

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

**RAJYA SABHA**  
**UNSTARRED QUESTION NO-495**  
ANSWERED ON- 07/02/2025

**INITIATIVES TO PROMOTE SUSTAINABLE FARMING PRACTICES AND  
RESILIENCE AGAINST CLIMATE CHANGE**

495. SHRI SANT BALBIR SINGH:

Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

- (a) whether Government has initiated any pilot projects focusing on sustainable farming practices such as water conservation, organic farming, or precision agriculture technologies in light of the growing challenges posed by climate change;
- (b) if so, the outcomes of these projects in terms of helping farmers adapt to changing weather patterns; and
- (c) the other measures being considered to help farmers build resilience against extreme weather events and ensure long-term agricultural sustainability?

**ANSWER**

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE  
(SHRI BHAGIRATH CHOUDHARY)

(a) & (b): The Government through ICAR flagship network project 'National Innovations in Climate Resilient Agriculture' (NICRA) develop and promotes climate resilient agricultural technologies in 151 climatically vulnerable districts spread across the country, which are prone to extreme weather conditions like droughts, floods, frost, heatwaves, etc in light of the challenges posed by climate change. Climate resilient technologies viz., climate resilient varieties, intercropping systems, conservation agriculture, crop diversification, agroforestry systems, zero-till sowing, green manuring, integrated farming systems, integrated nutrient and pest management, organic farming, site specific nutrient management, in-situ moisture conservation, protective irrigation, micro irrigation methods etc. have been developed and demonstrated to large number of farmers through farmers' participatory approach. Further, these technologies have been documented for 23 States and 3 Union Territories and shared with the State departments for further upscaling and convergence with on-going schemes in the States.

To promote Precision Agriculture, ICAR has a Network Program on Precision Agriculture (ICAR-NePPA) working at 16 locations to develop ICT based technologies for accelerated profitable and sustainable system through precise use of inputs. Some of the outcomes of the project related to adopting to climate change/ weather aberrations are as, sensor based soil and crop health monitoring and precision management of inputs (water and fertilizer) using robotics, IoTs and Data analytics; developed technologies for pest and disease monitoring particularly for rice and cotton crops for value added advisories for real time management.

ICAR operates All India Coordinated Research Programme on Integrated Farming Systems (AICRP-IFS) in 25 States/UTs and All India Network Programme on Organic Farming (AINP-OF) in 16 States to develop sustainable farming practices such as alternate efficient cropping systems, integrated farming systems, organic farming and natural farming to address the challenges posed by climate change. A total of 76 models of integrated farming system (IFS) including 8 integrated organic farming system models for 26 States/UTs and organic farming packages for 80 cropping systems suitable to 16 States have been developed so far.

(c): To help farmers in building resilience against extreme weather events and ensure long-term agricultural sustainability in the country, the Government of India implements National Mission for Sustainable Agriculture (NMSA), which is one of the Missions within the National Action Plan on Climate Change (NAPCC). NMSA has three major components i.e. Rainfed Area Development (RAD); On Farm Water Management (OFWM); and Soil Health Management (SHM). The Government of India provides financial assistance to the states through the NMSA to cope with the adverse impacts of climate change.

Further, Government has introduced flagship yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) along with Restructured Weather Based Crop Insurance Scheme (RWBCIS) from Kharif 2016 to help farmers build resilience against extreme weather events.

Through Technology Demonstration component of NICRA, 6,93,629 farmers were benefitted through technology demonstrations and 6,47,735 farmers were benefitted through 23,613 capacity building programs on climate resilient agriculture.

\*\*\*\*\*