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Analyzing the Linkages of Ex-Ante and Ex-Post Coping Strategies to Flood Damages: Implications for Sustainable Flood Management in Rural Pakistan

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Abstract

Pakistan is highly prone to flood hazard and faces a severe threat of this disaster under changing climate scenarios. Being an agrarian economy, rural households have been directly and indirectly affected by frequent flood events during the last two decades. Along with the presence of fragile flood protection infrastructure coupled with a flawed flood management system, rural households suffer heavily by these events and try to cope with varying degree of approaches and strategies. This study aims at exploring the range of coping responses and adaptation techniques of rural households and their linkage to flood damages in a previous flood event. For this purpose, a survey of flood-affected households in 5 districts of the country is carried out after the incidence of 2010 floods. Questionnaire-based field data is collected through multistage random sampling technique. Reported damage indicators are indexed and factor analysis is performed using polychoric correlation. Impact of various ex-ante coping strategies on indexed damage indicators is evaluated using multiple linear regression. Results indicate that weak to strong correlations exist among different damage indicators and ex-ante and ex-post coping responses. Moreover, overall flood damage for a farm household is found to be negatively and significantly affected by installing sand bags, seeking information about the flooding problem and leaving house before flooding. Elevating house, attending government meetings about flooding problem; and signing petitions and memos to resolve flooding problem are found to be positively affecting damage in a flood event. The study concludes with placing more emphasis on timely warnings, proper investigation of flooding problem and its likely impact on the community and strengthening of planning process through the involvement of community in order to reduce flooding risk in the study area.

Keywords: Adaptation, elevation, flood, household, mitigation, polychoric