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Farmers’ and academia’s views”

Lessons from the entanglement of adaptive capacity and response in complex agricultural systems - Evidence from a coffee landscape in Vietnam

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Abstract

Capacities to adapt to a changing climate are differentiated by ecological, social and individual factors, varying over time and space. Adaptive capacity can be conceptualised as the ameliorative component of vulnerability and as the enabling precursor to prepare, respond, adjust, and cope under stress or change. Assessment of adaptive capacity (and vulnerability) are often critiqued for “promoting a static understanding of human-environment interactions” and there are numerous calls to integrate temporal and spatial scale dynamics into their assessment. We look to derive temporally and spatially dynamic indicators to assess adaptive capacity in a complex agricultural system (as contributing within a vulnerability framework). Within this framework, we attempt to better formulate the [spatio-temporal] pathways between adaptive capacity and adaptive response, as illustrated by the uptake of intercropping in coffee systems the Central Highlands of Vietnam.

The distinction between adaptive capacity and adaptive response is not as clear-cut in practice. For example, adaptive capacity may facilitate the implementation of intercropping and cyclically, intercropping may increase adaptive capacity. This fuzzy line is reflected in concepts such as generic and specific capacity, respectively: demographic and socioeconomic characteristics of a population, and actions taken to confront risk. Specific capacity, such as labour or crop diversification, change in varieties planted or irrigation management would also all fall under the category of adaptive response. With a temporal adaptive capacity indicator, we can capture the implementation of adaptive measures, such as intercropping, and their ensuing contribution to adaptive capacity, while also maintaining the complexity of other generic and specific contributing factors and their evolution in time and space. We would present our (exploratory) characterisation and relative measurement of adaptive capacity in the Central Highlands coffee landscape, quantified using results from a household panel survey (2013, 2017), and preliminary results distinguishing the contributions of intercropping.

Keywords: Adaptive capacity, agroforestry, climate adaptation, coffee, intercropping, Vietnam