



सत्यमेव जयते



मानकः पथप्रदर्शकः

18 March 2024

Standardization in SMART Agriculture : *The Way Ahead*

ITU/FAO Workshop on “Cultivating Tomorrow:
Advancing Digital Agriculture through IoT and AI”

Session 2:

Seeds of Standardization: Nurturing Digital Inclusion in Agriculture



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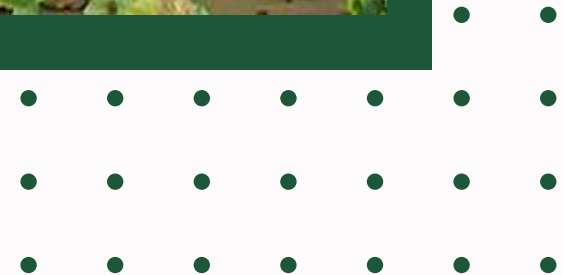
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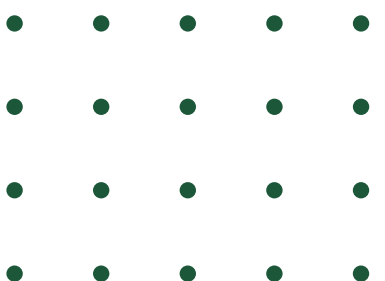
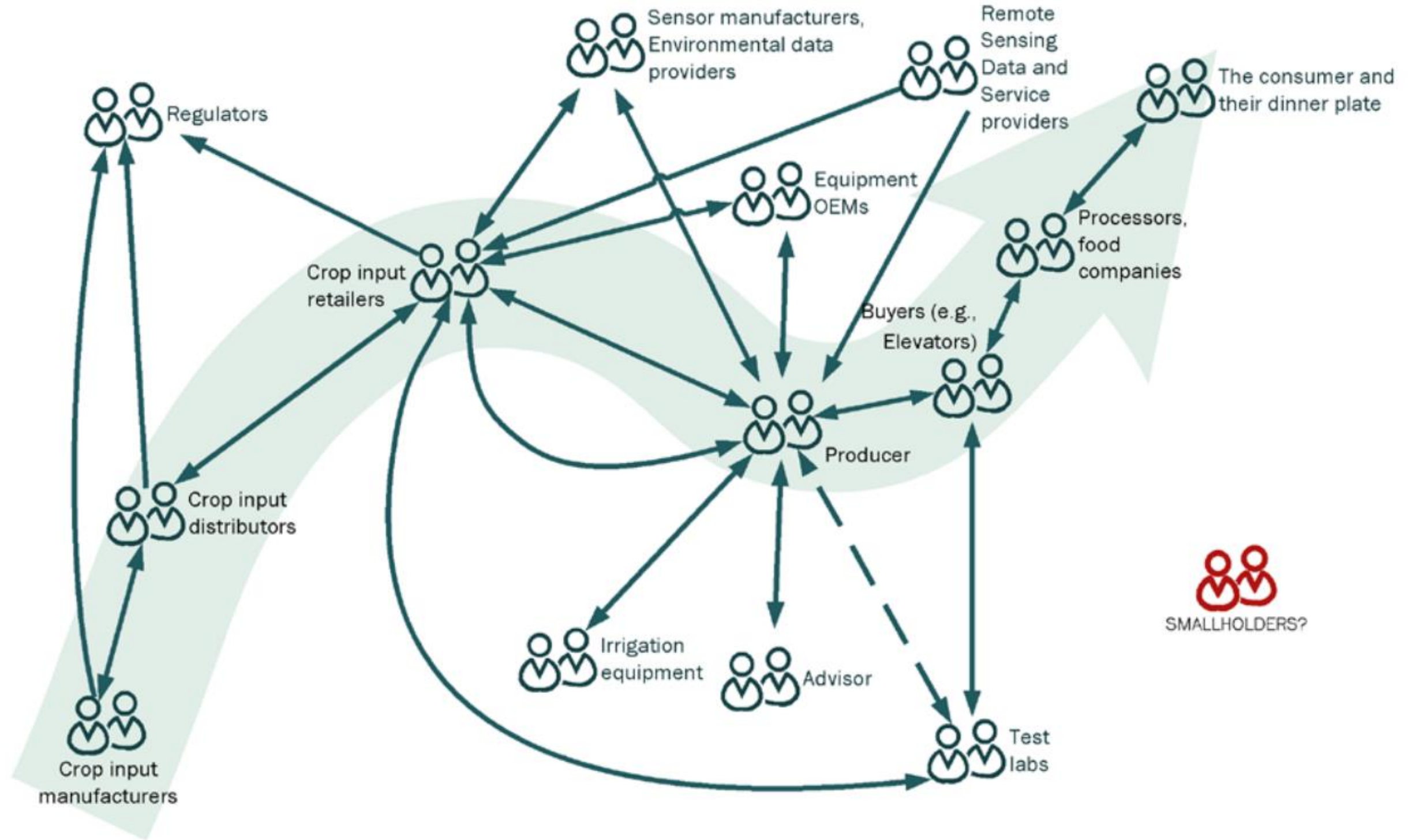
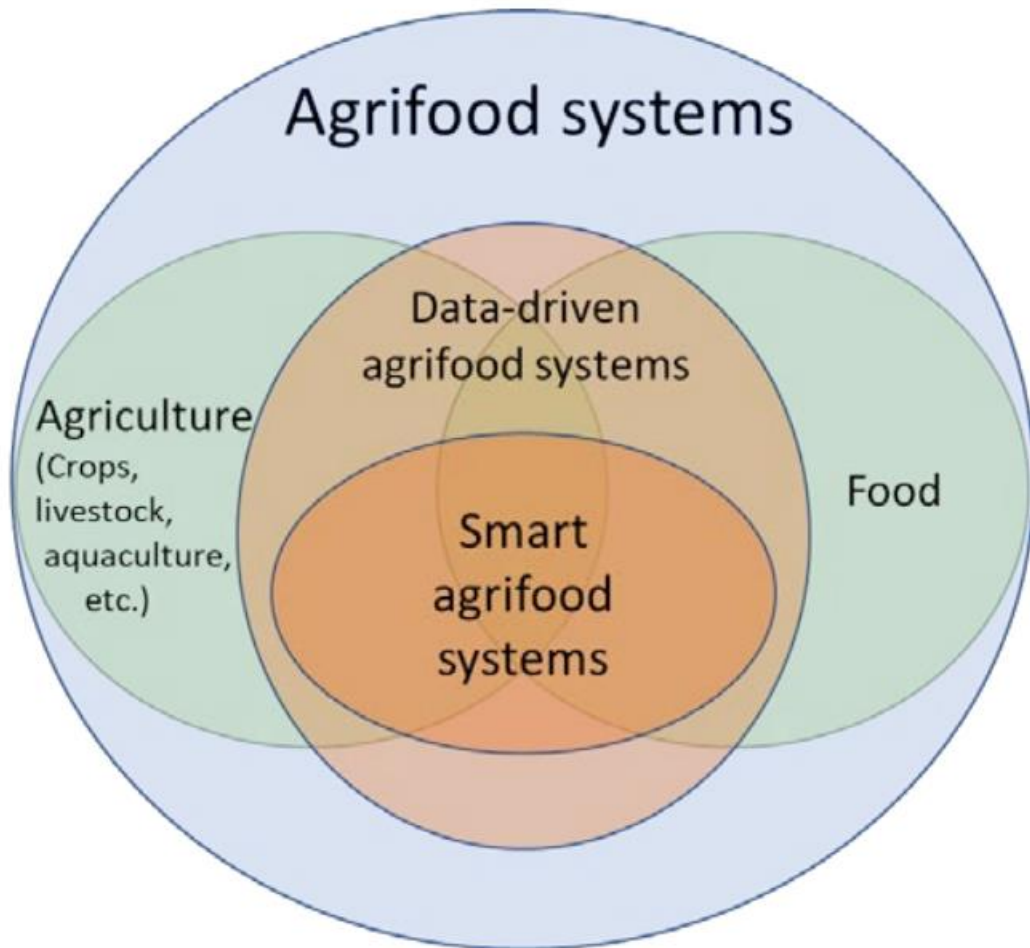
Question of the hour?



SMART Agriculture

Smart Farming is data-driven, principled decision making in agricultural and food value chains occurring as multi-objective optimization in the context of global volatility, uncertainty, complexity and ambiguity.

: ISO/SAG on SMART farming

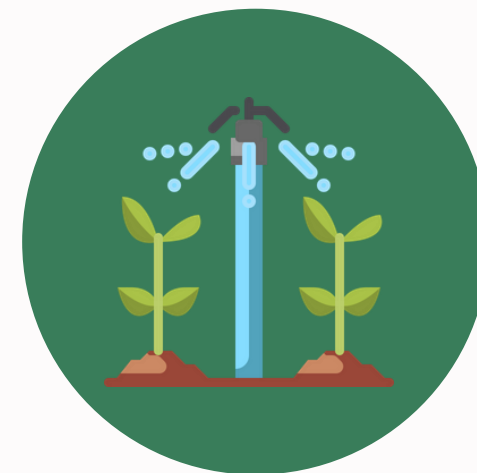


Standardization in Agriculture sector

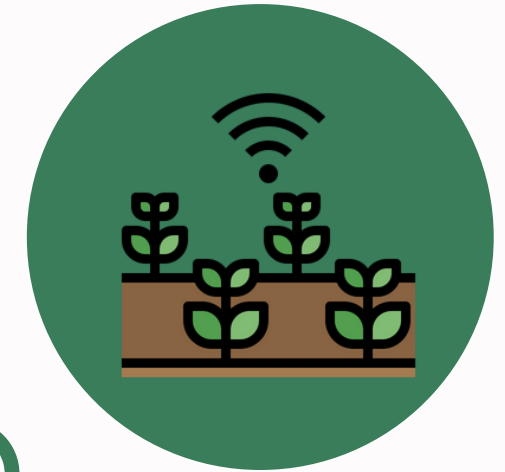
- Erstwhile known as Indian Standards Institution (ISI), Bureau of Indian Standards was established on 6th Jan, 1947 with the objective of promoting standardization, quality control and simplification in industry & commerce.
- The BIS Act 2016 enforced on 12th October 2017 gave BIS the status of National Standards Body
- Standardization in food and agriculture through Food and Agriculture Departments of BIS.
- Dedicated Sectional Committees (group of experts) for standardization in specific areas of Agri-food ecosystem.



Agriculture
Mechanisation
(pre and post
harvest)



Irrigation and
drainage



Agriculture
systems and
management



Agriculture
Inputs

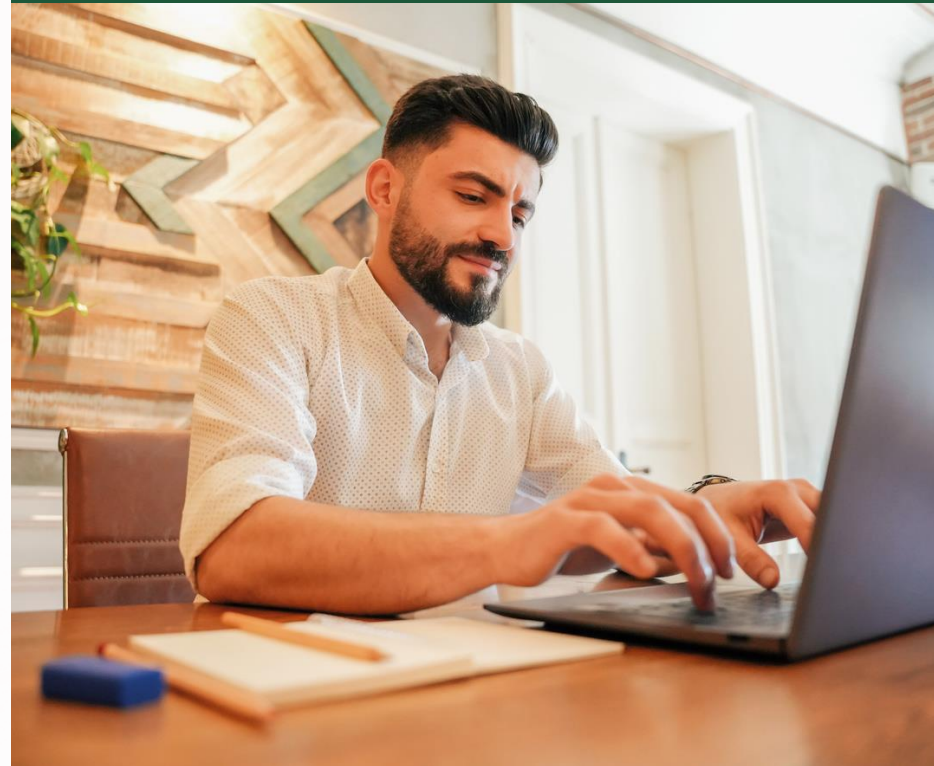
Transition to SMART agriculture

Research Based



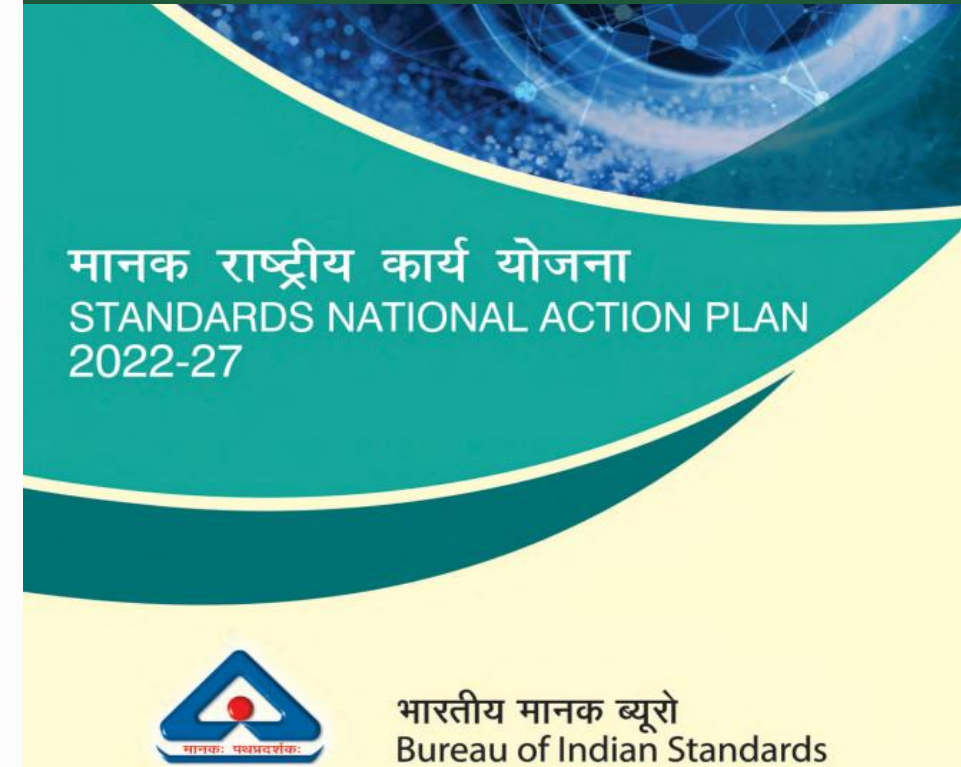
Several research in the field of protected cultivation technology, precision agriculture, drone application, urban farming technology etc were initiated under public-private research stations.

Start-up ecosystem



Several start-ups in India started developing technologies in Agriculture automation, sensor based solutions, hydroponic/ aeroponic/ vertical agriculture etc.

National-International Goals



ISO/SAG on SMART farming was formulated and Standards National Action Plan (SNAP) 2022-27 developed by BIS identified SMART agriculture as a subject for standardization.



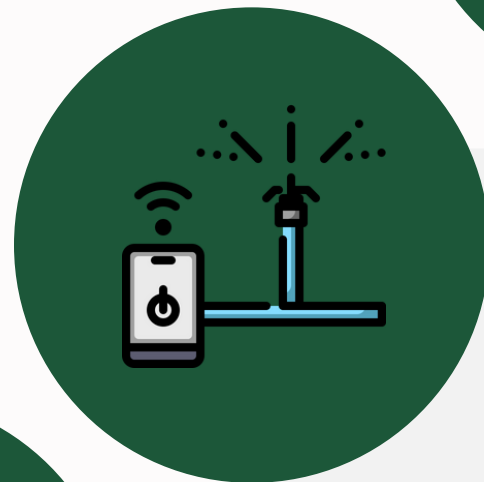
BIS Focus

- SNAP 2022-27
- Stakeholder consultation
- Policy integration
- SDG alignment



Autonomous

Autonomous self-propelled agri machineries



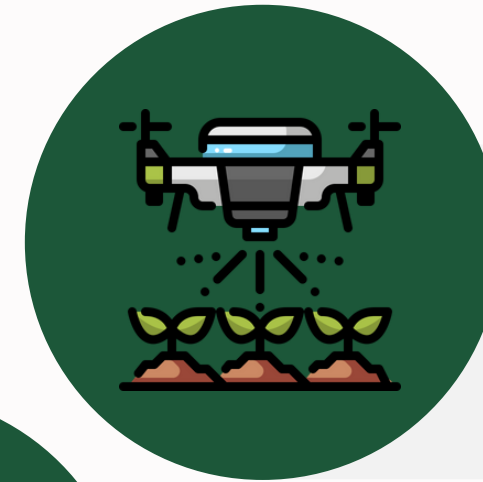
Remote Monitoring

Remote Monitoring and Control system in micro irrigation



Urban Farming

Hydroponic, artificial lighting, sensor enabled greenhouse



Drone application

Drone spraying system and drone seeding system

BIS in ISO/SAG and ISO/TC 347

The SAG was formulated in order to understand SMART agriculture, establish linkage between SDGs and SMART agriculture, identify the gap areas and lay down the future roadmap for the SMART agriculture to be implemented.



Representation

India represented in the core group as well as in 9 subgroups of ISO Strategic Advisory Group on Smart Farming (SAG) (crop production, livestock, urban farming, climate and environment, Original Equipment Manufacturers (OEM), Terminology and Semantics, Social Aspects, Data and Supply chain)



Perspective

Perspective of an agrarian economy, developing nation and marginal/small farmers. The recommendations of ISO/SAG explored all possibilities, but during its implementation the biggest impediment will be technology adoption by small and marginal farmers.



ISO/TC 347

India is a participatory Member. Scope of ISO/TC 347 cover the field of big-picture, data-driven, principled-decision-making, multi-objective optimization of agricultural and food systems. This includes interoperability challenges.

Challenges in standardization



01

The small and marginal farmer conundrum.
(A developing nation perspective)

02

Lack of quality data for standardization
(diversity of critical factors)

03

Lack of required expertise in SMART
agriculture technologies.

04

Simultaneous focus on National Mission
for Sustainable Agriculture (NMSA)
(Sustainable and regenerative practices
v/s SMART agriculture)



Question of the Hour

Sustainable and
regenerative
practices


Integrated
solutions
through
Standards

SMART
agriculture
technology

How to integrate sustainable agriculture practices and SMART agriculture technology?
Or how to identify the existing integration?


THANK YOU

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