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Livelihoods, ecosystem provisioning services and social differentiation: an empirical study of KwaZulu-Natal, South Africa (1993 - 2011)

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Abstract

This research report critically adopts and extends an approach of identifying and mapping social-ecological systems (SES) to analyze household livelihood domains emerging from ecosystem service (ES) use in KwaZulu-Natal (KZN), South Africa. ES use is proxied by the degree to which households directly utilize ES provisioning services (direct ES) as observed from national census and panel survey data between 1993 and 2011. The analysis fully relies on the expressiveness of a characteristic bundle of five direct ES, namely crop production, animal production, use of natural building materials, use of freshwater from a natural source and the collection or main usage of firewood for energy purposes. This bundle was argued to represent an integrated expression of the connection of households to their direct local environment and thus, of the overall SES characterized by low, medium or high degrees of direct ES use (Hamann et al., 2015a).

It is shown here that identifying SES that co-exist within a spatially delimited geography should require (i) a dimension of time and (ii) an exploration of the differences between households that live in a given type of SES. The results support the hypotheses that first, direct ES use varies substantially over time which makes a dynamic view on direct ES utilization appropriate and second, that aggregated SES face the risk of omitting important dynamics of social differentiation at household level that are rooted in the political economy of land access and capital accumulation, for example in the agricultural sector in KZN. Moreover, the possibilities to use the characteristic bundle as a novel indicator to various ends, including human well-being and social deprivation, ecological footprints and human-nature relationships are discussed at length. The relevance of this approach is underlined firstly by recent community resistance against large biofuel projects in the "economically underutilized" former homeland areas in South Africa that are shown to be overlapping with areas identified with high degrees of direct ES use and thus with strong ties to the direct natural environment. Second, a dynamic picture of direct ES use intensities may provide a glimpse of the waning agricultural transition in KZN, i.e. a transition from a rural-agricultural to urban-industrialized societies in which entirely new sustainability management problems arise. Third and on a more theoretical note, this study illustrates the need for combining SES theory with considerations of class, power and history inherent in any system majorly driven by human agency.

Future research avenues are identified along the lines of connecting scalable empirical research on SES with critical social science approaches that enable to provide insights, for example about the ongoing question of land reform in South Africa.

Key words: Social-ecological systems, livelihoods, social differentiation, ecosystem services, agriculture, land reform, South Africa