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## Climate Change, Flood and Rural Farming Communities: A Shift from Disaster Management to Disaster Preparedness

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### Abstract

Kerala, the southernmost state of India faced extreme precipitation and associated flooding during 2018 and 2019. It had a remarkable impact on all the aspects of the social and economic life of millions of people in the state. Preliminary estimates suggest that flood of 2018 caused an economic loss of more than \$3 billion and death toll of 400 people in Kerala. Kuttanad, the wetland zone situated around the Vembanad lake is one of the worst affected regions in Kerala during 2018 flood. The Kuttanad Wetland Agriculture System where rice cultivation is done in areas below sea level is the only such system in India, and is one of the Globally Important Agricultural Heritage Systems. Kuttanad plays a significant role in the food security of the state. Flood forced millions of people to leave their houses and it destroyed more than 10,000 hectares of paddy fields in Kuttanad. Overall impacts of flood are reduction in agricultural production, purchasing power and employment opportunities, which results in threat of hunger, food insecurity and poverty. The vulnerability associated with flood may vary at different social, geographical and temporal scales. Furthermore, lack of knowledge regarding households' perception about climate change, flood and the local adaptation measures are identified as major barrier in formulating effective adaptation strategies and policies. These factors emphasise the need for agro-ecological vulnerability assessments, which in turn helps in formulating effective and efficient adaptation policies and strategies for particular ecosystem units. Therefore, this research aims to quantify the climate change vulnerability of flood affected rural farmers and also to identify the existing local adaptation strategies adopted by rural people in Kuttanad. Moreover, the study compares the climate change and flood vulnerability of rural farming and non-farming communities of Kuttanad. Based on the degree of vulnerability of rural farming community, this research will be able to recommend agroecological unit-based adaptation strategies to make the rural farming community of Kuttanad to prepare well to mitigate any risk associated with climate change and floods.

**Keywords:** Adaptive capacity, Exposure, Perception, Sensitivity, vulnerability