

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

LOK SABHA
UNSTARRED QUESTION NO. 570
TO BE ANSWERED ON 06/02/2018

CLIMATE RESILIENT AGRICULTURE

570. SHRI PREM DAS RAI:

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

- (a) the steps being taken to promote climate-resilient agriculture;
- (b) whether these steps include special measures to address affected orchards and plantations especially in the Himalayan States that have an adverse impact on livelihood of farmers; and
- (c) if so, the details thereof and if not, the reasons therefor?

A N S W E R

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्रालय में राज्य मंत्री
(SHRI GAJENDRA SINGH SHEKHAWAT)

(a) The Indian Council of Agricultural Research (ICAR) launched a major project '*National Initiative on Climate Resilient Agriculture*' (NICRA) during XI Plan in February 2011. Currently it is referred as '*National Innovations in Climate Resilient Agriculture*' (NICRA). This programme is being implemented with four components viz. a) Strategic research through network as well as sponsored/competitive grants, b) Technology demonstrations on farmers' fields to cope with current climate variability c) Knowledge management d) Capacity building of different stakeholders.

Under Technology Demonstration Component (TDC), context- and location-specific climate resilient practices and technologies are demonstrated in farmer participatory mode to address current climatic variability faced in a cluster of villages in each district. TDC is being implemented in 151 climatically vulnerable districts across the country. The climate vulnerabilities addressed are drought, flood, cyclone, heat / cold wave, frost and high temperature stress.

The impact of demonstrations on agriculture and the benefits to farmers has been documented in the report entitled "**Smart Practices and Technologies for Climate Resilient Agriculture**", which is accessible at <http://www.nicra-icar.in/nicrarevised/images/publications/Smart%20practices%20&%20technologies.pdf>

(b) Yes, Madam.

(c) Demonstration of climate resilient practices in relation to orchards are taken up in various climatically vulnerable districts in the Himalayan region as part of the TDC of NICRA. The details are given in **Annexure-I**.

Demonstration of climate resilient practices in relation to orchards being taken up in various climatically vulnerable districts in the Himalayan region as part of the TDC under NICRA.

S. N.	District & State	Description of resilient practices demonstrated
1	Chamba, Himachal Pradesh	Improved varieties of Apple, viz., Red Chief, Well Spur, Silver Spur, Red Spur, Golden Spur, Oregon Spur II, Starkrimson, Bright-n-Early, Tydeman's Early Worcester, Summer Queen, Vance Delicious were demonstrated in view of the reduction in chilling temperatures and also due to lower fruiting of the traditional apple cultivars like Royal Delicious. About 30 farmers were involved in the demonstration of improved cultivars of apple in the NICRA village of Chamba district. The performance of the improved varieties is encouraging and the area under improved cultivars is expanding.
		Crop diversification from apple to apricot variety New Castle. Apricot is less sensitive to climate change as the fruiting of traditional apple cultivars is getting reduced due to reduction in the chilling hours in some of the Himachal districts.
		Marigold and cabbage intercropping in young apple orchards demonstrated to get additional income.
2	Kullu, Himachal Pradesh	Crop diversification from apple to pomegranate variety Kandhari Kabuli in view of the decline in apple yields due to reduction in the chilling hours. Pomegranate grows well in relatively hot and dry weather and require less water.
		<i>In situ</i> soil moisture conservation through black polythene mulching (50 micron) in pomegranate to escape prolonged dry spells during flowering (May) and fruit development (August-September) and to reduce flower drop and to increase fruit size and quality
3	Kinnaur, Himachal Pradesh	Soil test based fertilizer application in apples and foliar application of nutrients. Significant improvement in the fruit yield is observed.
		Honey bee pollinators for improved pollination in apples (Colonies of <i>Apis mellifera</i>). Yield increase up to 20%. There is significant adoption of the technology.
		Demonstration of pruning and training to enhance quality fruit production and quality nursery production as a livelihood option which has contributed towards improvement in the yield and income to the farmers besides making available the quality planting material of apple locally.
		Increasing the cropping intensity in young apple orchards by intercropping with maize, rajmash and/or pea have significantly improved the income of farmers.
4	Phulwama Jammu & Kashmir	Drip irrigation system in apple with the harvested water to increase irrigation water use efficiency and reduced weed problem and increased fruit yield.
		Garlic intercropping in apple orchards to minimize the risk from fruit orchards and to enhance the returns under favourable climates.
		Nutritional sprays like biozyme and solubor along with fungicidal sprays as per SKUAST-K recommendations to overcome nutrient deficiencies and enhance apple crop performance.
		Crop diversification with grafted walnut variety
5	Uttarkashi, Uttarakhand	Improved cultivars and management practices of fruit crops such as lemon, kinnow were demonstrated.
6	Mon, Nagaland	Fruit crop such as mango, jack fruit, guava, lime plantations were established for demonstration in the NICRA village for maximising income and diversification.