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Name of Scholar: Geeta Kumari

Supervisor: Prof. Haroon Sajjad

Department: Geography

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Findings

This thesis examines the impact of climate variability on livelihood vulnerability. Climate variability is creating extreme weather conditions leading to natural disasters globally. The occurring of climate variability is widely experienced. It is anticipated that nearly 85 per cent of the world's population is projected to face extreme natural events. The global average temperature is projected to rise between 1 °C and 3.7 °C by the year 2100. The changing global climate may have multiple implications on the agricultural system, human health, forest, water, food availability, and livelihood. Vulnerability has occupied central place in the global climate change and sustainability multi-research. Livelihood vulnerability is seen when any household is unable to cope with shocks and uncertainties. The concept of livelihood vulnerability was further broadened and strengthened by adding socio-economic dimensions. Livelihood vulnerability is also influenced by socio-economic conditions of the people, geographical location, social network, and adaptation strategies. It is estimated that approximately half a billion people would experience extreme poverty due to climate variability and climate change. The rural households have a restricted ability to withstand shocks due to insufficient productive assets, lack of diversified income, and low skill levels. Increase in adverse events and lack of effective coping mechanism among rural communities have necessitated to evolve the concept of resilience. Rural population in developing nations are heavily reliant on resources derived from nature for their sustenance and are subjected to a variety of stresses, including climate change, poverty, and food insecurity. A resilient pattern of livelihood may not only help communities to fight against natural hazards, but it may also be used to fulfil the global aim of ending poverty of the rural masses and creating sustainable livelihoods. Climate variability analysis revealed wide variations in meteorological parameters. This analysis indicated wide climate variability in the study area. Forecasting of variables has shown decreasing trend in rainfall. An increase in maximum temperature at the rate of 0.06°C is forecasted for the next 15 years during winter season. Minimum temperature for monsoon season forecasted an increasing trend at the rate of 0.017°C for 2021-2035. The forecast of relative humidity for pre-monsoon shows an increasing trend at the rate of 0.27 per cent. Livelihood vulnerability analysis at block level revealed that Niuland block was the most vulnerable block in terms of livelihood vulnerability followed by Kuhuboto, Dhansiripar and Medziphema. Livelihood vulnerability in Niuland, Kuhuboto and Dhansiripar blocks is attributed to high sensitivity and low adaptive capacity. The blocks are also vulnerable to exposure mainly because of climate variability and drought. Livelihood vulnerability was found highest among agricultural labourers (0.608) followed by cultivators (0.478), household industry workers (0.477) and other workers (0.443). High vulnerability among agriculture labourers is attributed to exposure and sensitivity. The findings revealed that resilience levels varied widely across different categories of workers. High resilience was found among other workers followed by cultivators, household industry workers, and agricultural laborers. Assets and adaptive capacity have affected the resilience capacity of all workers. Thus, interventions are needed to increase their assets and adaptive capacity. Provision of subsidies on livestock and agricultural implements should be made for agricultural laborers. Vocational and skill-based training should be initiated to enhance adaptive capacity among them.