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Assessing Household Vulnerability to Flash Floods and Landslides: Key Insights from Vietnam

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Abstract

Vietnam is one of the most natural hazard-prone countries in the East Asia. Every year it loses 1–1.5 percent of GDP due to natural disasters which hinders the socio-economic development of the country. Seventy percent of the population is concentrated in the flood plains and coastal areas relying on natural resources for subsistence especially smallholder agriculture. Flash floods and landslides are recurring disasters which heavily affect the country in terms of the land area impacted, population affected and economic loss. In addition to this, climate change accelerates the negative impacts on the livelihood of these poor rural households.

Against this background, this paper presents the Livelihood Vulnerability Index (LVI), a composite index, to estimate the vulnerability level of smallholder farmers to these hazards. As a case study, we selected Yen Bai province, one of the poorest provinces in the Northern Mountainous Region of Vietnam with a high proportion of ethnic minorities. This province is frequently affected by flash floods and landslides. Based on collected data from 406 households in three communes: An Binh, An Thinh and Dai Son, the LVI is calculated under seven major components namely socio-demographics, livelihood strategies, social networks, health, food, water, hazard impacts and climate variability. The results show that Dai Son commune has the highest LVI and is the most vulnerable due to its high vulnerability values in socio-demographic and water security components. On the other hand, An Thinh is considered as the least vulnerable because of better social network, health, socio-demographic and water security. Most of the agricultural lands of the households are damaged by flash floods and landslides thus leading to insufficient onfarm food. Therefore, 'food' is the most vulnerable major component in the three communes. These findings can contribute to the identification and prioritisation of measures to ensure better food and water accessibility through production system enhancement and natural resource management strategies. The LVI is replicable for assessing the vulnerability of small holder farmers in other hazard-prone areas

Keywords: Flash floods, hazard-prone areas, landslides, livelihood vulnerability index, Vietnam, Yen Bai province

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