

Indicator-Based Approach for Assessing Socio Economic Vulnerability of Dairy Farmers to Impacts of Climate Variability and Change in India

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Abstract : This paper aims at assessing the Socio Economic Vulnerability (SEV) of dairy farmers to Climate Variability and Change (CVC) in 3 states of Western Ghat region in India. For this purpose, a composite SEV index has been developed on the basis of functional relationships amongst sensitivity, exposure and adaptive capacity using 30 indicators related to dairy farming underlying the principles of Intergovernmental Panel on Climate Change and Fussel framework for nomenclature of vulnerable situation. Household level data were collected through Participatory Rural Appraisal and personal interviews of 540 dairy farmers of nine taluks, three each from a district selected from Kerala, Karnataka and Maharashtra, complemented by thirty years of gridded weather data. The data were normalized and then combined into three indices for sensitivity, exposure and adaptive capacity, which were then averaged with weights given using principal component analysis, to obtain the overall SEV index. Results indicated that the taluks of Western Ghats are vulnerable to CVC. The dairy farmers of Pulpally taluka were most vulnerable having the SEV score +1.24 and 42.66% farmers under high-level vulnerability category. Even though the taluks are geographically closer, there is wide variation in SEV components. Policies for incentivizing the 'climate risk adaptation' costs for small and marginal farmers and livelihood infrastructure for mitigating risks and promoting grass root level innovations are necessary to sustain dairy farming of the region.

Keywords : climate change, dairy, vulnerability, livelihoods, adaptation strategies

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