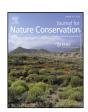
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Governance and forest landscape restoration: A framework to support decision-making



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ABSTRACT

Governance challenges are frequently underestimated in forest landscape restoration. Forest restoration practitioners are generally foresters or ecologists and their focus tends to be limited to the specific restoration interventions themselves, such as removing exotic species, protecting sites for natural regeneration and re-planting indigenous trees. Indeed there are many technical challenges, unknowns in technical aspects of forest landscape restoration and knowledge gaps. However, and even more so when dealing with large scales, additional challenges that fall under the governance umbrella such as tenure, policy measures and institutions have a significant impact on restoration, influencing it either positively or negatively. Conversely, the landscape-scale restoration work itself can influence and shape governance arrangements. This paper attempts to explore this wider relationship between large scale forest restoration — and specifically forest landscape restoration (FLR) — and governance. It is intended to assist and provide guidance to forest landscape restoration practitioners, researchers and policymakers on the consideration and importance of governance, and alternative ways in which the two-way relationship (between governance and FLR) plays out. A framework is proposed to support practitioners, researchers and decision-makers to address governance in forest landscape restoration.

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1. Introduction

Forest landscape restoration (FLR) has been receiving a lot of attention in the last decade (Mansourian, Vallauri, & Dudley, 2005; Rietbergen-McCracken et al., 2007; Stanturf et al., 2012; Lamb 2014). It was defined in 2000 as a "planned process that aims to regain ecological integrity and enhance human wellbeing in deforested or degraded landscapes" (WWF & IUCN, 2000). The intention is not to turn an entire landscape into forests, but rather to ensure that forest quality is improved in the landscape for the benefit of both people and biodiversity. Forest landscape restoration faces a number of "technical" challenges that relate for example, to identifying seed sources, the number and diversity of species used, removal of invasive and/or exotic plants, restoration methods, adapting planting to seasons, management of nurseries etc. (Clewell, Rieger, & Munro, 2000; Lamb, Erskine, & Parrotta, 2005; Chazdon 2013; Stanturf, Palik, & Dumroese, 2014). In addition, FLR faces several governance challenges. For example, who decides what and

where to restore? How are all stakeholders engaged? Who benefits? Who loses? How are benefits transferred? What institutions support (or hinder) FLR? (Brunckhorst, 2011; Mansourian 2016). Supportive governance may be even more critical than technical issues for successful restoration (Hobbs, Hallett, Ehrlich, & Mooney, 2011; Guariguata & Brancalion 2014; Sayles & Baggio 2017). Yet, a review of the literature indicates that there is limited to no guidance for FLR practitioners on how to integrate governance in their work (Mansourian 2016). This paper is intended to help fill this gap. The intention is to assist FLR practitioners (project designers and implementers such as non-governmental organisations, scientists, project managers etc.), researchers and policymakers to better understand the role of governance in FLR implementation (recognising that there are also ecological challenges to FLR, but these are beyond the scope of this paper). In particular, it proposes a framework and three overarching recommendations. While the focus is on FLR, in reality these challenges are relevant to any large scale forest restoration effort.

Whereas an earlier paper (Mansourian 2016) focused on the intersection between governance and the implementation of the FLR process, this paper attempts to offer practitioners, researchers and policymakers (working at all levels) a framework to help them consider governance in FLR implementation. It identifies gover-

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nance both as a problem and a solution for FLR, and also seeks to portray the different ways in which governance relates to FLR. The aim is not to define a prescriptive governance model for FLR – recognising the diversity of settings in which FLR takes place – but rather to understand, influence and shape, wherever possible, governance for FLR.

2. Methods

Research was conducted between February and April 2016 by the author. There were three components to the methodology: 1. a review of tools for FLR (and large scale forest restoration) focusing on key bodies involved in FLR (or large scale forest restoration), such as the Society for Ecological Restoration (SER), the Global Partnership on Forest Landscape Restoration (GPFLR), the International Union for Conservation of Nature (IUCN), the World Resources Institute (WRI) and WWF. The content of the tools was analysed for any guidance related to governance (searching for relevant terms such as "governance", "policy", "stakeholders", "institutions", "tenure", "ownership" and "social"). The aim was to assess how much, if any, guidance targeted governance or governance-related aspects. Where such guidance existed, it was extracted (see Appendix A).

2. a review of literature on governance and FLR centred on Scopus, the ISI Web of Knowledge and Google Scholar. Key search terms were "governance and FLR" and "governance and forest restoration". Because of the limited literature (a maximum of 19 items were retrieved with these search terms on Scopus), I broadened the search to "environmental governance" in order to identify key findings on environmental governance that could be applicable to FLR. A snowball method was used, whereby the literature cited in different papers served to further direct my research.

Using an interpretive review (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005) major governance themes that related to FLR were extracted and used to develop a framework to address governance challenges and seek governance solutions in support of FLR.

3. use of illustrative examples and case studies from known cases and from project databases such as those of WWF, the Society for Ecological Restoration's Global Restoration Network database and that of the GPFLR. The main criteria for the choice of case studies were that they were known to the author, there was sufficient information on them and they were relevant.

3. Preliminary contextual considerations

Based on the review of tools, literature and projects, in a first instance a presentation of the relationship between governance and FLR is provided to help frame this article.

3.1. Defining governance

It is useful to tease apart how the term "governance" is used in the environmental literature to better understand the different definitions and interpretations. Multiple definitions of governance can be found in the forest and environment literature but what they generally have in common is that they refer to: 1. people (stakeholders, actors, groups, individuals etc.), 2. decision-making actions (e.g. shaping, deciding, influencing etc.) and 3. tools that enable people to make those decisions (e.g. rules, regulations, institutions, policies etc.). In addition, in the context of forests and natural resources, the term "governance" is frequently associated with other terms, such as "structures", "issues", "bodies" etc. Prevailing terminology suggests a distinction between: 1. overarching decision-making bodies and processes, e.g. "governance systems"

(Jordan, 2008; Reed, Van Vianen, Deakin, Barlow, & Sunderland, 2016), "governance regimes", "modes of governance" or "governance arrangements" (Batterbury & Fernando 2006; Howlett, Rayner, & Tollefson, 2009); 2. elements of an overarching system of governance, e.g., "governance structures" (Reed et al. 2016; Pinto et al., 2014), "governance aspects", "governance issues", "governance mechanisms" (Batterbury and Fernando, 2006) or "governance instruments" (Pinto et al., 2014) and 3. phases of a larger process, e.g., "phases of governance" (Batterbury & Fernando 2006), "governance problems" and "governance solutions" (Paavola 2007). A distinction needs to be made between governance and governing (Kooiman 1993; Jordan 2008). Kooiman (1993) refers to "governing" as being activities intended to "guide or steer" and governance being "the patterns that emerge from the governing activities of social, political and administrative actors". Thus, governing can be seen as a sub-set of the broader process of governance. Governance has also been associated with management. Lammerant et al. (2013) for example, refer to the "governance" model" in their ecological restoration guidance referring to management structure. However, whereas management relates to operational decision-making to achieve specific outcomes, governance refers to the broader processes and institutions through which decisions are made by societies writ large. Governance is also more than just government, particularly since in most countries in recent decades the range of actors empowered to engage in environmental decision-making has grown (e.g. Lockwood, Davidson, Curtis, Stratford, & Griffith, 2010; Ekroos, Leventon, Fischer, Newig, & Smith, 2016). Indeed the term has acquired greater recognition in the literature to refer to decision-making processes and structures that go well beyond governments (e.g. Lemos & Agrawal 2006; Paavola 2007; Görg, 2007).

For our purposes, and with forest landscape restoration in mind, governance is understood in the broadest possible sense as the decision-making rules, structures and processes involved in restoring forested landscape. I propose here a definition based on those of Lemos and Agrawal (2006), Swiderska et al. (2009) and Colfer and Pfund (2011): governance in the framework of FLR refers to the wider set of institutions and stakeholders at all levels and the ways in which they connect and interrelate over time to influence the implementation of FLR and the process of restoring a forested landscape.

3.2. Why governance and forest landscape restoration?

Governance can be both a problem and a solution for FLR implementation. In order to restore a forested landscape, it is necessary to understand how governance influences FLR, which aspects of governance can hinder FLR implementation, progress or sustainability, which ones can support FLR implementation and how to surmount governance obstacles. Although a supportive governance framework can help accelerate FLR implementation (Hobbs et al., 2011), clearly a whole raft of ecological and technical considerations are also required, such as: what state is the forest ecosystem currently in? what trajectory brought it to this state? which species to use? which methods to apply? should active or passive restoration be undertaken? While precedence is frequently given to these ecological considerations, in practice, growing research indicates that the interaction between ecological and governance dimensions is critical to the success of FLR (or forest restoration) implementation (e.g. Hobbs et al., 2011; Guariguata & Brancalion 2014).

Governance is important for FLR and large scale restoration for numerous reasons (Hobbs et al., 2011; Nagendra & Ostrom, 2012; Guariguata & Brancalion 2014). Firstly, FLR works across land-scapes, signifying that there are likely to be more stakeholders (and diverse owners) than on a smaller site or plot. As a result, without clear rules on the use of forests, on land and forest rights, and on

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