

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

LOK SABHA
UNSTARRED QUESTION NO. 2604
TO BE ANSWERED ON 04TH AUGUST, 2026

ADOPTION OF MODERN TECHNOLOGIES IN AGRICULTURE

2604. SHRI SURESH KUMAR SHETKAR:

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

- (a) whether the Government proposes to provide financial assistance or subsidies for adoption of modern technologies like precision farming and micro-irrigation, if so, the details thereof;
- (b) whether access to affordable agricultural machinery remains limited for small landholders, if so, the details thereof and steps taken to promote shared infrastructure like custom hiring centres;
- (c) whether the Government has taken the steps to promote sustainable farming practices to restore soil fertility and improve long-term productivity and if so, the details thereof;
- (d) whether digital platforms and mobile-based advisory services are being effectively utilised to educate farmers, if so, the details thereof and usage statistics;
- (e) whether the Government has identified regional disparities in adoption of modern agricultural practices among small farmers, if so, the details thereof and corrective actions taken in this regard; and
- (f) whether a comprehensive policy framework exists to address training, soil health, and industrial exposure collectively for small landholders, if so, the details thereof and timeline for implementation?

ANSWER

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

(a): Government is implementing various schemes to provide financial assistance and promote adoption of modern technologies such as precision farming and micro-irrigation. Details of some major schemes may be seen as under:

Mission for Integrated Development of Horticulture (MIDH) is being implemented across the country for holistic growth of the horticulture sector covering fruits, vegetables, root and tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew and cocoa. For adoption of modern technologies, financial assistance @ 50% of the eligible cost is provided under MIDH for construction of protected cultivation structures like poly house, shade net house, plastic/non-woven cloth tunnels, walk in tunnels, hydroponics and aeroponics etc. Under MIDH, assistance is also provided for training on adoption of modern technologies through State Horticulture Missions, Precision Farming Development Centres (PFDCs), Centres of Excellence (CoEs), ICAR Institutes, State Agricultural Universities (SAUs), Krishi Vigyan Kendras (KVKs) and other recognized institutions. Centres of Excellence established under MIDH serve as demonstration and training centres and act as sources of elite planting material and vegetable seedlings under protected cultivation. Sixty-one (61) crop-specific Centres of Excellence have been established under MIDH through Indo-Israel Cooperation, Indo-Dutch Cooperation and Research Institutes.

Per Drop More Crop (PDMC) scheme promotes micro irrigation for enhancing water use efficiency at farm level and increasing productivity of crops and income of farmers through efficient water management. Financial assistance is provided to farmers @ 55% of the benchmark cost for Small and Marginal Farmers and 45% of the benchmark cost for other Farmers, for installation of micro-irrigation systems. The scheme also supports activities such as micro-irrigation demonstrations, capacity building, training, and awareness programmes to facilitate adoption of efficient irrigation technologies. Under the scheme, an area of 114.60 lakh hectares has been covered under micro irrigation since 2015-16.

Government is implementing Agriculture Infrastructure Fund (AIF) scheme across the country to mobilize a medium to long term debt financing facility for investment in viable projects relating to post harvest management infrastructure and community farming assets through incentives and financial support. Under AIF, there is provision for collateral free term loan upto Rs. 2.00 crore and interest subvention of 3% on the term loan availed for creation of post-harvest infrastructure, including establishment of hydroponics and aeroponics units.

(b): Under Sub Mission for Agriculture Mechanization (SMAM), in order to make farm machinery more accessible and affordable to farmers, financial assistance @ 40%-50% of the cost of machinery, depending on the category of farmers, is provided for purchase of agricultural machines. Further, financial assistance @ 90% of the cost of machines is provided to beneficiaries covered under the Forest Rights Act (FRA) Patta Holders. With a view to make available machines and equipment to farmers on rental basis, financial assistance is provided for establishment of Custom Hiring Centers (CHCs) upto project cost of Rs. 250 lakhs @ 40% of the project cost. Financial assistance for establishments of Farm Machinery Banks (FMBs) is provided upto project cost of Rs. 30 Lakhs @ 80% of the project cost. However, the rate of financial assistance for establishing FMBs in the North Eastern States is @ 95% of the project cost. Under SMAM, from FY 2014-15 till date, central funds amounting to Rs. 11,643.93 Crores have been released to various States. Under the scheme, 23,73,639 number of machines have been distributed as subsidy to individual farmers and 29,356 CHCs; 671 Hi-tech Hubs & 27,026 FMBs have been established.

(c): Government is implementing National Mission for sustainable Agriculture (NMSA) to implement strategies to make Indian agriculture more resilient to the changing climate. Various schemes have been integrated under NMSA to deal with the adverse climate situations in the agriculture sector. PDMC scheme increases water use efficiency at the farm level through micro irrigation technologies i.e. drip and sprinkler irrigation systems. Rainfed Area Development (RAD) scheme focuses on integrated Farming System (IFS) for enhancing productivity and minimizing risks associated with climatic variability. The Soil Health & Fertility scheme assists states in promoting integrated Nutrient Management through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures & bio-fertilizers for improving soil health and its productivity.

Further, Indian Council of Agricultural Research (ICAR) is implementing a project National Innovation in Climate Resilient Agriculture (NICRA) that studies the impact of climate change on agriculture including crops, livestock, horticulture and fisheries. It also develops and promotes climate resilient technologies to help the regions prone to extreme weather conditions. NICRA project creates awareness about impact of climate change among farmers. Capacity building programmes are conducted to educate the farmers for wider adoption of climate resilient technologies. Large scale demonstrations of climate resilient varieties are undertaken in farmers' fields through Krishi Vigyan Kendras (KVKs) under NICRA. Farmers are also provided with advisories as ICAR in collaboration with India Meteorological Department issues Agromet Advisories to farmers through Gramin Krishi Mausam Seva program.

ICAR has undertaken Awareness Campaign on Balanced use of Fertilizers and Khet Bachao Abhiyan during May – June 2026 to make farmers aware on restoration of soil fertility through balanced use of chemical fertilizers and subsequently improving long-term productivity.

(d): Government is implementing Digital Agriculture Mission to promote precision farming, satellite-based crop monitoring, and AI-driven advisories for improving productivity and resource efficiency. The Mission focuses on building a Digital public infrastructure (DPI) ecosystem for agriculture, including Agri Stack, the Krishi Decision Support System and comprehensive soil profile mapping. Agristack comprises foundational databases such as Farmers' Registry, Geo-referenced Village Maps and Crop Sown Registry, enabling timely and reliable information of farmers and their farming assets. The Mahalanobis National Crop Forecast Centre (MNCFC) supports the Mission through satellite-based crop forecasting under the FASAL project, drought monitoring, and technological support to Pradhan Mantri Fasal Bima Yojana (PMFBY) through YES-TECH. The government is also promoting AI and IoT-based solutions for personalized advisories and improved farm management.

Government has launched National Pest Surveillance System (NPSS) to tackle the loss of produce by utilizing AI and Machine Learning to detect pest infestation in crop issues, enabling timely intervention for healthier crops. This tool allows farmers to capture images of pests to help them mitigate pest attacks and reduce crop losses. At present, it covers 73 crops for 436 pests. AI-based analytics using field photographs for satellite-based crop mapping is being used in Crop-weather matching and monitoring of crops sown. As of today, 35, 565 advisories have been issued through the application.

BharatVistaar (Virtually Integrated System to Access Agricultural Resources), a multilingual Artificial Intelligence (AI)-powered Digital Public Infrastructure (DPI) platform for Agriculture has been developed by the Government. This platform provides farmers with AI-enabled, real-time and location-specific agricultural advisories and access to Government schemes and agricultural support services. Till date, the platform has served over 6 lakh farmers and addressed more than 95 lakh farmer queries. It also provides information on various Central Government schemes. The platform is available through a Chatboat (web portal & mobile application), and through a dedicated telephone line.

Indian Council of Agricultural Research (ICAR) has developed ICT based platform “KISAN SARATHI” to provide advisories on different aspects of agriculture and allied sectors to farmers. More than 2.97 crore farmers including small and marginal farmers across the country are registered on this platform. During 2025-26, 512 lakh messages have been sent through this platform to the farmers.

(e) & (f): Government promotes the adoption of modern agricultural practices across the country through various Centrally Sponsored and Central Sector Schemes, with flexibility to States/UTs to implement need-based interventions suited to local agro-climatic conditions and region-specific requirements, including those of small and marginal farmers. This decentralized approach helps address regional variations in the adoption of modern agricultural practices through location-specific interventions, capacity building and technology dissemination.

In order to strengthen farmer friendly extension system in the country, Government is also implementing “Support to State Extension Programs for Extension Reforms (ATMA) scheme throughout the country with the objective to make available latest agricultural technologies and good agricultural practices to farmers through extension activities i.e. farmers trainings, demonstrations, exposure visits, kisan mela, mobilization of farmer groups and organizing farm schools. Under the scheme, it has been provisioned that at least 50% beneficiaries must be selected from small and marginal farmer category.

Government also promotes judicious use of fertilizer through Soil Health & Fertility scheme. The scheme provides Soil Health Cards (SHCs) for all farm holdings, to promote balanced and integrated nutrient management for improving productivity and soil fertility. Since 2014-15, 26.10 crore Soil Health Cards have been generated/ distributed as on date across the country. Total 8313 Soil Testing Labs (1267 Static Soil Testing Labs, 168 Mobile Soil Testing Labs, 6197 Mini Soil Testing Labs and 681 Village Level Soil Testing Labs) have been established across the country. In addition to above state soil labs, 1935 School Mini Soil Testing Labs are also established under School Soil Health Programme in the country. Under the scheme, Rs. 2152.04 crore fund has been released so far since inception. 130627 farmer's trainings, 7.17 lakh demonstrations, 7425 farmer's Melas/ campaigns on soil health card recommendations have been organized across the country.
