

# ACTION-PLAN TO TACKLE ADVERSE IMPACT OF GLOBAL WARMING ON FOOD CROPS

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

Ministry of Agriculture & Farmers Welfare

## Action-Plan to tackle Adverse Impact of Global Warming on Food Crops

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Global Warming associated with the increase in concentration of green house gases in the atmosphere is one of the reasons for the increase in extreme weather events. Due to global warming agriculture sector is likely to be affected and climate change is expected to impact yields of agriculture crops in a business as usual scenario.

Simulation studies using integrated modelling framework showed that rainfed rice yields in India are projected to reduce marginally (<2.5%) in 2050 and 2080 scenarios while irrigated rice yields are projected to reduce by 7% in 2050 and 10% in 2080 scenarios. Climate change is projected to reduce wheat yield by 6-25% towards the end of the century with significant spatio-temporal variations. Climate change in 2050 and 2080 scenarios is projected to reduce the *kharif* maize yields by 18 to 23%. *Kharif* groundnut yields are projected to be increased by 4-7% in 2050 scenarios where as in 2080 scenario the yield is likely to decline by 5%. Future climates are likely to benefit chickpea with increase in productivity (23-54%).

During XII Plan (2012-2018), more than 400 climate resilient germplasm lines have been identified and 58 genotypes characterised with high water and nutrient use efficiency by Indian Council of Agricultural Research (ICAR).

National Mission for Sustainable Agriculture (NMSA) one of the missions under National Action Plan on Climate Change (NAPCC) aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate.

National Food Security Mission (NFSM) programme is implemented in the identified districts across the country with the objective of increasing foodgrain production through area expansion and productivity enhancement, restoring soil fertility and productivity at individual farm level and enhancing farm level economy.

ICAR has launched a flagship network project National Innovations in Climate Resilient Agriculture (NICRA).

The NICRA aims at strategic research on adaptation and mitigation, demonstration of technologies on farmers' fields and creating awareness among farmers and other stakeholders to minimize the impacts of global warming on agriculture. Under this project, large number of indigenous genetic resources and improved crop varieties of pulses (black gram, green gram, pigeonpea, chickpea) and cereals (rice and wheat) are screened for major abiotic stresses like drought and heat to identify superior cultivars for large scale adoption in farmer's fields genetic materials for cultivation at farmers field. In the process number of genetic materials including improved varieties were identified, some of which are already in the farmer's fields. Besides, location specific NRM technologies are being demonstrated under Technology Demonstration

Component of NICRA in 151 climatically vulnerable districts to achieve climate resilient agriculture.

This information was given in a written reply by the Union Minister of Agriculture and Farmers Welfare Shri Narendra Singh Tomar in Rajya Sabha today.

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