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Nexus of climate change, smallholder farmers food security and rural-out migration in Nepal: From fields to new horizons

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Abstract

Climate change affects the livelihood and food security of Nepalese smallholder farmers. Rural out-migration has remarkably increased, rising to 4.35 persons per 1000 inhabitants in 2022. The rural out-migration could have potential implications for agricultural production in the country. Therefore, the objective of this study was to analyse the climate change, food security, and migration nexus. We aimed to identify the factors influencing rural-out migration, including climate change, and the impact of migration on household food security. The study analysed 400 selected households using multistage sampling in three agro-ecological zones: highland (mountainous region), midland (hilly region), and lowland (terai region). The data were analysed using binary probit, propensity score matching, and endogenous switching regression models. The results showed that climate change, age, education, social group, and off-farm activities significantly increase the probability of rural out-migration. The endogenous switching regression model revealed that rural-out migration significantly improved households' food security. Although rural out-migration enhances the food security status of smallholder farmers in the short term, this is not a sustainable solution. In the long term, rural out-migration may exacerbate food insecurity due to a lack of labour for agricultural productivity. The main reasons for migration included seeking employment opportunities, improved livelihoods, access to education, fertile agricultural land, and adaptation to climate change. Our research highlights the urgent need for robust policies encouraging smallholder farmers to stay on their land and promote rural opportunities. Based on our findings, we propose comprehensive strategies that integrate both on-farm and off-farm employment opportunities and investments in education and agricultural innovation to anchor smallholder farmers and strengthen food security.

Keywords: Food security, livelihoods, sustainable development goals