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

LOK SABHA
UNSTARRED QUESTION NO. 1364
TO BE ANSWERED ON 11TH FEBRUARY, 2025

REPORT ON IMPACT OF CLIMATE CHANGE ON AGRICULTURE

1364. DR. K SUDHAKAR:

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

(a) whether there is any study report on the impact of climate change on agriculture in the country and if so, the details thereof;

(b) whether it is true that agrarian communities of Karnataka has been worsely affected by natural disasters during the last few decades and if so, the details thereof;

(c) the details of steps taken by the Government to ensure that climate change such as heat waves and droughts may not affect farmers of Karnataka;

(d) whether any technological interventions are being planned by the Government for the farmers to provide early warning of impending heat waves, droughts, storm or any other natural disasters and if so, the details thereof; and

(e) the manner in which climate change affected farmers of Karnataka especially Chikkaballapur during the last ten years?

ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण राज्य मंत्री (SHRI BHAGIRATH CHOUDHARY)

(a): The Government through ICAR flagship network project 'National Innovations in Climate Resilient Agriculture' (NICRA) conducted a District-level risk and vulnerability assessment of agriculture to climate change 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.

NICRA also assessed the impact of climate change on crop yields using simulation models in the country. The study indicated that rainfed rice yield projected to reduce by 20% in 2050 and 47% in 2080, while irrigated rice yield reduce by 3.5% in 2050 and 5% in 2080. The wheat yield projected to reduce by 19.3% in 2050 and 40% in 2080; maize yield may reduce by 18% in 2050 and 23% in 2080.

(b): Karnataka is majorly a rainfed agrarian, affected largely with droughts. National Rainfed Area Authority, New Delhi identified 24 drought Vulnerable districts in the country, among which 16 are located in Karnataka. Although state receives good rainfall normally, its erratic distribution both spatially and temporally affected agrarian communities of Karnataka.

Analysis of the drought declaration in the state of Karnataka indicated 16 years out of 23 years (2001 to 2023) declared drought years. Floods are also increasing since 2018 in Cauvery and Krishna basin. The hail-storm damage specially in Northern and Eastern dry zone of Karnataka is affecting horticultural crops. The heat wave incidences are extending to the southern part.

(c): The Government has taken several steps towards mitigation of adverse impact of climate change on agriculture in the country including Karnataka. The National Action Plan on Climate Change (NAPCC) provides an overarching policy framework to enable the country to adapt to climate change and enhance ecological sustainability. One of the National Missions under NAPCC is the National Mission for Sustainable Agriculture (NMSA), which implements strategies to make agriculture more resilient to the changing climate. Several schemes have also been initiated under NMSA to deal with the adverse climate situations. Per Drop More Crop (PDMC) scheme increases water use efficiency at the farm level through micro irrigation technologies i.e. drip and sprinkler irrigation systems. Rainfed Area Development focuses on Integrated Farming System for enhancing productivity and minimizing risks associated with climatic variability. The Soil Health & Fertility scheme assists states in promoting integrated nutrient management through judicious use of chemical fertilizers including secondary and micronutrients in conjunction with organic manures & bio-fertilizers for improving soil health and its productivity. Mission for Integrated Development of Horticulture, Agroforestry & National Bamboo Mission also promote climate resilience in agriculture. Further, Pradhan Mantri Fasal Bima Yojana along with weather index based Restructured Weather Based Crop Insurance Scheme provide a comprehensive insurance cover against crop failure by providing financial support to farmers suffering crop loss/damage arising out of unforeseen natural calamities.

(d): Weather alerts are issued through IMD and state Disaster Monitoring units. IMD in collaboration with ICAR and State Agricultural Universities initiated GKMS (Gramin Krishi Mausum Seva) for providing Agro-Met Advisory Services (AAS) to the farmers. These advisories are issued biweekly (Tuesday and Friday) considering the medium range weather forecast and crop situation. IMD is also issuing Seasonal weather forecast for monsoon, which help the farmers in crop selection and other stakeholders to plan their activities.

Government of India has implemented the District Agricultural Contingency Plan (DACP) prepared for 651 Districts of the country and recommends location specific technological interventions viz. climate resilient crops and varieties and management practices for use by farmers.

(e): Studies conducted by All India Coordinated Research Project on Agrometeorology indicated a temperature increase of around 1.5ºC and changed rainfall distribution as pre-monsoon showers (April – May) are increasing and rains during early Kharif (June) is decreasing in Chikkaballapur. The Technology Demonstration Component of NICRA has been implemented in Chikkaballapur through KVK, Chintamani for climate resilient agriculture practices to reduce the effect of climate change.

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