

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

RAJYA SABHA
UNSTARRED QUESTION NO. 652
TO BE ANSWERED ON 25/07/2025

MEASURES TO STRENGTHEN CLIMATE RESILIENCE IN AGRICULTURE

652. DR. SYED NASEER HUSSAIN:

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

- (a) whether the Ministry has conducted any assessment on the impact of irregular monsoon and extreme weather events on crop production during 2024-25, if so, the details thereof, including details of crop losses and assistance provided to farmers;
- (b) the measures being implemented to strengthen climate resilience in agriculture and to promote climate-resilient agricultural practices across the country; and
- (c) whether any comprehensive study/assessment has been conducted to evaluate the effectiveness of existing crop insurance schemes in protecting farmers against climate-related losses, if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
(SHRI RAMNATH THAKUR)

(a): As per the National Policy on Disaster Management (NPDM), the primary responsibility for disaster management, including disbursement of relief assistance on ground level, rests with the State Governments concerned. The State Governments undertake relief measures in the wake of natural calamities, from the State Disaster Response Fund (SDRF) already placed at their disposal, in accordance with Government of India's approved items and norms. The Central Government supplements the efforts of the State Governments and provides requisite logistics and financial support. Additional financial assistance is provided from the National Disaster Response Fund (NDRF), as per laid down procedure, in case of disaster of 'severe nature', which includes an assessment based on the visit of an Inter-Ministerial Central Team (IMCT). The details of the fund allocated and released under SDRF/NDRF to the States are available on Disaster Management, MHA's website i.e. ndmindia.mha.gov.in.

In the agricultural year 2024-25, as per the Third Advance Estimates, the country has achieved a record foodgrain production estimated at 3539.59 LMT, which is higher by 216.61 LMT than the foodgrain production of 3322.98 LMT in 2023-24 registering approx. 6.5% increase. In addition to this record production has been achieved in key crops including rice, wheat, maize, groundnut, and soybean. This record production is largely due to a favourable monsoon and ideal weather conditions. However, some States had reported loss of crop area in 2024-25, which is at Annexure.

(b): Department of Agriculture & Farmers Welfare implemented the Centrally Sponsored Scheme of Sub-Mission on Agroforestry (SMAF) from 2016-17 to encourage tree plantation on farmland along with crops/ cropping systems to help the farmers get additional income. Sub-Mission on Agroforestry (SMAF) was implemented from 2016-17 to 2021-22 in 21 States and 2 UTs. The SMAF scheme from 2023-24 has been restructured as an Agroforestry Component under Rashtriya

Krishi Vikas Yojana (RKVY) that focuses on production of Quality Planting Material. Agroforestry helps combat climate change by sequestering carbon in trees and soil, reducing atmospheric CO₂ levels. It enhances land resilience by preventing soil erosion, improving water retention, and moderating local temperatures. Additionally, Agroforestry protects ecosystems from extreme weather events like droughts and storms, making it an effective strategy for both climate change mitigation and adaptation.

Department of Agriculture & Farmers Welfare (DA&FW) is implementing Centrally sponsored scheme of Rainfed Area Development (RAD) across the country from 2014-15. RAD focuses on Integrated Farming System (IFS) for enhancing productivity and minimizing risks associated with climatic variability. From the Year 2014-15 to 2021-2022, the RAD was implemented as a component of National Mission for Sustainable Agriculture (NMSA). During the (FY: 2022-23), RAD became a component of RKVY Scheme. Under RAD, crops/cropping system is integrated with activities like horticulture, livestock, fishery, agro-forestry, apiculture etc. to enable farmers not only in maximizing farm returns for sustaining livelihood, but also to mitigate the impacts of drought, flood or other extreme weather events. Financial assistance of Rs. 30,000/- is provided to each farming family under RAD component irrespective of the size of their land holding.

Indian Council of Agricultural Research (ICAR) is implementing a flagship network project National Innovations in Climate Resilient Agriculture (NICRA) to strengthen climate resilience in agriculture and to promote climate-resilient agricultural practices across the country. The measures being implemented by NICRA are:

District level risk and vulnerability assessment of 573 predominantly agriculture districts was carried out as per Intergovernmental Panel on Climate Change (IPCC) protocol and location specific climate resilient technologies have been demonstrated in one village cluster from each of the 151 climatically vulnerable districts to the farmers through farmer participatory approach. At district level, KVKs facilitate in convergence with various schemes of line departments for upscaling the promising climate resilient practices. At village level, village climate risk management committees (VCRMCs), custom hiring centres (CHCs), seed banks and fodder banks help in spread of resilient technologies.

Climate resilient technologies include climate resilient varieties, resilient intercropping systems, conservation agriculture, crop diversification from paddy to other alternate crops like pulses, oilseeds, agroforestry systems, zero till sowing, alternate methods of rice cultivation, green manuring, integrated farming systems, integrated nutrient and pest management, organic farming, in-situ moisture conservation, protective irrigation, micro irrigation etc. have been developed and demonstrated to large number of farmers.

The studies indicate that change in sowing time, growing short duration, heat, drought and flood tolerant varieties with improved nutrient and water management strategies enhances the productivity of major crops. Developed District Agriculture Contingency Plans (DACPs) for 651 districts in India covering weather aberrations and recommended location specific climate resilient crops and varieties and management practices for use by the State departments (Available at <https://agriwelfare.gov.in/en/DocAgriContPlan>). Capacity building programs are also conducted to farmers and other stakeholders related to impact of climate change and their adaptation and mitigation measures.

(c): To provide financial support to farmers at the time of losses due to natural calamities, a yield index-based Pradhan Mantri Fasal Bima Yojana (PMFBY) and weather index based Restructured Weather Based Crop Insurance Scheme (RWBCIS) have been introduced in the country from Kharif 2016 season. It is a demand driven scheme and financial liability on premium subsidy to farmers is shared by the Central and State Government on 50: 50 basis and 90: 10 in North Eastern States & other Hilly states, with effect from Kharif 2020 season. The scheme is voluntary for the States since inception and for all farmers w.e.f. Kharif 2020.

PMFBY provides for comprehensive risk insurance against crop damage from pre-sowing to post-harvest for crops and area notified by the concerned State Government. The scheme not only safeguards against wide spread yield loss due to non-preventable natural risks/ & extreme climate calamities viz. flood, inundation, landslide, drought, heat waves, hailstorm, cyclone, pests/diseases, natural fire and lightening, storm, typhoon, tempest, hurricane, tornado etc. but also against farm level yield loss due to localized risks (hailstorm, landslide, inundation, cloud burst and natural fire) and post harvest losses due to cyclone, cyclonic/unseasonal rain and hailstorm and prevented sowing.

Further, it is also informed that various evaluation and research studies have been conducted under PMFBY from time to time such as Performance Evaluation of PMFBY (2018-19), Smart Sampling for Crop Yield Estimation (2019), Report on Evaluation of PMFBY (2023) etc. and based on the recommendations of such studies various Tech. initiatives like YES-TECH and WINDS is being implemented in the scheme.

- i. WINDS (Weather Information Network & Data System) - is a pioneering initiative of the country to set-up a network of Automatic Weather Stations & Rain Gauges at Taluk/Block and Gram Panchayat level, respectively, to create a strong database of hyper-local weather data for the different Govt. and other entities to use for all farmer and farming oriented services.
- ii. YES-Tech (Yield Estimation based on Technology) - is a technology based yield estimation mechanism which has been developed after 2 years of rigorous testing and pilot runs across 100 districts of the country. Crop Loss assessment and Yield estimation assisted by data inputs from such as Remote Sensing indices, Weather indices, crop phenological information, soil types etc. using approved Technologies/Approaches.

The above interventions help in bringing in more transparency into the scheme ecosystem by reducing human intervention and has further enabled trust within farmer's community and other stakeholders such as implementing States/UTs & General Insurers.

Crop area affected in hectares (As per report received from States/ UTs Government)

S.No	State/Uts	Crop area affected in hectares 2024-2025
1	Andhra Pradesh	11559
2	Arunachal Pradesh	584
3	Assam	137747
4	Bihar	-
5	Chhattisgarh	-
6	Goa	-
7	Gujarat	-
8	Haryana	540
9	Himachal Pradesh	-
10	Jharkhand	-
11	Karnataka	286229
12	Kerala	-
13	Madhya Pradesh	-
14	Maharashtra	-
15	Manipur	1206
16	Meghalaya	1122
17	Mizoram	21069
18	Nagaland	3147
19	Odisha	22083
20	Punjab	-
21	Rajasthan	-
22	Sikkim	58
23	Tamilnadu	292557
24	Telangana	-
25	Tripura	-
26	Uttar Pradesh	395058
27	Uttarakhand	5218
28	West Bengal	138000
29	Andaman & Nicobar	-
30	Chandigarh	-
31	Dadra & Nagar Haveli and Daman & Diu	-
32	Delhi	-
33	J & K	2012
34	Ladakh	-
35	Lakshadweep	-
36	Puducherry	5527
	Total	1312157

Source: As received from MHA.
