



Territory and authority of water fund payments for ecosystem services in Ecuador's Andes

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ABSTRACT

A 'water fund' is a model for watershed conservation that cities throughout Latin America are quickly adopting. Based upon the concept of Payments for Ecosystem Services, urban actors and international NGOs pay into a trust fund that finances conservation activities in rural communities existing in and around ecosystems important for water flowing downstream to cities. Ecosystems are inextricably tied to the landscape, so water funds seek to influence land use practices. However, the process of establishing control over land use activities within a targeted area is a challenge, particularly when these areas exist outside of the boundaries of state delineated protected areas and encompass diverse landscapes where people are living and working. Drawing upon an empirical case study from Ecuador, we use data from key informant interviews and archival documents to analyze how market actors and NGO alliances create authority and legitimacy for themselves to initiate the process of territorialization of a watershed premised on ecosystem services conservation. We demonstrate how urban market actors and NGO alliances create non-state authority for territorialization and bypass the political and economic instability of the state. However, we also show that the state itself may use this arrangement as a platform to exert power within territory

1. Introduction

Throughout the world, ecosystem services are increasingly a target for regulation and governance through multiplying arrangements of Payments for Ecosystem Services (PES). As ecosystem services and the people charged with maintaining and improving them are connected to land, PES arrangements are intimately tied to social and environmental processes located within places and spaces of intervention. Yet, literature examining territorializing aspects of governance within PES schemes remains relatively unexplored with a few exceptions (e.g. Rodriguez-de-Francisco and Boelens, 2016; Lansing et al., 2015).

In this article, we argue that PES intervention necessarily requires a new form of regionalization or territoriality – the control of land within a provision region of ecosystem services. Territorialization is an ongoing process of defining and re-defining space and involves territoriality, or a “form of behavior that binds, reifies, and controls space for some social ends” (Löwbrand and Stripple, 2006, 218). This article examines the process of territorialization for the production of ecosystem services, and particularly we address the process of constructing territory in which ecosystem services are made governable in a water fund PES model. We demonstrate how alliances between urban market

actors and NGOs create non-state authority for territorialization that bypasses political and economic instability of the state. However, we also show that this arrangement exists in an ongoing process of change, and that the state itself may use this arrangement as a platform to exert power within territory.

While scholars have called for improving the science in order to more effectively target and efficiently implement PES arrangements (Naeem et al., 2015), others have called to examine the role of context and power relations within the creation and implementation of PES schemes (Kolinjavadi et al., 2017; Fletcher and Büscher, 2017). This paper responds to the latter by examining the creation of water fund PES in Latin America. A water fund PES scheme connects urban users of watershed ecosystem services (i.e. ecosystem service buyers) to upstream land managers (i.e. ecosystem service producers) via an extra-governmental intermediary organization. Urban users contribute to a trust fund whose interest goes towards incentivizing land managers to adopt conservation-oriented land management practices within ecosystems important to the quality and quantity of water flowing downstream to a city.

Our case study is the first and model water fund PES in Latin America, called *Fondo para la proteccion del Agua* (FONAG) launched

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through a partnership between The Nature Conservancy (TNC) and the municipal public water company in Quito, Ecuador (EPMAPS) in 2000. Water-users in Quito –a mixed assortment of public and private entities– voluntarily agree to pay into a trust fund whose interest finances an extra-governmental intermediary organization headquartered in the city of Quito, Ecuador. This intermediary organization is set to last 80 years by its contract and creates development projects that promote intensification of agricultural land-use in rural communities located in and around ecosystems of hydrologic importance within the watersheds serving Quito. With a purpose of reducing the total area of land altered by human activities in the targeted páramo ecosystem, these development projects also serve as payment to communities for their conservation practices. In return, these projects require local labor inputs and the re-arrangement of land uses. TNC has declared a goal to replicate 32 other water funds in Latin America following FONAG's model (TNC, 2012). At least 18 cities have currently implemented the model, and several others in the planning stages (LAWFP, 2016).

This case study underscores the political context of PES as a set of environmental governance practices. It demonstrates how broadly defined ecosystem services can facilitate alliances between non-nation-state actors to initiate a process of territorialization, and how the boundaries of territory are negotiated between actors with differing priorities. Furthermore, it demonstrates how the balance of power within a PES can be contested, authority reconfigured, and priorities redefined with territorial outcomes. We underscore how PES arrangements are dynamic and sensitive to changing stakeholder agendas. Therefore, this paper examines the process of constructing and claiming territory in a water fund arrangement of PES and contributes to broader scholarly discussion on power dynamics within PES through an empirical case study.

This article draws upon dissertation research involving a multi-sited ethnographic case study of FONAG to examine the socio-spatial processes involved in the construction of water fund PES. The majority of data collection informing this article occurred between 2012 and 2014 and was conducted by the lead author. Data consists of documentary materials and key actor interviews. Documentary materials include strategic plans, reports, promotional materials, procedural manuals, memos, contracts, websites, and newsletters produced by FONAG itself and its constituent members, donors, and other affiliated organizations. Semi-structured key actor interviews over multiple years also contributed data to this paper.

Interviewees contributing to this article included FONAG practitioners, current and former program coordinators and current and former organization leadership ($n = 12$), representatives of constituent member organizations ($n = 5$), donors and other affiliates ($n = 4$), as well as with a lead designer in FONAG's water fund model. The research was presented to all interviewees as dissertation work and all interviews were conducted in person with informed consent after the lead author initiated contact via telephone or email. Interviews focused on the purpose and objectives of FONAG, priorities of intervention for FONAG, a timeline of involvement and significant events of FONAG, and perceived future directions of FONAG. Interviews were recorded and transcribed with permission. The lead author organized documents and transcribed interviews with Atlas.ti software and coded them based on a grounded theory approach (Cloke et al., 2004; Cope, 2005). This was an iterative process that involved developing themes based on the aforementioned topics of inquiry.

We organize our discussion as follows: the next section examines water funds as neoliberal environmental governance arrangements that initiate processes of territorialization. We then describe FONAG's roots in the strategies of international conservation organizations and the shortcomings of state-led territories for biodiversity conservation. After elucidating on the restructuring of FONAG's territory around watershed services, we explain how FONAG's original movements to create its own authority as a non-state extra-governmental model of environmental governance opened an avenue for co-optation between actors. Finally,

we assert that FONAG gives new insights on the exercise of power between actors within the formation of neoliberal conservation territories.

2. Water funds as environmental governance

A water fund seeks to influence land use behaviors within a targeted area. Therefore, it is a form of environmental governance, or a social arrangement for decision-making about the environment and a mechanism that produces a particular social order through environmental management (Liverman, 2004; Ekers and Loftus, 2008; Lemos and Agrawal, 2006; Bridge and Perreault, 2009). The conceptual basis for water fund design is Payments for Ecosystem Services (PES) (Goldman-Benner et al., 2012). PES arrangements ascribe economic value to ecological processes for conservation under the idea the market will enhance signals for resource-use efficiency and generate capital for reinvestment into conservation. Scholars and practitioners often promote PES as a form of Market-based Instrument (MBI) that is a non-coercive, efficient way to incentivize conservation and address conservation funding gaps (Sandbrook et al., 2013; Pirard, 2012).

Depending on the context and mechanisms in a particular arrangement, PES schemes may or may not fall under the category of a MBI. A voluntary trade of specific goods or services defines a market, and may include a diversity of actors including states as well as individuals, private business or communities (Vatn, 2014). Several types of market exchanges exist for biodiversity and ecosystem services, and PES generally fits within a Coasean-type arrangement in which buyers of products of ecosystem services (i.e. water, carbon sequestration, or biodiversity) enter into contracts with landowners over land use practices (Pirard, 2012). The requirement of PES as strictly a pure market mechanism, however, is contested as very few programs exist with the conditions to perfectly meet it (Muradian et al., 2013; Vatn, 2014). While a popularized definition of PES from Wunder (2005) emphasizes a strict market-based mechanism, other scholars and practitioners have shifted to favor definitions of PES that focus on the presence of incentives to “align individual and/or collective land use decisions with the social interest in the management of natural resources” (Muradian et al., 2010, 1205). Water fund schemes tend to follow the definition of PES emphasizing the use of incentives to influence decision-making about land management (Goldman-Benner et al., 2012).

Underpinning PES arrangements, however, is an idealized vision of market-oriented environmental decision making that promotes individualized economic incentives (Fletcher and Breitling, 2012). While many particular practices are associated with neoliberalism, such as privatization, marketization, re-regulation and market facilitation, they may or may not be present within PES arrangement (Fletcher and Büscher, 2017; Bakker, 2005; McElwee, 2012; Shapiro-Garza, 2013). Yet neoliberal forms of environmental governance push forward a worldview and ways of organizing societies via market-oriented values and logic that is reflected in language and practices (Gomez-Baggethun and Muradian, 2015). The idea behind PES, that economic valuation is both the cause of and the solution to the destruction of nature, is therefore inherently neoliberal, regardless of specific practices that evolve as an outcome to this idea (Fletcher and Büscher, 2017).

New neoliberal conservation arrangements often reregulate spaces and incentivize new values that become the focus of management (Igoe and Brockington, 2007). This involves examining the processes of how environmental priorities are used to justify enclosure and appropriate land, resources, and commodities from nature (Fairhead et al., 2012). Although the extent to which ecosystem services are fully commoditized versus simply assigned new value is debated (Sandbrook et al., 2013), ecosystem services can be conceived of as “value-bearing abstractions of physical processes” through PES (Robertson, 2012, 387). We point out that PES programs necessarily incorporate the human component of maintaining or improving ecosystems to produce services, thus PES is more accurately described as assigning value to abstracted socio-environmental processes.

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