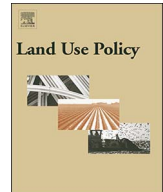




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How private are Europe's private forests? A comparative property rights analysis

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ABSTRACT

Private forests are widespread in Europe providing a range of ecosystem services of significant value to society, and there are calls for novel policies to enhance their provision and to face the challenges of environmental changes. Such policies need to acknowledge the importance of private forests, and importantly they need to be based on a deep understanding of how property rights held by private forest owners vary across Europe. We collected and analysed data on the content of property rights based on formal legal requirements existing in 31 European jurisdictions. To allow a comparison across jurisdictions, we constructed an original Property Rights Index for Forestry encompassing five rights domains (access, withdrawal, management, exclusion and alienation). We documented substantial variation of the private forest owners' rights, and notably to i) make decisions in operational management and the formulation of management goals, ii) withdraw timber resources from their forest, and iii) exclude others from the use of forest resources. We identified broad relations between the scope for decision making of private forest owners and jurisdictions' former socio-political background and geographical distribution. The variation in the content of property rights has implications for the implementation of international environmental policies, and stresses the need for tailored policy instruments, when addressing European society's rural development, the bioeconomy, climate change mitigation measures and nature protection strategies.

1. Introduction

Forests account for 32.2% of the European territory (FOREST EUROPE, 2015), providing important environmental services and economic benefits (Mori et al., 2016). Currently, nearly half of European forests are privately owned (Schmithüsen and Hirsch, 2010). Contemporary policy on private forest management is guided by sustainable forest management concepts (Fares et al., 2015). Depending on the region and forest type, these emphasise different aspects of sustainability, such as “sustainable yield” which focuses on sustained timber production, “multi-purpose forestry” which highlights multiple goods and services, or “ecosystem management” which stresses the status and evolution of forest ecosystems (Winkel et al., 2009). At the same time, most European countries are mandated with implementing a plethora of European Union (EU) legislative and policy instruments (Winkel et al., 2013).

Nationally or regionally-based regulatory frameworks influence the *de jure* property rights distribution and hence they impact on the economic and procedural aspects of forest management (Cubbage et al., 2007). A system of property rights is based on “the set of economic and social relations and norms defining the position of each individual with respect to the utilisation of scarce resources” (Furubotn and Pejovich, 1972) and thus depends on institutional decisions (Kissling-Näf and Bisang, 2001; Vatn, 2005). The diversity of national, legal, cultural and historic contexts has led to different levels of restrictions on the management of private forestland, establishing the duties and responsibilities governing forest managers, owners and users (Krott, 2005).

Private forest owners' (PFOs) property rights determine the scope for forest owners to decide individually on the delivery of forest goods and services to the society, subject to the rationale and efficacy of the legal implementation of policies that are related to forests (Bouriaud and Schmithüsen, 2005). These decisions influence the balance that is struck between commercial ecosystem services, like timber, on one hand and non-commercial ecosystem services, such as biodiversity conservation, on the other hand (Lockie, 2013). Hence, a structure of property rights has the potential to influence the entrepreneurial activities of forest owners (Buttoud et al., 2011), the implementation of climate change mitigation and adaptation policies (Lindner et al., 2010), the implementation of nature conservation policies (Winkel et al., 2015) and the delivery of forests products to renewable energy markets (Bouriaud et al., 2014; Kleinschmit et al., 2014; Stupak et al., 2007).

An analysis of property rights based on legal entitlements (Bromley, 1997) is less informative than an approach that considers the bundles of rights (Galik and Jagger, 2015) that are associated with the use of forests. The constitutional setting of the private form of ownership is

based on the legal entitlements conferred on a PFO and does not define *per se* the bundle of rights which determines the scope for decision making and the execution of activities a PFO may wish to perform. Despite its obvious importance, there is an absence of comparative studies investigating across multiple countries the links between property rights distributions and their official regulations relating to sustainable forest management. Existing studies of forest ownership at the European level focus on the overall assessment of forms of ownership (Schmithüsen and Hirsch, 2010) and changes in ownership structure (Živojinović et al., 2015), while studies into the distribution of rights have a primarily regional focus (Avdibegovic et al., 2010; Bouriaud et al., 2013; Glück et al., 2010).

To address this issue, we designed an index of property rights distribution in forestry (PRIF), to provide a structured comparative overview of the impacts of multiple regulatory frameworks on the property rights of PFOs. The PRIF is conceptually based on Schlager and Ostrom's (1992) analytical framework of property rights distribution, which we interpret in the context of private forest ownership. A similar framework is used by the Rights and Resources Initiative (RRI) to assess the impact of national laws that relate to the forest tenure rights of indigenous people and communities in Latin America, Asia and Africa (RRI, 2012). In the RRI study, the unit used to analyse the distribution of the bundle of rights is the community, while our focus is on private forests belonging to individual owners.

The construction of the PRIF is grounded on a systematic and transparent approach required for the formation of indices (Dobbie and Dail, 2013; Voigt, 2013). The use of composite indices is becoming increasingly popular in the assessment of sustainable development determinants (Rogge, 2012) such as economic systems, e.g. the Index of Economic Freedom (Miller et al., 2015), social fulfilment, e.g. the Human Development Index (UNDP, 2016) and environmental performances, e.g. the Environmental Performance Index (Hsu et al., 2016). Many indices are intended to estimate sectoral policy diversity across jurisdictions (Bertelsmann Stiftung, 2016; Hsu et al., 2016; Levy-Carciente, 2016), yet there is no specific index designed for the assessment of forest property rights. The International Property Rights Index (Levy-Carciente, 2016) has a broader scope than the PRIF, serving as a barometer of the security of property rights across the world, and does not specifically target the management of natural resources.

The paper introduces the methods used for setting the PRIF, displays the calculated values in a European scale analysis and identifies regional patterns of the distribution of rights. As with other composite indices, the PRIF can be used in benchmarking comparisons, the evaluation of the evolution of policies or a tool for more effective stakeholder and public communication (das Neves Almeida and García-Sánchez, 2016; Zhou et al., 2006).

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