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Ex ante evaluation of a PES system: Safeguarding recreational environments for nature-based tourism

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ABSTRACT

This paper evaluates the potentials of landscape and recreational values trading (LRVT), a system of payments for ecosystem services, as a vehicle to simultaneously preserve recreational environments for the nature-based tourism business and enhance welfare in rural communities. Ruka-Kuusamo in northeastern Finland serves as a case region for the ex ante evaluation. A novel evaluation framework of the study focuses on technical feasibility, institutional context, and potential surplus of LRVT to ecosystem service provision and social capital. The evaluation data from four years action research comprise surveys and group interviews with ecosystem service providers (forest owners) and buyers (tourism entrepreneurs and tourists), complemented with newspaper articles, forest data, and meeting minutes of local authorities. The results show tension between general acceptance and practical readiness to start LRVT. Several institutional challenges need to be solved before adopting LRVT in the region. Ambiguous understanding on the impacts of forest management to landscape and recreation value, deeply institutionalised norms among the forestry community, and hidden agendas may make it difficult to achieve considerable and sustainable improvements in the quality of ecosystem services. This paper concludes with discussing elements of LRVT that may be functional and provide positive returns to recreation values of the area and to social capital inside the community. Several years of research intervention and public discussion have now resettled the network of local actors to a promising position that shows capacity to co-create functional local forest governance, including possibly a publicly or privately organised LRVT system.

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1. Introduction

Ecosystem services (ES) have been emphasised as a concept to frame the use of natural resources from the perspective of governance challenges (Millennium Ecosystem Assessment, 2005; Carpenter et al., 2009). From this frame, improved provision of public goods from forests has been emphasised. For example, in the Nordic countries, wide open access to forests enables diverse consumption of tangible and intangible ecosystem services from forests, regardless of land ownership. Therefore, demand of public goods is high, especially in areas with recreational pressure from local residents or with active nature-based tourism. Still, even in those areas, public goods are considered more as positive externalities rather than as intrinsic targets, i.e., side products of tangible private goods. In the context of forestry, this means that timber and renewable energy drive the management decisions in forests while other benefits from forests are not properly considered. Sometimes the relationship between private and public goods is complementary: for example, crops of some berries or mushrooms may increase after clear-cutting mature forests. Nevertheless, most public and private goods are competitive and, thus, trade-offs exist between different ecosystem services. In such situations, the requirements of tangible goods with established markets dominate forest governance measures (Makkonen et al., 2015).

As a solution for this imbalance, a process of payments for environmental or ecosystem services (PES) has become a popular

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scientific and practical issue in the forestry context (Amacher et al., 2014). There have been several attempts to frame the essential features of PES systems in order to classify schemes and procedures for designing functional mechanisms and evaluating existing PES cases (e.g., Wunder, 2005, 2015; Department for environment food and rural affairs, 2013; Sattler et al., 2013;Hanley and White, 2014). Many different aspects have been emphasised (see Table 1); the following ones in particular have often been considered essential in scientific literature on PES: Is the buyer private or public? What is the target of the payment (outcome or action)? Is the level of payment negotiated jointly by buyer and seller or defined uniformly over the target area as a flat rate? Is there spatial coordination of services and payments included in the scheme? Sometimes schemes may be unanimous with respect to the above questions, but most include mixed features regarding many of those continuums.

Depth-in analysis of PES cases have dominantly focused on developing countries (Wegner, 2016). Many of those cases have aimed at improved provision of biodiversity, water quality or carbon sequestration as ecosystem services. To complement the picture, this study presents a pragmatic ex ante evaluation on the potential of a rural PES scheme to safeguard recreational environments. The Ruka-Kuusamo area in rural northeastern corner of EU serves as a case for this feasibility study. In this area, a 4-year research and development project was conducted to pilot and evaluate, together with practitioners, novel co-governance measures, later referred to as "Ruka-co-governance." In addition, the project included evaluation of the potential of PES in the region. So far, several frameworks have been proposed for feasibility evaluation of PES schemes, mainly for practical purposes and with a focus on technical feasibility (e.g., Wunder, 2005; Engel et al., 2008; Cole et al., 2014). More recently, behavioural and institutional contexts around PES schemes have been studied (e.g., Corbera et al., 2009; Vatn, 2010; Prager et al., 2012; Primmer et al., 2013), but technical and behavioural dimensions have been inadequately integrated, which has created an opportunity and motivation for this study to complement the recent advances of rural PES-scheme analyses.

Thus, the first objective of the study is to demonstrate and discuss an advanced synthesis framework to be used in evaluations of practical PES schemes. The below presented (Fig. 2) framework guides the evaluation towards technical and institutional feasibility of the scheme, and towards its potential impacts both on the provision of ecosystem service and on the social capital in the local rural community. The second objective is to evaluate, by the aid of the developed framework, aspects of a proposed PES in comparison with present governance structures and with innovations reached by the aid of co-governance without PES. Based on the evaluation, the third objective is to provide proposals for PES scheme designers, PES evaluators, and policy makers in the region and beyond.

2. Literature review

Research on incentive mechanisms to enhance sustainable management of natural resources in rural communities has been vital in recent years. In general, PES is seen as a means to simultaneously produce conservation outcomes and enhance the well-being of rural communities (Arriagada et al., 2015). PES has been representing a wider neoliberal agenda in rural policy making (Higgins et al., 2014a). From this perspective, a voluntary and private scheme, where ES providers negotiate individually with end users of a specific ES about the payment with respect to outcomes, taking into account spatial aspects, can be considered the "genuine" PES procedure (see, e.g., Wunder, 2005; Wunder et al., 2008; Hanley and White, 2014). However, in practice there are very few, if any, examples of such an ideal neoliberal PES procedure (e.g., Vatn, 2015), but practical solutions differ from genuine ones and are rather hybrid models of public and private schemes applying market and/or nonmarket-driven pricing (Wunder et al., 2008; Wynne-Jones, 2013; Hanley and White, 2014; McElwee et al., 2014; Wegner, 2016). Indeed, researchers are increasingly supporting the opinion that straightforward agenda of neoliberal PES may be on the wane (e.g., Hodge and Adams, 2014). A quest for post-neoliberal agri-environmental governance has emphasised the following two aspects of PES design in rural contexts.

Firstly, features of the ES in focus and its operational environment define what kind of PES scheme is the most suitable in a particular situation (Higgins et al., 2014b). However functional a scheme might appear in producing an ecosystem service, its operational success is in many ways dependent on the behavioural factors among landowners and service users (Hanley and Kuhfuss, 2015); therefore, institutional context is fundamentally defining practical applicability of any regional PES schemes (Corbera et al., 2009; Vatn, 2010; Mavsar and Prokofieva, 2014); and furthermore, the PES is always only a part of the institutional transformation, if launched (Escobar et al., 2013; Van Hecken et al., 2015). Thus, while evaluating the success of a PES scheme, its costs and potential drawbacks as well as the surrounding institutional interplay should be considered. Parts of the transaction costs, like costs of an intermediary organisation or a monitoring system, have been regularly included in evaluation frameworks (e.g., Olsen and Bishop, 2009; Alston et al., 2013). However, less attention has been paid to the potential costs necessary to motivate actors to jointly design the scheme and to evaluate/solve the possible side effects of required institutional transformation. Practical implementation of fundamentally new governance measures, like the spatially coordinated PES, induces necessarily substantial changes in the social capital of the community, fundamentally embedded and created in local cooperation structures and everyday practices of a community (Vatn, 2010; Andersson et al., 2013). Regardless of its popularity, limited evidence exists on positive impacts of PES in such societal issues, with one exception being Nieratka et al. (2015), who reported that a PES strengthened social capital and collective action in a Mexican case.

Secondly, environmental service providers are not simply modelled as utility maximisers, as assumed in the neoliberal ideal, but many intervening aspects are determining conservation behaviour: In addition to direct incomes, altruistic conservation motives have explained participation in PES programmes (e.g., Figueroa et al., 2016). Crowding-out from intrinsic conservation and collaborative local legitimacy of management actions is bound to happen if the focus of governance is purely on enhancing economic motivations of service providers (see Wegner, 2016). In addition, success of PES initiatives seems to be largely dependent on the other actors in the institutional context of PES rather than just buyers and sellers alone. Specifically, the motivations and interests of the government actors representing "buyers" on the ground play crucial roles (Chen et al., 2015), as do the spokespeople of individual service providers.

Inevitably, there is a need for further research to better understand these specifically political constraints of PES and its ambiguous consequences for institutions, policy networks, rural communities, and the environment (Potter and Wolf, 2014). "*Seemingly neoliberal policies like PES are actually a mix of both market economic incentives and regulatory approaches. Key goals of neoliberal approaches, namely efficiency and conditionality, are often actually the weakest components of PES schemes …. PES plans should not be considered exclusively neoliberal per se, as they may in fact strengthen both state regulation and local participation and*

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