

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

**LOK SABHA**  
**UNSTARRED QUESTION NO. 3637**  
TO BE ANSWERED ON THE 17<sup>TH</sup> DECEMBER, 2024

**TECHNOLOGICAL SOLUTIONS TO ADDRESS AGRICULTURAL CHALLENGES**

3637. SHRI PRAVEEN KHANDELWAL:

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

- (a) whether the Government has implemented or plans to implement technological solutions aimed at addressing the challenges faced by the agricultural community in the country;
- (b) if so, the details of such initiatives, State-wise; and
- (c) the details of the steps being taken to enhance farmers' digital literacy and capacity-building to effectively utilize these technological advancements?

**ANSWER**

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE  
कृषि एवं किसान कल्याण राज्य मंत्री (SHRI RAMNATH THAKUR)

(a) to (c): 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 incubation ecosystem. Under this programme, start-ups are encouraged to use innovative technologies to resolve challenges faced in agriculture and allied sectors. A total of 1176 start-ups have been selected in various areas of agriculture and allied sectors under this programme for providing financial support through Knowledge Partners and Agri Business Incubators appointed by the Department for implementation of this programme.

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

- I. Component I: 10 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 point 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 approved the Digital Agriculture Mission, which envisage the creations of Digital Public Infrastructure for Agriculture such as Agristack, Krishi Decision Support System, Comprehensive Soil Fertility & Profile Map and other IT initiatives. Agristack project is one of the major components of this Mission, which consists of three foundational registries or databases in the agriculture sector, i.e., the Farmers' Registry, Geo-referenced village maps and the Crop Sown Registry. This system aims to enhance interoperability and convergence of efforts, fostering the development of applications in the agricultural sector using emerging digital technologies.

A Central Sector Scheme for blended Capital Support to finance startups for agriculture and rural enterprise relevant for 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 in December 2021, which provide concise instructions for effective and safe operations 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 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 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 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 agriculture purpose (application of fertilizers and pesticides).

Further, Government has employed Artificial Intelligence (AI) methods to address various challenges in the agricultural sector to aid farmers. Some of the initiatives are given below:

- I. 'Kisan e-Mitra' an AI-powered chatbot to assist farmers with queries about the PM Kisan Samman Nidhi scheme. This solution supports multiple languages and is evolving to assist with other government programs.
- II. National Pest Surveillance System for tackling the loss of produce due to climate change. This system utilizes AI and Machine Learning to detect crop issues, enabling timely intervention for healthier crops.

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