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Climate Change and Spices: The Issues of Ecology and Economy

A B Sharangi[1*] and S K Acharya[2]

[1]Dept of Spices and Plantation Crops, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252, Nadia, West Bengal
[2]Dept of Agricultural Extension, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252, Nadia, West Bengal
E-mail: [1]dr_absharangi@yahoo.co.in, [2]acharya09sankar@gmail.com

Abstract—*The good earth now is under the brunt of climate change. The agricultural productivity, quality and quantity of produces, the food security and the livelihood of millions have been rendered more unpredictable and uncertain of arrays of agricultural and horticultural crops, the spices are going to receive the brunt of climate change in a very conspicuous manner. The present paper examines the effect of climate change on the phenology and productivity of spices with a clear dent for hill ecosystem. The differential preferences of spices for both day and night temperatures, spices at large are going to experience a setback both in productivity and quality terms. The dominant spices in India like black pepper, small and large cardamom, ginger, turmeric, dry chilli, cinnamon, clove, nutmeg coriander, fenugreek, other seed spices and so on are going to respond with varied intensity and distribution to weather phenomena like humidity, rainfall, temperature and of course the frequency of weather aberrations from moderate to extreme deflections. The mitigation and adaptation strategies for a sustainable growth of spices are the need of the time which may include replacement of classical genes with more adaptive ones, change of cropping pattern to offer better space and interactions with biotic and abiotic factors, community mobilization to usher and ensure better livelihood and economy from spices as an enterprise. The methodological innovations with location specific research can provide a better solution, as depicted in thiks paper, to make spices a resilient inclusion into a dynamic and functional agroecosystem, of course with an institutional support from the surroundings and social ecology.*

Keywords*: climate change, phenology, spices, hill ecosystem, mitigation.*