The Role of Farmers' Capitals in Drought Adaptation: A Case Study of Small-Scale Farmers in the North Central Province, Sri Lanka

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Drought is a natural phenomenon induced by climate change. Farmers in the Dry Zone who practice agriculture under small-scale irrigation are most vulnerable to drought. Literature shows that there is limited understanding of how different forms of capital influence farmers' drought adaptation. This research attempted to identify the relationship and influence between farming households' capitals (Human, Cultural, Social, Natural, Built, Financial, and Technological) and farmers' adaptation in the North Central Province of Sri Lanka (adaption was measured using ten commonly used adaptation strategies using a 1-5 scale) A mixed-methods approach was adopted. A questionnaire was used to collect the data. The sample size (n=356) was selected among the farming households (N=3163) using a stratified random sampling method from three Divisional Secretariat Divisions (DSD), Mahawillachhciya, Kahatagasdigilya, and Medirigiriya. Pearson's correlation and multiple linear regression analysis were performed using the Statistical Package for the Social Sciences (SPSS). It was found that there is a negative strong correlation between capitals of Human ($r=-.548$, $p<0.01$), Cultural ($r=-.678$, $p<0.01$), Social ($r=-.585$, $p<0.01$), Natural ($r=-.643$,$p<0.01$), Financial ($r=-.547$,$p<0.01$), Technological ($r=-.629$, $p<0.01$) and farmers adaptation while it was found that there is a negative moderate correlation related to Build capital ($r=-.467$, $p<0.01$). These results suggest that when farming households' capital is reduced, farmers are motivated to increase their adaptation to manage the adverse effects of drought. Capitals of Human ($\beta=-.270$, $p=.498$) and Social ($\beta=-.135$, $p=.702$) did not significantly impact farmers' adaptation. Capitals of cultural ($\beta=-1.525$, $p=.000$), Natural ($\beta=-1.400$, $p=.000$), Built ($\beta=-.606$, $p=.000$), Financial ($\beta=-.465$, $p=.014$), and Technological ($\beta=-.414$, $p=.018$) had significant negative impacts on farmers' drought adaptation. Seven farmers' capitals explain 64% variation in farmers' drought adaptation ($R = 0.801$; $R^2 = 0.642$; Adj. $R^2 = 0.635$). Overall, seven capitals have a significant influence on farmers' adaptation, and policymakers should pay more attention to cultural and natural capitals when making policies to enhance farmers' drought adaptation and build resilience.

Keywords: Capitals, Climate Change Drought, Farmers' adaptation, Resilience