

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

LOK SABHA
UNSTARRED QUESTION NO. 43
TO BE ANSWERED ON 11/12/2018

**ICAR STUDY ON IMPACT OF CLIMATE
CHANGE ON AGRICULTURE**

43. SHRI SHIVKUMAR UDASI:

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

- (a) whether ICAR study shows that farming in 20% of districts in India is threatened by climate change and if so, the details thereof;
- (b) whether the ICAR has identified that of the 28 million hectares under wheat, about 9 million hectares are categorized as being prone to sudden heat stress and if so, the details thereof; and
- (c) whether any steps have been taken by the Government against extreme weather events and if so, the details thereof?

A N S W E R

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्रालय में राज्य मंत्री
(SHRI GAJENDRA SINGH SHEKHAWAT)

(a) Yes, Madam. As part of ICAR's National Innovations in Climate Resilient Agriculture (NICRA) project, relative vulnerability of agriculture to climate change was analyzed. Adopting the definition of vulnerability given by IPCC, vulnerability was assessed for 572 rural districts of India. Based on the vulnerability index, all the districts were divided into five categories with equal number of districts and the top 20% of districts (115) were categorized as districts with 'very high' vulnerability. The vulnerability of Agriculture to Climate Changes (2020-2050) maps are available at (<http://crida.in/Pubs/Vulnerability Atlas web.pdf>).

(b) Yes, Madam. Variability in extreme temperatures and heat waves over the whole country was analyzed using the daily gridded maximum temperature data of IMD for 1951 to 2014 period. Results showed that the extreme warm days (ExWD) have increased throughout India over time but were statistically significant in 42% of the area. The increase was consistent over all the months in North Eastern region, southern plateau and both the coastal plains. The analysis of land area affected by several levels of extremes indicated significant increase in it during the last three decades with the rate being highest for higher extremes.

(c) Yes, Madam. The following steps have been taken against extreme weather events:-

- The Indian Council of Agricultural Research (ICAR) has launched a flagship network project 'National Innovations in Climate Resilient Agriculture' (NICRA) during 2011.
- Under strategic research component of NICRA, large number of germplasms collected from different hotspot locations of the country, which are being characterized as a source material for breeding programmes.
- Heat and drought tolerant wheat, flood tolerant rice, drought tolerant pulses, water logging and high temperature tolerant tomato varieties have been developed.
- The Technology Demonstration Component (TDC) of NICRA is being implemented in 151 climatically vulnerable districts of the country to address the climate variability and to enhance resilience and adaptive capacity of the farmers.
- District agricultural contingency plans have been developed for 633 districts in order to address extreme climatic events and to provide real time agro-advisories to farmers.
