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"Bridging the gap between increasing knowledge and decreasing resources"

Shocks and their Implications on Food Security of Vulnerable Households in Indonesia

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Abstract

Growing evidence shows that the world is facing a threat of climate change with the increase of temperature, intense rainfall and sea level rise.The intergovernmental Panel on Climate Change (IPPC) projected that these extreme climatic events, along with climate change will have adverse effects on agricultural production and food security in the coming decade and will be particularly pronounced in rural households of developing countries. Indonesia is an agrarian country where most of the households are engaged in agricultural activities for their income and livelihood. Thus, any irregularities in climate and weather patterns may threaten the small farmers' crop production, income, and human capital investment. These multiplier effects then have substantial negative effects for food security and poverty alleviation. In the present study we analyse the impact of expected temperature and rainfall changes on farm level productivity and subsequently on household welfare condition. Time series data on temperature and rainfall changes are combining with survey data from rural farming households to compute household vulnerability of food security. Using panel data this study aims to identify the effects of weather shocks and the key factors affecting food security during 2001 – 2006, and to provide some recommendations for improving food security in rural areas in Indonesia. We idevelop a household food security index from principal component analysis. The food security index is used as the dependent variable and an econometric approach applied is to identify the significance of the primary factors influencing a household's food security throughout the years. It shows that the increase of temperature and the variability of rainfall tend to alleviate food security. Moreover, a household's assets endowment is an important determinant of persistent food insecurity and vulnerability over the time. The result shows the importance of infrastructure construction in agricultural areas to be strengthened, and the need for efficient risk reduction and mitigation programs to improve risk exposure and coping ability of rural households under climate change.

Keywords: Agricultural production, food security, weather shocks

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