

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

LOK SABHA
UNSTARRED QUESTION NO. 865
TO BE ANSWERED ON THE 7TH FEBRUARY, 2023

STUDY ON CROP LOSS

865. SHRI NARANBHAI KACHHADIYA:

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

- (a) whether the Government has conducted any study of the crop losses due to adverse weather conditions and if so, the details thereof for the last five years;
- (b) whether the Government has undertaken any measures to reduce crop losses due to adverse weather conditions; and
- (c) if so, the details thereof and if not, the reasons therefor?

ANSWER

MINISTER OF AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण मंत्री (SHRI NARENDRA SINGH TOMAR)

(a) to (c): The Indian Council of Agricultural Research (ICAR) under the Ministry of Agriculture and Farmers Welfare launched a flagship network project 'National Innovations in Climate Resilient Agriculture' (NICRA) during 2011. NICRA is the unique project which brings all sectors of agriculture viz., crops, horticulture, livestock, fisheries, natural resource management and extension scientists on one platform. The major objectives of NICRA are (i) to undertake strategic and applied research on climate change adaptation and mitigation; (ii) to validate, demonstrate and assess the impact of climate resilient technologies on farmers' fields; and (iii) to strengthen the capacity of scientists, farmers and other stakeholders on climate resilient agriculture. About 57 ICAR Institutes, 16 State Agriculture Universities, Indian Institute of Technology (Chennai) & NGOs are involved in strategic research. The state of art research infrastructure was developed like high-throughput phenotyping platforms, free air temperature elevation systems in open fields, carbon dioxide temperature gradient chambers, environmental growth chambers with CO₂ and temperature controls and special calorimetric system to study livestock response to heat stress.

Significant achievements of the project include studies on impact of elevated temperature and CO₂ on crops (rice, wheat, maize and onion), livestock, fisheries, soil carbon, pests and diseases using integrated simulation modeling framework. 1752 climate resilient crop varieties tolerant to abiotic stresses in different crops have been developed. 400 of these varieties are tolerant to abiotic stresses like drought, flood, heat-wave etc. Location specific GHG inventory for different cropping systems and production systems and quantified carbon sequestration potential through agro-forestry systems and major cropping systems have been established. District level risk and vulnerability assessment of Indian agriculture to climate change has been revised as per IPCC AR-5 guidelines and is widely used by policy makers and research managers for prioritization of resources related to climate change action plans. Agricultural contingency plans are ready for 650 districts. Climate-induced pest and disease outbreaks in the country were studied in 9 crops (10 insects and 29 diseases) to build pest and disease forewarning models. Web enabled and mobile apps for pest forewarning have been developed.

For every 1°C rise in temperature, yields of rice, wheat, soybean, mustard, groundnut and potato are expected to decline by 3-7%. Resilient technologies viz., changes in land use management, development of multiple stress tolerant varieties, advancing sowing dates, adoption of short duration varieties minimize the negative impacts of heat waves. In addition, strengthening the weather forecasts and agro-advisory services, help farmers in taking informed decisions about the impending weather.

Location specific technologies, developed by the national agricultural research system, which can impart resilience against climatic vulnerability, are being demonstrated in 151 climatically vulnerable districts by taking one representative village in each district across the country. Village level institutional mechanisms such as, Village Level Climate Risk Management Committees (VCRMC), custom hiring centers etc. are established for managing infrastructure created and to improve the timeliness of operations during the limited window periods of moisture availability in rainfed areas and to promote small farm mechanization for adoption of climate resilient practices. These interventions helped farmers to reduce the yield losses and enhanced their adaptive capacity against climatic variability.

A large-scale capacity building program on climate resilient agriculture is being undertaken with the involvement of more than 1200 scientists, 874 research scholars and 160 doctoral and post graduate students across the country. These resilient practices are being adopted by communities and spreading beyond NICRA villages. In the last ten years, 16958 training programs have been conducted throughout the country under NICRA project to educate stakeholders on various aspects of climate change and resilient technologies, covering 514816 stakeholders so as to enable wider adoption of climate resilient technologies and increase in yields.

The Government of India has introduced yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) and weather based Restructured Weather Based Crop Insurance Scheme (WBCIS) from Kharif 2016 to provide financial support to farmers suffering crop loss/damage arising out of natural calamities, adverse weather incidence and to stabilize income of farmers. Comprehensive risk insurance is provided under the scheme from pre-harvesting to post-harvest losses. Under this Scheme, claims are paid to only those farmers who have insured their crops and paid their share of premium under any of the notified crop insurance scheme in the notified area/crop by the State Government. Details of Farmers Applications insured, area insured, sum insured and claims paid during 2016-17 to 2020-21 are as under:

Year	Farmers Applications Insured (in lakh)	Area insured (in lakh hectares)	Sum insured (Rs. in crore)	Claims paid (Rs. in crore)
2016-17	581.70	564.00	201799.10	16795.50
2017-18	531.80	507.30	201966.20	22065.50
2018-19	581.90	532.00	235740.10	28666.60
2019-20	616.20	508.40	221561.20	27359.70
2020-21	623.20	495.40	199672.20	20391.70

The State Government is primarily responsible for providing necessary relief measures in the wake of natural calamities. For undertaking relief measures, funds are available with the State Government in the form of the State Disaster Response Fund (SDRF). Additional financial assistance, over and above SDRF, is considered from the National Disaster Response Fund (NDRF) for natural calamities of a severe nature and is approved on the basis of a Memorandum received from the State Government, in accordance with established procedures. The financial assistance includes agriculture input subsidy as one of the components, which is computed for the affected area having crop loss of 33% & above.
