

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

RAJYA SABHA UNSTARRED QUESTION NO. 2112

TO BE ANSWERED ON 13/12/2024

EFFECT OF CLIMATE CHANGE ON CROP PRODUCTION

2112. SMT. SANGEETA YADAV:

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

- (a) the current status of crop production and productivity in the country;
- (b) whether any assessment has been conducted to evaluate the impact of climate change on the incidence of diseases in crops, if so, details of the findings;
- (c) the measures being taken to address the challenges posed by climate change to crop health and productivity;
- (d) whether there are any specific regions or crops that are particularly vulnerable to climate-related risks; and
- (e) the research initiatives or collaborations aimed at enhancing climate resilience in agriculture

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE

(SHRI RAMNATH THAKUR)

(a): The food grain production and productivity in the country during 2023-24 is as given below;

Crop	Production (Lakh tons)	Productivity (Yield in kg/ha)
	2023-24	2023-24
Rice	1378.25	2882
Wheat	1132.92	3559
Maize	376.65	3351
Barley	16.99	3082
Jowar	47.37	1162
Bajra	107.16	1453
Ragi	16.70	1375
Small Millets	4.49	935
Total Cereals	3080.52	2945
Tur	34.17	827
Gram	110.39	1151
Urad	23.19	656
Moong	31.03	598
Lentil	17.91	1028
Other Pulses	25.77	776
Total Pulses	242.46	881
Total Food Grains	3322.98	2515

(b) to (e): Indian Council of Agricultural Research (ICAR) is implementing a project namely National Innovations in Climate Resilient Agriculture (NICRA) that studies the impact of climate change on agriculture including crops, livestock, horticulture and fisheries. It also develops and promotes climate resilient technologies which helps the regions prone to extreme weather conditions like droughts, floods, frost, heat waves, etc. to cope with such extremes. Incidence of diseases in crops in relation to climate change under field conditions are being addressed through database development on insect pests, diseases and weather for important crops across 12 agro-climatic zones under NICRA. The studies showed that in the absence of adaptation measures, climate change is likely to reduce yield of rainfed as well as irrigated rice, wheat, Kharif maize etc. States like Bihar, Jharkhand and West Bengal are likely to be more vulnerable to heat stress for wheat crop in future. Irrigated rice in States such as Haryana, Karnataka, Kerala, Maharashtra, Tamil Nadu and West Bengal will be affected significantly for heat and water stress. The yield potential of potato varieties is projected to decrease from Punjab to West Bengal and in parts of Madhya Pradesh and Gujarat. Under NICRA, risk and vulnerability assessment of agriculture to climate change has been carried out at district-level for 651 predominantly agricultural districts as per Intergovernmental Panel on Climate Change (IPCC) protocols. Out of 310 districts identified as vulnerable, 109 districts have been categorized as ‘very high’ and 201 districts as ‘highly’ vulnerable. District Agriculture Contingency Plans (DACPs) for these 651 districts have been prepared to address weather aberrations and recommending location specific climate resilient crops and varieties and management practices. For enhancing the 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 have been demonstrated in 448 CRVs of 151 climatically vulnerable districts covering 28 states / UTs for adoption by farmers. Capacity building programmes are conducted to educate the farmers on various aspects of climate change for wider adoption of climate resilient technologies.

Several schemes have also been initiated under National Mission on Sustainable Agriculture (NMSA) by the Government to deal with the adverse climate situations in the agriculture sector. Per Drop More Crop (PDMC) scheme was launched in 2015-16 to increase water use efficiency at the farm level through Micro Irrigation technologies i.e. drip and sprinkler irrigation systems. Rainfed Area Development (RAD) scheme is being implemented as a component under National Mission for Sustainable Agriculture (NMSA) from 2014-15. RAD focuses on Integrated Farming System (IFS) for enhancing productivity and minimizing risks associated with climatic variability. Mission for Integrated Development of Horticulture (MIDH), Agroforestry & National Bamboo Mission also promote climate resilience in agriculture. Further, Pradhan Mantri Fasal Bima Yojana (PMFBY) along with weather index based Restructured Weather Based Crop Insurance Scheme (RWBCIS) provide a comprehensive insurance cover against failure of the crop by way of providing financial support to farmers suffering crop loss/damage arising out of unforeseen natural calamities, adverse weather incidence and to help stabilize income of farmers and ensure their continuation of farming.
