Funding ecological restoration policy in practice—patterns of short-termism and regional biases

Sara Borgström [a],*, Anna Zachrisson [b], Katarina Eckerberg [b]

[a] Stockholm Resilience Centre, Stockholm University, SE 10691 Stockholm, Sweden
[b] Dept of Political Science, Umeå University, SE 90187, Umeå, Sweden

ABSTRACT

With continuous degradation of ecosystems combined with the recognition of human dependence on functioning ecosystems, global interest in ecological restoration (ER) has intensified. From being merely a nature conservation measure, it is today advanced as a way to improve ecosystem functions, mitigate biodiversity loss and climate change, as well as renew human–nature relationships. However, ER is a contested and diversified term used in research, policy and practice. Substantive public funding is allocated towards this end worldwide, but little is known about its concrete purpose and coverage, as well as what decides its allocation. With inspiration from environmental funding literature we analyze the case of Sweden to provide the first national overview of public ER funding. The understudied political context of ER is thus addressed but also regional variation in funding allocation. A database of all national government funding programs between 1995 and 2011 that included projects and sub-programs aiming at practical ER measures was created. Results show that ER activities counted for 11% (130 million USD) of the total government nature conservation funding. Water environments were highly prioritized, which can be explained by economic and recreational motives behind ER. The ER funding was unevenly distributed geographically, not related to either environmental need or population size, but rather to regional administrative capacity. It was also found to be small scale and short term, and hence part of a general trend of "project proliferation" of public administration which runs contrary to ecosystem based management. As ER is not yet a long-term investment in Sweden, commonly seen as an environmental lead state, we expect even less and more short-term ER funding in other countries.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

Ecological restoration (ER) "the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed" (Society for Ecological Restoration, 2004:3) is increasingly advanced as a way to improve nature conservation and mitigate climate change and biodiversity loss across the world (see Millennium Ecosystem Assessment, 2005). Several political actors, including states and international organisations, such as United Nations Environment Programme, have made declaratory commitment to engage in ER (Nellemann and Corcoran, 2010). The Aichi Biodiversity Targets under the Convention on Biological Diversity (COP/10/INF/12/Rev.1) and the European Union's (EU) new Biodiversity Strategy (European Commission, 2012) prescribe that by 2020 at least 15 per cent of degraded ecosystems should be restored. In its framework for action the recent Rio 2012 declaration (UN, 2012) includes ER both in its vision and in six of the thematic areas. At the EU level, ER is currently also stressed in several sector policies such as the Water Framework Directive (European Commission, 2000) and the EU Marine Strategy Framework Directive (European Council, 2008). To achieve ER goals, both UN and EU lean on voluntary policy instruments, e.g., economic incentives and collaboration (Zachrisson and Eckerberg, 2014). ER usually requires large financial investments since it addresses severe environmental degradation that is costly to reverse and because it is labor and resource intensive (Crookes et al., 2013). Funding for environmental management is usually provided from the national level (e.g., Wang, 2011), though traditional command- and control policy instruments dominate in environmental policy generally (Jordan et al., 2013).

According to the international Society for Ecological Restoration, ER is an intentional activity that targets ecosystems negatively affected by human activities in order to "return an ecosystem to its historic trajectory" and to improve ecosystem health, integrity

and sustainability (Society for Ecological Restoration, 2004:1). For restoration ecologists, the focus is often on restoring whole ecosystems back to a more "natural or pristine condition", ultimately by decreasing human use and impact (Aronson and Clewell, 2013). Commonly ER is studied as a certain goal (e.g., increase in biodiversity), a specified environment (e.g., river dynamic) or target species (e.g., levels of regeneration), but there is a lack of comprehensive knowledge at aggregated scales (e.g., regional and/or national), and across environment types about what is done, for what purposes, and by whom. Little is known of the overall implementation of ER policy at regional, national and international levels (Egan et al., 2011; Keulartz, 2009; Kondolf et al., 2007). The most synthesizing effort, a study on nationwide river restoration in the US, showed that at least one billion USD of public investments were spent annually to this end and that the amount of investment was growing exponentially in every US region (Bernhardt et al., 2005). Even though this study looked solely at river restoration, it still reported difficulties in gathering comprehensive data.

Analyses of the political context of ER also remain scarce (Christian-Smith and Merenlender, 2010; but see McCool, 2010; Smith, 2009). The political context in relation to public funding is, however, studied in political science and there is an emerging literature on environmental funding in particular (e.g., Wang, 2011). Still, only a few studies address the power of influence over budget allocations more generally, and the ability to mobilize collaborative networks more specifically in ER policy implementation (Baker et al., 2013). ER projects need to be examined not only in how the goals are formulated, but also how they become implemented and this paper departs from studies of environmental funding to develop the knowledge of what decides ER funding patterns and to what extent they reflect government priorities (Baker and Eckerberg, 2013).

The main objective of this paper is to investigate and contextualize ER policy in practice through providing the first-of-its-kind national overview of the content and distribution of public ER funding. The research questions are: (i) What characterizes ER at the national scale; what kind of measures and environments are prioritized, on what time scales and who is involved? (ii) How are these priorities related to ER policy and theory?, and (iii) How is ER funding distributed among regions and what determines these regional funding trends? As the first comprehensive national level assessment, our study is important to understand how the increased focus on ER internationally translates to national and sub-national levels. Sweden was selected for this case study area for two reasons. First, Sweden is a critical case since it is for a long time known to be an environmental lead state and having a highly formalized environmental policy (Eckerberg, 2000; Jordan and Liefferink, 2005), recently ranked third in environmental regulation by international comparison (Sommerer, 2014). Lately, nature protection policy in Sweden has been stimulated through multiple approaches, including at the local level with considerable success (Eckerberg, 2012). It should thus point to where ER policy formulation is heading also in other advanced economies, in particular other EU countries with similar strong environmental profile. Second, a more pragmatic reason is that Sweden has a long and strong tradition of having a right of public access to all governmental information from national to local level. This allowed us to retrieve information on ER programs and projects including budgets from a range of public agencies that can be expected to be complete and reliable without extensive additional primary data gathering, thus providing a unique data set.

The paper proceeds next with a section on theoretical points of departure, followed by a background section situating ER in Swedish environmental policy. Next the methodological approach is described, before the results are outlined. We conclude by some critical remarks in the last section.

2. Public environmental funding

Funding is a central means to achieve environmental objectives in general (Baker and Eckerberg, 2008). There are, however, very few studies on the stability and security of this kind of funding, as well as on what determines environmental funding trends at the local level (Wang, 2011). At the same time, federal grants at least in the US constitute an increasing part of state and local expenditures in USA (Nicholson-Crotty, 2004). A study of Florida by Wang (2011) showed that environmental preservation spending (to which ER funding would belong) was higher where there is more farm land, more water consumption and in coastal areas. No other environmental characteristics than farm lands and water use were included. The results further suggested that spending on environmental preservation occurs in response to environmental pressure created by economic activities, while there was no support that human population variables such as size, density or growth influence environmental preservation spending (Wang, 2011). In other policy areas, Stein (1979) has instead shown that success in grant seeking by subnational governments was decided by their planning and fiscal capacity, not by the perceived need. For small, however often very needy, recipients he showed that the costs of applying easily exceed the expected grant award. Rich (1989) further concluded that prior experience with grant seeking increased program allocations, as well as efforts to apply—the more local applicants chose to spend themselves and the greater their success in seeking other grants, the more funds they received. There was a direct relationship between simply the number of applications filed and the amount of funds received. The analysis also supported that community needs (measured through population change, poverty, unemployment etc.) have increasingly been targeted. Then Hall (2008) added to the understanding of local funding through stressing also the ability to provide financial resources to meet federal matching requirements.

These results point in different directions and there seems to be a need to understand how central political priorities and governmental choices and strategies work together with environmental needs and administrative capacity at lower levels. This need is also getting more pressing with the worldwide trend towards 'project proliferation', which implies that public funding in the form of projects could be expected to continue to increase both in terms of factual sums and in importance (Sjöblom, 2009). Political scientists have not paid this trend much attention, although it can be argued that this is one of the most important administrative changes that characterize governance (Sjöblom, 2009). Economic studies have shown that temporary project administrations are vital for horizontal and vertical interlinking between various administrative sectors and levels, not least within environmental management, as a response to increased administrative complexity (Sjöblom and Godenhjelm, 2009). This kind of nesting of administration and the movement of the response mechanisms closer to the system at a more local level, have also been suggested as a way to handle ecological dynamics (e.g., Berkes and Folke, 1998; Chapin et al., 2010). Stakeholder involvement is a central feature of project proliferation (Sjöblom and Godenhjelm, 2009), and it has been shown to be central for rewarding economic instruments to have a catalyzing effect (Baker and Eckerberg, 2008). Indeed, stakeholder involvement was reported essential in present river ER projects in the US (Bernhardt et al., 2007) and might be seen as a potential for ER to act as a community activity that widens responsibility for and participation in ER. Projects then offer a promise, as do other forms of collaboration, of legitimizing public policy through the involvement of affected stakeholders (Bäckstrand et al., 2010).

However, project proliferation also poses many challenges to the realization and continuity of traditional administrative values (Sjöblom and Godenhjelm, 2009), such as the