

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

**RAJYA SABHA**  
**UNSTARRED QUESTION NO- 1292**  
TO BE ANSWERED ON 02/08/2024

**POLICIES AND TECHNOLOGICAL INNOVATIONS TO MITIGATE IMPACT OF  
CLIMATE CHANGE**

1292. SHRI SANJEEV ARORA:

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

- (a) whether Government is planning to introduce incentive-based policies and technological innovations to mitigate the impact of climate change on water and food security of an ever-growing population; and
- (b) if so, the plans of Government to implement climate-smart agricultural practices, including conservation tillage, improve cultivars and plant breeding technologies, innovative irrigation so as to minimize the impact of climate change on agriculture and vice-versa?

**ANSWER**

MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE

(SHRI RAMNATH THAKUR)

(a) & (b): The Government is implementing National Mission for Sustainable Agriculture (NMSA) to mitigate the impact of climate change on water and food security. The NMSA is one of the Missions within the National Action Plan on Climate Change (NAPCC) which aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate. Under NMSA, the Per Drop More Crop aims to improve on-farm water use efficiency, enhance the adoption of precision irrigation and other water saving technologies for which subsidy is being provided to the beneficiary to increase the area under micro irrigation. In addition, the Government is promoting organic farming in the country since 2015-16 through the schemes of Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER). Both the schemes stress on end-to-end support to farmers engaged in organic farming i.e. from production to processing, certification and marketing and post-harvest management. Training and Capacity Building are integral part of the scheme. Incentives to farmers for producing and using organic fertilizers/manure are inbuilt in these schemes as on-farm and off-farm organic inputs. Direct Benefit Transfer (DBT) is provided to the farmers for using organic inputs including organic fertilizers. PKVY is being implemented in all the States other-than North Eastern (NE) States across the country whereas MOVCDNER scheme is being implemented exclusively in the NE States. The scheme Bharatiya Prakritik Krishi Paddhati Programme (BPKP) aims to promote traditional indigenous practices and to create awareness of farmers. Mission for Integrated Development of Horticulture (MIDH), Agroforestry & National Bamboo Mission also aim to increase climate resilience. The Pradhan Mantri Fasal Bhima Yojana (PMFBY) provides full insured amount on crop losses due to natural calamities.

Department of Agriculture and Farmers Welfare (DA&FW) is implementing a Sub-Mission on

Nutri-Cereals (Millets) under National Food Security Mission (NFSM) in all districts of 28 States and 2 Union Territories viz. Jammu & Kashmir and Ladakh. The incentives are provided to the farmers, through the States/UTs, on crop production and protection technologies, cropping system based demonstrations, production & distribution of certified seeds of newly released varieties/hybrids, Integrated Nutrient and Pest Management techniques, improved farm implements /tools/ resource conservation machineries, water saving devices, capacity building of farmers through trainings during cropping season, organizing events/ workshops, distribution of seed minikits, publicity through print and electronic media etc.

The Indian Council of Agricultural Research (ICAR) under Ministry of Agriculture and Farmers Welfare, Government of India has launched a flagship network project namely National Innovations in Climate Resilient Agriculture (NICRA). The project aims to study the impact of climate change on agriculture including crops, livestock, horticulture and fisheries and to develop and promote climate resilient technologies in agriculture which will address vulnerable areas of the country and the outputs of the project help the districts and regions prone to extreme weather conditions like droughts, floods, frost, heat waves, etc. to cope with such extremes. The salient achievements of ICAR are as follows:

- During last 10 years (2014-2024), a total of 2593 varieties have been released by ICAR, out of these 2177 varieties have been found tolerant to one or more biotic and/or abiotic stresses.
- Risk and vulnerability assessment of agriculture to climate change is carried out at district-level for 651 predominantly agricultural districts as per Intergovernmental Panel on Climate Change (IPCC) protocols. A total of 109 districts are categorized as ‘very high’ and 201 districts as ‘highly’ vulnerable.
- District Agriculture Contingency Plans (DACPs) for these 651 districts have been prepared for weather aberrations like drought, floods, unseasonal rains and extreme weather events such as heat wave, cold wave, frost, hailstorm, cyclone etc. and recommending location specific climate resilient crops and varieties and management practices for use by the State departments of agriculture and farmers.
- Enhancing resilience and adaptive capacity of farmers to climate variability, the Concept of “Climate Resilient Villages” (CRVs) has been initiated under NICRA.
- Location-specific climate resilient technologies demonstrated in 448 CRVs of 151 climatically vulnerable districts for adoption by the farmers.
- ICAR through its NICRA project, creates awareness about impact of climate change in agriculture among farmers. Capacity building programmes are being conducted to educate the farmers on various aspects of climate change for wider adoption of climate resilient technologies.
- Climate resilient technologies viz., resilient intercropping systems, conservation agriculture, crop diversification from paddy to other alternate crops like pulses, oilseeds, agroforestry systems, alternate methods of rice cultivation (system of rice intensification, aerobic rice, direct seeded rice), green manuring, integrated farming systems, integrated nutrient management, integrated pest management, organic farming, site specific nutrient management, in-situ moisture conservation, protective irrigation from harvested rainwater in farm pond, micro irrigation method (drip and sprinkler) etc. have been developed and demonstrated at the farmer’s fields. Also, planting methods such as zero till drill sowing of wheat to escape terminal heat stress, raised bed planting, cropping intensification with harvested water have been demonstrated in North-Eastern States.

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