AgriTek UDP – Doubling Farmers Income through DeepTech Platform
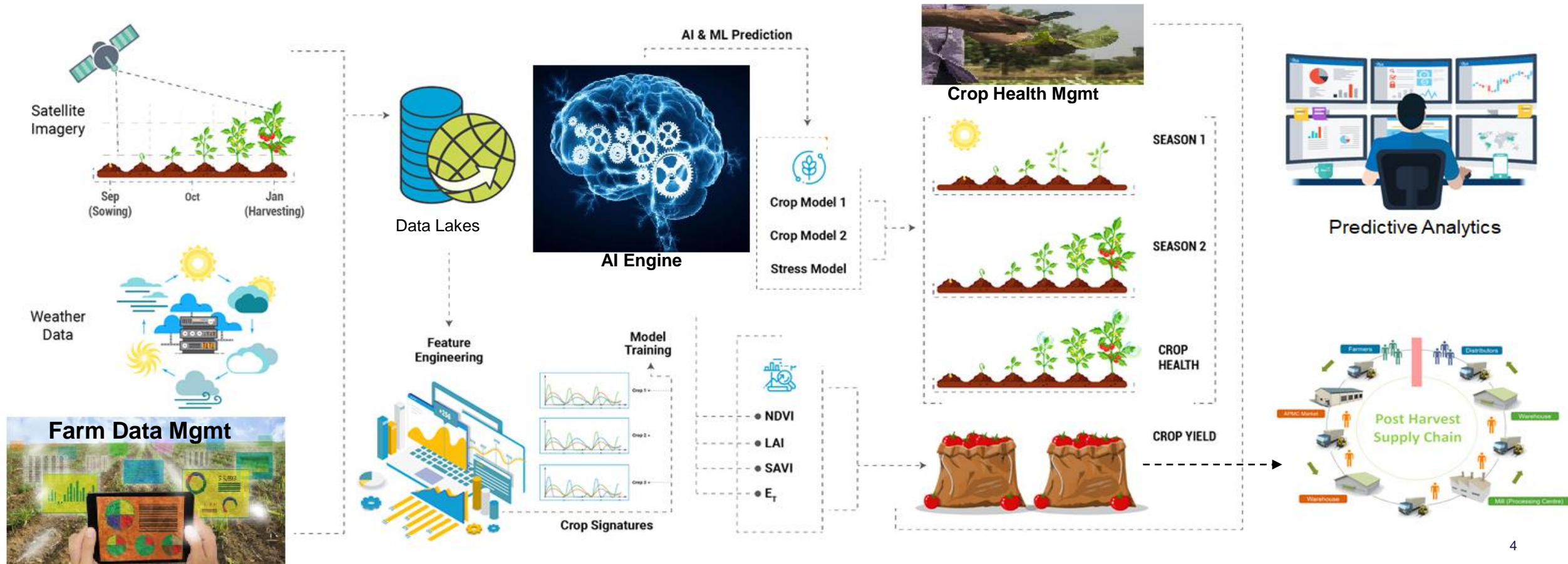
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Proposed Solution

Digital Agritek Platform

Agritek – One-stop-shop Digital Platform

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Digital Agritek Platform

Unified Smart Digital Agritek platform is built on latest open source technologies to include Knowledge management framework, uniform and context specific information dissemination mechanism built on the principles of Systems of Engagement and Innovation.

It facilitates seamless integration with all touch points of the agriculture ecosystem with full line-of-sight from **Land preparation to Produce marketing.**

The platform has the potential to scale up to all other allied sectors such as Animal Husbandry, Dairy, Sericulture, Apiculture, Aquaculture, etc. to encompass the entire rural ecosystem.

This platform also comes with built-in SLA matrix as well as AI based monitoring and Task generation engine to automate the entire gamut of services and events, assigning and monitoring the tasks for effective completion thus helping the authorities manage by exception
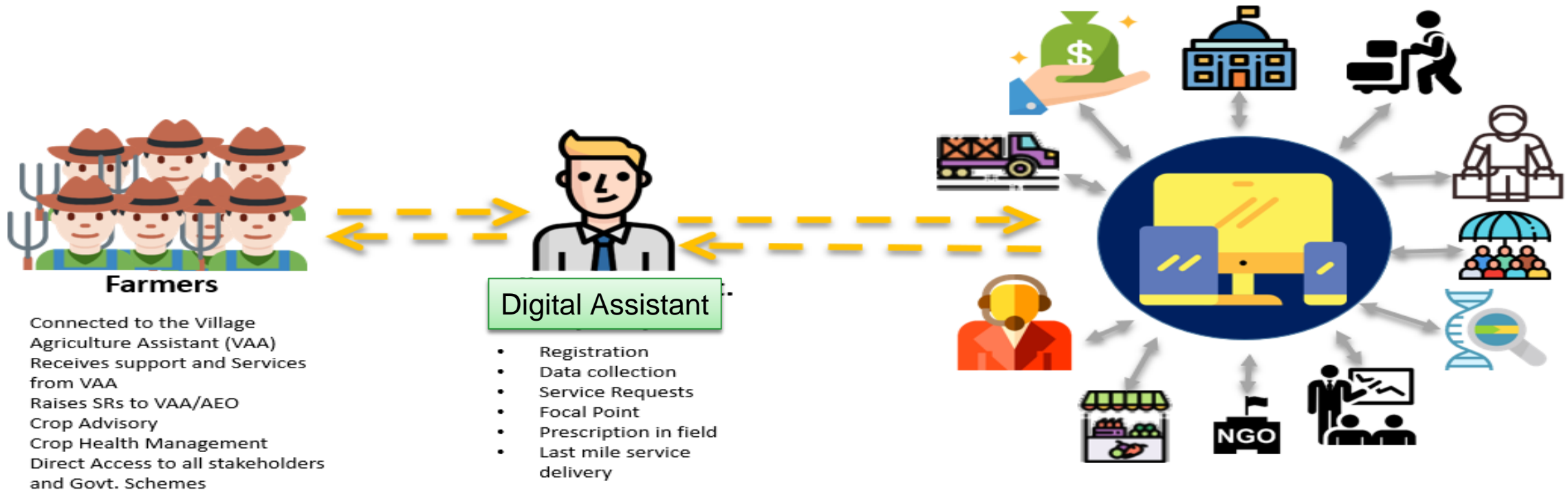
Agritek: Platform overview

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Agritek Digital platform is built on the principles of Systems of engagement and innovation. All stakeholders across the sector access the same single source of truth which keeps building on the process driven data from soil preparation to produce marketing. It keeps on accumulating data from both fields, processes, frameworks, Good Agriculture Practices (GAP), Crop health management, Remote sensing, Weather and all other contextual data both from input sources and operational interventions thus amassing immense data analytics possibilities through the AI engine. This platform is capable of handling the complete post-harvest cycle to maximize the value realization based on demand driven predictive analytics. Comprehensive role-based decision dashboards helps the Authorities make right decisions based on right data in real-time.

Satellite Imagery

Sep (Sowing) Oct Jan (Harvesting)

Data Lakes

AI Engine

AI & ML Prediction

Crop Model 1
Crop Model 2
Stress Model

Crop Health Mgmt

SEASON 1

SEASON 2

CROP HEALTH

CROP YIELD

Predictive Analytics

Post Harvest Supply Chain

Weather Data

Farm Data Mgmt

Feature Engineering

Model Training

Crop Signatures

- NDVI
- LAI
- SAVI
- E_T

Agritek: Operations overview

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The mobile App of the DAs/Extension Staff provides context specific information based on the farmer, crop being grown, weather, soil condition and their geo-location. Digital Assistant (DA) App works in off-line mode also in order for the Extension Staff to be able to support the farmers during the field visits even if there is no internet connectivity and automatically synchronizes the data as soon as the network connectivity is available.
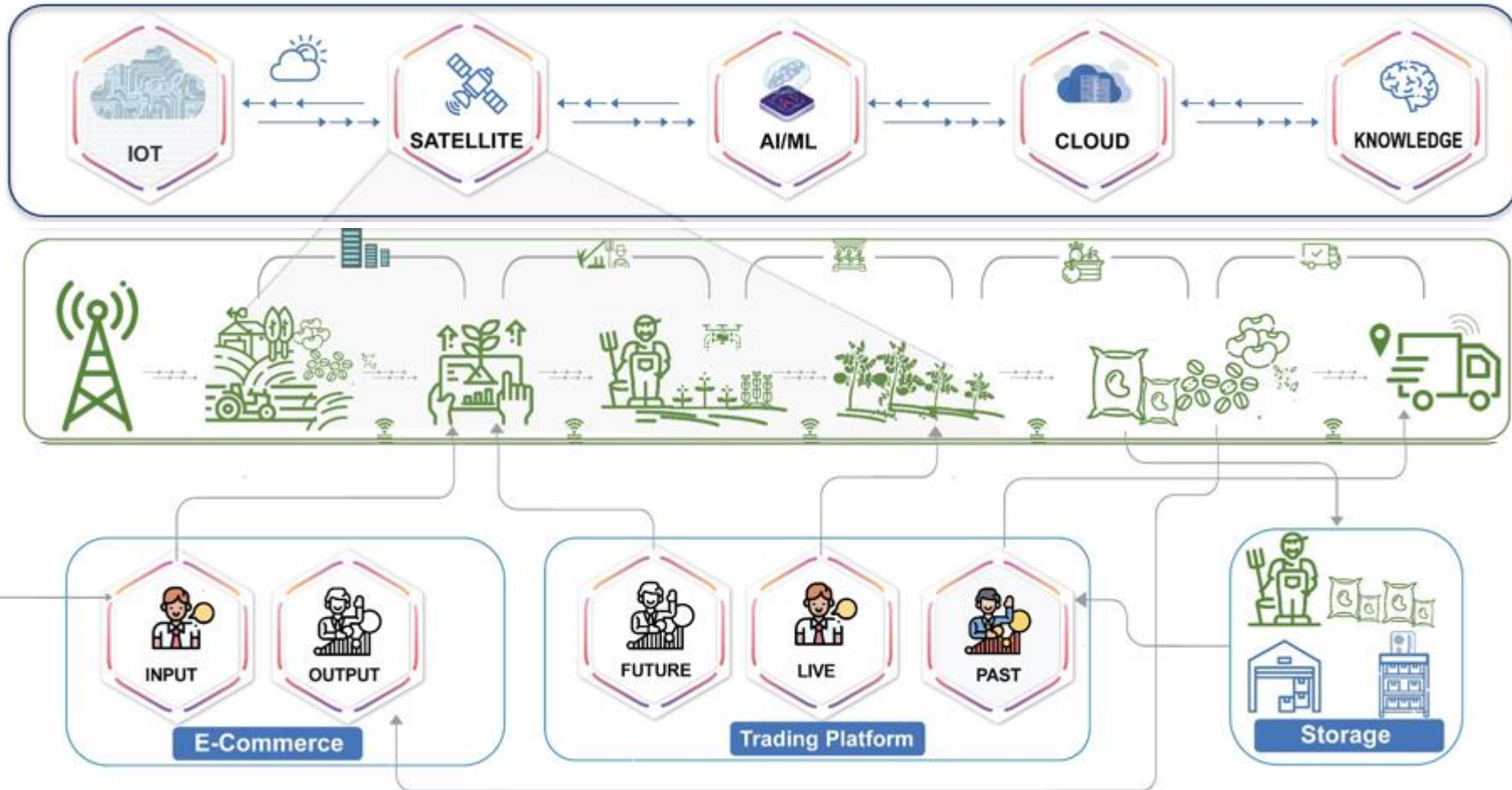
Farmers

- Connected to the Village Agriculture Assistant (VAA)
- Receives support and Services from VAA
- Raises SRs to VAA/AEO
- Crop Advisory
- Crop Health Management
- Direct Access to all stakeholders and Govt. Schemes

Digital Assistant

- Registration
- Data collection
- Service Requests
- Focal Point
- Prescription in field
- Last mile service delivery

SLA   RTG   BEST PRACTICES

Agritek Digital Platform

AgriTek UDP - Landscape

Doubling Farmers Income

Doubling Farm Income - 360° approach

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Crop Planning

- Demand sourcing – Global & Local
- Demand-driven cultivation
- Input planning – Seeds, Agro-chemical, Credit
- Establish crop colonies
- Promote contract farming
- Create compelling proposition – "Seed-to-fork"
- Develop integrated Value Chain
- Quality Compulsions
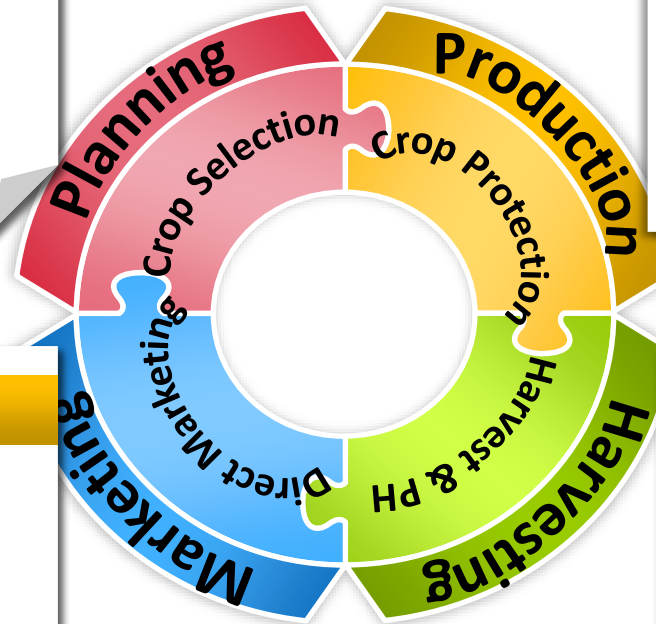- Develop Integrated Agribusiness Clusters

Crop Protection

- Input selection & Quality of Inputs
- Farm data capture – On-field & Remote
- Context specific Crop advisory
- Uberization of CHCs
- Crop Health Management (Prescription-in-Field)
- Input Quality assessment – Lab & Field
- Credit Linkages & Insurance management
- Resource optimization - Precision & Smart Agri
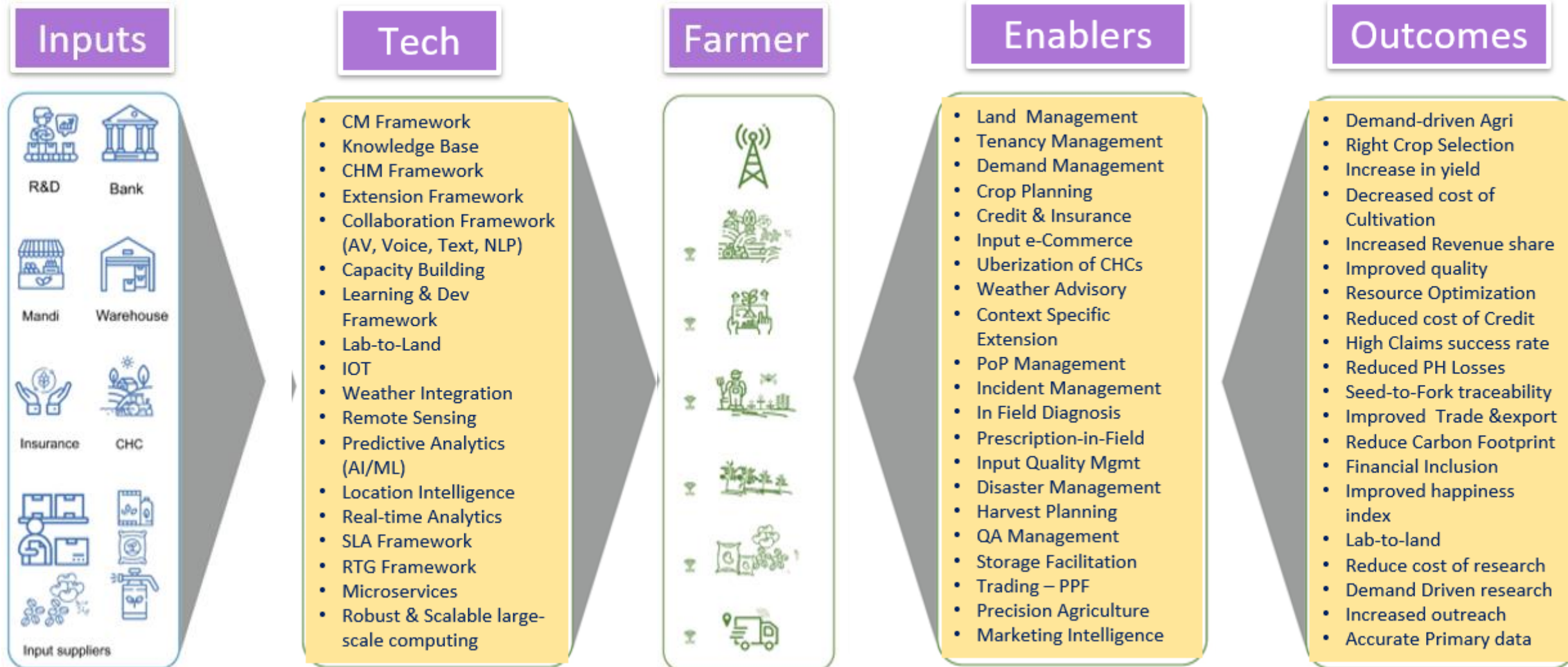- Disaster Management

Marketing

- Context specific market rates
- Direct Marketing
- Market Intelligence – Local and Global
- Demand Sourcing
- Matching Demand and Supply
- Demand fulfilment & Reconciliation
- On-line Trading – Bidding & Live Auctions
- 360° Marketing – Past, Present & Future
- Trade financing
- Trade Settlement

Harvesting

- Harvest Planning
- Decrease cost of harvesting - Uberization
- Farm gate Procurement
- Storage Facilitation – Warehouses & Cold Storage
- Warehouse Receipts Management Platform
- Credit & Insurance management
- Integrated Procurement Planning
- Logistics Management
- Reduce Post-harvest losses

Planning — Crop Selection
Production — Crop Protection
Harvesting — Harvest & PH
Marketing — Direct Marketing

Towards Doubling Farm Income

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Inputs

R&D | Bank
Mandi | Warehouse
Insurance | CHC

Input suppliers

Tech

- CM Framework
- Knowledge Base
- CHM Framework
- Extension Framework
- Collaboration Framework (AV, Voice, Text, NLP)
- Capacity Building
- Learning & Dev Framework
- Lab-to-Land
- IOT
- Weather Integration
- Remote Sensing
- Predictive Analytics (AI/ML)
- Location Intelligence
- Real-time Analytics
- SLA Framework
- RTG Framework
- Microservices
- Robust & Scalable large-scale computing

Farmer

Enablers

- Land Management
- Tenancy Management
- Demand Management
- Crop Planning
- Credit & Insurance
- Input e-Commerce
- Uberization of CHCs
- Weather Advisory
- Context Specific Extension
- PoP Management
- Incident Management
- In Field Diagnosis
- Prescription-in-Field
- Input Quality Mgmt
- Disaster Management
- Harvest Planning
- QA Management
- Storage Facilitation
- Trading – PPF
- Precision Agriculture
- Marketing Intelligence

Outcomes

- Demand-driven Agri
- Right Crop Selection
- Increase in yield
- Decreased cost of Cultivation
- Increased Revenue share
- Improved quality
- Resource Optimization
- Reduced cost of Credit
- High Claims success rate
- Reduced PH Losses
- Seed-to-Fork traceability
- Improved Trade &export
- Reduce Carbon Footprint
- Financial Inclusion
- Improved happiness index
- Lab-to-land
- Reduce cost of research
- Demand Driven research
- Increased outreach
- Accurate Primary data

USP - Seed to Fork Solutions

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Agritek Digital platform offers complete traceability of the produce from "Seed to Fork" with complete data on the full life cycle of all events and interventions. Integrated Crop heath Management and prescription management helps enhance the food quality and food safety. Harvest and post-harvest management processes can be completely mapped and managed on the system seamlessly thus extending the platform to encompass the full 360 degree and there by harnessing enormous data points for comprehensive predictive and prescriptive analytics. This offers an unparalleled opportunity for the Government to turn around the Agriculture sector and to make it self sustainable.
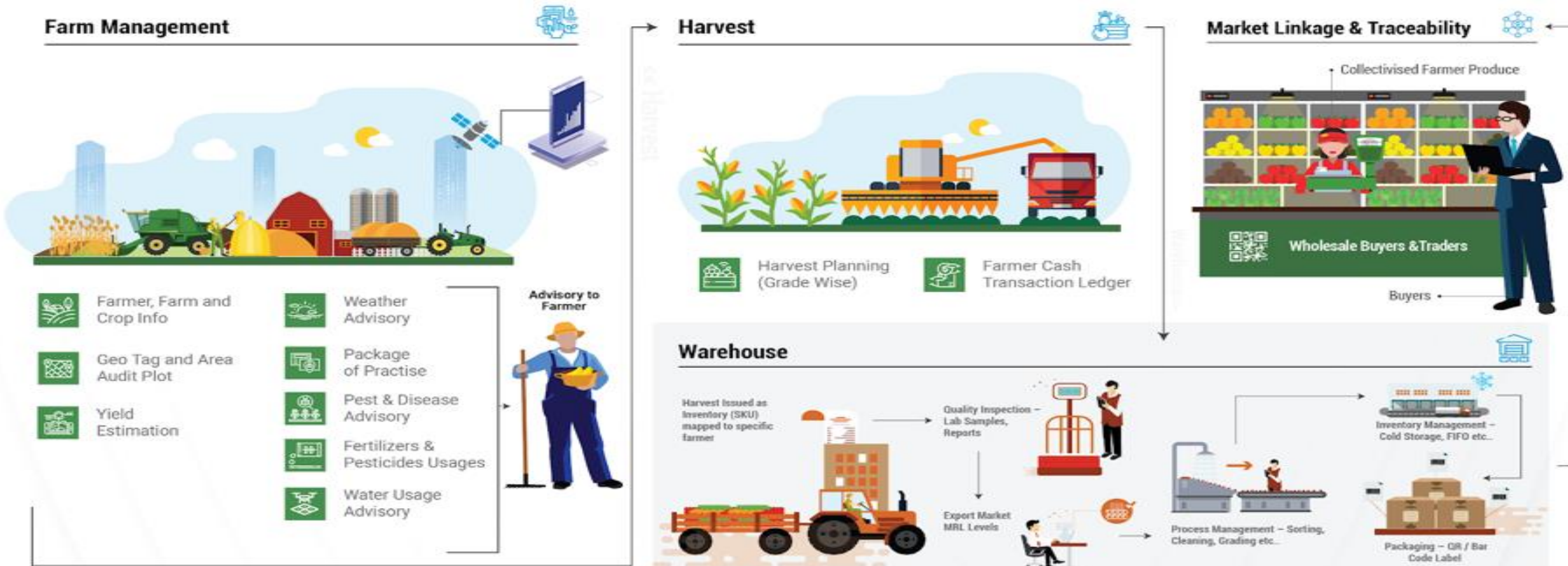
Agritek UDP – Summary of Key Features

Complete and up-to-date database of Farmers in line with the National Farmer Registry

Unified extension platform for seamless interaction of farmers with all stakeholders

RTG and Administration of Field Operations management

Context specific Good Agriculture Practices (GAP) Advisory to farmers delivered directly

Disease diagnosis and "Prescription in the field" functionality

Judicious use of Agrochemicals reduces cost of cultivation and environmental risk

Crop Loans and Crop insurance can be effectively managed

Subsidies, MSP interventions and other Govt initiatives can be directly communicated and delivered to farmers

Uberization of Custom hiring centers reduces cost of cultivation and increases rural employment

Context specific weather advisory delivered to the farmers directly

Storage facility information and booking management

Full "Line-of-Sight" to monitor input, actions and output (produce) – "Seed-to-Fork" ultimate USP

Direct market access and real-time market data access to farmers and Trading management

Centralized unified database of all Agriculture operations for real-time intelligent analytics

Manage, Monitor, control and optimize - actions, inputs and output real time

Agritek – Benefits

Stakeholder Benefits
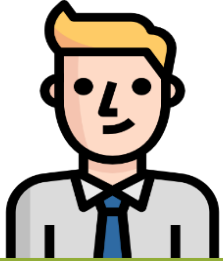
Village Agri Asst.(VAA)

- Effective and efficient service delivery
- Focal point for all Farmer interaction
- VAA Diary to maintain all day to day activities
- Unified platform for seamless data capture
- Minimal data entry
- Personal Development
- Farmers data and crop data at finger tips
- Access to context specific knowledge
- Task automation engine to guide performance
- Potential for self-actualization
- Conduct Surveys

Government

- Accurate primary data
- Employment generation
- Rural Development
- Improved Economy
- Increased Trade and Export
- Reduced carbon footprint
- Demand driven agriculture
- Reduced financial support burden
- Extended outreach
- Good governance
- Financial inclusion
- Rural Tourism
- Improved living conditions and happiness index
- Reduced stress on cities/towns
- Performance monitoring of all stakeholders

Farmers

- Increased farm yield
- Reduce cost
- Direct access to market
- Increased earnings
- Farm Economics
- Direct access to Govt, facilities, etc.
- Direct access to research
- Community development and support
- Better bargaining power
- Enhanced product value
- Equal opportunity platform

Input Suppliers

- Increased Market
- Reduce cost of Marketing
- Direct access to Customers
- Accurate Feedback
- Opportunity to develop close customer bonding
- Customer loyalty
- Control of counterfeit goods
- R&D support
- Showcasing opportunity
- Enhanced product value
- Direct CSR opportunity

Customers

- Quality produce
- Reduced cost of procurement
- Direct access to farmers
- Influence positive outcomes
- Opportunity to develop close bonding
- Farmer loyalty
- Proper and direct utilization possibilities of CSR providing extended benefits and reach
- Showcasing opportunity

R&D

- Direct access to field trials and extended trials
- Reduces cost of research
- Expedites adaption
- Demand Driven research possibilities
- Enables more with less
- Unbiased selection based on agro climatic suitability
- Instantaneous dissemination of research findings
- Immediate notification of UDMs and Epidemics

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Thank you