

Analysis

Forest owner perceptions of institutions and voluntary contracting for biodiversity conservation: Not crowding out but staying out



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ABSTRACT

Although the concepts of institutions in economics and institutional analysis have been integrated in recent writings about payments for ecosystem services (PES), their joint operationalization and testing have been limited. To tackle this integration challenge, we empirically explore how Finnish non-industrial private forest owners' perceptions about voluntary biodiversity conservation contracting correspond with the institutional theories about PES. Further, we test whether the perceptions are related to PES contracting in the past or in the future. The results of the explorative factor analyses corresponded with the theoretical considerations of both economics and institutional analysis. The logistic regression analyses showed that the factors that related to past contracting differed notably from those that explained future intentions to contract. Most consistently, perceptions about positive ecological impacts were positively related to past contracting, while social and moral normative perceptions had a negative effect. In other words, those who would conserve nature for altruistic reasons tended not to have entered a contract but rather stayed out. Local and social welfare expectations increased the willingness to contract in the future. Our analysis highlights the importance of normative conservation justifications as well as the expectations regarding non-economic benefits and welfare impacts for PES design and analysis.

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1. Introduction

Although the theoretical concepts of institutions in economics and institutional analysis have been integrated in recent writings about payments for ecosystem services (PES) (Muradian et al., 2010; Pascual et al., 2010; Vatn, 2010), their explicit joint empirical operationalization and testing have been limited. Economic analyses focus on quantitative testing of preferences and utility as well as assessing the environmental impacts, whereas institutional analyses build on conceptual and qualitative evidence of conservation mechanisms, instruments, projects and networks. In analyses of forest PES, this dichotomy is apparent. Economic analyses take forest owners as the target audience of the policy instrument and assess outcomes with set assumptions about property rights or, in some cases, about the governing authorities. Institutional analyses describe the rights and responsibilities of forest owners, authorities and other actors and analyze the evolution and legitimacy of these institutional arrangements. This paper derives the theory-based characteristics of institutions from the two streams of literature, operationalizes them for empirical exploration of forest owner beliefs and tests their relation to PES contracting in Finland.

Finland has had a PES mechanism for conserving biodiversity in non-industrial private forests since 2002 (METSO, 2002; METSO, 2008). The mechanism was first piloted in South-Western Finland, as a response to an acute need for additional conservation and a void of legitimacy in

state-driven protected area establishment (Hiedanpää, 2005; Paloniemi and Varho, 2009; Primmer et al., 2013). Forest owners welcomed the PES instrument because it secured their rights to make decisions on their own forests by introducing voluntary conservation, temporary contracts and forest-owner initiative. The pilot was run as a joint effort by the environmental and forestry authorities. The second program term started in 2008, targeting all of southern Finland. In this area, only 2% of forests are strictly protected (Finnish Forest Research Institute, 2013) and the forests are generally managed for timber production. Although the forests are managed with long rotation times and native tree species, following best management practices, the habitats valuable for biodiversity are scarce and fragmented. The characteristics of particularly valuable small sized habitats have been protected by law (Forest Act, 1997). These Forest Act habitats have been inventoried and almost 100,000 habitats have been identified and included in the forestry administration database. To improve connectivity and target the PES funds, the areas adjacent to these Forest Act habitats are prioritized in the current PES instrument (METSO, 2008, 5).

The average size of a Finnish non-industrial private forest property is 30 ha (Finnish Forest Research Institute, 2013). The forest owners generally manage this area for timber production but they also appreciate recreation and multiple use of their forests (Karppinen, 1998). Forest owners adhere to security, benevolence and conformity (Karppinen and Korhonen, 2013). The non-industrial private forests have open access and are therefore valued by Finnish citizens as places for recreation and habitat for species (Valkeapää and Karppinen, 2013). The same

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forests provide a range of ecosystem services from berries and mushrooms to water retention and carbon sequestration. The payment for ecosystem services idea is well captured by the Finnish PES mechanism, although it is primarily targeted at protecting forest biodiversity.

Finnish Forest owners have traditionally been relatively autonomous and strongly represented in the designing of national policy (Ollonqvist, 2001) but as individuals they have been subject to steering and dependent on expert advice (Hujala et al., 2007; Siiskonen, 2007). As well as providing advice, forestry professionals have had a crucial role also in communicating, planning and monitoring biodiversity conservation in private forests (Primmer and Karppinen, 2010; Similä et al., 2014). The environmental administration and their professionals, on the other hand, have encountered distrust among the majority of forest owners (Paloniemi and Varho, 2009). Although the PES is primarily a compensation for the loss of timber income (METSO, 2008; Primmer et al., 2013), forest owners are likely to base their contracting decisions also on other information than payment amounts and income loss. The forest owners' perceptions and goals related to ecosystem service, the different uses of their forests and the procedures by which contracting is done are likely to influence their decision to make a contract.

Typically, economic analyses of landowner participation in voluntary contracts and the impacts of payments for ecosystem services place much emphasis on the private benefits and costs experienced by the contracting landowners (e.g., Pagiola, 2002; Pannell et al., 2006). Regarding institutions, the focus is on the rules or contract terms that would attract landowners; the aim appears to be to identify appealing and functioning institutional arrangements. Willingness-to-accept analyses of landowners bridge economic preferences and contract terms, and address institutional factors, such as ownership of land, the length of the contract and the contracting authority (Horne, 2006; Lindhjem, 2007). Property rights are among the most consistently addressed institutional factors in these analyses. Economic analyses have also assessed the influence of the governing authorities of PES on the outcome of the incentives (Brouwer et al., 2011; Robalino et al., 2011). Along with the growing interest in ecosystem service valuation and increasing public spending in conservation through the PES mechanisms, the collectively experienced public benefits and societal costs have recently received increasing attention in economic analyses (e.g., Pannell, 2008; Pattanayak et al., 2010).

Institutional analysis has addressed the rights to ecosystem services and their governance more broadly than the economic analyses. These approaches define institutions as those formal and informal norms, rules and regularities that prescribe the behavior of organizations and individuals (North, 1990; Ostrom, 1990; Paavola, 2007; Vatn, 2005). The analytical interest lies in the different actors' formal and informal rights and roles, which can be altered by the PES mechanism, as well as the legitimacy of the mechanism (Corbera et al., 2009; Primmer et al., 2013; Vatn, 2010). These analyses have shown how pre-existing regulations as well as the prevailing administrative and cultural norms condition the introduction of new PES schemes and shape the way the payment contract terms and contracting process are developed and applied in practice (Corbera et al., 2009; Kosoy et al., 2008; Primmer et al., 2013). With a focus on the different actors, these analyses also identify intermediaries and have shown that they have an important role in transferring information and engaging the service providers and other local actors, relying on pre-existing relations and networks (Coggan et al., 2013; Corbera et al., 2009). Although fairness of the contracting process is an immediate condition for its legitimacy, equity and distributional fairness have also been found to be important (Pascual et al., 2010; Vainio, 2011; Vatn, 2010). In the Finnish forest biodiversity PES, the legitimacy of the prior institutional arrangement and the way the parties to the PES are engaged have been shown to explain the design and application of a new payment scheme (Hiedanpää, 2005; Paloniemi and Varho, 2009; Primmer et al., 2013).

All rules about what is right and appropriate are not formally stated. Instead, they can be embedded in the culture of the society, a group or an organization (Ostrom, 1990; Scott, 2001). In this sense, the arrangement of PES appeals to norms about what is considered right and appropriate

among forest owners and the different actors engaged in the PES implementation. If the social norm emphasizes a responsibility to care for nature and ecosystems, there might be a risk that the incentives crowd out some of the ecosystem service providers, particularly those who consider that the motivation to conserve should not be related to financial rewards (Frey and Jegen, 2001; Vatn, 2005). In the PES in Finland, the norms relating to forest conservation have been found to differ between forest owners, forest authorities and environmental authorities (Hiedanpää, 2005; Paloniemi and Varho, 2009; Primmer et al., 2013).

To summarize, despite the quite thorough understanding of the role of institutions in shaping the development and application of PES, the PES contract mechanisms tend to be justified with and evaluated against utility and monetary cost–benefit arguments. The analytical attention is focused on the utility and benefits derived from ecological, economic and social impacts, as illustrated in Fig. 1. In the Finnish forest PES context, these can be assumed to correspond with ecosystem service provision, economic opportunities and welfare distribution as well as legitimacy of the administration. The institutional analysis theory corresponds with forest owner perceptions of legitimacy of administration, rights and responsibilities as well as the contract terms that define these in detail (Fig. 1). We explore these perceptions empirically, and test their relation to the forest owner decision to take a PES contract. In particular, we test whether perceptions are related to past PES contracting and on the willingness to contract in the future. With this analysis, we seek to close the gap between the economic analysis of PES and the broader institutional analysis.

We investigate the perceptions in a context where forest owners actually consider the justifications for PES contracting and have a real opportunity to make decisions about contracting. Our empirical data consist of survey responses from 86 already contracted forest owners and 101 forest owners who have a valuable site on their land but have not made a conservation contract. We analyze the respondents' perceptions about the ecosystem services they provide, the economic implications the service provision has for them and the welfare distribution impacts. We focus on the contract terms, norms and goals as well as the contracting process. We use the dimensions of these perceptions to explain past conservation contracting with PES (contracted vs. non-contracted) and future willingness to make a new contract (all respondents). In the next section, we describe the methods of data collection and analysis. In Section 3, we report our results, after which we discuss them in Section 4 and draw conclusions in Section 5.

2. Material and methods

We conducted a survey of forest owners in South-Western Finland, where the PES scheme had been initiated and piloted (METSO, 2002).

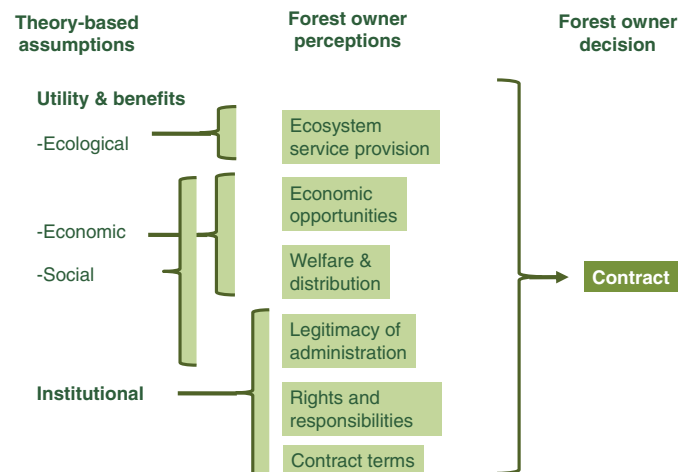


Fig. 1. Impacts of conservation contracting derived from theory and operationalized for a survey of perceptions of forest owners making decisions to contract for conservation.

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