

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

LOK SABHA
UNSTARRED QUESTION NO. 4966
TO BE ANSWERED ON THE 01ST APRIL, 2025

USE OF IT IN AGRICULTURE SECTOR

4966. SHRI SANJAY HARIBHAU JADHAV:

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

- (a) the details of steps taken by the Government for the development of Information Technology (IT) and to improve the level of implementation in the field of agriculture in the country;
- (b) whether any measures have been taken by the Government to encourage the use of IT equipment's and solutions to boost the production through farm pattern, if so, the details thereof and the outcome thereof;
- (c) whether the Government has evaluated the impact of information technology on Agriculture, if so, the details thereof;
- (d) whether the Government proposes to move forward with the Integration of Information technology in the agriculture sector;
- (e) if so, the details thereof; and
- (f) the manner in which the Government encourage the farmers particularly small farmers to effectively use above technologies in their agriculture activities?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE

कृषि एवं किसान कल्याण राज्य मंत्री (SHRI RAMNATH THAKUR)

(a) to (f): Government of India supports and facilitates the State Governments for infusing modern and smart farming technologies in the agriculture sector. The use of modern machines, including kisan drones, is promoted under Sub-Mission on Agricultural Mechanization (SMAM). Under National e-Governance Plan in Agriculture (NeGPA), funding is given to State Governments for Digital Agriculture Projects using emerging technologies like Artificial Intelligence, and Machine Learning (AI/ML), Internet of Things (IOT), Blockchain etc. A component called "Innovation and Agri-Entrepreneurship Development" has been launched under Rashtriya Krishi Vikas Yojana (RKVY-RAFTAAR) in 2018-19 with the objective of promoting innovation and Agri-Entrepreneurship by providing financial support and nurturing the digital incubation ecosystem. Under this programme, Start-ups are encouraged to use innovative technologies to resolve challenges faced in the agriculture and allied sectors. The funds are released to the States based on their proposals.

Department of Agriculture & Farmers Welfare (DA&FW) is implementing Centrally Sponsored Scheme of Per Drop More Crop (PDMC) in the country from 2015-16. PDMC focuses on enhancing water-use efficiency at farm-level through Micro Irrigation, namely, Drip and Sprinkler Irrigation Systems. The PDMC also supports micro-level water storage, water conservation/management activities as Other Interventions (OI) to supplement source creation for Micro Irrigation. During the years 2015-16 to 2021-22, the PDMC was implemented as a component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). From the year 2022-23 onwards, the PDMC is being implemented under the Rashtriya Krishi Vikas Yojana (RKVY). Micro-irrigation helps in water-saving as well as reduced fertilizer usage through fertigation, labour expenses, other input costs and overall income enhancement of farmers. The Government provides financial assistance @ 55% for small and marginal farmers and @ 45% for other farmers for installation of Drip and Sprinkler systems under the PDMC. The Assistance for installation of Micro-irrigation systems is limited to 5 hectares for a beneficiary.

The Indian Council of Agriculture Research (ICAR) has been supporting Agri-based startups under the project called National Agriculture Innovation Fund (NAIF) initiated in the year 2016-2017. It has two components viz. (I) Innovation Fund; (II) Incubation Fund and National Coordinating Unit (NCU):

- I. Component I: 10 (Ten) Zonal Technology Management Units and 89 Institute Technology Management Units (ITMUs) established in 99 ICAR institutes provide a single-window mechanism to manage innovations, showcase intellectual assets, and pursue matters related to intellectual property (IP) management and transfer/commercialization of technologies in these institutes.
- II. Component II: Agri-business Incubator Centres (ABICs) are set up to speed up the delivery of the new technologies to stake holders. The ABICs are the nodal points to provide the desired link for Agriculture Research & Development (R&D) Institutions for incubation/commercialization of the validated technologies. So far, 50 Agri-Business Incubation Centers have been established and are operational in the ICAR network under the NAIF scheme.

Further, the Government has built Digital Public Infrastructure for Agriculture as an open source, open standard at interoperable public goods as per budget announcements for the year 2023-24. These DPI intend to provide access to technology and information to the farmers across the country to address the farmer-centric solutions, through various digital initiatives.

A Central Sector Scheme for blended Capital Support to finance startups for agriculture and rural enterprise relevant for the Farm Produce Value Chain has been approved. Accordingly, administrative approval for Agri SURE has been conveyed to NABARD to operationalize the fund.

Looking into the unique advantages of Drone technologies in agriculture, the Department of Agriculture & Farmers Welfare has released the Standard Operating Procedures (SOPs) for use of drones in pesticide and nutrient application in public domain during December 2021, which provide concise instructions for effective and safe operation of drones. In order to make this technology affordable to the farmers and other stakeholders of this sector, financial assistance @ 100% for purchase of agricultural drones and its attachments (actual cost of expenditure and its attachments or Rs. 10.00 lakhs, whichever is lower) together with the contingent expenditure is extended under the Sub-Mission on Agricultural Mechanization (SMAM) to the Farm Machinery Training & Testing Institutes of Indian Council of Agricultural Research, Krishi Vigyan Kendra (KVK) and State Agricultural Universities (SAUs) and @ 75% to FPO's for its demonstration on the farmer's fields. In order to provide agricultural services through drone application, financial assistance @ 40% of the basic cost of drone and its attachments or Rs. 4 lakhs, whichever is less; also provided for drone purchase by existing and new Custom Hiring Centers (CHCs) and also a general category of farmers and @ 50% of the basic cost of drone and its attachments or Rs. 5 lakhs for SC/ST/women/small and marginal farmers and the agriculture graduates.

The Government has approved 'Namo Drone Didi' as a Central Sector Scheme for providing drones to the Women Self Help Groups (SHGs) with an outlay of Rs. 1261 Crores for the period from 2023-24 to 2025-26. The scheme aims to provide drones to 15000 selected Women SHGs for providing rental services to farmers for agricultural purpose (application of fertilizers and pesticides).

Further, the Government has employed Artificial Intelligence (AI) methods and IoT-enabled systems to improve crop productivity, sustainability and farmer livelihoods and to address various challenges in the agricultural sector to aid farmers etc. Some initiatives including Kisan e-Mitra are given below:

- I. 'Kisan e-Mitra', an AI-powered chatbot, has been developed to assist farmers with responses to queries about the PM Kisan Samman Nidhi scheme. This solution supports multiple languages and is evolving to assist with other government

programs. At present, it handles over 20,000 farmer queries daily and so far, more than 92 lakh queries have been answered.

- II. The National Pest Surveillance System, for tackling the loss of produce due to climate change, utilizes AI and Machine Learning to detect pest infestation in crop issues, enabling timely intervention for healthier crops. This tool, currently used by over 10,000 extension workers, allows farmers to capture images of pests to help them mitigate pest attacks and reduce crop losses. At present, it currently supports 61 crops and over 400 pests with approx. 1 lakh uploaded images.
- III. AI-based analytics using field photographs for crop health assessment and crop-health monitoring using Satellite imagery, weather & soil moisture datasets for rice and wheat crops.
