



Multidimensional assessment of smallholder farming systems' sustainability

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Abstract:

A holistic systems-oriented approach is strongly recommended to address the intractable challenges of complex smallholder farm and food systems in different ecologies, and cultures. In the present study, we have developed and piloted a multidimensional framework for assessing farming systems sustainability and resilience (FSSR) which is easily measurable and comparable. It considers five major sustainability domains: environmental, economic, productivity, social and human well-being. Further each domain is divided into different themes, sub-themes and indicators. The indicators have been finalized with rounds of stakeholders' consultations involving farmers, researchers, development actors besides literature. We identified 115 measurable indicators: environmental (34), economic (29), productivity (12), social (25) and human well-being (15) in the final framework which are aggregated into an index with a maximum value of 100 representing the level of sustainability and resilience at different scales. In our case study the overall sustainability index scores ranged between 42 to 47 across farm types. The overall and domain level sustainability scores varied widely across individual households and farm types. The present framework could be very useful tool for researchers, development actors and institutions to identify entry points to design context-specific strategies to improve sustainability and resilience of farming systems in vulnerable regions.

Keywords: Sustainability assessment, Farming systems, Domains, Indicators, Overall sustainability index

JEL codes: Q010, Q120, Q200