

Assessing Household Vulnerability to Climate Change: A National Index for Agriculture Sector in Sri Lanka

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A number of different methods and approaches have been used to assess household vulnerability. The vulnerability index is the most commonly applied method to assess vulnerability quantitatively based on a specific set of proxy indicators. This paper focuses on developing a vulnerability index using publicly available and periodically updated official statistics and census data in Sri Lanka to assess household vulnerability to climate change in the agriculture sector. Further, the Intergovernmental Panel on Climate Change framework has been used as the basis for this assessment. This framework consists of three key elements of vulnerability to climate change and variability, namely exposure, sensitivity, and adaptive capacity. The key assessment approaches for this study include socio-economic, biophysical (impact assessment), and integrated assessment. The development of the tools was performed in multiple stages: (1) three major hazards were prioritized using 'DesInventar', a database maintained by the Disaster Management Centre, Sri Lanka; (2) computation of the exposure, sensitivity, and adaptive capacity was done through data screening approach through publicly available statistics and census data, and around 500 indicators were selected for review; and (3) the review of the selected indicators against three determinants of vulnerability. The data was then normalized and merged to develop sub-indexes for exposure, sensitivity, and adaptive capacity, and thereby climate vulnerability index was determined for each district. The publication of such a periodic climate vulnerability index targeting the agriculture sector for all the districts in Sri Lanka will help implement policy decisions at national and sub-national levels. It will further support the development planners to prioritize adaptation strategies and rationalize resource allocations in the agriculture sector.

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