

THE ROLE OF LIVELIHOOD CAPITALS IN ADOPTING CLIMATE-SMART AGRICULTURE IN CASCADED TANK VILLAGE SYSTEMS OF THE CLIMATICALLY VULNERABLE *HOROWPATHANA* HOTSPOT

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Climate shocks and changes in weather patterns significantly impact agricultural production in Sri Lanka's dry zone, particularly in climatically vulnerable hotspots. Climate-smart agriculture (CSA) is widely recognized as a critical approach for farmers to adapt to climate change and enhance productivity. This study examines how different types of livelihood capitals influence the adoption of CSA technologies and practices among farmers using the sustainable livelihood framework. The research was conducted in two major cascaded tank village systems in *Horowpathana* climatically vulnerable hotspot, where farming livelihoods are highly vulnerable to increasing climatic variability. Primary data were collected from 200 farming households using a structured and pre-tested questionnaire through multistage proportionate random sampling. Descriptive and logistic regression analysis techniques were used to analyse the data. Results showed that 43.5% of households use at least one CSA technology, and all households engage in at least one CSA practice. Key CSA technologies include sprinkler systems for chilli, groundnut, and watermelon cultivation, while practices such as crop rotation, diversification, and growing short-duration crops are widely adopted and highly valued. The mean values for the five forms of livelihood capital, from largest to smallest, were social, natural, physical, human, and financial. Households were more endowed with social and natural capital but relatively poor in financial capital. Regression analysis revealed that different livelihood capitals had a positive and significant ($p < 0.05$) influence on adopting CSA technologies and practices. Therefore, farmers' livelihood capitals are crucial for adopting CSA as an adaptation strategy to cope with climate change in the study area. Encouraging farming households to invest in their livelihood capitals is essential for improving their adaptability to climate change.

Keywords: Climate adaptation, Livelihood capital, Natural Capital, Social Capital, Sustainable livelihood framework