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Anne Toppinen, Heimo Karppinen & Kati Kleemola (eds.)

Revisiting an empirically based analysis of household-level adaptation in high altitude villages in Nepal.

Herslund, L., Byg, A., Overgaard Larsen, H., Meilby, H., Nielsen, Ø.J., Rayamajhi, S. and Smith-Hall, C.

Climate change may significantly impact the assets, activities and income of rural households throughout developing countries. Estimating possible future vulnerability is therefore essential to climate change impact assessments. This case study paper aims to assess household-level coping and adaptation possibilities in high altitude villages in Lower Mustang, Nepal. These are generally characterised as having limited economic resources, low levels of technology, low skill levels, poor infrastructure and weak institutions, and are thus likely to have low coping and adaptive capacity. Village-level background information was collected using qualitative techniques. This was followed by a structured household survey (2009), emphasizing household assets and income, and a separate survey focusing on households' response to economic shocks. Livelihood strategies were identified using cluster analysis and adaptive responses to shocks (coping strategies) were modelled on the basis of the survey data. Existing regional and national-level climate studies and local data on temperature and precipitation were used to prepare scenarios of present and future agricultural harvest outcome distributions. A household-level simulation model was developed and the development with regard to households' incomes, assets and allocation of time to various activities was simulated over a period of 50 years using Monte-Carlo simulation. Two main scenarios were examined and compared. Based on the simulations household-level coping capacities were analysed, and conditions that stimulate or constrain coping were identified. Possibilities for increasing coping capacity, especially for poorer and more vulnerable households pursuing livelihood strategies with a significant environmental resource use component, were discussed.