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“Filling gaps and removing traps
for sustainable resource management”

Ecosystem Based Climate Change Vulnerability Assessment for Adaptation and Mitigation: A Mobile App Based Approach for Hotspots of Kerala State, India

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Abstract

Climate change is the defining issue of our time and we are at a decisive moment. Kerala, the Southernmost state of India, faces a myriad of climate change impacts on agriculture, human health, biodiversity, coastal areas and water availability in the recent years. The state's unique geographical location with hilly Western Ghats bordering one side and coastal fragile ecosystems on the other side, erratic weather patterns, high population density, rapid urbanisation, environmental degradation along with climate change compound the vulnerability condition. However, the region lack ecosystem based climate vulnerability assessment and validation of adaptation strategies. Hence, the overall objective of this study is to assess and analyse the climate change vulnerability of each agro-ecological units of climate vulnerable hotspots of Kerala and to validate ecosystem based adaptation strategies. For this, the study aims to develop an open data mobile application tool kit for data collection. This tool will have the potential to manage the data efficiently and thus ensures seamless collection, storage and analysis of the data. This data will be used to map the climate vulnerability of various agro-ecological units in the state. The climate vulnerability assessment will then be carried out by developing a composite index with emphasis on three dimensions of vulnerability - adaptive capacity, sensitivity and exposure. Validation and documentation of adaptation strategies will be facilitated with the help of Farm Science Centres and line departments in the agro-ecological units. The outcome of the study will help to identify the thrust areas for developing sustainable policies for micro and macro level planning for climate change adaptation and mitigation programs. Furthermore, it leads to sensitisation of farming communities in the agro-ecological units towards climate change and adaptation strategies.

Keywords: Agro-ecological units, climate change adaptation, India, mobile application, validation