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Disturbances, robustness and adaptation in forest commons: Comparative insights from two cases in the Southeastern Alps☆

Paola Gatto [a,*], Nevenka Bogataj [b,1]

[a] Dipartimento Territorio e Sistemi Agro Forestali, Università di Padova, Agripolis, Viale dell'Università, 16, 35020 Legnaro, PD, Italy
[b] Slovenian Institute for Adult Education, Šmartinska 134 a, 1000 Ljubljana, Slovenia

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ABSTRACT

Exposure to disturbances of different nature and scale can represent a threat for the survival of rural communities but also a stimulus to adjustment. Disturbance, robustness and adaptation are here examined through the lens of Forest Commons, as a typical institution, developed by communities in the southeastern Alps since several centuries. The paper relies on Commons' theory and further developments and carries out a historically-embedded analysis of disturbances, robustness and adaptation in Forest Commons of Slovenia and Veneto (Italy). Data have been drawn from multiple sources, following an approach based on an area scale and later on case-studies. The analysis focuses on evidence of Forest Commons' reactions to disturbances induced by political changes and State actions. Ostrom's design principles are used to test robustness of eight selected cases and identification of their adaptation patterns. The paper concludes by confirming Forest Commons as robust and adaptive social-ecological systems and thus useful in Community Forestry conceptualisation. However, thanks to its cross-border analysis, it also points out future research needs for their better understanding.

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1. Introduction

Over time, rural communities and their resources have been exposed to external agents and pressures of varying nature and scale (Berkes and Davidson-Hunt, 2007). The State has been among the most important external influences, both through placing direct demands on communities and indirectly by empowering or weakening the communal resource management institutions (Armitage, 2008; Bravo and De Moor, 2008; Landolt and Haller, 2011). A combination of State and other forces has often threatened the survival of communities, their resources and connected institutions, leading to failure and disappearance (Brandl, 2011). In other cases, the continuous interplay of different actors and forces has allowed communities to develop mechanisms to cope with, and slowly adjust to, external events, resulting in their survival in spite of external pressures and shocks (Janssen and Anderies, 2007). One key challenge emerging from the contemporary debate on adaptation is thus to understand what contributes to the persistence of communal institutions for resource management, and how they are transformed by adaptation.

Much of the investigation on this subject relies on forest cases, where several examples of long-lasting common-pool resource regimes, communities, and communal institutions have been identified as successful governance models (Agrawal, 2007; Ostrom and Janssen, 2004). There is a tradition of forest communities and community forestry throughout Europe (Jeanrenaud, 2001; Bravo and De Moor, 2008; Lawrence et al., 2009; Holmgren et al., 2010; Rubio-Perez and Fernándeza, 2013). In particular, the Alps are the setting for many ancient, traditional and recently-re-established forest commons (Netting, 1976; Kissling-Näf et al., 2002). They have been exposed to centuries of complex history and many political and economic changes, sometimes leading to destitution or poor functionality. Yet, several forest communities survived (van Gils et al., 2014), so Alpine areas are a good laboratory for studying community forests and forest commons in order to understand the effects of external disturbances, the factors explaining survival and the adaptive responses. However, the literature on this subject is not geographically homogeneous: despite similar experiences, peripheral areas such as the eastern Alps are underrepresented in comparison with the central Alps (Switzerland, Austria, or South Tyrol). The discourse on robustness and adaptation of the commons could therefore benefit by learning from new examples. In addition, a comparative analysis of cross State-border cases offers additional insights into the specific role played by the State as an element of disturbance.

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* Corresponding author. Tel.: +39 049 8272719.
E-mail addresses: paola.gatto@unipd.it (P. Gatto), nevenka.bogataj@acs.si (N. Bogataj).
[1] Tel.: +386 1 5842 579.

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The aim of this paper is hence threefold. The first aim is to draw more attention to the forest commons of the southeastern Alps and more specifically in Slovenia and the Veneto Region of Italy.[2] In the last century, forest commons in Italy and Slovenia were exposed to very different State ideological, legal and policy regimes and, since then, their development patterns have started to diverge rather radically. Thus, the second aim is to do a comparative study on the role of the State as a driver for change in forest commons. The third and principal aim is to gain insights into the robustness of forest commons and related adaptation patterns in the southeastern Alps, by testing case material from eight forest commons on both sides of the border against Ostrom's design principles.

2. Conceptual aspects

The role of communities and their institutions in natural resource management has been explored at varying scales and by different bodies of scholarship (Armitage, 2008) that include commons theory (Ostrom, 1990; Agrawal, 2007) and resilience theory (Berkes et al., 2003). We rely on commons theory to provide the conceptual foundation for our study, starting from the definition of our unit of analysis — forest commons (hereafter FCs). While the concept of FCs is used in the literature (e.g. Lidestav et al., 2010), detailed definitions are generally lacking. In this paper, we connect the definition of FCs with that of socio-ecological systems (SES). According to Janssen and Anderies (2007), an SES is 'a structure composed of a common-pool resource, its users, and an associated governance system' and is the pivotal unit for studying environmental and institutional change and related adaptation processes. Our FCs could be considered a specific type of SES, where the common-pool resource is forestland (also often including pastures), the users are a community having rights to the forests (often full ownership, at times only some use rights), and the associated governance system is represented by the legal–institutional context together with the internal FC rules for managing the community and the resource. Our concept of FCs pays special attention to the attributes of 'community'. This is conventionally taken as both a geographical and social unit, '… a group of people with common characteristics, needs and goals' (SSKJ, 2000). Here the focus is on a traditional community whose characteristics have evolved over centuries of living and working in the local area, where overcoming obstacles leads to establishment of internal norms, division of roles, and last but not least, forming of emotional ties (DiGiano and Racelis, 2012).

The robustness of an SES is described as the capability of 'maintaining performance when subjected to external or internal unpredictable perturbations' (Janssen and Anderies, 2007). Robustness can be considered a measure of success insofar as it allows SES to persist despite stressful events. According to Fleischman et al. (2010), robustness is the result of a cyclic adaptation process, of 'modest short-term cycles of failure and recovery'. In the literature, the concept of robustness is paralleled with that of resilience, which is more widely used in ecological analysis. However, robustness puts more emphasis on the reasons for and role of human constructs: humans create rules to enhance the performance of SES (commoners, for example, craft rules for regulating the resource use and distribution of its benefits) and, by continuously adjusting these rules, they control the response to disturbances. Another strength of the reference to robustness is the attention to trade-offs: achieving greater robustness in one respect may require losing it on another (if commoners, for example, perceive a danger of a community becoming too small, they might decide to admit new members, even if this means giving up community's internal cohesion).

Robustness is exercised in response to perturbations. Two types of perturbation, or disturbance, have been identified (Anderies et al., 2004): 1) external disturbances, which include biophysical and socio-economic changes (in markets, demography or political actions); and 2) internal disturbances, which refer to internal reorganisation resulting from changes elsewhere in the system. Change can be abrupt and discrete (Dawson et al., 2010), e.g. earthquake, landslide, change dictated by State actions such as regime change or war. Longer term challenges are posed by slow, regular, frequent or continuous change, such as climatic, demographic, or economic trends.

Robust communities – social settings tending to remain balanced – react to disturbances by continuously adjusting their institutional mechanisms (Berkes and Davidson-Hunt, 2007). Those that are not robust become dysfunctional, and may ultimately dissolve. Therefore Fleischman et al. (2010) warn of sampling bias when analysing robustness, as SES that have disappeared can no longer be observed. In parallel, surviving FCs are not all necessarily robust, as they may just not have been exposed to a critical type or level of disturbance. This also applies to our context and calls for an analytical focus on robustness and not simply on persistence. Ostrom (1990) identified a set of eight design principles for assessing robustness, derived from studying cases of long-enduring institutions. With further refinements and framing within the SES concept, these principles now form one of the main references for the assessment of robustness (Ostrom, 2009; Cox et al., 2010). Agrawal (2001) also contributed to this with his conceptualisation of conditions under which groups successfully adapt to changes and self-organise. He claims that adaptive mechanisms of local communities take place due both to internal and external ties, for example with the State or the market. It has also been argued that a 'systematic analysis of the robustness of SES should also look at how communities deal with dynamics at various scales' (Anderies et al., 2004) and that successful governance shows consistency between the different 'multiple layers of nested enterprises' (Ostrom, 1990). This article contributes to the literature on robust common property institutions by examining case material from eight long-enduring forest commons on both sides of the border for evidence corroborating the Ostrom design principles.

3. Research methodology and data sources

Given the scarcity of empirical evidence and, in particular of cross-border comparative analysis in the region of study, our work is of an exploratory nature, aimed at identifying further scope for research. For this reason, it primarily uses a qualitative approach, undertaken at different scales. The analysis of the role of the State over time and the present situation of FCs are tackled at the area scale (Veneto and Slovenia). The insights into robustness and adaptation are derived from case-studies (Yin, 2003) at the local scale based on eight FCs equally distributed between Veneto and Slovenia.

We made use of different sources of information, both secondary and primary data. Secondary data were extracted from published literature, also in local languages, legal Acts, grey literature, including university degree theses. In Italy, a continuous body of literature exists documenting FCs, dealing with juridical or historical aspects, and providing many elements for understanding the role of the State (Grossi, 1977, 1998; De Martin, 1990; Nervi, 1999). Analyses of individual cases are also available (Moretto and Rosato, 2002; Casari and Plott, 2003; Runge and Defrancesco, 2006; Pieraccini, 2013, among others), however they do not provide a systematic picture in a context of high diversity (Bassi, 2012), where each Region (taken as a political unit) has a different situation depending on history and political decisions. The situation in Slovenia is less well documented: the available literature is mostly from a historical perspective (Volčič, 1895; Rutar, 1896) or on juridical particularities (Britovšek, 1964; Vilfan, 1980). Recent

[2] There are other interesting areas for an expanded study of forest commons in central-eastern Italian Alps, e.g. Trentino Alto Adige and Friuli Venezia Giulia. The Veneto was primarily selected because one of the authors' direct experience in this region provided in-depth data not published or analysed elsewhere. Another and more important reason is linked to methodological and contextual aspects: in Italy, the political and legal context for forestry (and forest commons) is defined at a regional level. Trentino Alto Adige and Friuli Venezia Giulia thus have different political-legal contexts for forest commons.

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