

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

RAJYA SABHA
UNSTARRED QUESTION NO. 828
TO BE ANSWERED ON 09/02/2024

USE OF DIGITAL AND ANALYTICAL TOOLS IN AGRICULTURE

828. SMT. KANTA KARDAM:

Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

- (a) whether Government has taken any steps to leverage the use of digital and analytical tools in agriculture;
- (b) if so, the details thereof;
- (c) if not, the reasons therefor;
- (d) whether Government proposes to introduce new analytical tools in the agriculture sector;
- (e) if so, the details thereof; and
- (f) if not, the reasons therefor?

ANSWER

MINISTER OF AGRICULTURE AND FARMERS WELFARE

(SHRI ARJUN MUNDA)

(a) to (f): The Ministry of Agriculture and Farmers Welfare has taken various initiatives to build Digital Public Infrastructure (DPI) for agriculture as an open source, open standard and interoperable public good. These initiatives intend to provide access to technology and information to the farmers across the country to address the farmer-centric solutions, through various digital initiatives, such as:

- I. Under the Agristack initiative, the Government has initiated the development of three core registries, viz. Farmers Registry (Registry of Farmers), Geo-Referenced Village maps (of the Farmland plots) and Crop Sown Registry through the Digital Crop Survey. The Digital Crop Survey establishes a clear picture of crop being sown across all the farmlands in the country during the different agriculture seasons. These initiatives have been launched on pilot basis in some States.
- II. National Project on Soil Health and Fertility:-Issuance of soil health cards to farmers of the country, so as to provide a basis to address nutrient deficiencies in fertilization practices. The Soil Health Card Portal helps farmers to track soil samples.
- III. Unified Portal for Agricultural Statistics (UPAg) is an advanced agricultural data management platform designed to generate crop estimates and integrate with other systems generating Agriculture Statistics such as Price, Trade, Procurement, Stock etc. It serves as a centralized hub for near real time information on crop production, market trends, pricing, and other vital agricultural data. By unifying diverse sources of agricultural statistics, the portal enables a comprehensive and cohesive view of the agricultural landscape, facilitating better decision-making and policy formulation.
- IV. Krishi Mapper application has been developed to establish a comprehensive land-intervention database under various agricultural schemes and programs. This centralized repository not only enhances efficiency in data management but also plays a crucial role in preventing leakages in

government schemes related to fertilizers, seeds, PM-KISAN, and more. By facilitating the identification of farms, Krishi Mapper ensures targeted and efficient utilization of resources.

- V. Several new technological initiatives have been taken under the Pradhan Mantri Fasal Bima Yojana such as Yield Estimation System, based on Technology (YES-Tech), Weather Information Network Data Systems (WINDS) and door to door enrollment app AIDE/Sahayak.
- VI. The functioning of the Commercial Horticulture Schemes of National Horticulture Board (NHB) has been completely digitized through a customized web-based online portal. Through this portal the farmers/entrepreneurs can file and track status of their applications online. Handling of applications is also done online by NHB which allows applicants to respond to the queries and submit required documents online, apart from getting updates through SMS and emails. The physical pre-inspection of the project land is done away and replaced with mobile based App to capture the geo-coordinates. These measures have improved the transparency and efficiency in the sanctioning process.
- VII. Drought portal hosts data of multiple drought indicators related to rainfall, soil moisture, remote sensing-based crop condition, water storages etc. This portal provides drought indicators from a single window digital platform and enables easy, timely and objective assessment of drought situation over any district or region.
- VIII. Kisan-eMitra (PM Kisan Samman Nidhi chatbot) is an Artificial Intelligence (AI)-assisted Grievance Management System. The chatbot has been integrated with Bhashini and currently supports 5+ indic languages. By bridging the technological gap, this solution ensures that even those with limited access to advanced devices can seamlessly engage with the AI Chatbot and access crucial information related to payments, registration, and other facets of the PMKISAN program.
- IX. To create awareness on use of Kisan Drones, the government under Sub-Mission on Agricultural Mechanization (SMAM) is providing financial assistance for its purchase and demonstration on the farmers' fields. To promote technology in the rural development and agriculture sectors, government has approved 15 thousand drones to women through Self-Help Groups.
- X. In addition, under National e-Governance Plan in Agriculture (NeGPA), a Centrally Sponsored Scheme, funds are provided to states for the projects involving the use of modern Information Technologies, such as Artificial Intelligence, Machine Learning, Block chain Technology, the Internet of Things, Robotics, etc. The details of projects sanctioned under this schemes is given at Annexure.

These initiatives aim at enhancing interoperability and convergence of efforts, fostering the development of applications in the agricultural sector using emerging technologies.

Projects sanctioned under NeGPA from FY 2020-21 to 2023-24

S No	State/UT	Year	Project Name
1	Tripura	2022-23	Centralized farmer database, Direct benefit transfer, Precision farming, Integrated Information Ecosystem, Use of AI/ ML and Block chain technologies, Capacity Building of Employees, Digital Soil Health Card App, SSO Integrated Platform, Farmer Producer Organization (FPO) Portal etc.
2	Punjab	2020-21	Development of Crop and Soil Digital Algorithms for Crop Growth Monitoring, Crop Yield and Soil Quality and Precision irrigation in major cropping systems
		2021-22	Estimation of Ground water draft and water budgeting
		2023-24	Implementation of National e-Governance Plan in Punjab
3	Uttar Pradesh	2020-21	(i)Unmanned Aerial Vehicle for Agriculture Applications, (ii) Hand Held Tool based Soil Health Monitoring Integrated system and (iii) Automated Fire Alert System for Crop Residue Burning in U.P.
		2023-24	Digital Crop Survey
4	Assam	2020-21	e-project on ML based Crop Health Checkup for paddy crops.
		2023-24	Pilot on Digital Crop Survey
5	Puducherry	2022-23	Project proposal for setup of Intelligent Agriculture Advisory System(i-AAS), Robotic Control Tissue culture (RCTC) and real time irrigation management system(RIMS)
6	Nagaland	2021-22	Soil & Water Resource Management, Meteorological Analysis & Forecasting System using Remote Sensing, GIS mapping, Drone and Emerging Technologies under NeGPA
7	Bihar	2020-21	Digital Package of Practices for Major Crops and Automation Technique in Irrigation In State Seed Multiplication Farms
		2023-24	Pilot of Digital Crop Survey
8	Himachal Pradesh	2022-23	Project proposal for setup of ICT Infrastructure Requirements in the Department of Agriculture
9	Meghalaya	2020-21	Development of web and mobile based "Crop Pest Surveillance and Advisory Project (CROPSAP)
		2021-22	Regarding creation of farmers database
10	Odisha	2020-21	Creation of Farmer Database
		2021-22	Phase II of Krushak database
		2023-24	Digital Crop Survey

11	Sikkim	2021-22	Sikkim Agriculture Resource and Management System (ARMS)
		2023-24	Precision farming in Sikkim
12	Telangana	2020-21	(i)Crop Monitoring(ii)Automated irrigation Systems(iii) Fertilizer Calculation (iv)Automated Farm Operation (v)Traceability from
		2023-24	Digital Crop Survey
13	Arunachal Pradesh	2020-21	Resilient Supply Chain for identified Agricultural Crops Leveraging Digitization
		2021-22	1.Developing a resilient Agriculture /Farm Produce Supply Chain System Leveraging Digitalization in Arunachal Pradesh 2. Development of Smart Pest Surveillance System cum Geo Spatial aided Agricultural Information System
		2023-24	Creation of Farmer Database & Supporting Farmers through Real Time Geospatial Analytics in increasing Farm productivity in Agriculture by Machine Learning Technique
14	Andhra Pradesh	2020-21	Unified Digital Programme (UDP) for Agriculture
		2021-22	Implementation of Phase-II “Unified Digital Platform app to operate Rythu Bhrosa Kendralu (RBKs)”
15	Madhya Pradesh	2020-21	(i)Precision Farming and(ii)Ground water Availability
		2023-24	1.To operate and Maintain ‘e-Krishi Yantra Anudan Portal’ (Online Subsidy Disbursement System in E-Rupi Mode) 2. Digital Crop Survey
16	Tamil Nadu	2021-22	creation of Unified Farmers Database and building layers or solutions over the Farmers Database
		2023-24	1.Geo-referencing of 8026 villages and Development of Farmers’ database 2.Digital Crop Survey
17	Mizoram	2021-22	Geospatial Analytics & Decision Support for agriculture Development in Mizoram
18	Gujarat	2023-24	1.Revamping of existing iKhedut Portal 2. Digital Crop Survey
19	West Bengal	2023-24	Development of Digital Ecosystem for Crop Mapping, Crop surveillance, Crop Yield & Production Estimation in west Bengal
20	Kerala	2023-24	Digital Crop Survey
