

Vulnerability of Indian Agriculture to Climate Change: A Study of the Himalayan Region State

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Abstract : Climate variability and changes are the emerging challenges for Indian agriculture with the growing population to ensure national food security. A study was conducted to assess the Climatic Change effects in medium to low altitude areas of the Himalayan region causing changes in land use and cereal crop productivity with the various climatic parameters. The rainfall and temperature changes from 1951 to 2013 were studied at four locations of varying altitudes, namely Hardwar, Rudra Prayag, Uttar Kashi and Tehri Garwal. It was observed that there is noticeable increment in temperature on all the four locations. It was surprisingly observed that the mean rainfall intensity of 30 minutes duration has increased at the rate of 0.1 mm/hours since 2000. The study shows that the combined effect of increasing temperature, rainfall, runoff and urbanization at the mid-Himalayan region is causing an increase in various climatic disasters and changes in agriculture patterns. A noticeable change in cropping patterns, crop productivity and land use change was observed. Appropriate adaptation and mitigation strategies are necessary to ensure that sustainable and climate-resilient agriculture. Appropriate information is necessary for farmers, as well as planners and decision makers for developing, disseminating and adopting climate-smart technologies.

Keywords : climate variability, agriculture, land use, mitigation strategies

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