

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

LOK SABHA
STARRED QUESTION NO. 223
TO BE ANSWERED ON 19th DECEMBER 2023

NEW TECHNOLOGY AND INNOVATION IN FARMING SECTOR

223. DR. AMOL RAMSING KOLHE:
DR. DNV SENTHILKUMAR S.:

Will the Minister of AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्री be pleased to state:

- a) whether the Government has taken measures to encourage the use of new technology and innovation in the farming sector in the country especially in the States of Maharashtra, Tamil Nadu, Odisha and Andaman & Nicobar Islands and if so, the details thereof;
- b) whether the Government has developed any mechanism to disseminate information about such innovations/technologies to the farmers during the last five years;
- c) if so, the details thereof along with the number of farmers who availed benefits from such innovations/technologies during the said period in the above States;
- d) the measures taken by the Government to incentivize "Make in India" innovation in farming technology;
- e) the details of grants given by the Government for farming related technology and the disbursement thereof;
- f) the salient features of Kisan Portal and its advantages along with the number of farmers benefited from this Portal since its inception; and
- g) the other steps taken by the Government to spread awareness and ensure last-mile delivery of technology/innovations to the farmers?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्री (SHRI ARJUN MUNDA)

(a) to (g): A Statement is laid on the Table of the House.

STATEMENT IN RESPECT OF PARTS (a) to (g) OF LOK SABHA STARRED QUESTION NO. 223 TO BE ANSWERED ON 19th DECEMBER 2023 REGARDING “NEW TECHNOLOGY AND INNOVATION IN FARMING SECTOR”

(a), (b) and (c): Yes, Sir. The Government has taken measures to develop and encourage use of new technologies and innovations. ICAR during 2014-15 to 2022-23 has developed new varieties including 140 bio-fortified, 1971 biotic and abiotic stress tolerant new varieties, 369 varieties of pulses and 358 varieties of oilseeds; 28 eco-friendly pest management modules; 272 farm machineries; 53 multi-enterprise integrated farming system modules; 61 vaccines and diagnostic kits against animal and poultry diseases; 44 aquaculture, marine fisheries and prawn production technologies and practices; contingency practices; soil-crop-water management strategies; bio-fertilizers and bio-formulations; integrated organic farming practices; and improved cattle and sheep breeds.

The Government is implementing Krishi Vigyan Kendras (KVKs) scheme in different States of the Country through 731 KVKs including States of Maharashtra (50 KVKs), Tamil Nadu (32 KVKs), Odisha (33 KVKs) and Andaman & Nicobar Islands (3 KVKs) to encourage use of and disseminate information about new technology and innovation in the farming sector to the farmers. The activities of KVKs include on-farm testing to identify the location specificity of technology under various farming systems; frontline demonstration to establish the production potential of improved agricultural technologies on the farmers' fields; capacity development of farmers for knowledge and skill up gradation; and production of quality seeds, planting materials and other technology inputs for availability to the farmers. In order to develop awareness about agricultural innovations and technologies among the farmers, a large number of extension activities are taken up by the KVKs. Besides, Government is also implementing a centrally sponsored scheme namely 'Support to State Extension Programmes for Extension Reforms' popularly known as 'ATMA (Agricultural Technology Management Agency) Scheme' in 739 districts of 28 states & 5 UTs in the country including 33 districts of Maharashtra, 37 districts of Tamil Nadu, 30 districts of Odisha and 3 districts of Andaman and Nicobar Islands to support efforts of State Governments in making available latest agricultural technologies through various activities including exhibition/farmers' fairs.

About 19 crore farmers benefited through these schemes from 2018-19 to 2022-23.

(d) and (e): Under Sub Mission on Agricultural Mechanization (SMAM) scheme being implemented from 2014-15, Department of Agriculture & Farmers Welfare (DA&FW) provides financial assistance for purchase of agricultural machines and equipment to the farmers on individual ownership basis and for establishment of Custom Hiring Centre (CHC)/High Tech Hub/Farm Machinery Bank (FMB) which includes subsidy ranging from 40% to 80% for individual farmers to Cooperative Societies, FPOs, Self Help Groups (SHGs) and Panchayats. An amount of Rs. 4724.53 crore has been released for the purpose of agricultural machines and equipment during last five years.

Likewise, subsidy for purchase of Kisan Drones is also being provided. The Government has recently approved Central Sector Scheme for providing drones to the Women Self Help Groups (SHG) (NAMO Drone Didi Scheme) with an outlay of Rs. 1261 Crores. The scheme aims to provide drones to 15000 selected Women SHGs for providing rental services to farmers for agriculture purpose (application of fertilizers and pesticides). Funds amounting to Rs. 141.39 crores have been released towards Kisan Drone promotion.

Such incentives create demand for farm machineries and drones in the market and in turn promote Make in India innovations in farming sectors.

(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 including the state of Rajasthan.
- 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. YES-TECH, a technology-driven yield estimation system, offers methodologies, best practices, and integration insights for accurate yield assessments at the Gram Panchayat level. WINDS Portal is a centralized

platform that hosts, manages, and processes hyper-local weather data collected by Automatic Weather Stations and Rain Gauges at Taluk/Block and Gram Panchayat levels. The portal enhances risk assessment and decision-making in crop insurance, agriculture advisories, and disaster mitigation, supporting the agricultural sector and rural economy.

- 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.

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

Indian Council of Agricultural Research, in collaboration with Digital India Corporation, Ministry of Electronics and Information Technology (MeitY), Government of India, created an intelligent online multilingual platform named **Kisan Sarathi (System of Agri-information Resources Auto-transmission and Technology Hub Interface)** to provide latest agricultural technological knowledge in local language to farmers in a seamless, multimedia, multi-ways connectivity. It has been implemented in all the States and UTs of the country. Services of Kisan Sarathi for farmers are available through an Interactive Voice Response System (IVRS), in 13 languages (11 major regional languages

along with English and Hindi), via toll free numbers 1800-123-2175 (short number 14426). Around 1.65 crores farmers have registered in the system and about 7.5 crore advisories in the form of SMS have also been sent to the registered farmers. Further, a Kisan-Sarathi Mobile App (KS-App/F) has been made available to the farming Community to support both ways multimedia exchange. This app is in all 13 languages is available with UMANG platform of MeitY, Government of India at Google play store. It supports various activities viz.: registration of farmers; advisory notification; ask and track query; call from App etc.

(g): Besides KVK and ATMA schemes, the Government is implementing schemes and Programmes namely Per Drop More Crop, Micro Irrigation Fund, Promotion of Farmer Producer Organization (FPO), National Beekeeping and Honey Mission (NBHM), Namo Drone Didi Scheme, Soil Health Card Scheme and Mission for integrated Development of Horticulture (MIDH) to spread awareness and ensure last-mile delivery of technology/innovations to the farmers.
