Identifying key indicators and exploring gender intersectional vulnerabilities to climate change in agricultural households: A study of Central Himalaya

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Gender vulnerabilities to climate change are increasingly recognized in the global arena; however, attention to gender in the context of climate change in India is relatively recent. Agriculture is a crucial part of the country's economy and the agricultural practices in the Indian Himalaya are highly influenced by gender dynamics due to traditional gender roles and various social and cultural constraints. This study provides empirical evidence on how gender plays a role in the susceptibility to climate change from a district of Central Himalaya in Uttarakhand. The study identifies the key indicators that affect vulnerability both within and between genders. Additionally, the gender data is categorized based on caste (social segregation) and lower and higher elevation in the hills (geographical segregation) for investigating gender-specific vulnerabilities - both inter and intra-gender - in agricultural households. The primary data were collected in the months, April - June 2022 from 298 sample households based on stratified sampling selected from 20 villages in the district, Almora, Uttarakhand. Categorical principal component analysis (Cat-PCA) was used to develop weights for adaptive capacity and sensitivity indicators. Based on the Inter-governmental Panel on Climate Change (IPCC) framework 2014 and the theory of intersectionality, an intrinsic gender vulnerability index is developed. A sensitivity analysis approach is further adopted to pinpoint the major indicators influencing gender intersectional vulnerabilities. The expected results go beyond the conventional gender paradigms by exploring the intersectional nature of vulnerability and recognizing the complex interplay of various socioeconomic factors such as caste, education, income, and access to resources that contribute to differential gender vulnerabilities.

Keywords: Gender vulnerability, intersectionality, climate change, Cat-PCA, Sensitivity analysis.