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## Does Risk Mitigation Help Rural Households in Vietnam in Reducing the Impact of Extreme Weather?

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### Abstract

Extreme weather events frequently cause livelihood stress in rural households in developing countries and they are expected to become more frequent due to climate change. Local action for *ex-ante* risk mitigation strategies seeks to reduce livelihood stress due to extreme weather. The literature finds that risk mitigation strategies generally improve livelihoods; however whether they are actually effective in reducing risk of households to face livelihood stress due to extreme weather remains unclear. The aim of the paper is to investigate whether risk mitigation is effective in reducing the number of extreme events causing livelihood stress, their severity felt by the household and the actual damage. We use panel data from two provinces in rural Vietnam providing information on about 1100 households in the the years 2003 to 2013, looking at economic shocks due to drought, flood and storm. In a difference-in-difference model with kernel matching the impact of applying risk mitigation measures such as collective action, agricultural diversification and income diversification in 2008 is assessed by comparing the outcomes for non-mitigators and mitigators in the five years prior to 2008 to the five-year period after 2008. The findings are that risk mitigation measures cannot reduce the total number of shocks the households face. However, the number of shocks with high severity is reduced throughout the sample while the number of shocks with medium severity increases for floods and droughts. This leads to the conclusion that risk mitigation measures are capable of reducing the impact of extreme events but not reducing the number of events causing livelihood stress. The impact on total damage relative to household income is expected to be decreased by the application of risk mitigation measures as well.

**Keywords:** Adaptation, risk mitigation, Vietnam, weather shocks