

IDEA

India Digital Ecosystem of Agriculture

Conceptualization

- Department of Agriculture, Cooperation, and Farmer Welfare, GOI, 2021
- Doubling of farmer's income
- Increase productivity and profitability of the farmers
- Achieve SDGs – end hunger, poverty, malnutrition
- Integrate the ecosystem – horticulture, animal husbandry, fisheries, dairy, poultry, and allied activities

Challenges

- Food sufficiency but nutrition deficiency
- High import of edible oil
- Yield stagnation
- Degrading soils and water stress
- Inadequate market linkages
- Volatile prices, information asymmetry, lack of crop planning
- Post-harvest losses, wastages

Digitalization of Agriculture

Digital Transformation of Food Systems - a global perspective*



Strengthen **access** to foundational data and promote **data sharing**



Safeguard **farmers' data & privacy**



Review regulations that constrain **precision agriculture**



Enable **competition** in digital markets



Support development of **digital payment** systems



Support digital **entrepreneurship** ecosystem



Invest in **R&D**

* Digital Transformation of Agri-food systems – World Bank Group (2021)

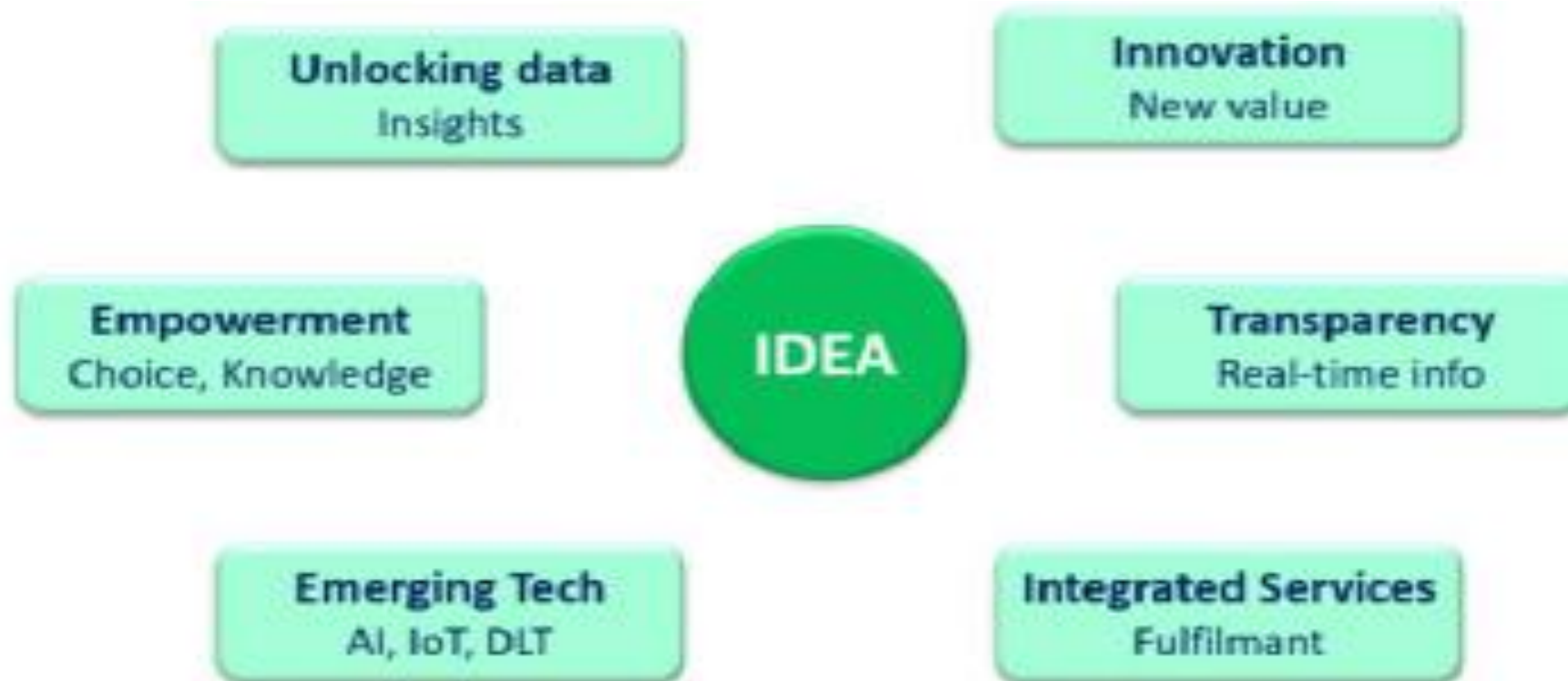
IDEA

- ❑ GOI initiated constituted a taskforce and a working group for designing a blueprint for digital agriculture
- ❑ An ecosystem approach, named as IDEA
- ❑ The farmer is placed in the center of the agriculture ecosystem
- ❑ Principles and patterns designed by the Ministry of Electronics and IT

Features of IDEA

- Farmer takes informed decisions on what crop to grow, what variety of seed to buy, when to sow and the best practices to be followed
- The supply chain players plan the production and logistics based on the timely information
- Farmers to get the benefits of innovative solutions and personalized services driven by emerging technologies
- Precision agriculture to become a reality

IDEA - Perspective



Objectives of IDEA

- Vision – “To build a National Digital Agriculture Ecosystem, to elevate Indian Agriculture sector to higher levels of efficiency and productivity, and to improve the welfare and income of farmers”
- Objectives
 - Enable the farmer to realize higher income and better profitability through access to right information at the right time
 - Enable better planning and execution of policies, programs and schemes of the central and state govts, FPO's
 - To enhance efficiencies in the usage of resources
 - Provide location specific and personalized extension services

Objectives of IDEA

- Build capacities in digital and precision agriculture
- Promote adoption of standards and seamless exchange of information across ecosystem while ensuring the digital rights are protected
- Promote R&D and innovations
- Adopt the best principles of cooperative federalism
- Realize the “Power of the Digital”

Mapping of Agriculture Value Chain

Focus on VALUE around 5 Personas and 26 Value Nodes



Mapping of Agriculture Value Chain

- Value mapped around three stakeholders – farmer, government, market
- Value nodes are functional areas in which value is enhanced or new value created through innovation
- Enables relationships of various value nodes to be visualized for realizing value on an end-to-end basis
- All activities centered around nodes
- Value nodes is non-exhaustive and can be modifies or enhanced

IDEA Principles

- Ecosystem principles – design all digital initiatives as ecosystems and not as systems
 - Ecosystems span across center and states, public and private and are composed of several autonomous, interoperable and federated systems
- Building block approach – categorizing the building blocks as core, common or reference building blocks based on the degree to which they are to be centralized. All building blocks to evolve orthogonally – any block can be modified without requiring the other blocks to make any consequential changes
- API based – adopt the principle of ‘open-API by default’
- Open systems – open source, to be published as open source, to conform to open standards
- National portability – design national digital systems and platforms for portability – factor the requirements of localization and diversity, inclusion, and special needs

IDEA Principles

- Participatory design – end user engagement at all stages of the digital initiative
- Innovation – enable and promote innovation, and responsible deployment of emerging technologies.
- Adopt a federated architecture model for designing digital ecosystems – especially data and applications
- Value driven – focus on providing additional or new value to the user.
- Adopt the principle of cloud first technology and design the delivery of all digital services through mobile

IDEA Ecosystem Architecture

