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"Agricultural development within the rural-urban continuum"

Farmers' Perceptions of and Responses to Climate Change in Nepal

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Abstract

The study explores the farmers' perceptions of climate change and their responses to it in Nepal. Information was collected through focus group discussions (9 FGDs) and household surveys (225 HHs) in three tropical districts (Banke, Chitwan and Morang) of Nepal in 2011. Farmers responded based on their experiences of climate trends during the last ten years. Farmers perceived climate change as increased variability of temperature and rainfall, increased temperature (90.6 % HHs), shorter and warmer winter, changes in monsoon time (99.1 % HHs), reduction of annual rainfall (74.6 % HHs), decreased rainfall frequency (51.5 % HHs) and duration per event (75.5 % HHs), decreased winter rains, increased frequency of erratic rainfall, increased drought frequency and periods (60.8 % HHs), etc. The major effects of perceived changes included limited water availability (drying of streams, well), decreasing soil moisture, high fluctuations of crops yields and declining agricultural productivity, increased incidence of pests (*i.e.* snail worms) and diseases (92 % HHs), existence of unidentified pests (55.5 % HHs), emergence of new plant species (11.5 % HHs), environmental pollution, high risk in fish farming (water pollution), poor livestock health, decreasing earthworm population, shortening life cycle of crops by 10–15 days (*i.e.* rice, maize, wheat), low fruiting in fruit trees, fruits cracking (*i.e.* lime), changes in flowering and fruiting time (*i.e.* mango, jackfruit, guava), increased sand in soils due to flood, etc. Farmers also noticed the positive effect as automatic control of some pests (*i.e.* white fly in rice). Majority of farmers (92.8 % HHs) have already followed/ planned to follow some adaptation techniques such as shifting of agricultural calendar (56 % HHs), crop rotation (53.7 % HHs), crops diversification (36.4 % HHs), changes of crop types and varieties (65.7 % HHs), investment on irrigation (75.5 % HHs) *i.e.* purchase of water pumps, investment on plastic tunnels (33.7 % HHs), mulching to maintain soil moisture (27.5 %), traditional pest management (*i.e.* use of cow urine, ashes), more use of compost and FYM, provision of drainage canals in the field, agro-forestry practices, rain water harvesting. The study concludes that the farmers have perceived climate change and its effects on farming and have been trying to adapt to it.

Keywords: Climate change, climate change adaptation, farmers' perceptions

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