Assessing the Vulnerability Level in Coastal Communities in the Caribbean: A Case Study of San Pedro, Belize

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Abstract : In this paper, the vulnerability level to climate change is analysed using a comprehensive index, consisting of five pillars: human, social, natural, physical, and financial. A structural equation model is also applied to determine the indicators and relationships that exist between the observed environmental changes and the quality of life. Using survey data to model the results, a value of 0.382 is derived as the vulnerability level for San Pedro, where values closer to zero indicates lower vulnerability and values closer to one indicates higher vulnerability. The results showed the social pillar to be most vulnerable, with the indicator 'participation' ranked the highest in its cohort. Although, the environmental pillar is ranked as least vulnerable, the indicators 'hazard' and 'biodiversity' obtained scores closer to 0.4, suggesting that changes in the environment are occurring from natural and anthropogenic activities. These changes can negatively influence the quality of life as illustrated in the structural equation modelling. The study concludes by reporting on the need for collective action and participation by households in lowering vulnerability to ensure sustainable development and livelihood.

Keywords : climate change, participation, San Pedro, structural equation model, vulnerability index

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