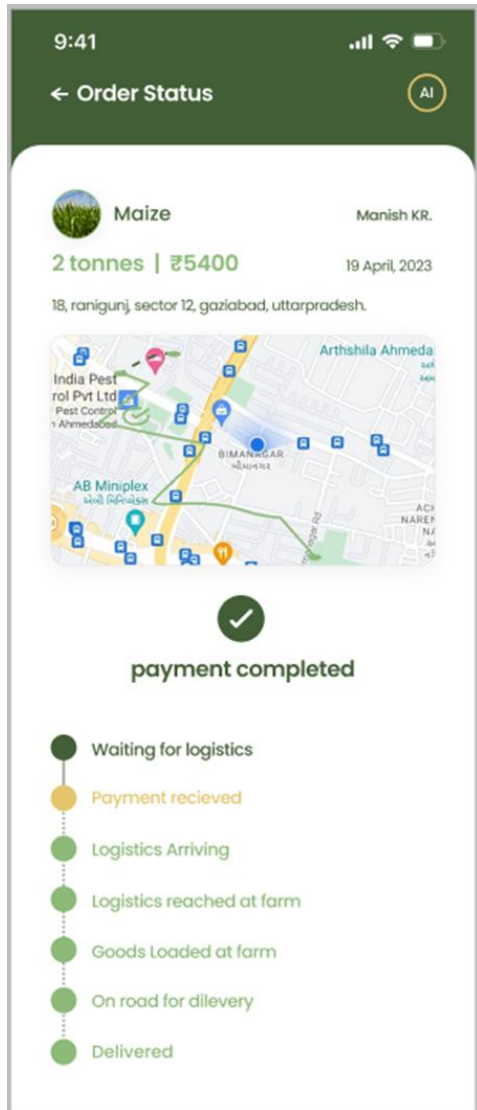
- Integrated in SaaS platform Mobile Android Application.
- For advisory as well as negotiation, sales and storage management.



- Uses our specific maize dataset to generate relevant advises and solutions.
- Maize GPT: AI-Agentic Advisory System in local languages: **Kannada, Hindi**, along with **English**.



# Procurement and Storage Management



## Stocks and Transits

- Deals are finalized with match-making
- Billing completed
- Logistics delivered
- Stock quality and logistics management

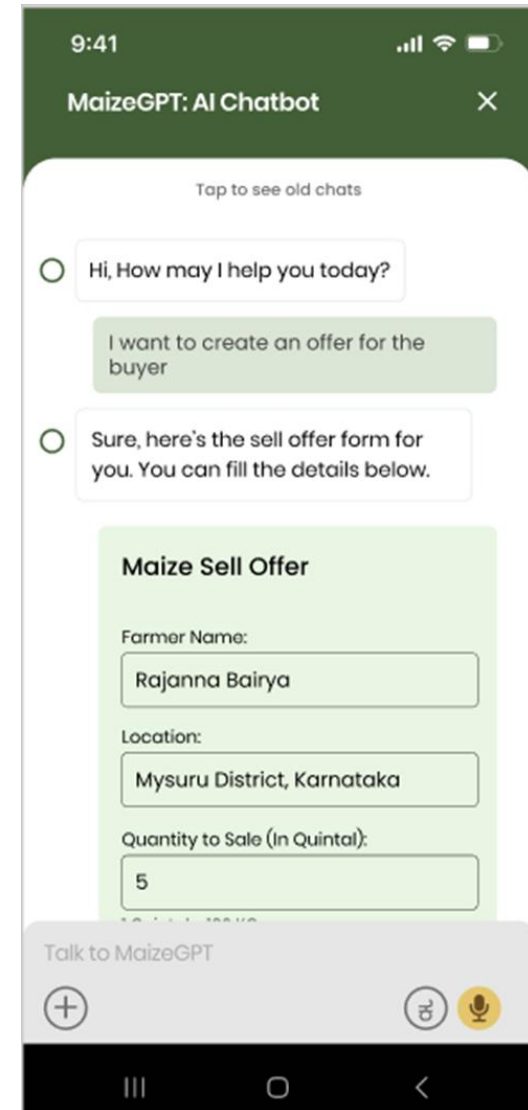
**KEY: Track down the optimal pathway and minimize transportation costs by 20 rupees per quintal approximately.**

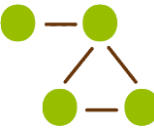
## Stock rotation/Admin support

Streamline bag storage with ID codes, entry dates, and exit times, linked to a centralized tracking system.

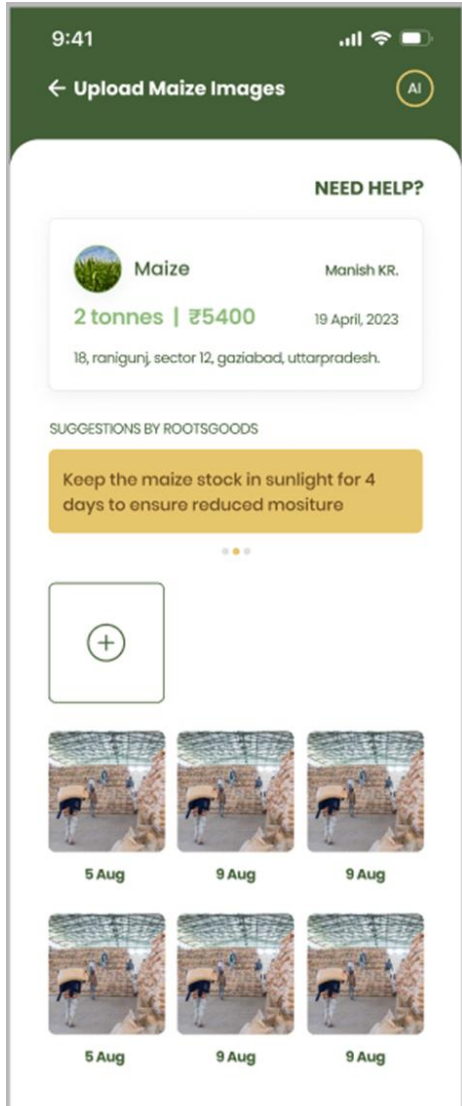
- Indicate net weight in packaging
- Date and time information of lot and package
- Supplier/manufacturer name

**KEY: Increase in stock usability. Reduction in loss by 30 rupees per quintal approximately.**





# Warehouse Level Solutions

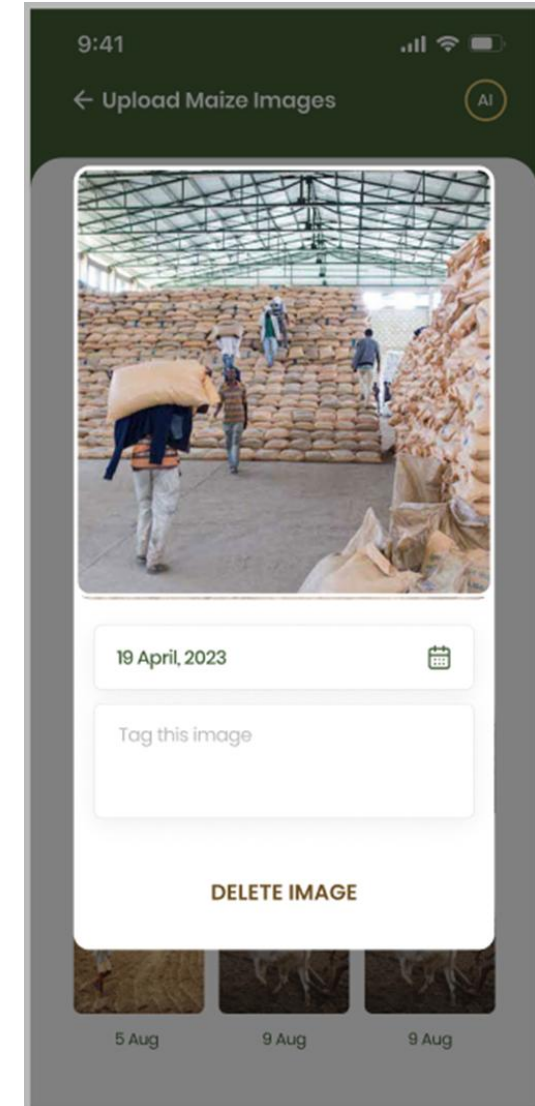


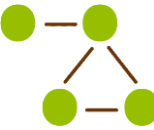
## Stock Visibility

- Updated information of incoming stock, stored stock, outgoing stock.
- Realtime stock visibility inside warehouse with its usage and storage status.
- AI-Agent based Maize GPT system for problem solving and advisory.

## Space Utilisation

- Optimising storage layouts of maize bags to increase space efficiency.
- Live information of deadstock to manage the stock.
- Partner rental warehouse to manage maize storage or offer rental space.





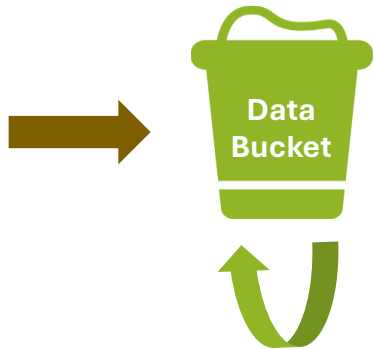
# Machine Learning (ML) Structure

WEATHER DATA



COLLECTED PHOTOGRAPHS

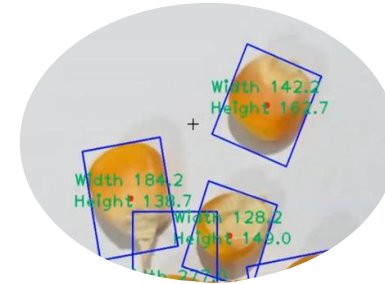
**Quality Parameters:** Size, Color, Fungus, Foreign Materials, Moisture, Shelf Life.



DATA PROCESSING

ML Models

READJUST ML MODELS



RESULT OF ML MODELS

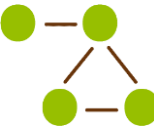


MOISTURE LEVELS OF MAIZE KERNELS

**Indian Patent Application No.:** 201841036367  
(Granted), 202241063215, 202541003200

**PCT international application No.:** PCT/IB2020/052796

**Indian Trademark Number:** 5072881, 7160500, 7160501

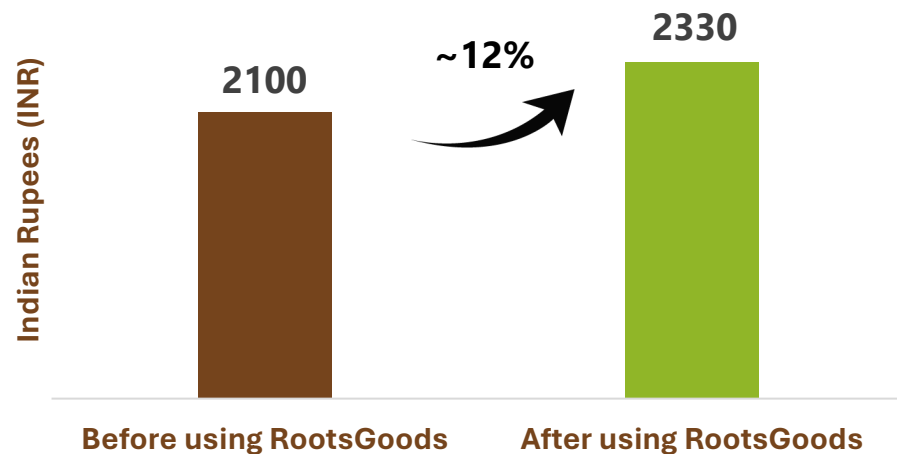


# Market Potential for Maize

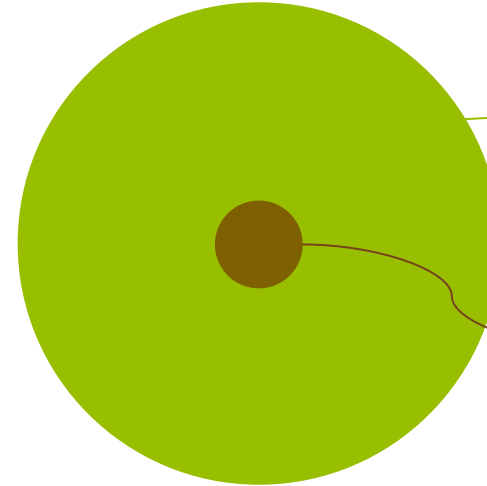
- **38 MMT production in 2022-23**
- **45 MMT goal for 2025-26**

Increasing import trend to meet bioethanol blending push

## Farmer's Livelihood per quintal per acre

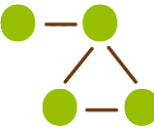


**Total Market (India):  
66,000 crores INR**



**Total Addressable  
Market (India):  
3,300 crores INR  
(5% of total market)**

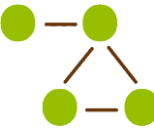
- We have covered more than **48,000 maize farmers** helping them sell close to **5200 MT** of maize
- We are actively working with the fact: **29 farmers deaths per day in India** due to inefficient market access



## Competitive Advantages

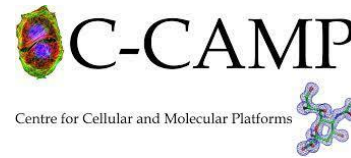
Competition Matrix	RootsGoods	Intello	Ag Next	Fasal	Cropin
Multinational Agri-University Collaboration	✓	✗	✓	✗	✗
<b>Focus on only one multinational crop</b>	✓	✗	✗	✗	✗
<b>Quality information from farm level</b>	✓	✗	✗	✗	✗
<b>Bioinformatics &amp; Genetics data of crop</b>	✓	✗	✗	✗	✗
Peer to Peer farmer platform	✓	✗	✗	✓	✓
Spot trading finance facilities	✓	✓	✓	✓	✓

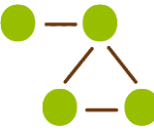
- Negotiation advantage with farm-based bioinformatics and genetics data leading to quality certificate.
- Free service for farmers and reducing their post-harvest loss of maize from 8% to 2%.
- Logistics, sales, storage pipelining and shelf life of crops for buyers, reducing the loss from 14% to 3%.
- Multi-disciplinary team with background on agriculture, economics, climate change, and data analytics.



# Go to Market Strategy

- ✓ Mobile application-based service
- ✓ Accelerate user base through organisations working for farmers
- ✓ Direct MoU-based collaboration with 48 Farmer Producer Organisations
- ✓ Successful pilot projects in Karnataka and Telangana and ongoing in Punjab, Gujarat, Nigeria, Canada, and the USA
- ✓ Hiring local agriculture graduates to intermediate with farmers
- ✓ Project Amplify with Microsoft and Accenture under for GPUs





# Revenue and Projections

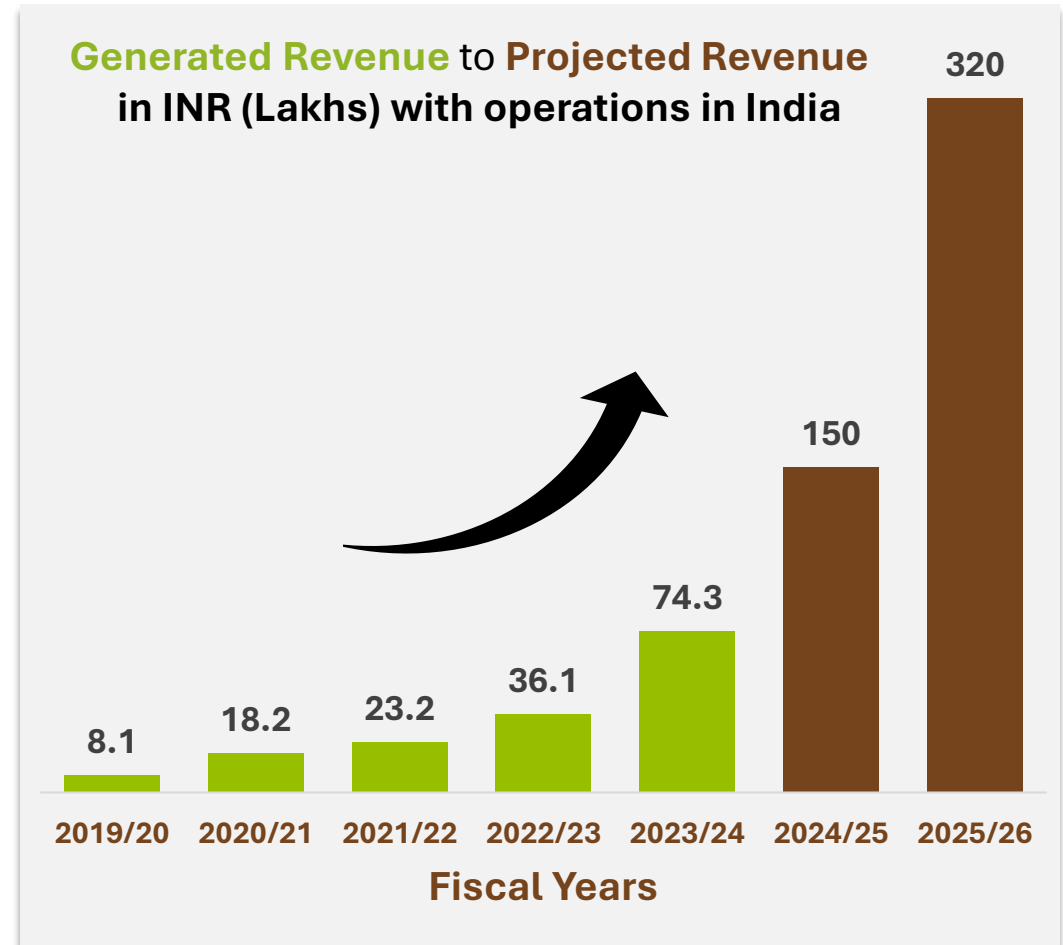
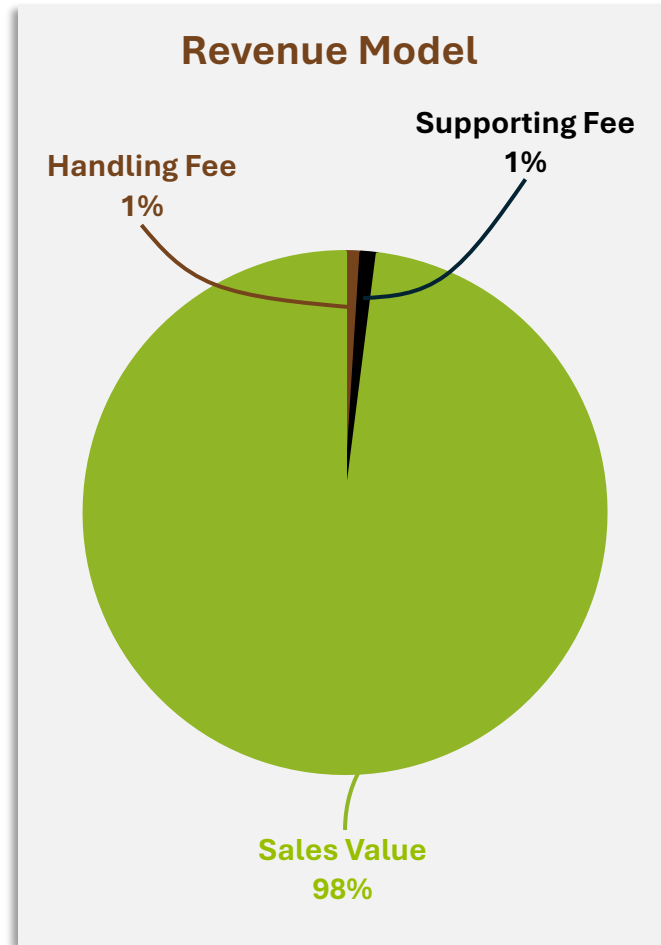
I receive the services for free!

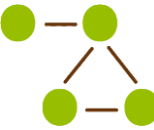
**Farmer**

Loss of maize is reduced from 22% to 5% along with warehouse management so I have willingness to pay for the services!



**Buyer (Poultry/Animal Feed, Starch, Biofuel manufacturers)**

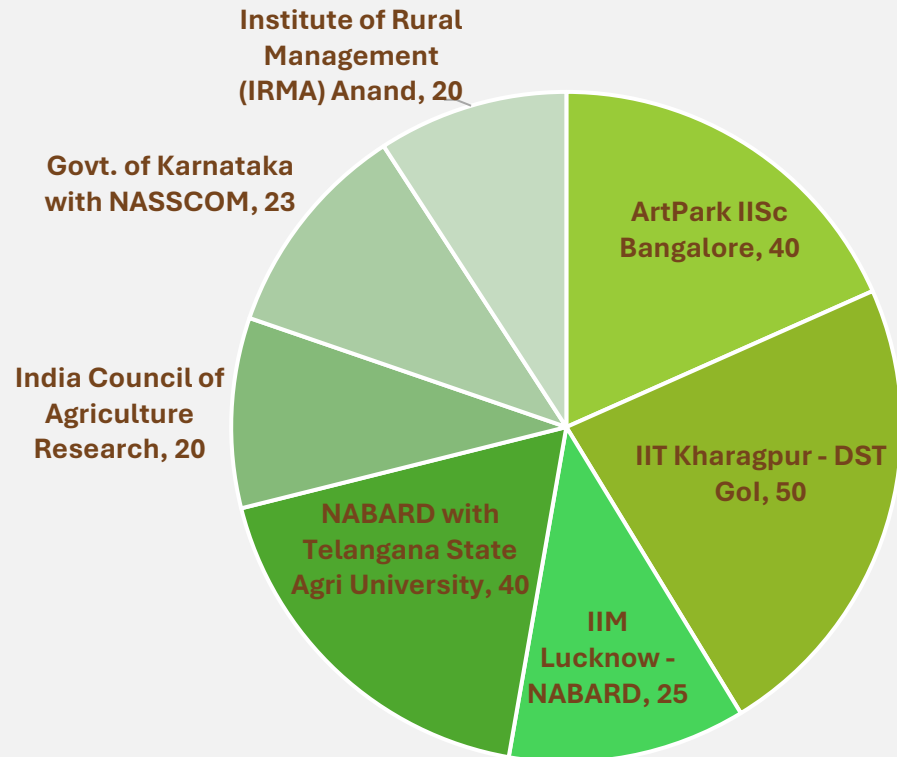




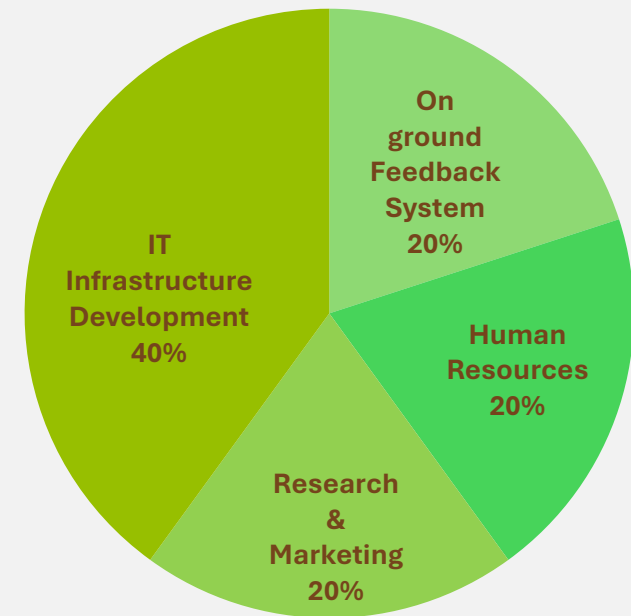
# Financial Overview

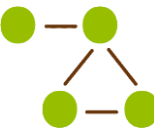
We are raising **4.2 crores INR** (out of which we have already raised **2.18 crores** from strategic co-investors)

## Strategic Investors on board (INR in Lakh)



## Fund Distribution





## Brief Profile of Core Team & Advisors

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**Mr. Sachin Hegdekudgi**

Chief Executive Officer

*MSc in Resource Economics  
TU Munich, Germany*

Team leader and  
management



**Dr. Shakil Regmi**

Chief Information Officer

*PhD in Geosciences & Education  
MLU Halle, Germany*

Data Management &  
Quality Control



**Prof. Dr. Gracy Paily**

Agricultural Advisor

*Post-PhD in Development  
Economics*

Market and Agronomy

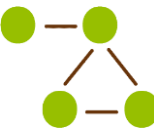


**Dr. Vasudev Rao**

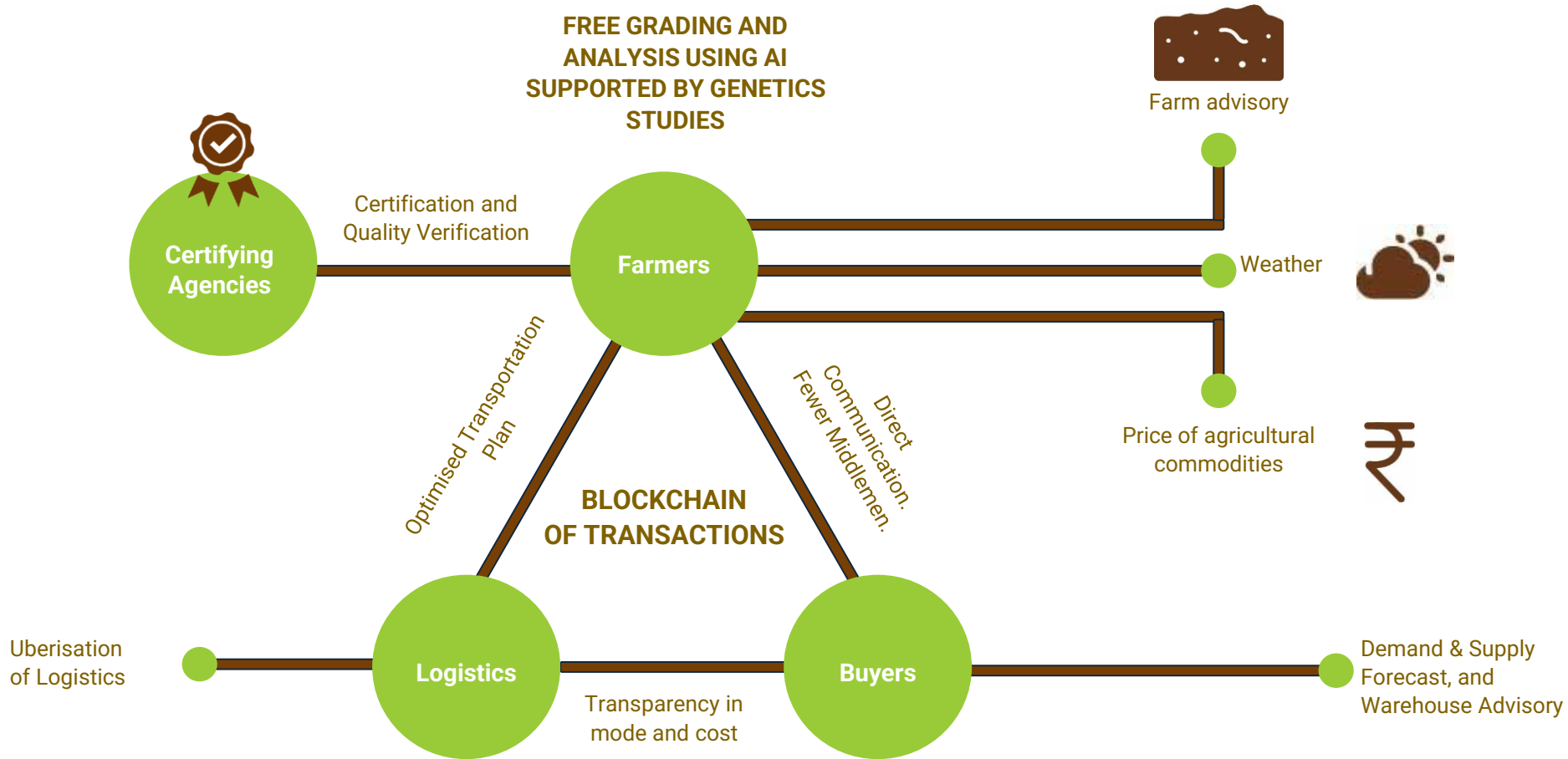
Advisor

*Formerly President Ag Technology  
of MetaHelix (now a TATA company)*

Plant Breeding and Seed  
Technology



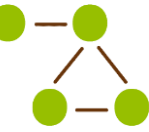
# Overview of Service and User base



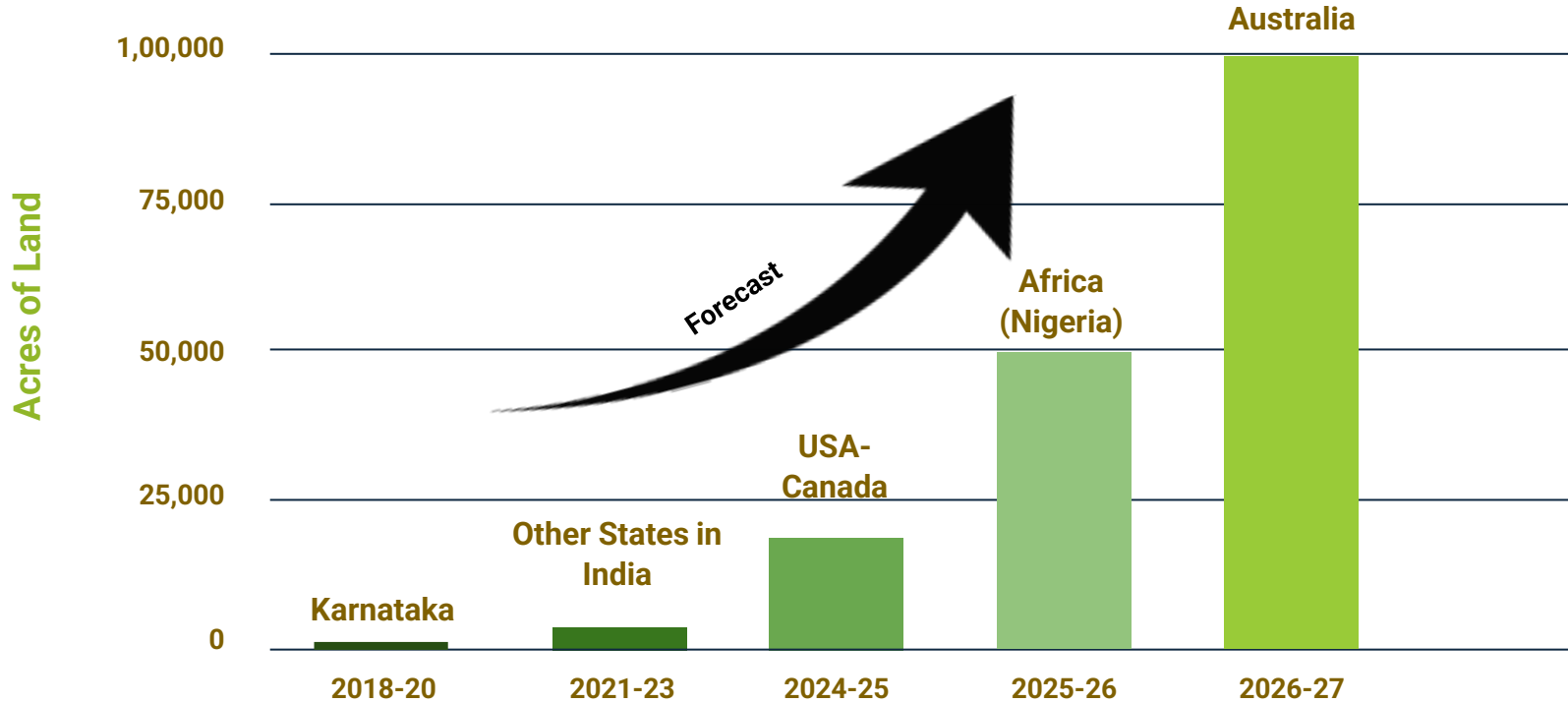
## Common Operation Business Model (COBM) for Crops

### Our Addressable Sustainable Development Goals

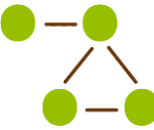
<p><b>1 NO POVERTY</b></p>	<p><b>2 ZERO HUNGER</b></p>
<p><b>5 GENDER EQUALITY</b></p>	<p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p>
<p><b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p>	<p><b>10 REDUCED INEQUALITIES</b></p>
<p><b>13 CLIMATE ACTION</b></p>	<p><b>17 PARTNERSHIPS FOR THE GOALS</b></p>



# Roadmap



**Farmer User Base Scaling Approach Using  
Common Operation Business Model (COBM)**



# Testimony: Procurement Manager of Cargill India Pvt. Ltd.

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Years Associated with RootsGoods: 5 years



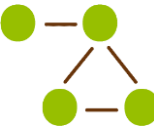
Service Used: Quality maize supply directly from farmers



Most Liked Service: Quality assessment



Area of improvement: Bulk supply and regular supply



# Testimony: Proprietor MCY TRADER HAVERI



Business: Poultry Feed  
 Services provided: Match making, finances.



Match Making



Easy of navigating



Quality produce and fast transactions



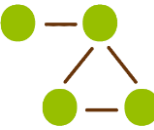
Profit margin improved: 10-15%



Quality produce and fast transactions



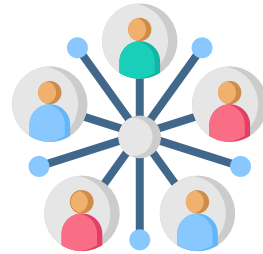
Current issue in pipeline:  
 Improvements in logistics service in peak season



# Testimony: CEO of Uduthadi FPO



Uduthadi Farmer Producer Organization (FPO), established in 2019.



1,000 shareholders



Services provided: Quality assessment, finances.

RootsGoods fulfills the supply.



Providing funds against the POs,



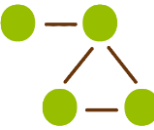
Timely payment



Turnover of ₹22 crores with a profit of ₹20 lakhs (2,000 tonnes procured)



Current issue in pipeline: Increasing purchase order



## Testimony: CEO of Attibylu FPO



Attibylu Farmer Producer Organization (FPO)  
established in 2018.



750 shareholders



MoU with RootsGoods, 2022

150 tonnes, 2022



210 tonnes, 2023



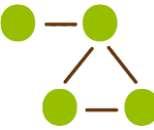
350 tonnes, 2024



Increased efficiency in maize  
procurement



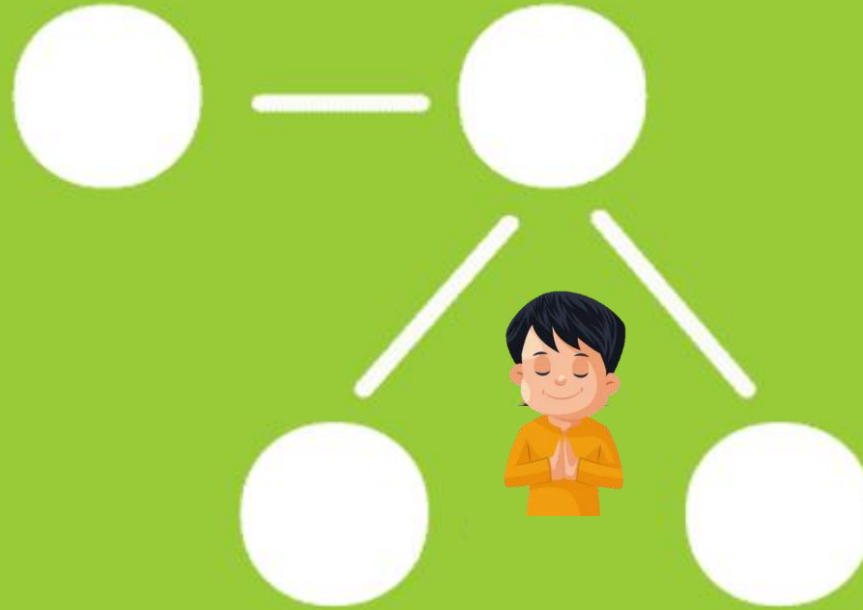
Current issue in pipeline:  
Easy transportation



# Accreditations

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1. Most Promising CEO award from **Chamber of Commerce**, Karnataka
2. Selected as one of 30 startups for Indian Delegation to attend **Indo-Asean Startup festival 2022** at Jakarta from IIT Kanpur and Ministry of External Affairs, Govt of India.
3. **Economics times** interviewed us: <https://economictimes.indiatimes.com/small-biz/sme-sector/a-karnataka-based-firm-is-giving-maize-the-worlds-second-most-widely-grown-crop-an-ai-boost/articleshow/101745851.cms>
4. Winners of **ATMAN Program** for 50 lakhs funding from IIT Kharagpur and IIT Indore through Department of Science and Technology India
5. RootsGoods is performing Proof of Concept (POC) testing project with McGill University in **Canada** and with University of Bayero in **Nigeria**
6. Selected as top **5 agritech startup** by Ministry of Electronics and Information Technology in the **India AI Programme**
7. Scaling in 5 North Indian states (**Punjab, J&K, Haryana, Himachal Pradesh**) through Northern Science Cluster- Pi Rahi under **Scientific Advisor for Prime minister, DST. GOI**
8. **Bio informatics Data** through pilots with **Scale ready platform** for other crops: **Already ENAM ONDC LIVE**



**Do you need to know the quality of crop for better market price?**

**RootsGoods Pvt. Ltd.**

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Email us at: [hegdekudgi@rootsgoods.com](mailto:hegdekudgi@rootsgoods.com)

Introduction video: <https://youtu.be/oW2-apjOB14>

PlayStore Link: [https://play.google.com/store/apps/details?id=com.foundercode.rootsgood\\_mvp3](https://play.google.com/store/apps/details?id=com.foundercode.rootsgood_mvp3)

Maize GPT Link: <https://maizegpt.streamlit.app/Chat>