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Risk-Management to Reduce Multidimensional Poverty? Comparative Evidence on the Effects of Crop Diversification on Poverty in Southeast Asia

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Abstract

Vietnam and Thailand are both heavily affected by climate change. According to the Global Climate Risk index, which measures the exposure to extreme weather events, Vietnam and Thailand rank 6th and 9th respectively for the period from 1999–2018. Higher temperatures, greater variability in rainfall patterns and altered growing seasons negatively affect agricultural production and, thus, farmers' income. Crop diversification can help to mitigate income loss from altered weather conditions. The effect of crop diversification on farmers' income and poverty has already been studied by using income-based measures that rely on an assessment of what amount of income would normally be sufficient to meet minimum needs. This study focuses on a multidimensional approach to measure poverty. Multidimensional poverty indices provide a more detailed picture about patterns of poverty. The empirical analyses use a uniquely large and long-term data set of 4,400 rural Vietnamese and Thai households from a socio-economic panel (TVSEP) ranging from 2007 to 2017. This data is used to calculate the multidimensional poverty index as well as the Simpson Index of Diversification to measure crop diversification at the household level. The multidimensional poverty index contains information on health, education, standards of living, and income. For the analysis, a panel data regression method will be implemented using the multi-dimensional poverty index as dependent and the Simpson Index for Diversification as well as self-assessed weather shocks as control variables next to other socio-demographic controls. In order to deal with the endogeneity issue between self-assessed weather shocks and crop diversification as well as the stochastic nature of income, precipitation data is used to construct an index indicating extreme heat or wet seasons. We find a positive impact of crop diversification on poverty, meaning that crop diversification helps not only to reduce monetary poverty but also positively impacts other dimensions of poverty such as health, education, and standards of living. Thus, policy makers should consider an extension of services promoting crop diversification.

Keywords: Crop diversification, income poverty, multidimensional poverty, panel data, precipitation, shocks