

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

RAJYA SABHA
UNSTARRED QUESTION NO. 3387
TO BE ANSWERED ON 31/03/2023

LOSS IN FOOD PRODUCTION DUE TO CLIMATE CHANGE

3387 SMT. JEBI MATHER HISHAM:

Will the Minister of Agriculture and Farmers Welfare be pleased to state:

- (a) whether Government has estimated how climate change is affecting food production, if so, the steps taken to address this issue;
- (b) whether Government has estimated the loss in food production due to climate change, if so, the crop-wise details thereof; and
- (c) whether Government has any plan to promote food products from genetically modified crops which are claimed to be resistant to climate change, if so, the details thereof?

ANSWER

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
(SHRI NARENDRA SINGH TOMAR)

(a) to (c): The climate change impact assessment was carried out by Indian Council of Agricultural Research (ICAR) using the crop simulation models by incorporating the projected climates of 2050 & 2080. In absence of adoption of adaptation measures, rainfed rice yields in India are projected to reduce by 20% in 2050 and 47% in 2080 scenarios while, irrigated rice yields are projected to reduce by 3.5% in 2050 and 5% in 2080 scenarios. Climate change is projected to reduce wheat yield by 19.3% in 2050 and 40% in 2080 scenarios towards the end of the century with significant spatial and temporal variations. Climate change is projected to reduce the kharif maize yields by 18 and 23% in 2050 and 2080 scenarios, respectively.

To address the issue of impact of climate change on food production, the Government has formulated schemes/plans to make agriculture more resilient to climate change. The National Mission for Sustainable Agriculture (NMSA) is one of the Missions within the National Action Plan on Climate Change (NAPCC). The mission aims at evolving and implementing strategies to make Indian agriculture more resilient to the changing climate.

Further, to meet the challenges of sustaining domestic food production in the face of changing climate, the Indian Council of Agricultural Research (ICAR), Ministry of Agriculture and Farmers Welfare, Government of India launched a flagship network research project 'National Innovations in Climate Resilient Agriculture' (NICRA) in 2011. The project aims to develop and promote climate resilient technologies in agriculture, which addresses vulnerable areas of the country and the outputs of the project help the districts and regions prone to extreme weather conditions like droughts, floods, frost, heat waves, etc. to cope with such extreme events.

ICAR has developed more than 7200 high yielding varieties of field and horticultural crops since 1969 through National Agricultural Research System (NARS). During 2014-15 to 2022-23, NARS under the aegis of ICAR has released 2681 high yielding/ stress tolerant varieties/hybrids of field (2279) and horticultural crops (402) for different agro-climatic conditions, of which 407 varieties have been bred through precision phenotyping tools specially for extreme climate including flood/water submergence/water logging tolerance (73), drought/moisture stress/water stress tolerance (220), salinity/alkalinity/sodic soils tolerance (52), heat stress/high temperature tolerance(49) and cold/frost/winter chilling tolerance(13).
