

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

LOK SABHA
UNSTARRED QUESTION NO. 1344
TO BE ANSWERED ON THE 11TH FEBRUARY, 2025

AI AND ADVANCED TECHNOLOGIES FOR SUSTAINABLE FARMING

1344. SHRI SUKANTA KUMAR PANIGRAHI:

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

- (a) the steps taken by the Government to integrate Artificial Intelligence (AI) and advanced technologies into sustainable farming practices during the last five years;
- (b) the progress achieved under flagship programmes like National Mission for Sustainable Agriculture (NMSA) and Paramparagat Krishi VikasYojana (PKVY) in promoting sustainable agriculture;
- (c) the specific measures proposed by the Government for the next four years to expand AI and technology use including addressing affordability and accessibility for small holder farmers;
- (d) the quantum of budget allocated for AI-driven agricultural initiatives during the last five years and provision made for the next five years; and
- (e) the details of efforts made by the Government to foster collaborations with private sector entities and international organizations to support innovation in agricultural technology with skill?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE

कृषि एवं किसान कल्याण राज्य मंत्री (SHRI RAMNATH THAKUR)

(a): The 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, has been developed to assist farmers with responses to the 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, utilizes AI and Machine Learning to detect pest infestation in crop issues, enabling timely intervention for healthier crops.

III. AI based analytics using field photographs for crop health assessment and crop health monitoring using Satellite, weather & soil moisture datasets for Rice and Wheat crop.

(b): Government is promoting organic farming under Paramparagat Krishi Vikas Yojana (PKVY), a component of Pradhan Mantri- Rashtriya Krishi Vikas Yojana (PM-RKVY). The PKVY scheme provides end-to-end support to organic farmers i.e. from production to processing, certification and marketing in cluster based approach. The primary focus of the scheme is to form organic clusters (other than North Eastern States) to help them to create a supply chain.

Under PKVY, States/UTs are provided financial assistance of Rs. 31,500/ha for 3 years in the organic clusters out of which, Rs. 15,000/ha is provided directly to farmers through DBT for on-farm and off-farm organic inputs. Financial assistance of Rs. 4,500/ha for 3 years is provided for marketing, packaging, branding, value addition etc. Rs. 3,000/ha for 3 years is provided for certification and residue analysis. Assistance is also provided @Rs. 9,000/ha for 3 years for training and capacity building.

Since 2015-16, under PKVY, total funds released Rs 2265.86 lakh. Total 14.99 lakh ha area has been covered under organic farming by developing 52289 clusters involving 25.30 lakh farmers. Total 6.22 lakh farmers have been registered under Jaivik-kheti portal.

Further, 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.

Apart from the above, 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.

(c) to (e): In pursuance to Para 60 of the Budget Announcement 2023-24 regarding "Centres of Excellence for Artificial Intelligence" for the vision of "Make AI in India and make AI work for India", Government has approved establishment of three Centres of Excellence (CoE) in Artificial intelligence (AI), one each in the areas of health, sustainable cities and agriculture with a total financial outlay of Rs. 990.00 Cr over the period of FY 2023-24 to FY 2027-28. For selection of CoEs, a nationwide call for proposals was rolled out inviting proposals from Higher Education Institutions (HEIs) having NIRF ranking within the top 100 in the overall category. In phase-I, proposals from 11 consortiums were selected for submission of Proof of Concept (PoC). Thereafter, consortiums led by AIIMS Delhi -IIT Delhi, IIT Kanpur and IIT Ropar were selected in the areas of health, sustainable cities and agriculture respectively, through rigorous evaluation by an Apex Committee (which consists of industry experts, experts in the field of AI, academicians, representatives from concerned Ministries etc). Each CoE is a consortium of top academic, research institutes along with industry partners, startups etc and represents a collaborative effort between lead institute and other institutions like IIT Madras, IIT Hyderabad, IIT Bombay, IIT Tirupati, IIT Guwahati, IIT Gandhinagar, IISc Bangalore, IIIT Hyderabad, AIIMS Patna, NIT Meghalaya, NIT Hamirpur, NIT Calicut etc.
