



Tropentag, September 20-22, 2023, hybrid conference
“Competing pathways for equitable food systems transformation:
Trade-offs and synergies”

Assessing flood vulnerability for social inclusion and disaster preparedness in Kerala’s farming communities

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Abstract

In recent years, natural disasters have significantly impacted both developed and developing countries, claiming lives and disrupting economic and social structures. Floods and landslides, accounting for 47 % of all weather-related disasters, have been particularly devastating, and affecting 2.3 billion people worldwide. India, especially its southern state of Kerala, has been heavily affected by flooding due to topography and socio-economic factors. The southwest monsoon’s recent changes have led to severe flooding and landslides in Kerala. Despite farmers in Kerala being frequently impacted by floods and landslides, there is a lack of studies on their vulnerability, particularly concerning socio-economic aspects. Assessing farmers’ vulnerability to natural disasters is crucial for reducing disaster-related risks and ensuring livelihood sustainability. In this study, we evaluate the vulnerability of Kerala’s farmers using a societal vulnerability index for floods and landslides (SVIFL). Examining farmers’ vulnerability to floods and landslides by considering social, physical, environmental, and economic dimensions is essential for understanding how hazards affect individuals and communities. To develop the index and enable regional comparison, we collected data from 520 farm households in Kerala’s highlands (Wayanad and Idukki) and lowlands (Alappuzha and Pathanamthitta). We selected 80 location-specific indicators for the vulnerability assessment. SVIFL results indicate that Kerala’s highlands are more vulnerable to flooding and associated landslides than the lowlands. Among the four components analyzed, economic vulnerability ranks highest, followed by environmental and physical vulnerability. Interestingly, social vulnerability has the lowest susceptibility to natural disasters in Kerala. Consequently, the development of SVIFL serves as a foundation for assessing the vulnerability of farming communities, which bear the brunt of climate change and natural disasters.

Keywords: Farmers, floods, landslides, vulnerability assessment