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Climate Change Versus Adaptation–perception, of Forest Fringe Communities from West Bengal

Tanusri Dey, P. K. Pal*, Gopal Shukla and Sumit Chakravarty

*Department of Forestry Department of Agricultural Extension**
Uttar Banga Krishi Vishwavidyalaya Pundibari-736165, Cooch Behar West Bengal
E-mail: tanuubkv1991@gmail.com; c_drsumit@yahoo.com

Abstract—*Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Climate variability/change is attributed directly or indirectly to human activity and is usually observed over time. Climate variability/change scenario represents a significant environmental, social and economic threat which is now recognized by the majority of the world's governments and scientists as an issue of extreme concern because it is expected to affect functioning of eco-system services (including forestry and agriculture) and also expected to exacerbate the vulnerability of communities with adverse impacts on livelihood options. The forest dwellers, adjacent farmers and even considerable proportion of underprivileged population are particularly at risk due to climate change. A study was thus conducted during 2014-15 in a Humid Tropical Foothill Forest of Indian Eastern Himalayas to document the perception of the forest fringe communities on climate change and consequently the adaptation strategies they are adopting in response to the climate change. A total of 100 respondents through random sampling were selected for personal in-depth interview through close ended questionnaire. Majority of the respondents were male, literates and subsistently growing crops in their marginal land. Forest fringe community of Chilapatta Reserve Forest perceived climate change and its effects on the weather, ecosystems, biodiversity and agriculture. Majority of them perceived increase in temperature as increase in day and night temperature, mildness in winter and warming of winds. Similarly they believed that monsoon is becoming unpredictable day by day with changed intensity and pattern but generally arriving late and withdrawing early over the past few decades along with decrease in cloudy and rainy days. Majority of these people also perceived negative impact of climate*

change on forest biotic and abiotic environment along with risk on their livelihood through increased misery, decreased income, increase susceptibility to serious diseases and decreased availability of food and water. Having perceived climate change the community is adopting knowledge-based adaptive measures to cope with it but with medium adaptive capacity. A total of 17 coping options were identified. Pre-monsoon dry-seeding, agroforestry, crop rotation, short duration crop varieties and use of organic products are popular. The study also revealed a need for scientists, government and non-government agents and other stakeholders to support efforts by farmers to adapt to effects of climate change through technological, policy and financial interventions with an aim of improving livelihoods and food security.

Keywords*: Forest, Fringe community, Climate change, Risk perception, Adaptation.*