

# National Innovations in Climate Resilient Agriculture (NICRA)

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**In news :** Recently, the Union Minister of Agriculture said that due to climate change, the Rainfed rice yields in India are projected to reduce marginally by around 2.5 per cent and irrigated rice yields by 7 per cent in 2050. He also mentioned NICRA project in this regard

## Key updates

Following are the key updates given by the Minister in Lok Sabha:

- As per the minister, **rainfed rice yields in India are projected to reduce marginally** (<2.5%) in 2050 and 2080 and irrigated rice yields by 7% in 2050 and 10% in 2080 scenarios.
- Further, wheat yield is projected to reduce by 6-25% in 2100 and maize yields by 18-23%.
- **Future climates are likely to benefit chickpea** with increase in productivity (23-54%).
- Impact of climate change on Indian agriculture was studied under National Innovations in Climate Resilient Agriculture (NICRA).
- **Vulnerability assessment of Indian Agriculture** to climate change is undertaken by Indian Council of Agricultural Research (ICAR).
- Such an assessment was for 573 rural districts of India (excluding the Union Territories of Andaman and Nicobar Islands, Lakshadweep).
- Based on the vulnerability analysis, 109 districts out of 573 rural districts (19% of total districts) are

**'very high-risk' districts**, while 201 districts are risk districts.

- Integrated simulation modelling studies indicated that under Representative Concentration Pathway 4.5, maximum temperature is expected to increase by 1 to 1.3oC in 256 districts, by 1.3 to 1.6 oC in 157 districts (2020-2049). The increase ranged from <1.3 oC in 199 districts to >1.6 oC in 89 districts. Cultivation of wheat in these districts is likely to be affected by heat stress.

### **Key inventions**

- Under the NICRA project, wheat germplasm consisting of advanced breeding lines and land races have been screened for heat/drought tolerance.
- ICAR-Indian Agricultural Research Institute (IARI) has released the high yielding varieties such as HD 2967 and HD 3086 which are being grown in large areas of North-west and North India.

### **Committee to review NICRA project**

- NICRA project is being reviewed by a High Level Monitoring Committee (HLMC) under the Chairmanship of Secretary, DARE & DG, ICAR with invited members representing different Ministries, Government of India.
- This committee recommends measures to be taken through NICRA for making Indian agriculture more resilient to changing climate.
- Besides an expert committee periodically review the project and advise on various aspects.

### **A brief note on the National Innovations in Climate Resilient Agriculture (NICRA)**

- Indian Council of Agricultural Research (ICAR) has initiated a network project NICRA during 2011 to address the impact of climate change on Indian agriculture.

- The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration.
- The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management.
- The project consists of four components viz. Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grants

### **Objectives of NICRA**

ICAR has launched a major Project entitled, National Initiative on Climate Resilient Agriculture (NICRA) during 2010-11 with an outlay of Rs.350 crores for the XI Plan with the following objectives.

- To enhance the resilience of Indian agriculture covering crops, livestock and fisheries to climatic variability and climate change through development and application of improved production and risk management technologies
- To demonstrate site specific technology packages on farmers' fields for adapting to current climate risks
- To enhance the capacity building of scientists and other stakeholders in climate resilient agricultural research and its application.