

PERCEIVED CLIMATE CHANGE IMPACTS AND RESILIENCE OF FARM HOUSEHOLDS: A STUDY IN A CLIMATE CHANGE HOTSPOT IN THE DRY ZONE OF SRI LANKA

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The agricultural sector in the dry zone of Sri Lanka consistently faces challenges due to climate change. Understanding and continually updating knowledge of farmers' evolving perspectives on climate change is crucial for developing effective adaptation strategies. Therefore, this study subjectively investigates climatic changes, impacts, and the resilient capacities of farming households. The study was conducted in three major cascaded tank village systems in the *Horowpothana* climatic hotspot. Multistage proportionate random sampling was used to collect data from 200 farming households, and descriptive statistics, indices, and inferential statistics were employed for analysis. All respondents perceived climate change mainly due to deforestation (97%) and land clearing (96.5%). Community meetings (80.5%) and personal networks (51.5%) were prominent sources of climate information for the community. Respondents perceived increased severity of climatic effects, particularly from rainfall and temperature changes. Major perceived impacts included crop damage due to pests and diseases, decreased agricultural productivity, and reduced income. Farmers perceived a need for both individual and collective action in addressing the issue of climate change. The study examined three perceived capacities for climate resilience: robustness, adaptability, and transformability. Robustness, which indicates a farm's ability to absorb and recover from shocks, was the prominent capacity. It was followed by adaptability, which refers to the ease of making adjustments. Transformability, the willingness to reorganize the farm, scored lowest, suggesting it is less emphasized. Over time, perceptions of resilience capacity differed significantly ($p < 0.05$) across past, present, and future perspectives. Future resilience was perceived as significantly lower ($p < 0.05$) than past and present resilience. The overall resilience scores vary with farmer education, household size, access to formal credit, farming experience, cultivated area, and receipt of external program support. The study recommends implementing targeted climate adaptation strategies in the dry zone to enhance farm resilience and align with evolving farmer perceptions through transformative changes.

Keywords: Adaptability, Perceived Resilience Capacity, Robustness, Transformability