WORDS APART: PARTICIPATION & THE POLITICS OF TRANSLATION IN CONSERVATION

by

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(Under the Direction of Julie Velásquez Runk & J. Peter Brosius)

ABSTRACT

In transnational conservation initiatives that are dependent on heterogeneous networks of actors, the power to participate in decision making is increasingly affected by a politics of translation: that is, who has the power to define the terms, who has the power to use them, and whose voices are heard when decisions are made? International programs that address climate change, such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), have decentralized governance structures and led to greater dependence on transnational networks of actors to balance local knowledge and practice with global priorities. For the indigenous people, conservation practitioners, policy makers, and funders working to implement REDD+ in San Martin, Peru, effectively engaging in these networks is dependent on access to information and an in-depth understanding of key terms and concepts relating to climate change. In this dissertation, I trace the movement of information about climate change through networks of actors at the local and regional levels in San Martin, at the national level in Lima, and the international level in the United States, to understand how knowledge is translated, used, and transformed, and in the process, how it shapes participation. Multi-sited fieldwork in San Martin, Lima, and Washington, DC has included participant observation at key meetings, interviews, and

social network analysis. The results of this research indicate that while transnational NGOs are critical to facilitating the movement of information among a broad range of actors working at different scales, they also play a disproportionate role in decision-making networks at the regional scale. It also indicates that while conceptions of key terms related to climate change are shaped by educational experience, linguistic ability, and access to information, traditional knowledge remains poorly integrated into REDD+ initiatives. Finally, it indicates that while the ability to appropriate and use key western scientific terms is a major factor in participation, the dynamic relationship between scientific and traditional knowledge remains poorly understood by conservation practitioners. A greater awareness of the politics of translation in conservation will enable actors to develop more equitable participation processes and, in turn, more effective conservation initiatives that better integrate global conservation priorities with local needs.

INDEX WORDS: CONSERVATION, CLIMATE CHANGE, REDD+,
ENVIRONMENTAL GOVERNANCE, PARTICIPATION

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DEDICATION

For my parents, John and Catherine Dunne, my first teachers.

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CHAPTER 1
INTRODUCTION

On June 5, 2009, 600 Peruvian soldiers and riot police rolled down Devil's Curve on the Belaunde Terry Highway in the department of Amazonas in northern Peru. Their goal was to break up a road block erected by several thousand indigenous people and non-indigenous supporters to protest President Alan García's government's plans for increasing foreign, private investment in their forests (Hughes 2010). This moment marked a particularly violent culmination to tensions that had been growing over the previous months as indigenous leaders vied to have their voices heard in debates with government officials over land tenure in Amazonia. According to official sources, five Awajun-Wampís indigenous and five mestizo people were confirmed dead, along with 23 police officers (Bebbington 2009). Yet, unofficial reports stated that the casualties among the protesters were far higher, with bodies being removed from the scene, burned, and disposed of by police (Peruvian Times, 10 June 2009; Hughes 2010).

One thousand kilometers to the south, in Lima, I sat in the offices of la Sociedad Peruana de Derecho Ambiental (SPDA), the Peruvian Society for Environmental Law. I had arrived in Peru less than twelve hours prior with my first fieldwork assignment: to document conservation terminology that created difficulties when translated between English and Spanish. The normally busy offices of SPDA were thrown into a state of chaos when the news broke, with lawyers and social scientists attempting to make sense of what had happened, and to sort the sensationalized news reports from the truth. Still working on obtaining fluency in Spanish at the time, I sat at my desk bewildered by the tumult surrounding me. Over the next several weeks, I would be deluged with graphic media images of the dead officers juxtaposed with images of angry indigenous

protestors armed with spears, hear claims that the local casualties numbered in the hundreds, and get my first taste of tear gas in one of the largest protests in Peru in decades.

The road leading up to this conflict was paved with the competing interests of local and indigenous people, government officials, environmental advocates, and corporations. It brings into question not only issues of land tenure, but also environmental governance, power, and most specifically, who gets to participate in decision making and on what terms. As conservation and development have shifted from locally oriented approaches to address global concerns such as climate change, participation increasingly has hinged on the translation of concepts and priorities as they move and are applied in a multitude of cultural and historical contexts. This dissertation explores participation through the lens of translation; by translation, I mean the processes through which ideas, practices, and objects are appropriated, transported, reframed, and applied in new contexts (following Gal 2015). This dissertation focuses specifically on understanding the political context of the translation of knowledge, much in line with the work of Callon (1986a, 1986b), Latour (1987, 2005), Star & Griesemer(1989) and Foucault (1980).

The case study for this research is Reducing Emissions from Deforestation and Forest Degradation (REDD+) in San Martin, Peru. REDD+ is a transnational program which aims to address global climate change by providing financial incentives for developing countries to reduce rates of deforestation and increase reforestation (Agrawal et al. 2011; Clements 2010; Pokharel & Baral 2009). REDD+ involves the development of governance mechanisms at regional, national, and global scales, as well as the participation of diverse actors, including decision makers, conservation practitioners, indigenous people, private sector, academia, bilateral and multilateral funders. Because of these characteristics, it is a good case study for exploring which actors transport, interpret, reframe, and apply terms and their concepts, how

they do this translation, and what this reveals for understanding power in global conservation initiatives.

Global Climate Change & REDD+

Over the last several decades, there has been increasing concern over the acceleration of tropical forest loss and the links between carbon emissions resulting from this deforestation and global climate change (McDermott et al 2012). In response to this, the United Nations Conference on Environment and Development, also known as the Earth Summit, was held in Rio de Janeiro, Brazil in 1992. This conference was the largest gathering of world leaders up to that point with the aim to develop a common agenda on environment and development (Swiderska 2002). Three international conventions emerged from the Earth Summit: the Convention on Biological Diversity (CBD), the Convention to Combat Desertification (CCD), and the Framework Convention on Climate Change (FCCC or UNFCCC), which focused on the reduction of greenhouse gas emissions (ibid.). To oversee the implementation of these conventions, a Conference of the Parties (COP) was established for each to act as the governing body (Xiang & Meehan 2005). What became REDD+ was first proposed in 2005 at the 11th COP of the UNFCCC by Costa Rica and Papua New Guinea as a way of mobilizing international carbon finance to reduce deforestation in developing nations; it is premised on a system of payments for ecosystem services for forest carbon (Alvarado et al. 2007). REDD+ began as RED (Reducing Emissions from Deforestation), then evolved to REDD (Reducing Emissions from Deforestation and Forest Degradation), and finally, to REDD+, which includes conservation, the sustainable management of forests, and the increase of carbon reserves or stocks (Velarde et al 2010; Arhin 2014).

REDD+ has received considerable attention from policy makers, practitioners, funders, academics, and local and indigenous people due to claims that it will simultaneously conserve forests, address climate change, and alleviate poverty in developing nations by providing funding for alternative activities to avoid deforestation (Poffenberger & Smith-Hanssen 2009, Pokharel & Baral 2009). However, concern has been raised over how appropriate governance mechanisms and sustainable management practices will be developed and implemented in the national contexts (Pokharel & Baral 2009, Skutsch et al. 2009), particularly due to the possibility that national and organizational short-term interest may undermine positive outcomes on the ground (Levin et al. 2008). Other challenges for implementing REDD+ include: the difficulty of quantifying the carbon emissions of nation-states (Gibbs et al. 2007); the difficulty in determining the "right price" for forgone land use; the challenges in establishing a market for REDD+ credits; the challenges in developing the capacity to verify emissions reductions (Alvarado et al. 2007); the challenge of determining the most effective scale for implementing support for REDD+ projects (Angelsen 2008); the need to include small local stakeholders; the possibility that REDD+-induced changes in land use trends could exacerbate poverty; and the possibility that the focus on carbon could compromise the quality of ecosystem management (Huettner et al. 2008).

The participation of local and indigenous people in REDD+ decision-making processes has been the focus of significant attention since it was first proposed in 2005, due in part to the fact that indigenous people manage approximately 11% of the world's forests (White & Martin 2002). To address this issue, as well as other issues relating to co-benefits from REDD+, the UNFCCC agreed to a set of standards, or "safeguards," known as the Cancun Agreement, during COP16 in Cancun, Mexico in 2010 (Chatre 2012). These safeguards formally specified that

REDD+ activities in the forest sector must promote or support "respect for the knowledge and rights of indigenous peoples and members of local communities," as well as ensure "the full and effective participation of relevant stakeholders, in particular, indigenous peoples and local communities" (UNFCCC/CP 2010: Appendix 1). The term 'safeguards' originated among financial institutions and covers actions intended to prevent or mitigate negative consequences of investment or development activities (McDermott et al 2012; World Bank 2005). They have been in use by multi-lateral financial institutions, such as the World back, since the 1980s, though their appearance in literatures about forest management and its relationship to climate change is fairly recent (Arhin 2014). Safeguards are key components in the development of national REDD+ strategies and activities, as addressing them and monitoring compliance with them is a requirement for accessing funding (ibid.). Among the funding mechanisms that support REDD+ countries in readiness activities are the Forest Carbon Partnership Facility (FCPF), funded by the World Bank, the Forest Investment Programme (FIP), funded by the World Bank and regional development banks, and UN-REDD, supported by the United Nations Development Programme, the UN Environmental Programme, FAO, and bilateral donors (McDermott et al 2012; Arhin 2014). REDD+ country participants are developing countries located in subtropical or tropical regions that have signed participation agreements for these funds (FCPF 2015). In order to access funding, participating countries must meet the requirements laid out by FCPF, including the development of a series of plans and mechanisms for their REDD+ Readiness and Implementation phases. These include strategy documents, monitoring and evaluation mechanisms, and safeguard information systems (ibid).

Description of Sites

REDD+ is a transnational, multi-scalar program that encompasses intergovernmental and nongovernmental organizations, national governments, local and indigenous groups, and spans the worlds of practice and scholarship. Fieldwork for this dissertation was conducted in multiple sites, including Lima and the Department of San Martin, Peru, and New York and Washington, DC, in the United States. This multi-sited approach has enabled me to explore and understand the links between REDD+ governance at local, regional, national, and international scales.

Peru

Peru is located on the west coast of South America, and shares borders with Ecuador to the northwest, Colombia to the north, Brazil and Bolivia to the east, and Chile to the south. It is divided into 25 administrative regions, and encompasses three physiographic regions: the Coast, the Andes Mountains, and Amazonia, each with distinctly different soil, climates, hydrology, and topography (Quieroz et al 2014). Peru has the second largest tropical forest area in Latin America, and ranks fourth worldwide (MINAM 2011); as of 2012, over 52% of its 1,280,000 square kilometers was forested (World Bank 2015). It is also among the ten most biodiverse countries in the world, with numerous endemic species and a remarkably high diversity of habitats (Rodríguez and Young 2000; Queiroz et al 2014). For instance, it is among the top countries in the world for diversity of bird species, with 1,840 recorded species (SERNANP 2014). Though it has relatively low rates of deforestation in comparison to other REDD+ countries, increased economic growth, foreign investment, and unregulated activities, such as illegal mining and cocaine trafficing, have increased pressures on biodiversity (MINAM 2011; Salisbury & Fagan 2013). Its growing population, with over 30 million people as of 2013, and a growth rate of 1.28 per year, is also a significant factor in driving deforestation (World Bank

2015). 47% of greenhouse gas emissions in Peru are the result of deforestation and land us change (Rogner et al 2007; Velarde et al 2010). Among the underlying causes of biodiversity and forest loss in Peru is related to a lack of capacity in environmental governance, namely, its inability to effectively plan, regulate, and monitor the rapidly growing economic activities in the forests (Queiroz et al 2014).

There are 51 recognized indigenous groups in Peru, and indigenous peoples make up 45% of the total population (Minority Rights Group International 2007). The 350,000 indigenous people living in Peru's Amazonia are governed by 65 federations and six regional organizations; these, in turn, are represented by AIDESEP, the Interethnic Association for the Development of the Peruvian Rainforest (Hughes 2010). Indigenous people in Peru have both formalized and disputed claims to at least 40% of the Amazonian forests (White 2014). Indigenous communities are recognized as legal entities by the Peruvian government, and are considered autonomous in their organization, economic activities, and the use of their lands (Queiroz et al 2014). Indigenous communities can apply for land tenure rights through formal communal titles, though no communal titles have been granted since 2008 (Queiroz et al 2014). While Peruvian law establishes the rights of indigenous people to free, prior, and informed consent (FPIC) in accordance with the International Labour Organization (ILO) Convention 169, there are frequent conflicts over whether government approvals of large projects have included appropriate consultation processes (Queiroz et al 2014; Hughes 2010). Further, the ownership of communal land only extends as far as the soil, while rights to renewable and non-renewable resources below the surface of the soil remain with the state (Hughes 2010). The ambiguity resulting from these rights has been used by the Peruvian government to allow foreign

hydrocarbon and mining corporations to explore and develop communal lands; as of 2010, over 70% of the Peruvian Amazon was open to exploration (ibid.).

Peru's national REDD+ program emerged partially in response to a pledge by the newly formed Peruvian Ministry of the Environment (MINAM) to conserve 54 million hectares of forest (MINAM 2010; White 2014). The development of the program commenced in 2008 with the Declaration of Tarapoto, which outlined the REDD roadmap for 2008-2012 (Velarde et al 2010). REDD+ readiness activities have been evolving within the framework of the World Bank's Forest Carbon Partnership Facility (FCPF); Peru's REDD+ Readiness Proposal (R-PP) was approved by FCPF in 2011 (FCPF 2015). This resulted in a promise of $3.6 million in funding contingent on cooperation among the government, AIDESEP, and the national Mesa REDD+ (REDD+ roundtable), a decision-making body focusing on REDD+ priorities and issues, made up of civil and governmental actors (White 2014). Peru also has been partner country in the UN-REDD Programme since 2011; as a partner country, they have access to technical assistance and targeted funding support (UN-REDD Programme 2011). In addition, Peru has more recently become a FIP country, which will provide funding for sustainable forestry and land-use, as well as direct funding to local and indigenous communities through the Dedicated Grant Mechanism to support engagement in REDD+ planning and activities (Forest Investment Program 2014).

Department of San Martin

The San Martin Department political-administrative unit is located in the eastern Andean foothills that link the Andes to Amazonia (Roberts et al 2006). These foothills are made up of a series of smaller mountain ranges, or *cordilleras*, where elevation rarely exceeds 2000m, and the upper elevations consist of moist premontane cloud forest (ibid). The gradients in elevation, soil

type, and rainfall have created diverse habitats for flora and fauna, making San Martin among the most biologically diverse regions of Peru (Merkord et al. 2009). Yet, biodiversity increasingly is threatened by deforestation and hunting for subsistence and sport, despite the latter being prohibited by Peruvian law (Bunckingham & Shanee 2009). Population growth in the region resulting from migration is another significant threat; though much of the habitat in the region was generally inaccessible up to the 1950s, new roads have brought an influx of immigrants from the coast and high mountain sierras (ibid.). Among the most critically endangered species in the country is the yellow-tailed woolly monkey, which is endemic to the area, and is the largest of Peru's primates (Leo Luna 1987; Buckingham & Shanee 2009). This species only can be found in a confined area of primary montane and cloud forest in San Martin and the neighboring region of Amazonas (Butchart et al 1995; Buckingham & Shanee 2009).

The primary drivers of deforestation in Northern Amazonia, which includes San Martin and neighboring Loreto, are the building of roads, logging (legal and illegal), swidden agriculture, large-scale crops such as palm oil, charcoal production, and coca leaf production, particularly in the Huallaga Valley (Velarde et al 2010). Agriculture and timber extraction, in particular, have driven the deforestation rates in San Martin to among the highest in the country (INEI 2008; Buckingham & Shanee 2009; DeLuycker 2007; Buckingham & Shanee 2009). Coca production historically has been a significant illegal industry in the region; in 1979, San Martin was officially reported as having 1137 hectares under legal coca leaf production, but illegal production could have been as high as 100,000 hectares (Dourojeanni 1992). In recent years, cocoa production has become popular as an alternative crop to illegally growing coca, especially in Juanjui, a province in San Martin which is the main cocoa producer in Peru (Higuchi et al 2010). Cocoa coming from San Martin is prized throughout Peru for its quality.

San Martin has the 5th largest indigenous population of all of the departments of Peru, representing 4% of the region's population (INEI 1997). Awajun (Aguaruna), Kechwa (Lamas Quechua), and Shawi (Chayahuita), are the three indigenous groups in the region, governed by seven federations. In addition, a regional office for development, la Oficina Regional de Desarrollo de Pueblos Indígenas de San Martín (ORDEPISAM), includes representatives of each of the groups, and operates within the regional government. The provinces of Lamas, San Martin, and El Dorado have the largest number of indigenous peoples in the region. As of 1993, 93% of the indigenous population was Kechwa (Lamas Quechua) (INEI 1997). As of 2012, San Martin had 29 indigenous Kechwa and Awajun communities with formal land tenure rights to communal lands through titles, 34 who were registered but whose titles were still pending, and 13 communities without either registration or title (Queiroz et al 2014). Engaging indigenous communities in REDD+ activities has been a major priority for NGOs, government officials, and other stakeholders in the region because officially recognized communal lands frequently abut protected areas and encompass large tracts of forest (see Figure 1).

Lack of infrastructure and limited educational opportunities are among the greatest challenges in rural Peru, and indigenous communities are no exception. According to 2012 census data from the Instituto Nacional de Estadística e Informática (INE 2012), though electricity has increased in San Martin by almost 25% from 2007 to 2012, 45.1% of homes in rural areas still do not have access. 81.5% of rural households rely on radio for news, 43.7 % have access to a television, 4.3% a telephone, and only 2.1% a computer. In addition, almost 65% of the general population in rural areas have educational experience limited to the primary level, and only 3.5% have gone on to higher education (ibid.). Among indigenous groups, Kechwa have the highest rates of formal education of all the groups in San Martin.

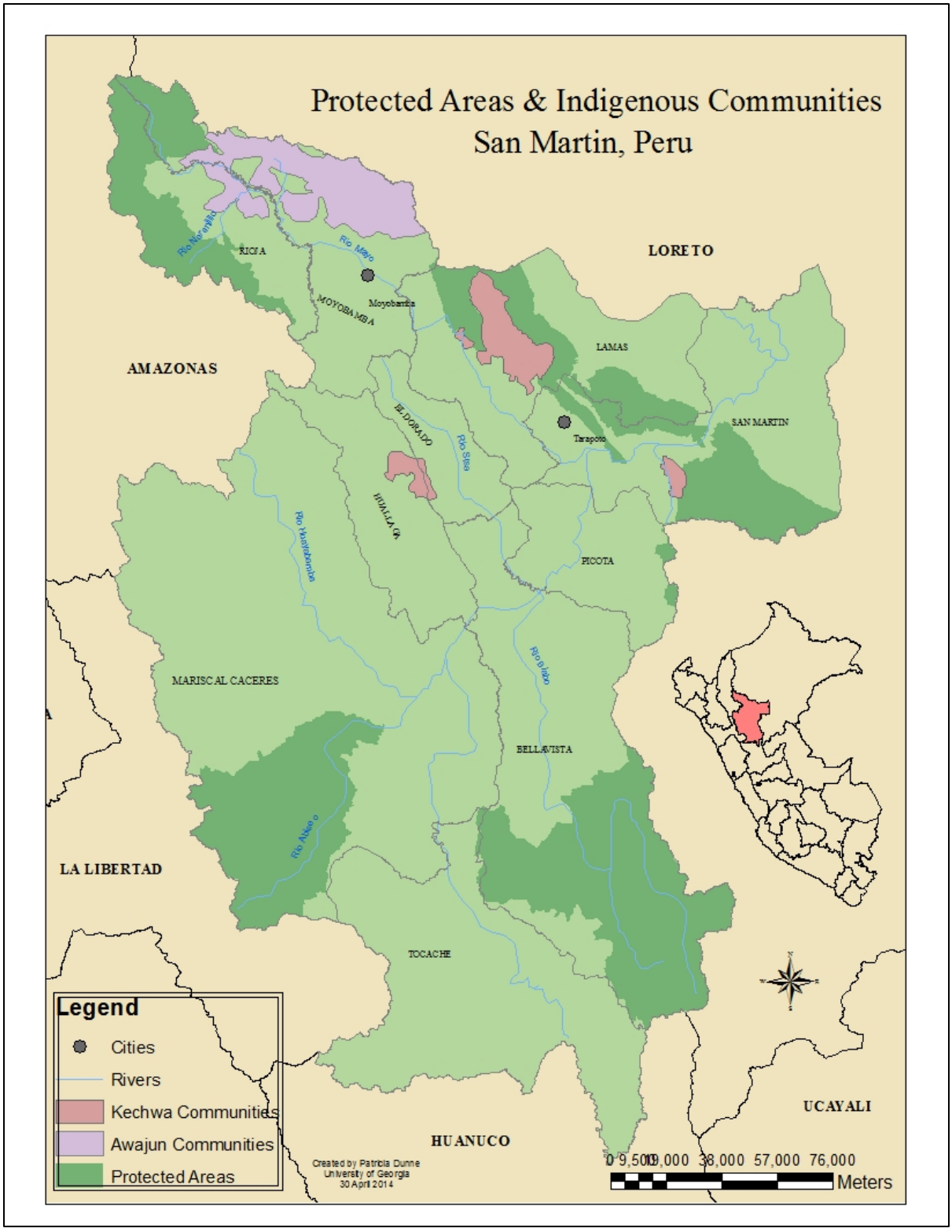

Figure 1.1. Protected Areas & Formally Recognized Indigenous Communal Lands in the Department of San Martin. Inset map illustrates the location of San Martin Department within Peru.

Awajun are the next highest, and Shawi had the lowest rates of formal education. Shawi had the lowest rates of formal education among not only the indigenous groups in San Martin, but among all indigenous groups in the country (see Table 1) (INEI 2007).

Methods

This study is based on multi-sited fieldwork carried out from April 2012 – June 2013 in Lima, Peru, San Martin, Peru, and the United States. Analysis is based on data collected during participant observation of REDD+ planning meetings and training workshops, as well as from 55 semi-structured interviews held with key actors engaging with REDD+. These actors included policy-makers working at the regional and national scales in Peru, conservation practitioners working in regional, national, and transnational conservation NGOs, faculty working in regional universities in San Martin, representatives of agricultural cooperatives, indigenous leaders, and indigenous participants in regional training workshops on REDD+.

Participant Observation

Participant observation in REDD+ training workshops and meetings was a critical part of this research. From September 2012 to May 2013, I participated in seven 2-3 day workshops, called the Training of Trainers, run by Conservation International, a transnational NGO, in San Martin. These workshops were designed to build the capacity of indigenous people to engage in REDD+ decision making in the region by increasing their knowledge and comfort with the western scientific concepts upon which REDD+ is based. During the workshops, representatives from each of the indigenous federations attended lectures on basic environmental science and the development of REDD+, participated in hands-on workshops that taught skills that ranged from measuring forest carbon stores to sustainable agricultural techniques, and practiced explaining the concepts behind REDD+ to their fellow participants. The goal of these workshops was to

develop a team of indigenous practitioners who could represent their federations at the regional Mesa REDD+, and who could in turn teach their communities about REDD+. These workshops provided an invaluable opportunity for me to observe moments when participants and practitioners had difficulty with certain concepts, and to better understand the context in which these actors were engaging with each other through REDD+. I also observed several similar training sessions with local policy makers in San Martin, and observed larger educational workshops that included indigenous participants and conservation practitioners from all over Peru.

Interviews

Semi-structured interviews were another key component of data collection. I conducted 55 interviews with 2 sets of actors: the first, set included representatives of 37 institutions engaging in REDD+ in the region. The second set included practitioners and indigenous participants of regional training workshops on REDD+. The institutions in the first set of actors included government entities working at the regional and national scales in Peru, conservation NGOs, regional universities in San Martin, agricultural cooperatives, and indigenous federations. These institutions were chosen based on snowball sampling beginning with three initial key institutions: Conservation International Peru (CI Peru), an international NGO that is very active in the region, Autoridad Regional Ambiental de San Martin (ARA), the regional environmental agency, and la Oficina Regional de Desarrollo de Pueblos Indígenas de San Martín (ORDEPISAM), the office for the development of indigenous people within the regional government. These focal actors were asked to free list all of the organizations with which they had interacted in the context of REDD+ in San Martin in the previous 3 months. I then conducted interviews with representatives of all of the organizations that these focal actors listed, as well as

organizations that were listed by two or more interviewees in the full sample. Interviewees were individuals that acted as the institutional representatives at Mesa REDD+ meetings, and who were the liaisons with other organizations in the context of REDD+. In some cases, this included several individuals within the same organization.

The second set of actors interviewed was made up of the individual participants and practitioners in REDD+ training workshops conducted by CI Peru with indigenous people in San Martin (sample size = 100%). Participants in these workshops were indigenous men selected by the leaders of the indigenous federations; their ages ranged from their early 20s to late 40s, and their livelihoods included farming, teaching, and practicing law.

During interviews with both sets of actors, respondents were asked about their views on conservation and REDD+, their educational and linguistic backgrounds, as well as the frequency and manner in which they give and receive information about the key terms *climate change*, *REDD+*, and *ecosystem services*. These terms were selected based on initial interviews and participant observation of capacity building workshops. Each of these terms has different attributes that affect the way in which actors engage with them. Climate change, for example, has been widely discussed within the news media and has been a source of academic inquiry for several decades. Initial observations indicated that it was the most likely term for actors with which they had some familiarity. Ecosystem services is a more technical term that exemplifies the current trend toward market-based approaches to conservation. REDD+, an acronym in wide use within San Martin and Peru, more generally, is the most recent and specific of the three terms, and serves as a mobilizing force for conservation in San Martin.

During interviews, interviewees were asked the following questions:

1. How do you define the key terms *climate change*, *REDD+*, and *ecosystem services*?
2. Where did you first learn about these concepts?

3. Which of these concepts are the easiest to understand and explain to others? Why?
4. Which of these concepts are the most difficult to understand and explain to others? Why?
5. Where do you get information about each of these concepts?
6. To whom do you give information about each of these concepts?

All interviews were digitally tape recorded, transcribed, and coded using MAXQDA 10, a qualitative analytic software package. Analysis of interviews, as well as organizational and policy documents, focused on the frequency and context in which the key terms were used by different sets of actors, and the ways in which their usage and intension (Putnam 1975) shifted in different contexts. These results were combined with observations from meetings and workshops to consider how different actors perceive and engage with the key terms.

Social Network Analysis

Social network analysis (SNA) is a useful method for mapping and measuring the flow of information and resources among actors (Ward et al 2003). I used SNA to explore how terms and concepts in REDD+ moved through networks of organizational and individual actors. Social network data was collected using questionnaires during interviews; I collected data for two different networks, the first of the regional Mesa REDD+, and the second of the group of practitioners and participants in the Training of Trainers workshops.

The Mesa REDD+ network included the institutions that participate in the roundtable, such as NGOs, government agencies, agricultural cooperatives, and indigenous federations. This data was collected from those individuals within these institutions that act as their representatives at Mesa REDD+ meetings, and who are the liaisons with other organizations in the context of REDD+. In some cases, this included several individuals within the same organization. In order to identify the institutions to include in the analysis, I first had the three focal actors, CI, ARA, and ORDEPISAM, complete the questionnaire. These actors were asked to free list all of the

organizations with which they had interacted in the context of REDD+ in San Martin in the previous 3 months. Free listing, rather than providing a roster of actors, was chosen to avoid artificially bounding the network (Kossinets 2008). The key actors were then asked to indicate whether they had given information to the actor, received information from that actor, or whether there was an exchange of information in both directions. Each actor listed by the key actors was then interviewed and asked to complete the same questionnaire. This continued until all actors listed more than once by other actors had completed the questionnaire. Due to logistical constraints, it was not possible to conduct interviews and collect social network data from every actor listed in the surveys. In these cases, the ties were constructed by proxy, using the responses of other actors who named them as a contact (Kossinets 2008; Stork & Richards 1992). To minimize the effects of such cases on the analysis, all actors interviewed were asked to specify the directionality of their interactions, that is, whether they had received info, given info, or both from each of their reported connections.

The second network was made up of individual participants and practitioners in the Training of Trainers workshops conducted by Conservation International. During interviews, practitioners running the workshops and workshop participants were given a social network questionnaire to measure the frequency of their interactions with other individuals in the context of REDD+. The questionnaire included a roster of practitioners and participants, and respondents were asked to indicate who they spoke to about REDD+ and climate change outside of the workshops. This network was a whole network and included 14 actors. Social network data was combined with interview and observational data to explore the attributes that enabled actors to be effective boundary agents, and in turn, to better understand the barriers to more active participation.

Organization of Dissertation

In the next chapter of this dissertation, I review engagements with translation found in political ecology, then consider how translation as both a political and a linguistic process has been addressed in the post-colonial, politics of knowledge and scale literatures. This chapter provides the theoretical framework for the dissertation.

Chapter three, *Social Networks of Climate Governance: A REDD+ Case Study from San Martin, Peru***,** presents a case study of Mesa REDD+ San Martin, the regional policy roundtable in Peru's Amazonia. In this chapter, I explore how international programs that address climate change, such as REDD+, have decentralized governance structures and led to greater dependence on transnational networks of actors to balance local knowledge and practice with global priorities. Transnational conservation NGOs are often central actors in these networks, serving a critical role as vehicles for information and resources across scales and fields of practice. In this chapter, I combine ethnographic data with social network analysis to explore how information about REDD+ moves among actors in the network, to identify key actors for disseminating information and maintaining the network, and to consider the role of boundary spanning organizations, such as transnational conservation NGOs, as vehicles for disseminating information to national and global governance networks.

In chapter four, *Knowledge, Language, & Participation: Working in the Boundaries of Climate Change,* I present a case study of the Training of Trainers workshops that explores the barriers to indigenous participation in San Martin. I use the concepts of boundary agent and boundary spanning to determine the attributes that enable an individual to participate in decision making, and to highlight the obstacles to more inclusive participation. Methods include participant observation in meetings and training workshops, analysis of interviews and

organizational documents, and social network analysis. Results indicate that educational experience, language skills, and western scientific knowledge are important for boundary work. I conclude that while these attributes are important for enabling boundary spanning, more work is needed to ensure that the burden of acquiring new knowledge and language skills is not placed disproportionately on indigenous and local people.

Chapter five, *REDD+ in Translation: Knowledges, Terminology, and the Politics of Translation,* I explore what the circulation and (mis)application of REDD+ terminology can tell us about the dynamic relationship between western scientific and traditional knowledges. To address this, I examine the ways in which different types of actors, including conservation practitioners, indigenous people, and policy makers, encounter and engage with the key terms *climate change*, *REDD+* and *ecosystem services* in San Martin, Peru. This case study is based on data collected using participant observation at training workshops and meetings, interview data, content analysis and social network data collected in San Martin and Lima, Peru, and the United States, from April 2012 – May 2013. I first trace the emergence and evolution of these key terms in the academic literature to provide broad context for their use. I then analyze the ways in which different actors encounter and understand these terms. I conclude that while these terms can be difficult to understand due to their technical, western scientific nature, integrating traditional knowledge into conceptions whenever possible can facilitate greater engagement of local actors. Finally, in chapter six, I conclude with an overview of the major findings, and a discussion of future avenues of research.

CHAPTER 2

FRAMING A POLITICS OF TRANSLATION IN CONSERVATION

A LITERATURE REVIEW[1]

[1] To be submitted to Annual Review of Anthropology

Abstract

Addressing global issues, such as climate change, requires the participation of diverse actors whose work spans scales from the local to the global, as well as a multitude of political, cultural, and historical contexts. For actors engaging in Reducing Emissions from Deforestation and Forest Degradation (REDD+), translation is key: participation requires the adoption and use of technical, western scientific terms, as well as an ability to navigate governance structures that originate in the Global North. This chapter considers the implications of a politics of translation for conservation by reviewing engagements with translation found in political ecology, and considers how translation as both a political and a linguistic process has been addressed in the post-colonial literatures, and the politics of knowledge and scale literatures.

Introduction

Translation is the key to participation in decision making for conservation. The use of a single, standard language is necessary for the efficient administration of states (Scott 1998) and serves as a critical tool for communication across continents (Kachru [1990]2006). Yet, for actors whose work frequently spans scales from the local to the global, in addition to a multitude of cultural and historical contexts, participation hinges on more than translation from one language to another; it also involves the development and understanding of a common set of categories that bridge differing worldviews (Nadasdy 1999). Though the use of such categories enables the formation of alliances among actors with different identities, they also carry with them particular forms of knowledge, agendas and power structures from one political context to another (Brosius et al. 1998; MacDonald 2005). For example, Reducing Emissions from Deforestation and Forest Degradation (REDD+), a global program that aims to address climate

change through payments for ecosystem services from forest carbon to developing countries in the Global South, requires the adoption and use of technical, western scientific concepts, and engagement with governance structures that are common to the Global North (Thompson et al 2011). The categories that are used within REDD+ have implications for the relationships among conservation practitioners, policy makers, and local and indigenous people in the global South, influencing who gets to participate in decision making, and on what terms (Brosius 2010).

The emergence of climate change as a central concern in the global policy arena has resulted in an increasing shift from locally and nationally-oriented conservation strategies to those oriented toward the global scale (Biermann 2010). As a global issue, climate change transcends political borders, making top-down, centralized management impossible (Bodin & Crona 2009). Addressing it requires aligning the interests and actions of a broad set of actors, including governments of nation states, multilateral agencies, NGOs, corporations, and local and indigenous peoples. The development of REDD+ is indicative of this trend in which governance is not centered on nation states, but happens across borders, and is enacted by many types of actors in many locations simultaneously (Gallemore & Munroe 2013). Yet, despite REDD+'s efforts to align the interests of many types of actors working at different scales with broader conservation goals, those actors that are most successful at navigating REDD+ are those most comfortable engaging with governance structures common in the Global North, such as transnational NGOs (Thompson et al. 2011).

Over the last few decades, Northern countries have come to play an increasingly disproportionate role in providing the funding for social and environmental initiatives throughout the globe due to a dearth of domestic funding (Sundberg 2006) and the economic interests of Northern actors (Cabello & Gilbertson 2012). As a result, Northern actors, including NGOs,

multilateral organizations, such as the United Nations and World Bank, and bilateral aid agencies, have had increasing authority over conservation priorities in other countries (Sundberg 2012). Local people living in these areas are therefore subjected to the discourse of conservation produced by the global North. Though an increasing number of practitioners and academics have pointed to the problem of translation in conservation and development, mainly regarding the difficulties of translating terms among different scales and sets of actors in transnational conservation partnerships (West 2005; Zerner 2003; Nadasdy1999), the implications of a politics of translation for transnational conservation and development have not been adequately explored within political ecology. With the emergence and proliferation of concerns about global climate change and the development of mechanisms like REDD+, understanding the politics of translation has become more critical than ever before.

The engagement with translation presented in this dissertation takes its cue from Bourdieu & Thompson (1991) and Duranti (1985; in press) who note that linguistic choices, such as the use of particular vocabulary, are anything but neutral and must be understood within the context of conditions of domination and power asymmetries. It also draws on Gal's (2015:226) description of translation as a host of semiotic processes that seek "to change the form, social place, or meaning of a text, object, person or practice while simultaneously seeming to keep something about it the same." The central question is: how does the politics of translation shape participation in decision making over conservation and development priorities? Specifically, which actors transport, interpret, reframe, and apply terms and their concepts? How do they do this translation? What can the ways in which this plays out tell us about power? To address these questions, this chapter reviews engagements with translation found in political ecology, then

considers how translation as both a political and a linguistic process has been addressed in the post-colonial, politics of knowledge and scale literatures.

Conservation and the Politics of Knowledge

Critiques of transnational NGOs working in the global South often have focused on their role in disseminating and perpetuating western cultural biases of nature conservation (West 2005; Novellino 2003; Zimmerer 2006) which may undermine local involvement in co-management of natural resources (Hunn et al. 2003, Nadasdy 1999). To address such critiques, many academics and practitioners have sought to integrate traditional ecological knowledge (TEK) with scientific knowledge in order to better facilitate local representation and engagement. Yet, Nadasdy (1999) argues that such efforts may actually reinforce, rather than breakdown, such biases. Though it is often assumed that terms used within conservation refer to agreed-upon realities, they often have no counterparts in the language or cultural practices of native groups (Nadasdy 1999; Morrow and Hensel 1992). As a result, they can become sources of contestation at a fundamental level and can lead to misunderstandings between parties. Through these contestations, they may also, as Nadasdy notes, strengthen the positions of dominant groups. In addition, the proliferation of English terminology biases the discourse toward a Northern perspective while simultaneously legitimating the authority of academics and practitioners working in conservation. Yet, as Hunn et al. (2003) note, the inability of conservation terminology to perfectly bridge scientific and traditional worldviews is not a sufficient cause to abandon it; a standard lexicon among academics, practitioners, funders and local people is critical to doing conservation work. Rather, a more nuanced understanding of and attention to the political context in which the translation and integration of different forms of knowledge occur is necessary to make conservation interventions more inclusive of differing,

and sometimes competing, interests. Yet, addressing how and why a perspective that takes into account the political context of translation is both relevant to and critical for supporting active participation in decision making for conservation requires first exploring what it means to translate, what it is that is being translated, and who or what is doing the translation.

Translating Cultures, Writing Worlds

Language provides the basis by which people understand, know and control the world around them (Ashcroft et al. 2006). As a result, it has been implicated in the colonial endeavor as a critical point of struggle within many nation states of Africa, Latin America and Asia due to the significant role of colonialism in reworking governance structures, resource management and land tenure systems (Sundberg 2006). The colonial process begins with language; specifically, with the displacement of native languages, the creation of new standards, and the relocation of the language of empire (Ashcroft, et al. 2006). As Antonio de Nebrija wrote in 1492, "language is the perfect instrument of empire… language was always the companion of empire; therefore, it follows that together they begin, grow and flourish and together they fall" (as cited in Rafael 2009). Similarly, U.S. President John Adams wrote,

> "English is destined to be in the next and succeeding centuries more generally the language of the world than Latin was in the last or French is in the present age. The reason of this is obvious, because the increasing population in America, and their universal connection and correspondence with all nations will… force their language into general use, in spite of obstacles that may be thrown in their way, if any such there should be."
>
> -John Adams 1780 (in Crawford1992:32)

This prescient statement emerged during a historical moment in which a still-forming, polyglot United States was eager to break free of its colonial ties with Great Britain and unite a culturally and linguistically diverse population through the establishment of a lingua franca of its own. Once established, Adams envisioned American English facilitating greater social

interaction and diffusion of knowledge among its people (Rafael 2009).Yet, language becomes a hegemonic device by enabling the legitimation of the cultural authority of a dominant group over a subordinate group. This is evident in the proliferation of English, Spanish, French and Portuguese as the official languages of many nations of the Global South (Woolard 1985). They serve to legitimate the cultural authority of the dominant group because they are the languages in which law and government are administered. In order to participate in decision making, less powerful groups must learn to speak these languages.

Social scientists, especially those working within post-colonial studies, have paid particular attention to how the languages of empire have altered or replaced native systems of understanding the world. Some scholars, such as Ngũgĩ wa Thiong'o (1981), have argued against using the languages of colonizers, instead arguing for a return to native languages as an act of anti-imperialist struggle. Yet, Achebe ([1989] 2006) notes that to see the continued dominance of an alien language such as English in many nations of the Global South as being a detrimental artifact of imperialism misses the critical role it serves in unifying disparate social, cultural and political groups. Likewise, Kachru ([1990] 2006) considers the English language both a tool of power and domination, as well as a critical tool for communication across continents. Both of these perspectives are reflected in the 21st century emphasis on bilingual, intercultural education.

Translating Knowledges

A central concern in the politics of knowledge is the relationship between power and the production and circulation of discourse, and can be seen in the works of Callon (1986), Foucault (1980), Said (1984) and other scholars. Callon saw "translation as a mechanism by which the social and natural worlds progressively take form, resulting in situations in which certain entities control others" (1986:19). Foucault (1980) identified the question of power as internal to the

development of scientific knowledge and how that knowledge is influenced by social movements which may be external to science. In order to disrupt the notion of fixed identities when studying objects such as the body, government or sexuality, Foucault used the concept of *genealogy* to approach them as the effects of shifting configurations of discourse and practice, emphasizing the historical, cultural and political conditions through which they are rendered legible (Foucault 1984). Said (1994) argued the essentializing discourses of colonialism laid the groundwork for the reordering and restructuring necessary for the domination of the East by the West. Key to the creation of such discourses was the establishment of the authority of Western knowledge.

Translation was central to the colonial project. In the premodern European state, power was made visible through theatrical displays and was managed by specialists, such as processions, royal entrances, and funerals. From the eighteenth century onward, European states increasingly made their power visible not only through ritual performance and dramatic display, but through the gradual "officializing" procedures that established and extended their capacity (Cohn 1996). Colonialism was made possible, sustained, and strengthened as much by cultural technologies of rule, such as standardized languages and censuses, as by the more obvious and brutal modes of conquest (Dirk 1996). Conquest was not only about entering and invading a territory, but an epistemological space as well, where the 'facts' of the space did not necessarily correspond to those of the invaders. This necessitated a project of *translation,* which established correspondence between the colonizers and the colonized that made the unknown and strange knowable for colonial authorities (Cohn 1996; Appadurai 1988). For example, in her studies of British colonial texts from the nineteenth century, Spivak ([1999] 2006) discusses specific directives to produce a class of interpreters between British administrators and colonial subjects. These interpreters would be well-versed in the Western scientific nomenclature and would, in

turn, convey knowledge to the governed masses. Just as translation was intended to span boundaries, it also created and reinforced them. As Gal (2015) notes, the direction and purpose of translation inherently stems from power asymmetries, and has implications for the creation of boundaries. This was the case in colonial projects in which colonial authorities repurposed subaltern practices and knowledges into European understandings of the world (Cohn 1996; Gal 2015).

The relationship between knowledge and power that was evident in the colonial project is similarly present in the relationship between the global North and South. During the period following WWII, a project of social engineering in the form of industrialization, modernization and development spread from the North to the South and was justified partly on the basis of the superiority of Western knowledge and institutions (Banuri 1990; Escobar 1988). The growing awareness of environmental issues in the global arena over the last few decades has resulted in policy-making in the developing world becoming increasingly intertwined with global actors, producing a new kind of global politics in which transnational NGOs are at the forefront of a fundamental shift in the focus, distribution, and exercise of power (Brosius 1999; Duffy 2006). Through their interventions in local places, multilateral organizations, NGOs, and other conservation actors may create new technologies of government, or *environmentality* (Agrawal 2005), which redefine political relations, reconfigure institutional arrangements and transform environmental subjectivities. During this process, certain forms of knowledge are deemed legitimate or illegitimate, certain realities are reduced to classifiable, commensurable data and governance structures are altered at the national and local levels (Goldman 2001), paving the way for global environmental discourse (Velásquez Runk 2009; West 2005; Novellino 2003). As in the case of colonialism, the proliferation of a discourse of conservation and development is

enabled by the creation of a set of techniques and disciplinary practices through which the generation, diffusion and validation of knowledge is organized, managed and controlled (Escobar 1988).

This relationship between knowledge and translation has become increasingly complex and intertwined as a result of globalization in the 20th and 21st centuries. This is particularly evident in the privileging of experts and expert opinion due to concerns about resource use and production, creating a demand for knowledge that can be applied, particularly in the global market (Darby 2003). This global knowledge economy is dominated by Northern countries due to their control of bibliographic and funding resources (Kitchin 2005, De la Cadena 2005). This is both a cause and result of the status of English as a globally dominant language (Sonntag 2003) and as the lingua franca of academia (Kitchin and Fuller 2003, Kitchin 2005), where approximately 94% of all indexed, scientific knowledge originates in Western, developed countries (Büscher and Mutimukuru 2007; Karlsson 2002). The geographical imbalance in knowledge production has become a growing concern in the natural sciences in recent years, with widely-read journals such as *Oryx* and the *Journal of Applied Ecology* calling for greater representation of work from scientists in developing countries (McGowan 2010; Memmott et al. 2010; Milner-Gulland et al. 2010).

Translating Across Scales, Building Networks

Language is not the only site of translation. Callon (1986) and Latour (1987, 2005) proposed a sociology of translation as a framework for studying the role that science and technology can play in structuring power relationships. Callon (1986), in particular, saw translation as a process, never as a completed accomplishment, which is prone to both success and failure. It involves the establishment of alliances among different groups, where each group

is assigned an identity, a set of interests, and a role to play (Callon 1986; Horowitz 2011). Callon (1986:6) laid out four moments of translation: *problematisation, interessement, enrolment* and *mobilization*, in which "the identity of the actors, the possibility of interaction and margins of maneuver are negotiated and delimited." Star & Griesemer (1989) broadened this conceptualization in order to understand how actors organized around shared objectives could succeed in cooperating over long periods of time. Their work focused on the flow of objects and concepts through a network of participating allies in order to view the problem from many perspectives rather than privileging one (Wenger 2000, Trompette & Vinck 2009). Negotiations around conservation and development priorities depend on scientific approaches and technological practices that construct *boundary objects* (Star & Griesemer 1989) which facilitate communication and collaboration among sets of actors working in both academia and practice, as well as across the local, national and global scales.

Scholars in science and technology studies have applied the concept of boundary object to examine issues related to natural resource management and policy making. For example, boundary objects have been frequently applied to understand how strong particular concepts, such as ecological indicators, are for assessing different conservation sites (Turnhout 2009), and to examine how different sets of actors come together around particular events (Lynch & Brunner 2007, Lynch et al 2008). The notion of *boundary spanning* has been a major topic in organizational management and the administrative sciences (i.e. Rosenkopf & Nerkar 2001; Bartel 2001), and its application in the political ecology and conservation literatures has focused on the boundary between science and policy. Kamelarczyk & Gamborg (2014)'s work addresses the challenges of bridging forestry science and policy in REDD+ in Zambia, such as the minor role that research-based evidence plays in policy making. Reid et al.'s (2010) work highlights

principles and activities for effective boundary spanning teams to help bridge the gap between science and policy to address poverty and biodiversity loss in pastoral East Africa. Yet, the role of power in definitions of and negotiations around boundary objects and boundary spanning has received less attention, as have the challenges faced by individual actors engaging in a program as complex and multi-scalar as REDD+. Thus, the multi-scalar nature of conservation and development necessitates that an exploration of the politics of translation also takes into account the politics of scale.

The notion of scale as a preordained hierarchical framework for ordering the world has been widely rejected in the literature on the social construction of scale (Marston 2000). Rather, it has been developed as a theoretical concept by Cox (1998), Brenner (2000), Jonas (1994) and Smith (1992; 1993, 1996; 2004), who instead treat it as a contingent outcome of the tensions that exist between structural forces and social practices (Marston 2000). Their work has highlighted three critical aspects of scale: scale is not self-evident, but is a way of framing our conceptions of reality (Smith 1992; Marston 2000); the outcomes of the way scale is framed are often contradictory and contested and subject to change (Swyngedouw 1997;Marston 2000); and scale is inherently a relational concept (Brenner 2001). Though the politics of scale works to dismantle the rigid hierarchy implicit in the historical concept of scale, much of the literature on the discourse of conservation and development focuses on its transportation from the global scale to the national and regional scales, and its final manifestation in material form through specific interventions in local spaces (MacDonald 2005). This global-local dualism, which often sees the local as the 'victim' of the global, is prevalent in many anthropological critiques of conservation and development (Hoefle 2006). Yet, some scholars have noted that it ignores the role that the

local plays in producing the global (Massay 2004), giving the global more causal force while relegating the local to realm of case study (Marston et al. 2005).

Among the most challenging questions in addressing climate change is determining the most effective scale of intervention for achieving conservation goals. Some have considered orchestrated global interventions to be paramount due to the global nature of the ramifications of climate change, while others have called for decentralized approaches that focus on subnational and local scales to better take into account local contexts in order to ensure the long-term sustainability of conservation outcomes (Gupta 2007). As Biermann (2010) notes, global carbon governance necessitates multilevel policy making processes; global policies must be implemented locally, and in turn, lessons learned at the local level should inform global policies. This framing of global carbon governance is indicative of Swyngedouw's (2010) argument that the mainstreaming of climate change as a major concern for human well-being has resulted in its reinforcement of the post-political. This refers to a politics in which the recognition that struggles emerge from ideological contestation and political self-interest is replaced by an administrative approach in which consensually established concerns about threats to human well-being are a question of expert knowledge rather than politics (ibid.).

Conservation, Development and Translation

The practice of conservation has undergone a series of paradigm shifts over the last century, moving from classic, state-run protected areas to populist, participation-based, to a neo-liberal focus on engaging markets and the private sector (Brown 2002). Over the last several decades, these approaches increasingly have integrated development initiatives in order to address the idea that the poor degrade the environment through their poverty (Agrawal and Redford 2006) and that the poor are particularly vulnerable to environmental degradation due to

a higher dependence on natural resources than the wealthy (see Escobal and Aldana 2003, Holmes 2003, Newmark et al. 1992, Gillingham and Lee 1999). The last quarter century has seen a dramatic increase in the size and reach of transnational NGOs who fund, design, and implement conservation initiatives throughout the globe (Chapin 2004; Townsend 2002). These organizations have become dominant vehicles in the production and circulation of the discourse of conservation and development due to their access to funding which can be used by national and local governments to carry out development goals (Townsend 2002; MacDonald 2005).

Political ecology has examined the use of buzzwords to succinctly communicate goals and outcomes (Büscher & Mutimukuru 2007), as well as the failure of terminology to bridge the differing worldviews of local people and extra-local practitioners (Nadasdy 1999), but less work has been done at broader scales of analyses. Likewise, political ecology is particularly strong in local level research that explores the meaning and significance of micropolitical struggles over environmental issues which have national and global linkages, but Purcell & Brown (2005) caution that it often falls into the 'local trap' by failing to adequately take into account the politics of scale. This is particularly problematic because though conservation at the local level has always been influenced by regional, national, and international interests, the current emphasis on developing initiatives to mitigate the effects of climate change has led to local decision-making becoming increasingly focused on global priorities. At the same time, as Benn & Martin (2010) note, the urgent need to understand the complexities of climate change is driving research to become highly specialized in the natural sciences, making it increasingly difficult to incorporate that knowledge into different social, environmental, and economic contexts. Spanning the boundaries of knowledges, languages, and geographies has, therefore, never been more critical, nor more complex than it is now.

Conclusion

Translation is key to active participation in REDD+ decision making processes, yet the ways in which the politics of translation influences which actors participate and what terms and knowledges are transported and applied is not widely recognized despite its implications for conservation practice. In his analysis of efforts to integrate traditional ecological knowledge with scientific knowledge in North American Arctic conservation, Nadasdy (1999) noted that the compartmentalization of bureaucratic state knowledge of the landscape undermined the ability of conservation practitioners to work effectively with local, indigenous populations, whose views of the relationship between humans and the environment are more holistic in nature. Nadasdy's example is illustrative of the practical implications of a politics of translation for conservation and development, albeit at the local level. The emergence of carbon governance as a key concern in the global policy arena has made translating differing views and interests even more complex because of the increasing engagement of actors, such as multinational corporations, who were previously less active in decision making (Biermann 2010). A greater attention to the politics of translation is critical for conservation practitioners, policy makers, funders and indigenous people to engage with and actively participate in decision making to better integrate global conservation priorities with local needs.

CHAPTER 3

SOCIAL NETWORKS OF CLIMATE GOVERNANCE:

A REDD+ CASE STUDY FROM SAN MARTIN, PERU[2]

[2] To be submitted to Society & Natural Resources

Abstract

International programs that address climate change, such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), have decentralized governance structures and led to greater dependence on transnational networks of actors to balance local knowledge and practice with global priorities. Transnational conservation NGOs are often central actors in these networks, serving a critical role as vehicles for information and resources across scales and fields of practice. This article presents a case study of Mesa REDD+ San Martin, a regional policy roundtable in Peru's Amazonia. In this case study, I combine ethnographic data from participant observation and interviews with social network analysis to explore how information about REDD+ moves among actors in the network in order to identify key actors for disseminating information and maintaining the network. I found that despite efforts to increase the engagement of local and regional scale actors in governance networks, international actors, such as transnational conservation NGOs, continue to play a dominant role in disseminating information.

Introduction

Global environmental challenges require global policy interventions, and climate change is no exception. Yet, they also require careful attention to the complex and highly variable national and local contexts in which global policies are implemented. The challenge of reducing carbon emissions and mitigating the effects of climate change has resulted in the emergence of new actors and mechanisms in the global political arena (Bierman 2010). International programs that aim to address climate change, such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), have decentralized governance structures and led to a greater

dependency on transnational networks of state and non-state actors, including transnational conservation NGOs, intergovernmental agencies, foundations, and indigenous organizations (Biermann 2010; Backstrand 2008; Betsill & Bulkeley 2004). Transnational NGOs have been widely critiqued in political ecology for perpetuating Northern biases about nature and conservation (West 2005; Sundberg 2006; Tsing 2009). They also play a critical role as vehicles for the movement and dissemination of information and resources in transnational governance networks. Understanding the significance of this role is critical for addressing one of the key challenges to accountability in networks: representation of stakeholders (Backstrand 2008).

The importance of networks and partnerships in governance has been a central focus in the political science literature since the 1980s (Gupta 2007). This marks a shift from so-called 'old' modes of governance, that is, hierarchical top-down modes of regulation centered around government actors, to 'new' modes, characterized by decentralized, voluntary, market-oriented interaction between public and private actors (Backstrand 2008; Betsill & Bulkeley 2004). The emergence of carbon governance as a key concern in the global policy arena is emblematic of this shift, as private actors, such as NGOs, multinational corporations, and foundations, who had previously been active primarily at the subnational scale, have grown in number and influence in global policy making (Biermann 2010). This increasing role of non-state actors in transnational networks is due in part to the complexities of climate change, as well as the difficulties of intergovernmental negotiations around climate change policy (ibid.). The engagement of private, non-state actors and the emergence of transnational networks are seen as beneficial for increasing the inclusiveness, legitimacy, and effectiveness of decision-making processes by balancing local knowledge and innovation with coordination (Ostrom 1998; Biermann 2010; Gallemore & Munroe 2013). Yet, they also create significant challenges due to issues of power

inequalities, uneven representation, and engagement among diverse sets of stakeholders (Backstrand 2008).

Reducing Emissions from Deforestation and Forest Degradation (REDD+) first emerged at the United Nations Framework Convention on Climate Change's 11th Conference of the Parties (UNFCCC COP11) in 2005 in response to the recognition that forest loss was responsible for approximately 20% of greenhouse gas emissions (Arhin 2014). REDD+ has grown significantly over the last decade to include a broad range of forest-related activities, and is widely seen as the most advanced climate mitigation scheme within the UNFCCC (Gupta et al 2015). Like global environmental governance more generally, REDD+ has evolved to encompass increasingly fragmented arenas for public and private policy making and information exchange (ibid.). REDD+ activities in national and local contexts have surpassed the complex and laborious development of the REDD+ mechanism within the UNFCCC, resulting in a process in which on-going activities are both shaped by and shaping global REDD+ policies (Reinecke et al 2014). In order for REDD+ to successfully address the needs of diverse local contexts, decision-making processes must be nested to connect local, national, and global scales (Chhatre et al 2012).

Developing governance networks that span political boundaries and fields of practice is dependent on establishing an arena for interaction, encouraging the participation of a broad range of stakeholders, funding coordination activities, and disseminating information (Bodin & Crona 2009; Schneider et al 2003). In San Martin, a region in Peru's Highland Amazonia, policy makers, conservation practitioners, and indigenous leaders are working on such a network to address climate change and REDD+ in the region. This network, centered on the regional REDD+ roundtable, Mesa REDD+ San Martin, is made up of diverse actors, including

government agencies, conservation NGOs, indigenous NGOs, and agricultural cooperatives that work at regional, national, and global scales. Developing strong pathways for communication and collaborative activities are among the major goals of Mesa REDD+. In this article, I ask, what roles do different types of organizational actors play in circulating information through transnational REDD+ networks? I do this by combining observational data from training workshops and meetings, with interview data, and social network data collected from April 2012 – May 2013 in San Martin and Lima, Peru, and the United States. I consider the role of boundary spanning organizations, such as transnational conservation NGOs, as vehicles for disseminating information to national and global governance networks. I conclude that although there are efforts to increase the participation of local and regional scale actors in REDD+ decision making fora, international actors continue to play a disproportionate role in information exchange about REDD+.

Site Description

The Peruvian government has engaged with REDD+ since 2008, and Peru is currently one of 47 REDD+ participant countries who have signed a participation agreement for the Forest Carbon Partnership Facility's Readiness Fund (FCPF 2015). Peru's Ministry of the Environment (MINAM), is the leader of the national Mesa REDD+, and serves as the technical secretariat for subnational Mesa REDD+s to ensure that regional activities fit with national standards. Mesa REDD+ San Martin was the first Mesa REDD+ to be formed at the regional level in Peru, in August, 2009, and is currently the most active. It is led by la Autoridad Regional Ambiental (ARA), the environmental agency that is part of the regional government. An advisory council led by ARA and made up of representatives of organizations that are directly engaged with designing and implementing REDD+ projects in the region, serves to make policies and technical

guidelines for REDD+ in the region. In addition, there are two technical committees within Mesa REDD+, one responsible for environmental aspects of REDD+, and the other responsible for addressing the social aspects of REDD+.

NGOs working on REDD+ in Peru have made a concerted effort to increase stakeholder engagement in decision making. Capacity building and outreach activities have specifically targeted indigenous communities, as well as the private sector, agricultural cooperatives, and governing bodies at the local, regional, and national scales. San Martin has the 5th largest indigenous population of all of the departments of Peru, representing 4% of the region's population (INEI 1997). Awajun (Aguaruna), Kechwa (Lamas Quechua), and Shawi (Chayahuita), comprise the three indigenous groups in the region. Their communities are governed by seven federations. In addition, a regional office for development, la Oficina Regional de Desarrollo de Pueblos Indígenas de San Martín (ORDEPISAM), includes representatives of each of the groups, and operates within the regional government. The participation of indigenous people in Mesa REDD+ is a priority for the regional government and NGOs working in the area because their lands encompass or border large tracts of forest. ORDEPISAM is among the most active organizational actors in Mesa REDD+. One indigenous representative described the importance of indigenous engagement in REDD+ decision making processes:

> "Once challenge for local actors is access to information and the other is whether there is information. .. Peru is in the process of making policies and regulations for REDD+, but there is still no clear mechanism, and that creates a lot of uncertainty and fear in local populations…. Many do not consider it an opportunity but a threat that could jeopardize their lands"

Methodology

This study is based on multi-sited fieldwork carried out from April 2012 – June 2013 in Lima and San Martin, Peru, and the United States. Analysis is based on interview, observational, and social network data collected during participant observation of REDD+ planning meetings and training workshops, as well as from 55 semi-structured interviews held with individuals engaging with REDD+. These actors included policy-makers working at the regional and national scales in Peru, conservation practitioners working in regional, national, and transnational conservation NGOs, faculty working in regional universities in San Martin, representatives of agricultural cooperatives, indigenous leaders, and indigenous participants in regional training workshops on REDD+.

Social Network Analysis (SNA), a method that enables the mapping and measurement of flows of information and resources among actors (Ward et al 2003), is one of the main methods used in this analysis. Criteria for inclusion in the network were based on snowball sampling from three key actors (Bernard 2006). They were identified based on initial interviews and several months of participant observation at meetings and workshops; these actors included Conservation International, a transnational conservation NGO active in the region, ARA, the environmental agency, and an indigenous organization active in conservation and development policy-making in the region. Social network data were collected by questionnaire during interviews with the individuals that act as the institutional representatives of the named organizations at Mesa REDD+ meetings, and who are the liaisons with other organizations in the context of REDD+. In some cases, this included several individuals within the same organization.

The three key actors were asked to free list all of the organizations with which they had interacted in the context of REDD+ in San Martin in the previous 3 months. Free listing, rather than providing a roster of actors, was chosen to avoid artificially bounding the network (Kossinets 2008). The key actors were asked to indicate whether they had given information to the other organization, received information from that organization, or whether there was an exchange of information in both directions. A representative from each organization listed by the key actors was then interviewed and asked to complete the same questionnaire. This continued until all organizations listed more than once by other organizations had completed the questionnaire. It was not possible to conduct interviews and collect social network data from every organization listed in the surveys due to the large number, time constraints, and in several cases, difficulty making contact with organizational representatives. In these cases, the ties were constructed by proxy, using the responses of other organizations who named them as a contact (Kossinets 2008; Stork & Richards 1992). To minimize the effects of such cases on the analysis, all actors interviewed were asked to specify the directionality of their interactions, that is, whether they had received info, given info, or both from each of their reported connections.

Results

As a result of interview and social network data, I found that there are a total of 141 organizations engaging in some capacity in REDD+ in San Martin. 37 of these organizations are actively engaging in REDD+ planning, and 104 are providing information or resources. Figure 3.1 illustrates the breakdown of the 141 total organizational types represented; organizations were classified according to how they were identified by their representatives during interviews and in organizational documents and websites. Organizations included government agencies, indigenous federations, indigenous organizations, indigenous communities, intergovernmental

organizations, NGOs, private sector, protected areas, conservation concessions, development agencies, aid agencies, agricultural cooperatives, educational institutions, and REDD+ committees. Of the 141 organizational actors identified in this study, the largest represented category was NGOs (35%), and the second largest was government agencies (20%). Figure 3.2 illustrates the broadest reported scales of engagement for each of the 141 organizations; they were categorized according to the responses of their representatives during interviews, as well as through analysis of organizational materials and websites. 46% of organizational actors reported engaging at the regional scale, with national (24%) and international (23%) scales the next most reported. Some organizations, such as transnational conservation NGOs, may be modeled as networks, themselves, rather than as individual actors (Gallemore & Munroe 2013); in these cases, the organizations are coded at the scale of their primary activities.

I found that the 37 active organizations in the Mesa REDD+ San Martin network (Figure 3.3) include a total of 185 edges; the nodes (circles) represent organizational actors, and the edges (lines) represent a reported connection of information exchange between two organizations. This is a directed network (Knoke & Yang 2008), with arrows indicating the directionality of the reported information. The colors of the nodes indicate the broadest reported scale of engagement, and the numbers indicate actor type.

The density of this network is low, with only 13.9% of all possible connections present. Network density is the degree to which all possible relations in a network are present (Scott 1991) and is a helpful measure for determining the possibility for collective action (Bodin & Crona 2009) because the more connections that are present, the more opportunities organizations have for collaboration. Low network density indicates that a few actors are responsible for the majority of information exchanges. If one of these actors leaves the network, there will be a

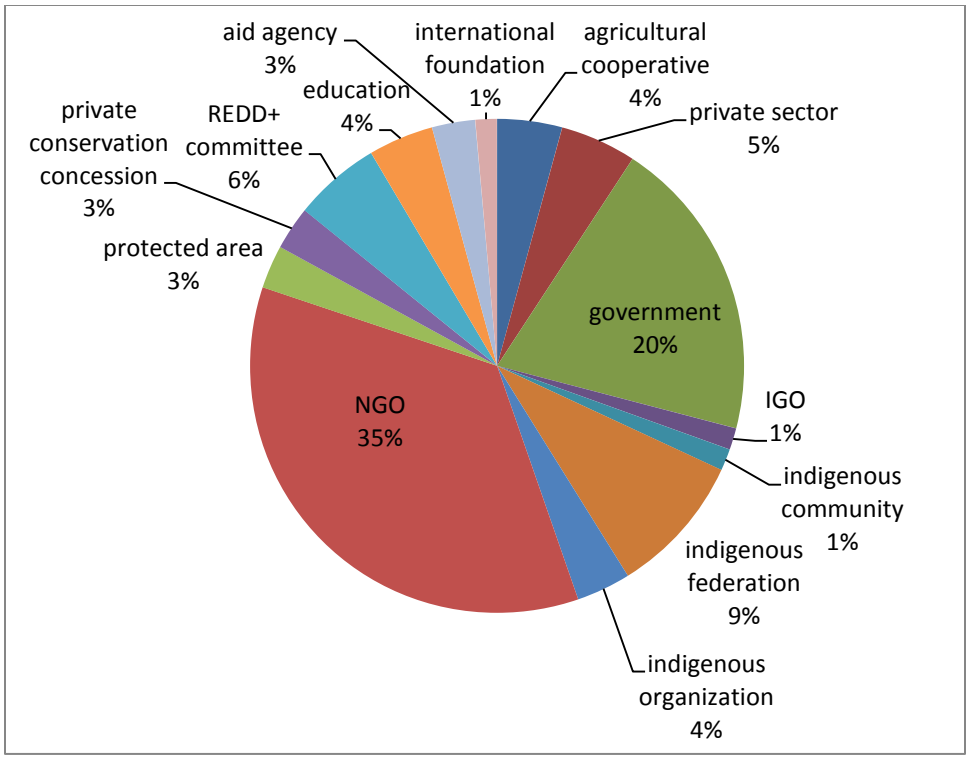

Figure 3.1. Types of Organizations in the REDD+ San Martin Network
Breakdown of 141 organizations represented in this analysis. Organizations were categorized according to how they were identified by their representatives in interviews and through organizational websites.

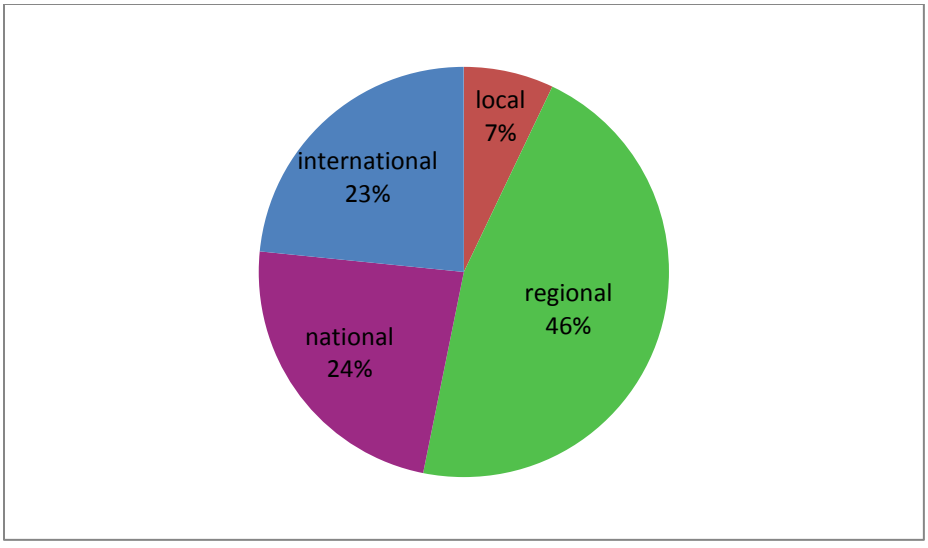

Figure 3.2. Breakdown of broadest scale of engagement for 141 organizations REDD+ San Martin Network
Each actor is categorized according to the broadest scale in which they work. Local actors' activities are limited to municipalities or one province in San Martin; regional actors' activities include more than one province in a single region; national actors' activities include more than one region in the country; international actors' activities include more than one country.

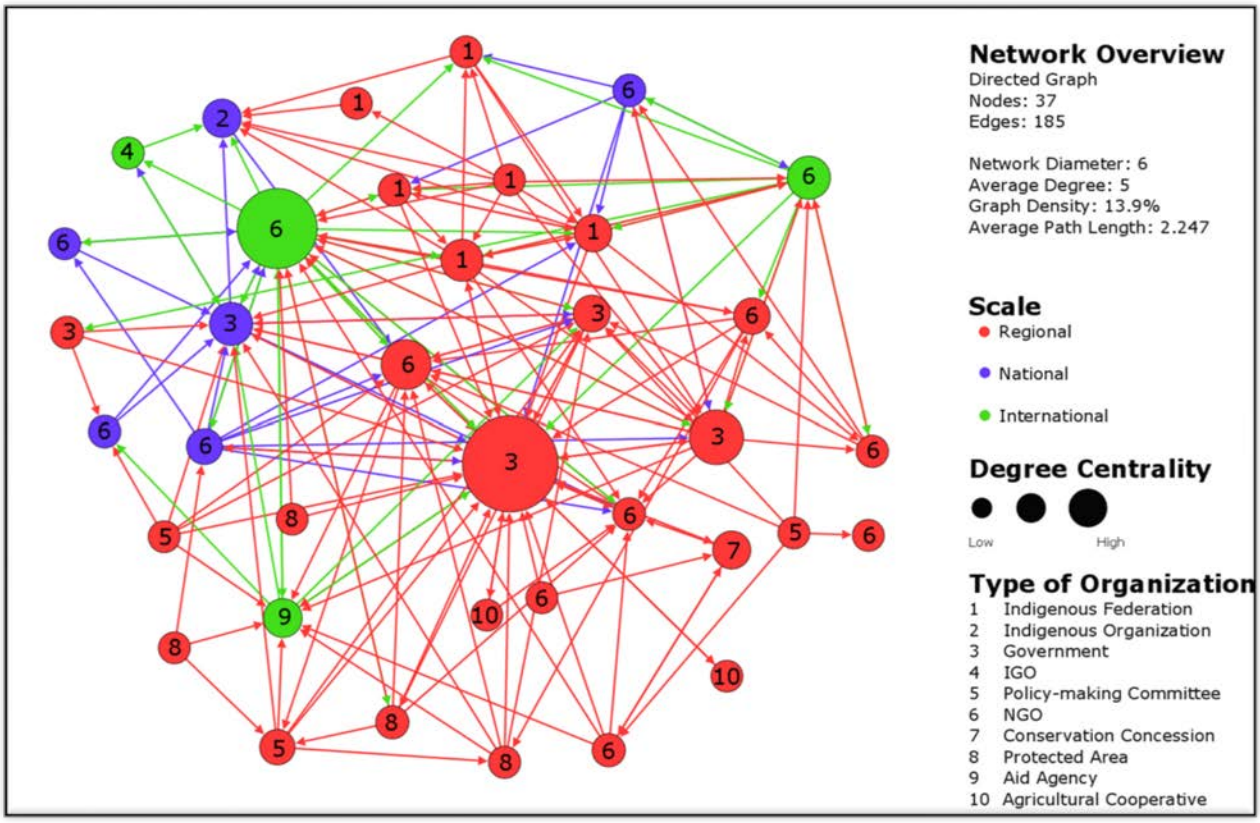

Figure 3.2. Key Mesa REDD+ San Martin Organizational Actors and their Degree Centrality This network map shows the degree centrality scores of the organizational actors in Mesa REDD+ San Martin. The size of the nodes indicates the number of ties an actor has to other actors in the network.

significant reduction in information exchange on REDD+. However, in this network there are a high number of connections between actors of different types, which is similarly critical for collaboration (Sandstrom 2008; Bodin & Crona 2009). This indicates that while there might be a significant reduction in the rate of information exchange, the variety of information exchanged would likely remain high, as different types of actors typically have access to different types of information. In this network, government agencies have information related to regional and national policy making, NGOs to the technical aspects of REDD+, and indigenous federations to the climate-related conditions experienced in local communities.

The two actors with the highest degree centrality are ARA and Conservation International (CI), the transnational NGO that is active in the area. Centrality refers to the extent to which an actor is tied to other actors in the network (Klenk et al 2009). In Figure 3, the size of the nodes indicates the degree centrality score of the actor. Degree centrality, that is, the number of ties an actor has with other actors in the network (Hanneman & Riddle 2005), is a good indicator of how likely an actor is to access information about REDD+ and climate change from a variety of sources, and in turn, to influence information available in the network. ARA and CI had a degree centrality score of 37 and 33, respectively, and are represented by the two largest nodes in the map. There is a considerable drop in degree centrality between these two actors and the other actors in the network. The next highest, another government agency, had a degree centrality score of 21, and the average degree centrality score is 10. The differences in degree centrality scores of the remaining actors in the network are far less extreme. The size of the gap between ARA and CI, the two actors with the highest degree centrality scores, and the rest of the actors in the network indicates that information in this network is highly centralized around these two actors. Interview and observational data confirmed this, as interviewees frequently mentioned collaborations with ARA and CI, and reliance on them for information about REDD+ developments in the region and nationally. These two actors were also very important for supporting and implementing capacity building activities in the region. During interviews, several of the actors with lower degree centrality scores indicated that they often had difficulty attending Mesa REDD+ meetings due to geographical constraints. Though many of the actors are based in one of the two main cities in the region, Moyobamba and Tarapoto, several are located in other areas, and lengthy travel time to meeting sites makes regular attendance difficult. At the same time, however, many of the actors recognize the importance of attending meetings because

for many, these meetings were their primary opportunity to access information about REDD+, and conservation in general. This was particularly common for several actors with lower degree centrality scores.

In this network, the two actors with the highest betweenness centrality scores are the same: ARA and CI, the transnational conservation NGO. Betweenness centrality is another useful measure for identifying key actors in a network as it measures the extent to which an actor may play the role of broker or gatekeeper for information exchange (Scott 1991). However, the gap between the top two actors and the rest of the network in terms of betweenness centrality is even more marked than with degree centrality, as shown in Figure 3.4. This indicates that these two actors are critical to maintaining the network (Borgatti 2006). In the case of this network, both ARA and CI facilitate the exchange of information among other actors. ARA does this through the facilitation of Mesa REDD+ meetings. CI facilitates information exchange through the development and implantation of capacity building workshops for government officials and indigenous people, as well as through technical and financial support for large regional meetings and reports.

The actors with the highest indegree scores are ARA (25) and CI (17), and the average indegree score for all organizational actors in the network is five. An indegree score indicates the number of exchanges directed toward an actor (Scott 1991). In the case of this network, it is the number of reported exchanges in which the organization was the recipient of information about REDD+. When asked about why they frequently exchanged information about REDD+ with other actors in the region, ARA representatives mentioned that their role in creating policies and guidelines necessitated that they frequently assess land use and natural resource management practices in the region. The significantly higher rate at which ARA receives information in this

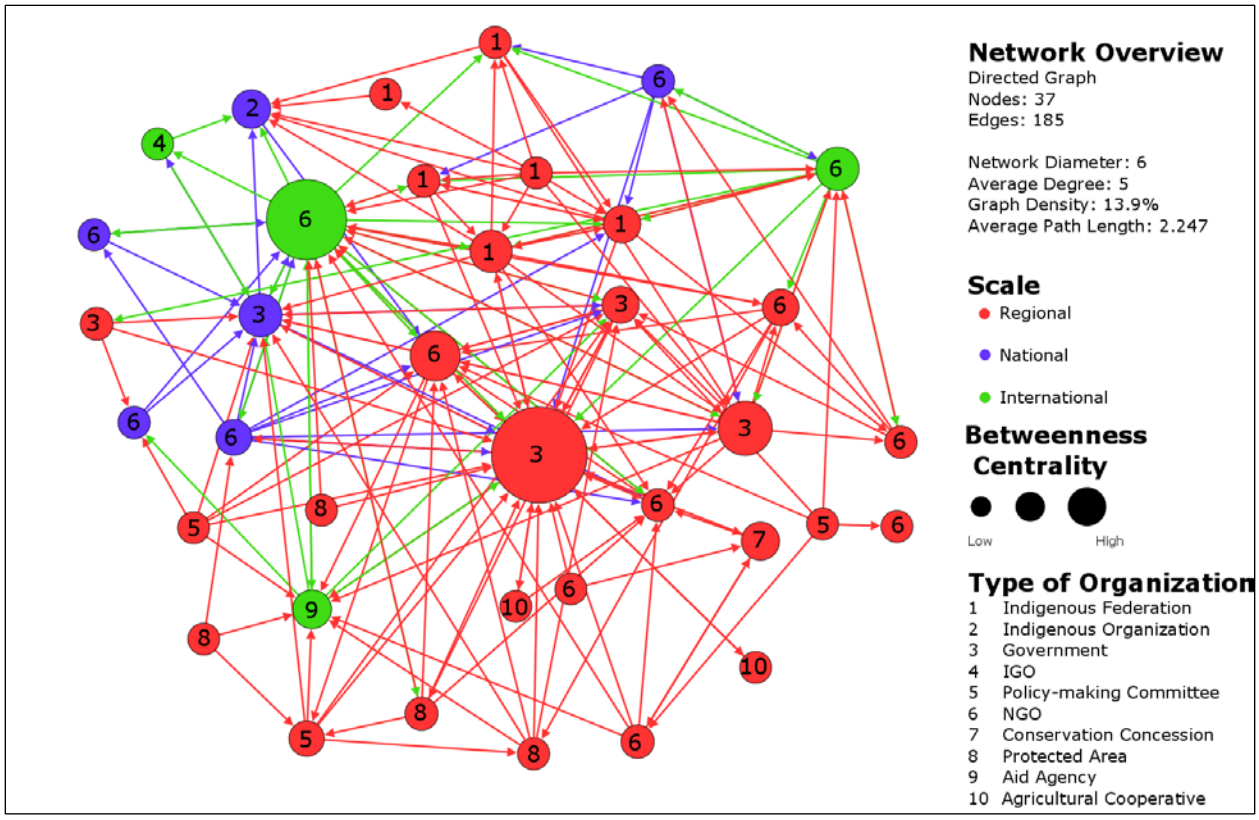

Figure 3.3. Key Mesa REDD+ San Martin Organizational Actors and Their Betweenness Centrality This network map shows the betweenness centrality scores of the organizational actors in Mesa REDD+ San Martin. The layout is the same as in Figure 3, but the size of the nodes indicates the extent to which the actor plays the role of information broker for other actors in the network.

network in comparison to other actors likely is a result of this role.

The actors with the highest outdegree score in this network also are ARA and CI, but in this case, they are reversed; CI has a score of 16, while ARA's is 12. The average outdegree score in the network is five. Outdegree indicates the number of exchanges directed away from an actor, or in this network, the number of exchanges of information about REDD+ in which the organization was the source (ibid.). So, CI was the reported source of information about REDD+ 16 times, and ARA 12.CI's higher outdegree score likely results from their activities in capacity building. During fieldwork, I observed several workshops that CI developed and facilitated for indigenous people and government officials on REDD+ and climate change. CI staff also frequently participated in regional and national meetings in which they presented overviews of

the development of REDD+ and explained the key concepts upon which it is based. In addition, several of the educational materials that were in use in the region were produced with the financial and technical support of CI.

During interviews, organizational representatives frequently described the role of Mesa REDD+ San Martin as facilitating information exchange among different organizations. Yet, the degree to which different types of actors give and receive information in this network varied significantly. Government agencies and NGOs had the highest rates of information exchange of all organizational types, while agricultural cooperatives, conservation concessions, and protected areas had the lowest. One conservation practitioner noted that the low rate of information exchange with agricultural cooperatives was a particular concern because agriculture is a major driver of deforestation in San Martin. As he explained, "the government can create all of the policies it wants, and NGOs can implement all sorts of projects, but if we don't work with the people that are driving deforestation, the farmers, the loggers, we won't get anywhere."

The network of 37 organizations actively engaging in Mesa REDD+, illustrated in Figures 3 & 4, is embedded within broader transnational networks of organizational actors engaging in REDD+ and conservation and development, more generally. In the social network questionnaires, the representatives of the 37 organizations in Mesa REDD+ identified 104 additional organizations that while not directly engaging in Mesa REDD+ San Martin, provided funding or informational resources to support REDD+ in the region. This broader network includes multilateral organizations, such as the United Nations, bilateral aid agencies, and private foundations, in addition to NGOs, indigenous organizations and federations in other departments of Peru, policy-making committees, and corporations in the private sector (see Figure 5). Though these organizations do not participate directly in Mesa REDD+ San Martin, they are directly

engaging with Mesa REDD+ San Martin participants on REDD+, and therefore influence the flow of information in the Mesa REDD+ network. Their engagement may take several different forms, including representation in policy making fora at other levels, such as the national Mesa REDD+ or the UNFCCC COPS, funding initiatives or actors implementing initiatives, and serving in an advisory capacity.

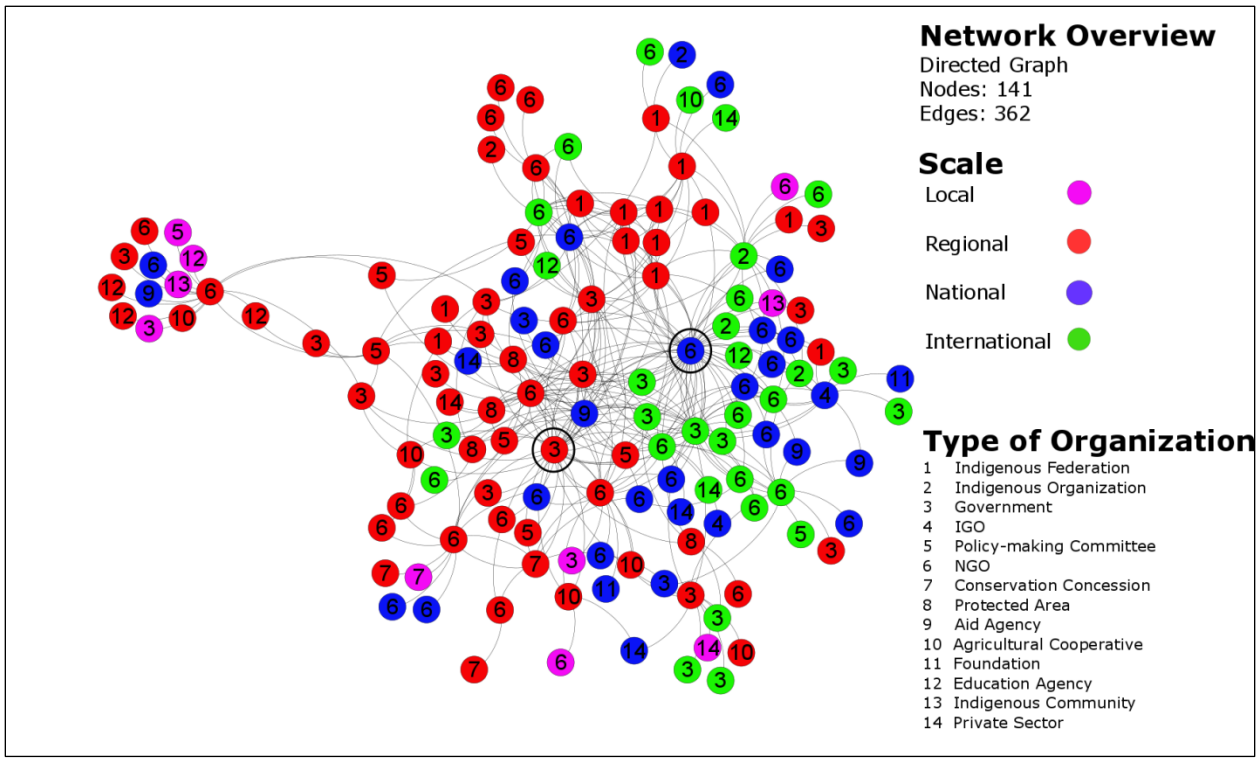

Figure 3.4. Full Extent of Mesa REDD+ San Martin Network
This network map shows all 141 organizational actors who are connected in some capacity to Mesa REDD+ San Martin. ARA and CI, identified in this figure as the circled nodes, are the two most central actors in the broader network.

Like the network of active Mesa REDD+ members, this broader network is characterized by a high degree of information exchange among different types of organizational actors (Figure 6). Of the 141 organizations in the broader network, 119 exchange information with organizations of a different type than themselves; of the 362 connections (edges) among the actors in the broader network, 72% (260) were between actors of different types. CI and ARA were once again the two actors with the most cross-type connections, with 34 and 33 connections

respectively, indicating that they are key to facilitating information exchange among different types of actors. The next most notable for linking with different actor types in this broader network is the Peruvian Ministry of the Environment (MINAM), a national agency and the REDD+ focal point for the Forest Carbon Partnership Facility's REDD+ Readiness process, with 20 cross-type connections. Like CI, MINAM is based in Lima, and unlike some of the other Peruvian ministries, does not have offices or staff based in San Martin. The next two actors with a significant number of connections with other types of organizations are AIDESEP, a national indigenous NGO, and ORDEPISAM, the regional agency for indigenous development, each with 17 cross-type connections.

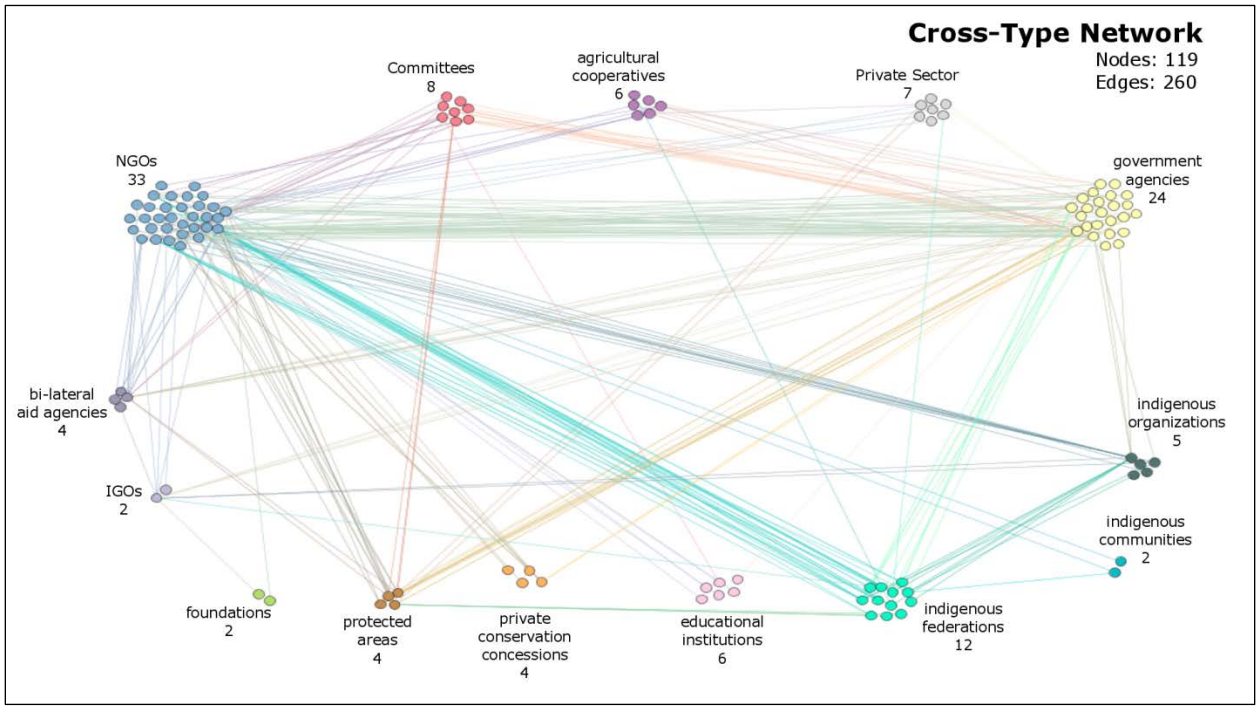

Figure 3.5. Connections in Mesa REDD+ San Martin Network Among Organizations of Different Types

The highest rate of information and resource exchange between actors of different types in this network can be seen between NGOs and government agencies, with 63 reported connections among these actors. This rate reflects the relationship of NGOs acting as advisors

for the regional government on the technical components of REDD+. CI, in particular, held capacity-building workshops for the regional government, with participants spanning several agencies across the government. During interviews, representatives of government agencies frequently cited capacity building workshops run by NGOs as their primary source for learning about the development of REDD+. The next highest rate of exchange is between NGOs and indigenous federations, with 29 reported connections. Interview and observation data highlighted the strong relationships among indigenous federations and NGOs in the region. Conservation NGOs were partnering with federations and indigenous communities on projects aimed at sustainable land use, reforestation, and capacity building for REDD+. NGOs focusing on development, education, and human rights that were engaging with indigenous communities and organizations were also active in the network. This rate is notably higher than between government agencies and indigenous federations, with only 9 connections reported among these two groups.

Another important characteristic of the flow of information through this network is the high rate of reported exchanges that span different geographic scales (Figure 8). Classifying the scale of engagement for these organizations is rarely clear as many are simultaneously engaging in REDD+ at multiple scales. For the purpose of understanding how information and resources move, the organizations again are classified according to the broadest scale of engagement of their primary activities. Of the 141 nodes identified in this network, 101 have reported exchanges with organizations operating at a different scale, and over 52% of all reported exchanges of information or resources in this network are cross-scalar. 39% (75) of these exchanges were between actors engaging at the regional and international scales; 32% (61) exchanges were between those at the regional and national scales; 23% (44) were between national and

international actors; less than 1% were between local actors and those engaging at broader scales. Representatives from regional organizations noted that they engaged frequently with national and international organizations in order to stay informed about the development of the national REDD+ readiness process and about key discussions at the UNFCCC COPs, as well as to communicate priorities and concerns in San Martin to those shaping REDD+ policies at the national scale. International organizations also were frequently mentioned as having access to or providing funding for regional work, as well as being sources of technical expertise that was not available at the regional scale. Only 5 organizations in this network have reported connections with all scales. These include ARA, CI, and AIDESEP, as well as Amazónicos por la Amazonía (AMPA), a regional conservation and sustainable development NGO, and the Direccion Regional de Agricultura de San Martin (DRASAM), the regional agricultural agency.

Discussion

The results of this study have several important implications for participation and information exchange in REDD+ governance networks. First, results reveal the extent to which information in Mesa REDD+ San Martin is centralized and the role that centralization plays in this network. Centralization is the degree to which information and influence is controlled by a small subset of actors in a network (Klenk et al 2009). In this network, the large gap between the two actors with the highest centrality scores, ARA and CI, and the rest of the actors in the network suggests that the network is highly centralized around these two key actors. This can be beneficial for problem solving in policy networks such as this one due to the need for prioritization and coordination (Sandstrom 2008; Bodin & Crona 2009). Here, the size of the network and diversity of actor types make balancing many, and sometimes competing, interests very challenging. In addition, factors such as the wide geographical distribution of the network,

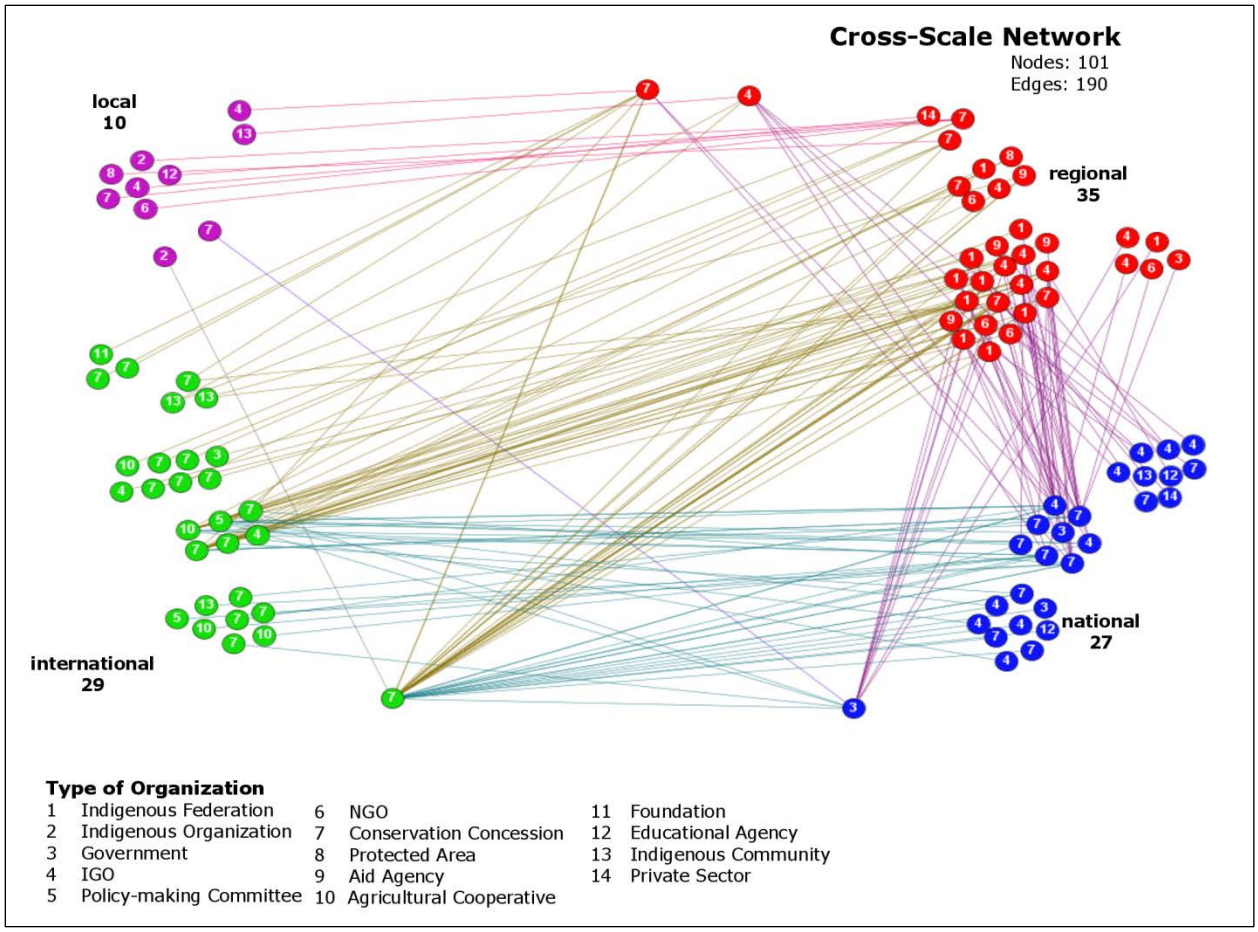

Figure 6. Cross-scalar Connections in Mesa REDD+ San Martin

lengthy travel times to meeting sites within the region, and limited access to internet and other media in rural areas of San Martin make disseminating information in this network logistically complicated. During interviews, organizational representatives stressed the importance of Mesa REDD+ meetings for learning about and reporting on new developments, but also mentioned that they frequently relied on a few key actors for information between meetings. Similarly, the role of ARA in coordinating meetings with stakeholders, compiling reports on regional conservation and development activities, and translating management priorities into regional policies is made easier by their central position within the network. They are also a major hub for information exchange, allowing the agency a degree of control over what information is legitimized and disseminated in the network. In addition, ARA has a significantly higher indegree score

compared with the other actors in the network, which can be beneficial for collecting the greatest amount of information from other sources to inform policy decisions.

The position of the other central actor, CI, also has interesting implications for governance networks. One significant challenge for participation in REDD+ is that actors need considerable resources and technical capabilities, as well as in-depth knowledge of the local contexts in which projects are implemented (Gallemore & Munroe 2013). Few organizations possess all of these requirements in and of themselves. To address this, large institutional actors with access to technical expertise and funding resources, such as development agencies and transnational conservation NGOs, form partnerships with actors working at finer-scales, such as indigenous federations and local NGOs with knowledge of the local context (ibid.). Here, CI plays a key role in capacity building in the region, running workshops for regional policy makers and indigenous people on REDD+ concepts and decision making processes at the national and global scales. They also provide sources of funding for initiatives run by local NGOs, and generate and disseminate technical information for regional decision making.

CI also plays a key role as a vehicle for moving information about priorities and challenges at the local level to broader scales of governance through their participation in national Mesa REDD+, and observer status at the UNFCCC COPs. This role is facilitated to a large degree by geography: though considerable work is done at the national office in Lima, their headquarters are located in Washington, DC. As an organization, CI is also a network, with country programs and partnerships throughout Latin America, Africa, and Asia-Pacific. This offers them considerable access to information about how REDD+ challenges and opportunities are being handled in other geographical, social, and political contexts. In their analysis of 276 REDD+ projects, Gallemore & Munroe (2013) found that the transnational networks of

organizations engaging in REDD+ can become spatially centralized, with actors in donor countries, particularly the US and Europe, being the most central. This likely is due to the fact that actors with strong ties to places where expertise and resources are available may be more successful at becoming brokers within a network, and may have more beneficial ties with other influential actors (ibid.). Despite the United Nations Framework Convention on Climate Change emphasis on the sovereignty of national governments in REDD+ policy making, in many cases, national governments adopt the discourses and model policies developed in geographic centers such as Washington, DC. The result is an increasingly significant role for transnational NGOs serving as advisors for governments, translating international standards into national policies (ibid.). The strong working relationship reported by CI and ARA in this network is indicative of this trend, as CI is frequently asked to provide capacity building workshops about REDD+ and climate change more generally to representatives from agencies across the regional government.

Centralization can also facilitate diffusion of innovations as the most central actors in a network may act as important starting points for introducing new ideas and practices (Borgatti 2006). Similarly, identifying the actors that are most embedded in the network, that is, the actors that can reach the highest number of other actors through the shortest paths, is critical because the more paths that information must travel from its source to its target, the greater the risk that it will be degraded (Borgatti 2006). Both ARA and CI are the most embedded actors in the network, meaning that they have the most direct access to other organizations. In addition, those actors with the highest degree centrality in this network are not only the most effective starting points for disseminating information, but they connect the Mesa REDD+ San Martin network to other REDD+ governance networks working in other regions and parts of the globe.

Centralization can have negative effects on the network, as well. Because a few actors are responsible for the majority of information exchange, they may have a disproportionate amount of control over the quality and accessibility of that information (Klenk et al 2009). While Mesa REDD+ San Martin is a regional governance network, the results of this research indicate that international NGOs have significant influence over information in the network. The narratives that drive the work of these NGOs is based on the idea that effective conservation can be achieved through locally-based governance mechanisms that manage the use and users of forests (Dressler et al 2014). Developing and maintaining these governance mechanisms requires aligning the interests of all actors in the network to the goal of forest conservation and enhancing carbon stocks (Thompson et al 2011). As Thompson et al caution, efforts to do so are currently focused on those actors who are most engaged with the governance structures common in the Global North, such as international NGOs, and are not effectively incorporating the voices and interests of local actors. This issue was raised by an indigenous activist who, when asked about his thoughts on NGO efforts to support indigenous participation replied:

> "[success] depends greatly on the will and self-criticism of NGOs… NGOs respond with projects, they are purely projects. You need a meeting with the donors who give the money – they have their terms of reference for applications that they design from a distant city, such as Lima, and not from the field. The NGOs then take them and tell donors what they want to hear, and donors don't have the information first hand. Then it is a competition to achieve goals. In two or three years, the projects are finished. But problems are long term, and solutions are long winded and only manage to sooth and calm, but don't end up being effective…until there is a change in approach, there will be no order or commitment to stop viewing it from the top down. I don't think there is capacity for action with no level of self-criticism."

This quote highlights some of the concerns with the current focus on narratives and governance structures that originate in the Global North. In San Martin, the majority of funding for conservation activities from aid agencies, foundations, and private donors is channeled through NGOs. This is a result of the resources and expertise needed to obtain and manage funds and

meet the diverse expectations and reporting requirements of donors. NGOs are among the most well positioned actors working in the region to navigate these processes, yet they may not be the most knowledgeable of the local context. In addition, the short timeframe of project cycles are often not sufficient to achieve long term solutions. While local actors, such as communities and cooperatives, have more knowledge of the local context and have a higher stake in outcomes, they are often unable to navigate the complex processes and requirements of funders.

Strong ties among actors of different types is one way to address the potentially negative implications of a highly centralized network. In their analysis of REDD+ information-sharing networks in Indonesia, Moeliono et al (2014) found that information exchange was strongest among organizations of the same type, and weak among national government agencies, national civil society actors, and transnational actors. This was not the case in San Martin. Social network analysis indicated that 72% of exchanges of information within the broader network were between actors of different types. Interview and observational data confirmed this, as transnational NGOs were frequently described as close advisors by national and regional government agencies Strong cross-type ties were particularly apparent among indigenous federations and NGOs, especially in comparison to the connections between indigenous federations and government agencies. In San Martin, there is a perception among practitioners and indigenous people that NGOs act as mediators between the indigenous communities and the regional government. This was explained by an indigenous leader as a result of the higher frequency in which representatives of NGOs travel to the communities compared to representatives of government agencies. As he mentioned “the NGOs always come to the communities, but the regional government rarely does.” It is also a reflection of the role of NGOs in capacity building activities for REDD+. Among the most common REDD+-related activities

in the region were capacity building workshops for indigenous people to strengthen their understanding of the western scientific concepts behind REDD+. The objective of these workshops was to facilitate increased indigenous engagement in decision making. Although they are not the only NGO conducting capacity building activities in the region, CI is particularly notable in the number of connections with indigenous federations, organizations, and communities. The capacity building activities carried out by CI and other NGOs are seen by indigenous people as critical to enabling indigenous participation in Mesa REDD+, because, as one indigenous representative explained, NGO practitioners are the ones who explain both the concepts that they need to understand and their rights in relation to REDD+.

Similarly, a major focus of the literature on REDD+ governance is on the need for nested governance networks with strong cross-scalar linkages (Kashwan & Holahan 2014; Berardi et al 2015). In this network, over half (52%) of al reported exchanges of information are cross-scalar. However, while there were many cross-scalar linkages, there were very few reported exchanges that linked this network to others in the Global South. South-South exchange of information on forestry and resource management is one of the priorities for REDD+ (GEF 2011). Though there is significant exchange of information and resources among organizational actors in Peru and neighboring countries in Latin America, such as Ecuador, the majority of connections that span country boundaries are among organizations based in Peru and the United States or the European Union. At the time of this case study, there were no reported connections between organizations working in San Martin and organizations in Africa or the Asia-Pacific region. Though transnational NGOs, such as CI, are networks themselves, and can link actors working in these regions, South-South connections in this network are unclear. Institutional ethnography of transnational NGOs would shed light on this dynamic.

Conclusion

REDD+ governance in Peru is increasingly multi-scalar as top-down approaches to REDD+ are challenged by models that focus on supporting the rights of local and indigenous peoples, and as an increasingly diverse group of organizational actors spanning civil society, the private sector, funders, and government agencies challenge the tendency to centralize decision-making processes (White 2014). Effective planning and implementation for REDD+ is dependent on strong, cohesive networks of organizational actors through which information and resources can flow. Forums such as Mesa REDD+ San Martin are important spaces for developing trust and formulating policy approaches to climate change that include the input of many stakeholders (Schneider et al 2003). Yet, despite these efforts to establish local and regional-level governance processes that incorporate the voices and interests of local and regional actors, the results of this research indicate that international actors, particularly transnational NGOs, continue to play a dominant role in the exchange of information about REDD+. As a result, the voices and interests of local level actors are not sufficiently represented in regional governance networks. Addressing this issue is challenging and requires a significant shift in the way that conservation and REDD+ are approached. First, developing conservation interventions that address problems in the local context, rather than speak to global concerns, may help to shift the focus from highly technical information to information that is more relevant for local actors. Second, designing interventions based on the needs of the local context rather than the priorities of donors would ensure that outcomes are more sustainable and meaningful for local actors. Finally, developing and supporting mechanisms that better enable South-South exchange of information would provide valuable opportunities for local and regional actors to more effectively make their voices heard in REDD+ governance networks.

CHAPTER 4

KNOWLEDGE, LANGUAGE, & PARTICIPATION:

WORKING IN THE BOUNDARIES OF CLIMATE CHANGE[3]

[3] To be submitted to Oryx

Abstract

Engaging local and indigenous people as participants in conservation has long been considered a key to conservation effectiveness. Despite the considerable efforts of practitioners, policy makers, and community leaders, however, active participation still is a major challenge. This article uses the concepts of boundary agent and boundary spanning to explore the attributes that enable an individual to participate in decision making, and to highlight the obstacles to more inclusive participation. It presents a case study of capacity building initiatives designed to increase awareness and participation in Reducing Emissions from Deforestation and Forest Degradation (REDD+) in San Martin, Peru. Methods include participant observation in meetings and training workshops, interviews and content analysis of organizational documents, and social network analysis. Results indicate that educational experience, language skills, and western scientific knowledge are important for boundary work. I conclude that while these attributes are important for enabling boundary spanning, more work is needed to ensure that the burden of acquiring new knowledge and language skills is not placed disproportionately on indigenous and local people.

Introduction

Engaging local and indigenous people as participants in conservation has long been considered a key to conservation effectiveness (Shanee et al 2014). Despite the considerable efforts of practitioners, policy makers, and community leaders over the last few decades, however, participation is still a major challenge and examples of active participation are relatively few (Méndez-López et al 2014). With the emergence of Reducing Emissions from

Deforestation and Forest Degradation (REDD+), the approach to conservation in many areas has shifted from the local, project-based efforts of integrated conservation and development projects (ICDPs) to globally oriented programs focused on climate and forest policy (Blom et al 2010). Yet, the participation of local and indigenous groups, who manage approximately 11% of the world's forests, remains critical (White & Martin 2002). Just as climate change is the result of complex, long-term human-environment relations, so too are the barriers to active, effective participation the result of complex, long-term social processes. In order to address this, conservation practitioners, policy-makers, and indigenous people must have an understanding of how these barriers shape an individual's ability to translate their goals and interests across cultural, political, geographic, and linguistic boundaries.

The idea that local participation is key to conservation effectiveness is a major focus in community-based natural resource management (Brosius et al 1998; Krause et al 2013; Measham & Lumbasi 2013; Shanee et al 2014). It is based on the premises that local people have greater interest in sustainable resource use, that they have a better understanding of the local ecological context, and that traditional forms of management are better than extralocal management (Brosius et al 1998; White & Martin 2002). For many practitioners, policy makers, and indigenous groups engaging in REDD+, local participation is a priority due to the fact that while the benefits of tropical forest conservation are global, the costs are often felt at the local level (Blom et al 2010). Yet, "participation" is difficult to define, and is often used in policy documents, grant proposals, and project descriptions for political legitimation (Mosse 2005; Büscher & Mutimukuru 2007). Political ecologists have distinguished between different levels of participation, ranging from passive participation, such as when a NGO holds a community workshop to explain a planned initiative and to obtain basic permissions (Khadka & Nepal,

2010; Méndez-López et al 2014), to more active forms, where indigenous communities have a role in the decision making process (Agarwal 2001; Méndez-López et al 2014).

REDD+ is a mechanism in which developed countries provide funds for developing countries to slow or halt deforestation through payments from carbon trading (Fletcher et al 2016). It emerged in 2005 in response to the recognition that forest loss was responsible for approximately 20% of greenhouse gas emissions; the "+" refers to an additional focus on conservation and sustainable use of forests, and on enhancing carbon stocks (Arhin 2014). Though proponents of REDD+ have pointed to its potential for slowing rates of deforestation, providing access to financial resources for forest management, and supporting sustainable development and poverty alleviation (ibid.), concerns have been raised over its potential role in recentralizing forest governance (Phelps et al 2010). For local and indigenous people, centralization can lead to a lack of participation in decision-making processes, greater burden of the costs of project implementation, and a lack of access to benefits (Arhin 2014). To address these concerns, the 16th Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC), the convention under which REDD+ has developed, agreed to a set of guidelines, or "safeguards" designed to mitigate negative social and environmental consequences of REDD+ (Arhin 2014; Chhatre 2012). Among these were a call for respecting "the knowledge and rights of indigenous peoples and members of local communities" and "the full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities" (UNFCCC 2010: Appendix 1). The response to these safeguards has resulted in an increased focus on building the capacities of local and indigenous groups to participate in REDD+ decision-making. This is particularly the case in Peru, where indigenous leaders have challenged the national REDD+ program to implement REDD+ in the

context of land tenure rights, human rights, and self-determination rather than carbon-offsets (White 2014).

In San Martin, a department in Peru's Amazonia, the participation of indigenous people in REDD+ decision making has become a priority. Participation, as defined by indigenous leaders, conservation practitioners, and regional government officials, involves more than just information sharing, but includes the development of collaborative processes that empower indigenous groups to actively engage in the planning, design, and implementation of REDD+ initiatives. Yet, in San Martin, as in many other areas, there are significant challenges for local and indigenous engagement in REDD+. To address this, local and transnational NGOs, government agencies, and indigenous leaders have been engaging in a series of capacity building activities to develop a team of indigenous individuals who act as translators, representing the needs and desires of their indigenous communities at regional and national decision making roundtables, known as Mesa REDD+s, and who convey the opportunities and challenges of participation back to their communities in a manner that is culturally appropriate. These individuals are expected to act as *boundary agents* (Organ 1971); that is, individuals or organizations that work around a boundary object, a concrete or abstract object that is plastic enough to adapt to the conceptual needs and constraints of several different actors, yet robust enough to retain a common identity across actors (Star & Griesemer 1989). These objects often function as a common language between different sets of actors (Turnhout 2009, Carlile 2002). Thus, these individuals span the boundaries between policy, practice, and indigenous communities.

Boundary spanning has been a major topic in organizational management and the administrative sciences (i.e. Rosenkopf & Nerkar 2001; Bartel 2001), and its application in the

political ecology and conservation literatures has focused on the boundary between science and policy (i.e. Reid et al 2010; Kamelarczyk & Gamborg 2014). Less attention has been given to the role and requirements of boundary agents in conservation. The central question in this article is: what attributes enable or impede an individual's ability to participate in REDD+ decision-making processes at local, national, and international scales? To address this question, I present a capacity building initiative in San Martin, Peru. This case study is based on data collected using participant observation at training workshops and meetings, interview data, and social network data collected in San Martin and Lima, Peru, and the United States, from April 2012 – May 2013.

Site Description

Peru is considered a global center for biological diversity, with numerous endemic species and a remarkably high diversity of habitats (Rodríguez and Young 2000). Located in the eastern Andean foothills, San Martin is a particularly biologically diverse region of Peru. The gradients in elevation, rainfall, and soil types have created diverse habitats for flora and fauna, including several rare, recently described bird species (Merkord et al. 2009) and the critically endangered yellow-tailed woolly monkey (Shanee et al. 2007). The tropical Andean forests of San Martin and its neighboring regions contain species diversity that is comparable to Peru's Amazonian lowland, which covers 20 times more land (Shanee et al 2014). Yet, it is also a region where the pressures on biodiversity are particularly acute; as the "breakfast belt" of Peru, clearing land to make room for coffee, tea, and cereal production have driven rates of deforestation to among the highest in the country (Chatterjee 2009). Though setting aside land for conservation purposes is a priority for the national and regional governments, raising funds to manage those lands has proved very challenging. REDD+ is, therefore, an attractive option as a

funding mechanism for conservation. Concerns have been raised, however, over how to develop appropriate policies that support governance and sustainable management practices at the national, regional, and local levels (Pokharal & Baral 2009). In order to plan for REDD+ in San Martin, the regional government and conservation NGOs organized a regional Mesa REDD+ in 2009. Mesa REDD+ consists of representatives from government, NGOs, indigenous groups, and the private sector that work together to develop regional policies informed by national and international REDD+ objectives.

San Martin has the 5th largest indigenous population of all of the departments of Peru, representing 4% of the region's population (INEI 1997). Awajun (Aguaruna), Kechwa (Lamas Quechua), and Shawi (Chayahuita), are the three indigenous groups in the region. Their communities are governed by seven federations. In addition, a regional office for development, la Oficina Regional de Desarrollo de Pueblos Indígenas de San Martín (ORDEPISAM), includes representatives of each of the groups, and operates within the regional government. ORDEPISAM is envisioned as a primary point of contact between Mesa REDD+ and the indigenous groups.

Lack of infrastructure and limited educational opportunities are among the greatest challenges in rural Peru, and indigenous communities are no exception. According to 2012 census data from the Instituto Nacional de Estadística e Informática (INEI), though electrification has increased in San Martin by almost 25% in the last few years, 45.1% of homes in rural areas still do not have access. In addition, 81.5% of rural households rely on radio for news, 43.7 % have access to a television, 4.3% a telephone, and only 2.1% a computer (INEI 2012). In addition, almost 65% of the general population in rural areas have educational

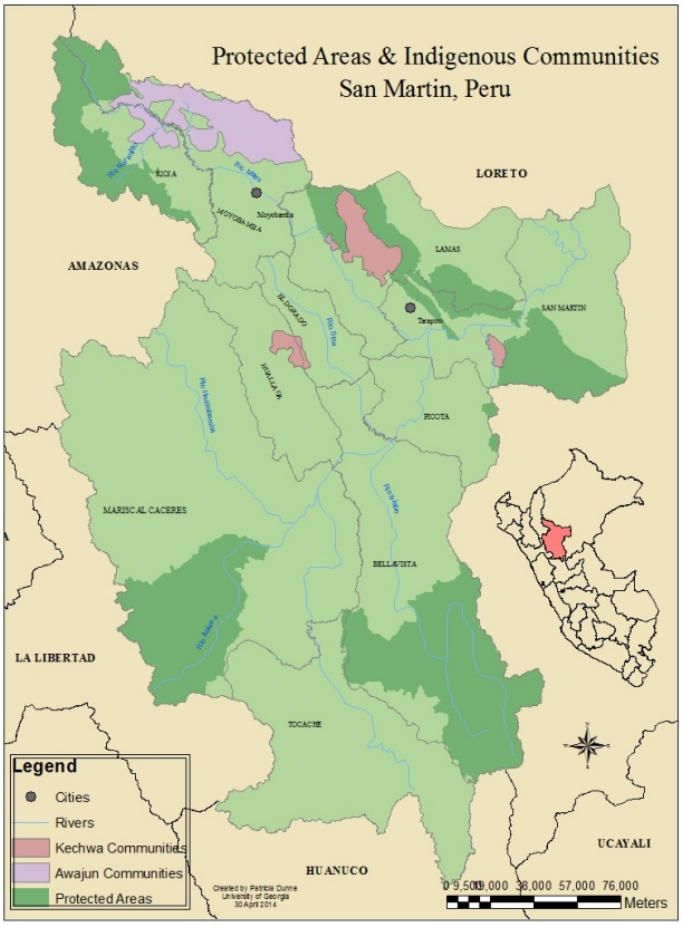

Figure 4.7. Protected Areas & Indigenous Communal Lands in San Martin, Peru

experience limited to the primary level, and only 3.5% have gone on to higher education. Rates of education vary according to gender, with only 36.8% of women having some secondary school experience compared with 32.8% of men (ibid.). Among indigenous groups, Kechwa have the highest rates of formal education of all the groups in San Martin, Awajun are the next highest, and Shawi had the lowest rates of formal education, both of the groups in San Martin, and among all indigenous groups in the country (INEI 2007).

In indigenous communities in San Martin, the language spoken in the home is typically the indigenous language. Spanish is often learned in school. Yet, fluency and literacy in Spanish varies widely across ethnicities, genders, and communities. Shawi have the highest illiteracy

rates among the three groups, with 32.7% of the total population; Awajun are the next highest, with 20.8%, and Kechwa the lowest, with 18.2%.Women have the highest rates of illiteracy across all indigenous groups (INEI 2007).

San Martin is a key department for conservation and development work in Peru. Several international and national conservation NGOs have offices in Moyobamba, the capital city, or Tarapoto, the largest city in the region, as do international aid agencies. Based on my fieldwork, many practitioners working for these organizations are originally from outside San Martin, often Lima, and those that oversee the design and implementation of conservation activities typically are college educated. All speak Spanish and some also English, very few are fluent in or have even a basic knowledge of the indigenous languages in the region.

The effects of climate change, including changes in precipitation, temperature, and increased flood events, were frequently cited by practitioners, policy makers, and indigenous participants in interviews and meetings as a growing concern for local people in San Martin over the last few years. In 2009, conservation practitioners and regional policy-makers first considered REDD+ as a mechanism for funding conservation and sustainable development initiatives in the region. In 2010, the first annual workshop was held in the region to teach local stakeholders about REDD+. A stakeholder engagement assessment was conducted in early 2012 by conservation NGOs and policy-makers to measure participation in planning for REDD+. The results indicated that local capacity to engage with REDD+ issues was lacking, particularly among indigenous communities, whose communal lands encompass large tracks of forest, and in several cases, are adjacent to protected areas (see figure 1) (Conservation International Peru 2012). The stakeholder engagement assessment found that previous efforts to increase capacity of indigenous people to engage in decision-making processes for REDD+ readiness did not

provide adequate time to explain the concepts behind carbon emissions and REDD+ due to the complexity of REDD+ and the frequency of capacity building workshops, which were limited to one a year. To address this, several NGOs working in the area shifted their focus to more frequent and sustained capacity building activities, as well as the creation of educational materials in indigenous languages.

Methodology

This study is based on multi-sited fieldwork carried out from April 2012 – June 2013 in Lima, Peru, San Martin, Peru, and the United States. Analysis is based on data collected during participant observation of REDD+ planning meetings and training workshops, as well as from 55 semi-structured interviews held with key actors engaging with REDD+. These actors included policy-makers working at the regional and national scales in Peru, conservation practitioners working in regional, national, and transnational conservation NGOs, faculty working in regional universities in San Martin, representatives of agricultural cooperatives, indigenous leaders, and indigenous participants in regional training workshops on REDD+. During interviews, respondents were asked about their educational and linguistic backgrounds, as well as the frequency and manner in which they give and receive information about climate change and REDD+. They were also given the opportunity to express their opinions on the challenges of accessing and disseminating information about climate change and REDD+, with particular attention paid to the attributes that facilitate information exchange and participation in decision making processes.

I collected social network data using a questionnaire during interviews in order trace the connections of respondents to other actors and institutions in the context of REDD+. For this study, I collected social network data from a group of participants and practitioners in a series of

REDD+ training workshops conducted by conservation NGOs and local government authorities for indigenous people in San Martin. These workshops were designed to create a team of translators who would represent the region's indigenous communities at Mesa REDD+. Through the workshops, these translators learned about the concepts behind REDD+, its development, and the opportunities and challenges it could offer their communities. Participants in these workshops were indigenous men selected by the leaders of the indigenous federations; their ages ranged from early 20's to late 40's, and their livelihoods included farming, teaching, and practicing law. During interviews, practitioners running the workshops and workshop participants were given a social network questionnaire to measure the frequency of their interactions with other individuals in the context of REDD+. The questionnaire included a roster of practitioners and participants, and respondents were asked to indicate who they spoke to about REDD+ and climate change outside of the workshops. They were also asked whether they attended Mesa REDD+ and other meetings about REDD+. This network is a whole network, and N = 14. While social network analysis highlights patterns of engagement by revealing how often and with whom actors exchanged information about REDD+, as well as how these relate to particular attributes, it does not tell the whole story. To address this, social network data were combined with interview and observational data to explore how and to what extent particular attributes enabled the actors to actively participate in decision making processes, and in turn, to better understand the barriers to more active participation.

Results

During interviews, representatives of NGOs, government agencies, and indigenous leaders indicated that participation in planning and implementing REDD+ involved significant challenges for all actors, including practitioners, policy makers, and indigenous people. Among

those challenges most often cited were that the complexity of REDD+ made it very difficult both to define and to navigate, and that its continually evolving nature made staying informed critical. In addition, interviewees agreed that the technical nature of the terminology and concepts upon which it is based added to its complexity. Those practitioners that facilitated capacity building activities with indigenous communities reported that this technical aspect was a particular challenge to indigenous engagement due to a dearth of educational opportunities in rural areas and a lack of familiarity with western science. As an indigenous activist explained,

> "Indigenous leaders are people who have not left their communities to become academically prepared, and those that have gone to university have left to work elsewhere or in other parts of the government. And the indigenous movement does not have its own technical staff, so much depends on advisors and consultants who have a different worldview… and [indigenous people] are dependent on them for information."

Capacity building activities undertaken by NGOs and bilateral development agencies working in the region primarily focused on increasing scientific knowledge among indigenous people with the belief that this would enable them to participate more actively in decision making processes at the regional and national scales. These activities included the development of Spanish-language educational materials that addressed the national and regional context of REDD+, a limited number of indigenous-language educational materials that explained some of the more basic scientific concepts behind REDD+, and the monthly capacity building workshops to develop a team of indigenous translators to explain REDD+ to their communities and in turn, represent their communities at Mesa REDD+ meetings.

In addition to varying educational backgrounds and comfort with western scientific knowledge, linguistic abilities and the remoteness of many communities were noted as being a significant challenge for indigenous engagement by practitioners, policy makers and indigenous leaders. Several interviewees mentioned that more frequent and sustained engagement was

necessary to increase indigenous participation, and that understanding the implications of education, language abilities, and access to information was important for fostering more active participation. Social network data were analyzed through the lenses of these categories to explore their significance in influencing participation.

Education

For indigenous participants in the monthly REDD+ training workshops, the highest level of education completed was a strong factor in predicting the likelihood of their engagement with REDD+ decision-making processes. Those participants who did not have college experience all reported during interviews that they had never encountered the western scientific concepts behind REDD+ prior to the workshops. These participants also reported that they did not remember taking a science class in school. During workshops, these actors had considerable difficulty learning, and in turn, explaining key concepts, such as the carbon cycle, mitigation, and adaptation. These participants reported not attending Mesa REDD+ meetings or participating in other meetings and workshops about REDD+. Most of the participants with college-level experience reported having taken science in school, and some reported some familiarity with the key concepts prior to their participation in the workshops. These participants generally had an easier time learning and explaining the concepts during workshops and interviews. Several of them reported attending Mesa REDD+ meetings, and three worked in ORDEPISAM. Not surprisingly, the practitioners running the workshops all reported that they had had extensive experience with the western scientific concepts behind REDD+ prior to the workshops. Several of the practitioners reported first encountering these concepts in college, while others had learned about them through the course of their work.

The variations in comfort with new concepts and the pace at which participants learned them became a frequent source of frustration as the workshops progressed. The sessions were designed as an iterative process in which the topics increased in complexity as participants' understanding of the concepts improved. Practitioners facilitating the workshop used flashcards with terms and definitions, illustrated figures explaining key concepts, such as the carbon cycle, and a workbook to assist with explanations. Those who grasped new concepts faster were often those with more educational experience, and they were eager to move on to the next topic, while those with less educational experience often struggled to keep up. On several occasions, participants with greater comfort with the topics would jump in to explain key concepts with which others were struggling. In their explanations, they often used everyday objects to explain a concept, such as an orange to explain the earth's crust (the rind) and its core (the pulp), or explaining mitigation by shaking a bottle of soda until it was about to explode, then slowly opening it and releasing the pressure gradually to lessen the impact. These demonstrations were sometimes repeated at subsequent workshops and later incorporated into the explanations given by those participants that were initially less comfortable with the concepts.

The relationship between education level and level of engagement with REDD+ can be seen in the analysis of social network data. Ten of the fourteen actors in the network had a college education and one had a graduate degree. These ten all had the highest degree centrality scores, that is, the most number of ties to other actors in the network (Hanneman & Riddle 2005); those with high degree centrality scores have the most number of lines connecting them with other actors in Figure 4.2. Six of these ten were indigenous participants. A high degree centrality score indicates, in this case, that an actor is more likely to access information about REDD+ and climate change from a variety of sources within the network, and in turn, are the

most likely to influence information available in the network. Those participants who most frequently clarified concepts for others during workshops had the highest degree centrality scores among participants; this reflects their role as a respected source of information about REDD+, as they were also most frequently named as individuals who were knowledgeable not just about concepts, but also developments in regional decision making processes outside the workshops. Education also had a strong relationship with betweenness centrality in this network. Betweenness centrality indicates the extent to which an actor may play the role of broker or gatekeeper for information exchange (Scott 1991 [2000]). The nine actors in this network with the highest betweenness centrality scores were all college educated.

Language

During interviews, it was frequently noted that the level of fluency and literacy in Spanish was a strong factor in determining an individual's likelihood of engaging in REDD+ outside of workshops. This was also evident in observation of the workshops. Training workshops were held in Spanish, and participants were therefore required to speak and be literate in Spanish. However, it became apparent during participant observation that comfort working in Spanish varied among participants, with some having high levels of fluency and literacy, and some having greater comfort speaking, rather than reading and writing Spanish. The practitioners facilitating the workshops were all native Spanish speakers; none spoke the indigenous languages, so indigenous participants often were called upon to clarify key concepts in the indigenous languages for fellow participants struggling with understanding the concepts in Spanish. All of those participants engaging at the national level of REDD+ were among the most comfortable reading and writing in Spanish. The case was the same with the participants serving as representatives in ORDEPISAM; the one representative working at only the regional level

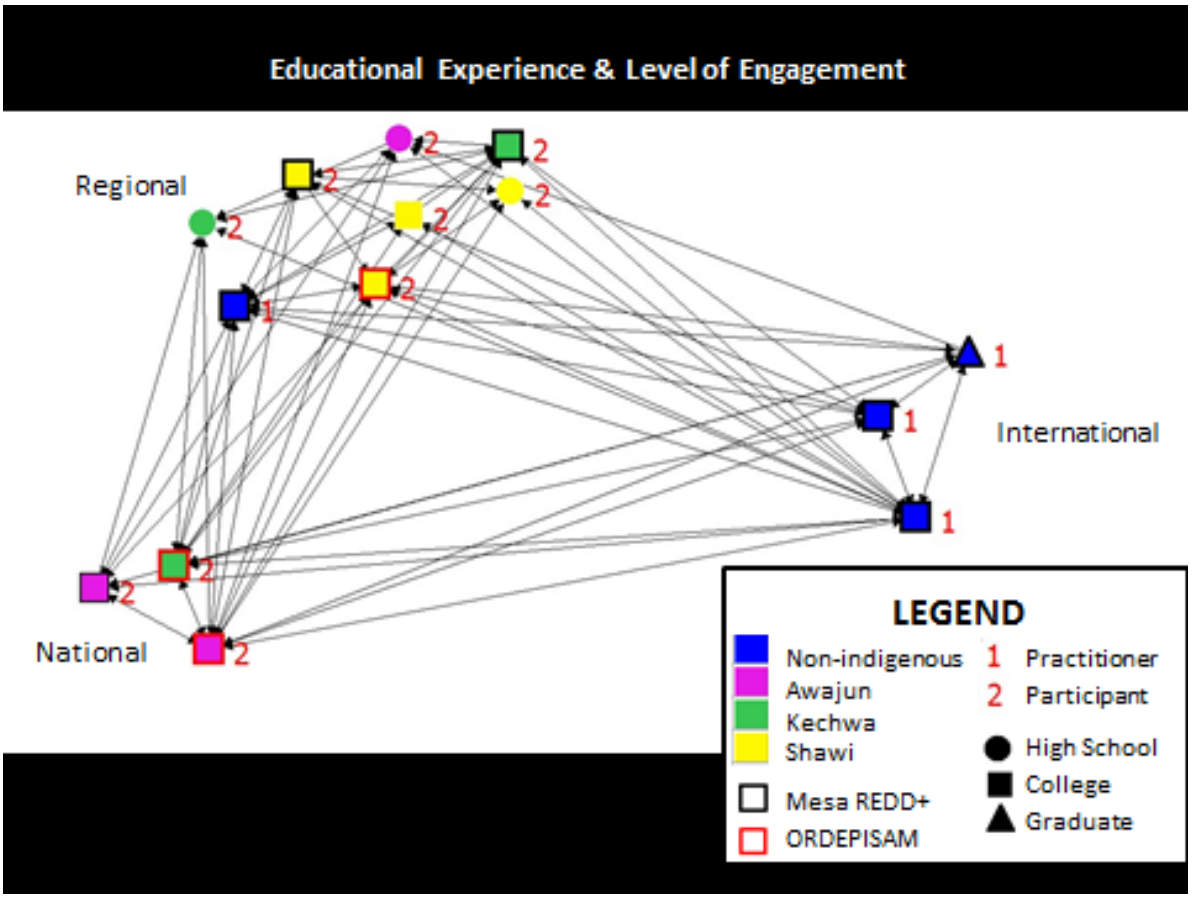

Figure 4.8. Education Experience & Level of Engagement in REDD+
In this diagram, each box, or node, represents an actor – in this case, a practitioner who conducted the workshop (1), or a participant in the workshop (2). The colors indicate an actor's ethnicity. The lines between actors indicate a reported interaction, and the arrows indicate the reported directionality. The shapes refer to the highest educational level reported by the actor. The nodes are grouped according to the largest scale at which they engage with REDD+.

was a recent appointment at the time of interviews and expressed an interest in engaging at the national level in the near future. Similarly, participants with the highest fluency and literacy levels in Spanish had less difficulty engaging with the material presented in workshops. They also frequently clarified key concepts in their respective indigenous languages for other participants during workshops (see Figure 4.3).

While practitioners facilitating the workshops and those working in San Martin, more generally, were aware that language was a barrier, there were few workshop sessions focusing on

the translation of terms and their concepts into the indigenous languages. In one such instance, a bilateral aid agency working in the region presented educational materials during the capacity building workshops that they had developed for use with indigenous communities. These materials consisted of a large, illustrated flip chart that gave a very basic overview in Spanish, Kechwa, and Awajun of the importance of forests and the services that they provide to communities. Their presentation received a very negative reaction from the indigenous participants partly because the dialect of Kechwa that they had used in the translation was not appropriate for the region. In addition, they had failed to include Shawi, one of the three indigenous languages, and the one in which the highest percentage of speakers are not bilingual. While the development of these materials was one of the few examples that I observed in which practitioners attempted to engage with indigenous groups in the indigenous languages, it also highlights the need for practitioners to better understand the cultural context.

Access

The third major challenge for encouraging participation in REDD+ decision-making that was repeatedly mentioned in interviews was access to information. As one practitioner based in Lima noted,

> "information that is flowing about REDD+ is centralized and is here in Lima, and when we talk about REDD+, we are not talking only about carbon, we are talking about the relationship with forests, with forest governance, with conservation, and with forest management, so it is very important that local people understand."

All conservation practitioners working in San Martin that were interviewed as part of this study noted that they exchanged information about REDD+ and climate change mainly through face-to-face meetings and via the internet. The majority of these practitioners were based in regional cities or in Lima, where internet and access to a central location for meetings is readily

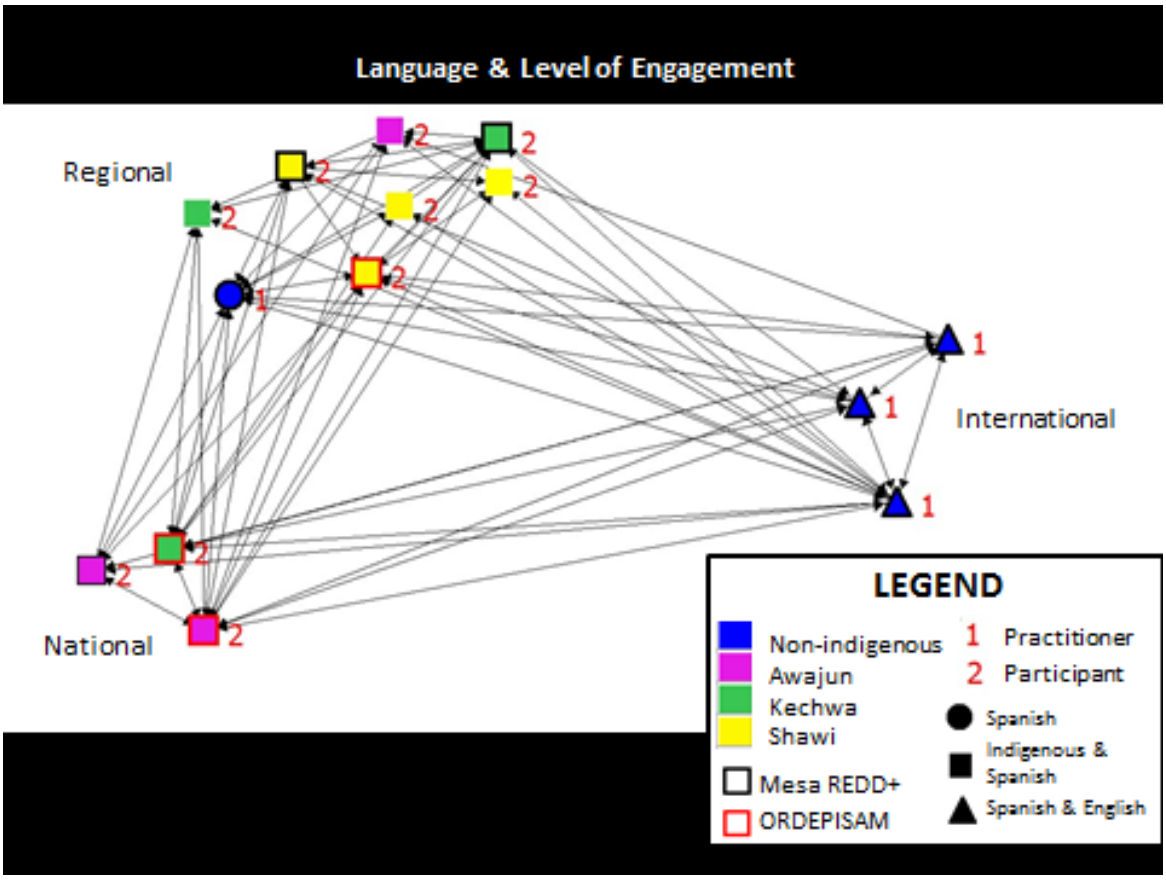

Figure 4.9. Language & Level of Engagement in REDD+
In this diagram, each box, or node, represents an actor – in this case, a practitioner who conducted the workshop (1), or a participant in the workshop (2). The colors indicate an actor's ethnicity. The lines between actors indicate a reported interaction, and the arrows indicate the reported directionality. Like the previous diagram, this network map is laid out according to the broadest scale at which the actors engage in REDD+; the positions of the actors have not changed. In this diagram, the shapes of the nodes have changed to reflect linguistic abilities.

available. For many of the indigenous participants in REDD+ training workshops, attending monthly workshops and Mesa REDD+ meetings could be very challenging because of the time and expense of traveling to the sites, and because information regarding the dates and locations mainly were exchanged by word of mouth. During interviews, participants living full time in indigenous communities reported accessing and exchanging information about REDD+ and climate change only during workshops. These participants also reported exchanging information about REDD+ and climate change the least often among all of the actors in the network. The

participants who reported the most frequent exchange of information about REDD+ and climate change all lived at least part-time in regional cities, and reported easy access to internet and cell phone service. These participants also reported the most frequent interactions with participants who were from other indigenous groups, and with conservation practitioners. In turn, those with the most frequent cross-group interactions were the most informed regarding REDD+ decision-making processes in the region.

ORDEPISAM

Participants who worked in ORDEPISAM, the regional indigenous office for development, all had high levels of education, strong language skills in Spanish, and access to information. Those individuals who had been hired to work in ORDEPISAM were well respected within in their communities, lived in or near regional cities, had college experience, and, in some cases, a background in law and teaching prior to joining ORDEPISAM and to their participation in the workshops. All began their participation in the regional capacity building workshops after joining ORDEPISAM, and all were among those participants that more easily and rapidly grasped the material early on.

ORDEPISAM was set up within the regional government to facilitate indigenous participation in decision making fora focusing on issues that affect their communities; Mesa REDD+ was one key regional forum. As a result, those participants working in ORDEPISAM frequently attended Mesa REDD+ meetings simultaneous to their participation in the capacity building workshops. They also had easy access to other regional decision makers as their office was located within the regional government's headquarters, and they were in daily contact with other regional decision makers and practitioners through their work. Their frequent exposure to

REDD+ through Mesa REDD+ in addition to the capacity building workshops further facilitated their learning of key concepts, and as the workshops progressed, these participants became the most likely to clarify concepts for others and to be reported as a source of information on REDD+. They also became the most likely to exchange information with participants from other indigenous groups and with non-indigenous conservation practitioners; representatives in ORDEPISAM were 12.5 times more likely to report frequent interactions with actors in other indigenous groups than non-ORDEPISAM members and 8.77 times more likely to report frequent contact with non-indigenous conservation practitioners than non-ORDEPISAM members. The two participants with the highest degree centrality were both in ORDEPISAM, and all three representatives of ORDEPISAM were among the top four participants in terms of degree centrality.

Education, Language, and Access for Regional, National, and International Scales

Interviews with practitioners, policy makers, and indigenous leaders outside the capacity building workshops indicated that aside from a familiarity with western scientific knowledge, requirements for participating in decision making processes varied depending on scale. At the local and regional scales, participation required a knowledge and comfort working in Spanish, access to meeting sites, and access to information about developments, often through internet access or word of mouth. For regional practitioners and policy makers for whom REDD+ was a central component of their work responsibilities, access to the latest developments at the national and international scales required strong contacts in Lima and literacy in English, as much of the most current information at the international scale is only available in English. In some cases, regional practitioners and decision makers who did not have a reading knowledge of English would rely on their colleagues to pass along the latest news on REDD+. Over dinner one

evening, one practitioner who was based in San Martin recounted her surprise at arriving at an international meeting focused on REDD+ in Latin America only to discover that it was held in English. While she was comfortable reading English, she was not comfortable conversing in it, and described her discomfort and disappointment at being unable to participate in the meeting.

For those working at the national scale, comfort with the scientific concepts behind REDD+ was more frequently cited as being important than it was at the local scale, as was literacy and fluency in both Spanish and English for accessing the latest information, and maintaining strong contacts with other actors at all scales. In addition, knowledge of policy making processes was cited as important for individuals engaging at the national scale. For those actors engaging in decision making at the international scale, fluency in Spanish and English, in-depth knowledge of the scientific concepts central to REDD+, a strong network of contacts, and in-depth knowledge of policy making processes at all scales were noted as critical. In many cases, actors were based at one scale, but simultaneously engaged in REDD+ decision making at more than one, and in some cases, local, regional, national, and international scales. For these actors, strong relationships with actors based at other scales were critical to their work, and they were often reported as being key sources of information about needs and decisions at other scales.

Discussion

The results of this research confirm that familiarity with Western scientific knowledge, and an ability to translate that knowledge in different cultural contexts is critical to an individual's ability to act as a boundary agent. Transnational NGOs working in developing countries have frequently been critiqued for disseminating and perpetuating western cultural

biases of nature conservation (West 2005; Novellino 2003; Zimmerer 2006) which may undermine local participation in co-management of natural resources (Hunn et al. 2003, Nadasdy 1999). Though it is often assumed that terms used within conservation and REDD+ refer to agreed-upon realities, they often have no counterparts in the language or cultural practices of native groups (Nadasdy 1999; Morrow and Hensel 1992). As one practitioner noted, "one barrier is language, but not in the sense that they don't understand everyday language, but when you present more technical aspects... It's very difficult to express many technical words because they don't understand them." This challenge was a frequent one in the capacity building workshops, particularly when discussing concepts such as the carbon cycle, ecosystem services, or the greenhouse effect.

The proliferation of western scientific terminology also biases the discourse toward a Northern perspective while simultaneously legitimating the authority of academics and practitioners working in conservation (Nadasdy 1999). While there was an awareness of the importance of traditional knowledge among practitioners and policy makers in San Martin, the focus of educational materials, capacity building workshops, and decision making processes was almost exclusively on western scientific knowledge. When asked about challenges related to knowledge, practitioners and policy makers frequently cited the lack of educational opportunities and proficiency in science among indigenous groups. Several also mentioned that traditional knowledge was important, but few offered examples of traditional knowledge, or discussed ways in which they were working to learn and incorporate it into projects or decision making processes. Those that did mentioned their expectation that the indigenous translators would facilitate the incorporation of traditional knowledge into projects and decision making processes.

This places the burden on indigenous people to navigate the boundary between traditional and western scientific worldviews.

Similarly, literacy and fluency in dominant languages are critical to accessing and exchanging knowledge. Like English, French, and Portuguese in other parts of the Global South, the proliferation of Spanish in Peru is rooted in the country's colonial history. Language was a critical tool of the colonial project that significantly reworked governance structures, resource management and land tenure systems in the Global South (Sundberg 2006). As with other colonial languages, Spanish in Peru often replaces and reshapes local systems of understanding the world. It has also served a critical role in facilitating communication among different cultural groups, such as the non-indigenous conservation practitioners, and indigenous Awajun, Kechwa, and Shawi groups engaging in REDD+ in San Martin. Yet, for NGOs looking to partner with indigenous communities on specific initiatives, the high rates of illiteracy and lack of fluency in Spanish are considered a serious challenge, making translators critical to the success of an initiative. The indigenous participants in regional training workshops not only become representatives of their federations and communities in ORDEPISAM and Mesa REDD+, but are also becoming those translators. They play a critical role by working with NGO representatives to translate between Spanish and indigenous languages at community meetings and can provide input into the creation of REDD+ educational materials in indigenous languages.

Despite their attention to the challenges created by language barriers, practitioners and policy makers are rarely learning indigenous languages, and efforts to create educational materials in indigenous languages are few. Responses to questions about why this is the case included explanations that both financial and human resources were limited, and that there was not sufficient time to learn the languages. Building a team of indigenous translators through the

capacity building workshops was frequently mentioned as the most realistic and effective way of addressing this issue.

Just as Spanish is the critical language in decision-making processes at the regional and national levels, English is often the critical language in REDD+ decision-making processes at the international level. This is closely tied to trends in knowledge production, namely that English is the lingua franca of academia (Kitchin and Fuller 2003, Kitchin 2005) and that approximately 94% of all indexed, scientific knowledge originates in Western, developed countries (Büscher and Mutimukuru 2007; Karlsson 2002) due to their control of bibliographic and funding resources (Kitchin 2005, De la Cadena 2005). This geographical imbalance in knowledge production has become a growing concern in the natural sciences in recent years, with widely-read journals such as *Oryx* and the *Journal of Applied Ecology* calling for greater representation of work from scientists in developing countries (McGowan 2010; Memmott et al. 2010; Milner-Gulland et al. 2010).

The significance of English in REDD+ came up repeatedly in interviews with practitioners and policy makers in San Martin and Lima. Several interviewees expressed frustration at needing to read English to access the latest news on REDD+ at the international level, or on having to rely on colleagues who read or spoke English to convey developments. The significance of English for decision making at the international scale also became apparent to the indigenous participants of the capacity building workshops. For example, during a lunch break on the last day of a workshop in Lamas, a Kechwa town in San Martin, an indigenous participant asked me how important it really was to learn English if he wanted to work in climate policy at the international scale. His question arose following a particularly challenging morning session in which workshop facilitators were explaining the development of REDD+ and the

history of the UNFCCC. While neither REDD+ nor international climate policy are simple or straightforward, for the workshop participants, the most challenging aspect of the morning session were the acronyms – a veritable alphabet soup of governing bodies: UNFCCC, UNCBD (United Nations Convention on Biological Diversity), UNCCD (United Nations Convention to Combat Desertification); the multilateral funding mechanisms FCPF (Forest Carbon Partnership Facility), and UNREDD (United Nations REDD+ Programme); and SES (Social and Environmental Standards) and the CCBA (Climate, Community, and Biodiversity Alliance), to name just a few. As a native English speaker who was relatively new to the world of conservation and development, the seemingly endless stream of acronyms surrounding climate policy were daunting for me to remember. For the indigenous participants, for whom Spanish was a second language and English a language only spoken by a few Lima-based facilitators, the acronyms were meaningless because they were based on English-language names. As the morning progressed, the participants became increasingly frustrated until the discussion turned to why everything was in English rather than Spanish. One facilitator explained that English is the language that is most spoken at international meetings, while another chimed in that "English is the universal language." The explanation offered for why it was so prevalent focused on the dominance of the United States and the United Kingdom in international policy, and the need for a common language among the many languages of the world. This came as a surprise to many of the participants who, while very aware of the political and economic reach of the US, would rarely encounter English in their everyday work as farmers, teachers, and lawyers.

Access to information through frequent attendance at meetings and engagement with NGOs and policy makers was another key attribute that enabled boundary spanning. Access was also an important factor in determining which languages educational materials were translated

into; in this case, educational materials had been translated into Awajun and Kechwa, but not Shawi. When asked why this was the case, the developers explained that they do not work with Shawi communities because they are located in very remote areas of the region, while Awajun and Kechwa communities are often near cities and accessible by main roads. This "spatial bias" (Chambers 1983), where the focus is placed on communities that are easy to reach, while omitting those that are remote, has long been a critique of development projects and is still prevalent in conservation (Poudyal et al 2016). The model of capacity building activities in San Martin aimed to address this challenge of disseminating information to remote communities by training participants from some of these communities who could then bring information back. However, because workshops were centrally held in the main cities, participants had to travel long distances to attend; those who lived furthest from the cities had lower attendance rates. This resulted in reinforcing the spatial bias of capacity building efforts in the region.

Though Western scientific knowledge and strong language skills were the most apparent attributes during interviews and in social network analysis, they are not the only attributes that enable boundary work. It became clear through observation of meetings, workshops, and group dynamics that trust, charisma, respect, time to engage, and overall interest in conservation, climate change, and regional politics were equally critical for boundary agents. Yet, these are more difficult traits to measure because they are highly individualized. Those participants in the workshops who were the most respected were not necessarily the most knowledgeable about REDD+, but in some cases, were the most vocal and assertive. Similarly, some participants had more difficulty engaging in discussions during meetings, but were excellent public speakers. Having the time to take off work in order to attend meetings and workshops, as well as an interest in learning about climate change and REDD+, were critical for boundary work.

In this case study, ORDEPISAM, an agency within the government that promotes and supports indigenous engagement in regional decision making, was key to active participation. The three representatives in ORDEPISAM were the most likely to have strong cross-group relationships, the greatest number of access points to information, and had the most time to dedicate to training workshops and meetings because their jobs were directly related to participation. In turn, these participants also had the highest levels of education, the strongest language skills, and spent most of their time residing in regional cities, where internet access was available. Though such positions are available to a very limited number of individuals, these representatives are key points of contact for leaders of the indigenous federations, and community members, as well as policy makers and practitioners.

Indigenous participation was limited at the time of fieldwork to elites. All participants in the training workshops had been recruited based on the recommendations of the leaders of the indigenous federations. Here, practitioners noted that such 'elite capture' (Lund & Saito-Jensen 2013) was due to the fact that these workshops marked their first engagements with the federations, so they had limited contacts within individual indigenous communities. Similarly, the practitioners noted that the support of the leaders was critical to developing strong, long-term working relationships with the federations.

Participation was also constrained by gender, as all participants were male. This is a common issue for indigenous participation (Agarwal 2001), and was explained by practitioners as being the result of lower rates of education and higher rates of illiteracy. For example, only 26.8 % of women in San Martin have completed secondary school, compared with 32.8% of men (INEI 2012), and indigenous women have the highest illiteracy rates, with 32.3% of Awajun, 28.2% of Kechwa, and 48.1% of Shawi women, compared with 9.7% male Awajun, 9.5% male

Kechwa, and 17.8% male Shawi (INEI 2007). Several of the male participants noted that attending workshops and meetings required traveling long distances and taking time away from their work and families, which was often very challenging. When asked why they thought women were not participating, they mentioned that women were the primary care-givers for children, so leaving their families to travel to the workshops was impossible for them.

Conclusion

Engaging local and indigenous people has long been a concern of community-based conservation due to the idea that it increases local capacity for conservation, builds feelings of responsibility for the natural environment, and improves governance mechanisms at the local level (Danielson et al 2013, Shanee et al 2014). Despite UNFCCC calls for local and indigenous engagement in REDD+ decision-making processes, relatively little attention has been given at the global level to facilitating meaningful participation (Danielson et al 2013). As a result, NGOs, policy-makers, and local and indigenous people have been left to develop decision-making processes at the national, regional, and local levels that allow for the integration of the views and interests of different sets of actors. In the process, they face challenges resulting from translation, or, in the words of one practitioner based in Lima,

> "They always take knowledge from here to the field and expect local people to understand it; but if you want to see change, it is all about the language of engagement: one message may not be the most appropriate for them if 20% speak Spanish and 80% do not, or if your message does not have a cultural meaning and they cannot understand it… or if you invite men and not women and women are the ones who collect the daily firewood in the forest."

In the case of San Martin, changing the language of engagement requires working across traditional and scientific knowledges, the linguistic boundaries among indigenous languages, Spanish, and English, and geographic boundaries. For the indigenous translators, practitioners and policy makers that span these boundaries in their work, the significance of these boundaries

is more than a practical one; it also highlights the power dynamics at play throughout every stage of REDD+ engagement (Reid et al 2010). Those actors that speak the dominant languages, Spanish and English, are comfortable with western scientific knowledge, and who live near cities have the most access to information about REDD+ and the most opportunity to participate in decision making processes. While there are efforts to increase access to information for those actors that do not speak the dominant languages or who have more traditional worldviews, the burden is still very much on them to acquire new skills in order to participate in decision-making processes. Learning and incorporating traditional knowledge into REDD+ projects, translating educational and information materials into indigenous languages, and developing mechanisms for engaging more remote communities may help change the language of engagement.

CHAPTER 5

REDD+ IN TRANSLATION:

KNOWLEDGES, TERMINOLOGY, AND THE POLITICS OF TRANSLATION[4]

[4] To be submitted to American Anthropologist

Abstract

The increasing attention paid to global climate change in recent years has led to the proliferation of transnational policies and programs that provide funding for developing countries to reduce rates of deforestation and increase reforestation. In the process, terminology and concepts related to conservation have been transported into new geographical, cultural, and political contexts. In this article, I explore what the circulation and (mis)application of REDD+ terminology can tell us about the dynamic relationship between western scientific and traditional knowledges. To address this, I examine the ways in which different types of actors, including conservation practitioners, indigenous people, and policy makers, encounter and engage with the key terms *climate change*, *REDD+* and *ecosystem services* in San Martin, Peru. This case study is based on data collected using participant observation at training workshops and meetings, interview data, content analysis and social network data collected in San Martin and Lima, Peru, and the United States, from April 2012 – May 2013. I first trace the emergence and evolution of these key terms in the academic literature to provide broad context for their use. I then analyze the ways in which different actors encounter and understand these terms. I conclude that while these terms can be difficult to understand due to their technical, western scientific nature, integrating traditional knowledge into conceptions whenever possible can facilitate greater engagement of local actors.

Introduction

The increasing attention paid to global climate change in recent years has led to the proliferation of transnational policies and programs that aim to address climate change by

providing financial incentives for developing countries to reduce rates of deforestation and increase reforestation (Agrawal et al. 2011; Clements 2010; Pokharel & Baral 2009). In the process, terminology and concepts related to conservation and climate change have been transported, applied, and adopted in new geographical, cultural, and political contexts. Though the use of such terms enables the formation of strategic alliances among actors with different identities and interests, they also carry with them particular forms of knowledge, agendas, and power structures from one political context to another (Brosius et al. 1998; MacDonald 2005). For actors engaging in Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities, understanding these terms and the Western scientific concepts behind them are key to participating in decision making over conservation and development priorities.

Political ecologists have raised concerns in recent years over the challenges created in the process of translating terms among different scales and sets of actors in transnational conservation partnerships (e.g. West 2005; Zerner 2003; Nadasdy1999). A central concern is that linguistic choices, such as the use of particular vocabulary, are anything but neutral and must be understood within the context of conditions of domination and power asymmetries (Bourdieu & Thompson 1991; Duranti 1985). For example, Büscher and Mutimukuru (2004) note that because terminology related to conservation and development originates in specific political and ideological contexts, its meaning can shift as it moves through space and time, creating challenges when a term is operationalized at the global scale. Similarly, local and traditional knowledge about the environment and climate change is often viewed as the result of observation, and the role that the reception of scientific knowledge plays in shaping traditional knowledge is not adequately addressed in the literature (Rudiak-Gould 2014). While a concern for conservation practice, the challenges created by translation are often viewed in a more

practical sense. In order for an NGO to work with a local group, they need the local group to understand and adopt their views of why the project is important.

For indigenous, governmental, and NGO actors in San Martin, a region in Peru's highland Amazonia, understanding and adopting terminology relating to REDD+ is seen as critical for participation in decision making processes over climate change mitigation. Yet, effective communication and integration of traditional and Western scientific knowledge about the environment remains a significant challenge. In rural areas of San Martin, local and indigenous people have limited opportunities to engage with Western science in school, making the highly technical terms and their concepts upon which REDD+ is based difficult to understand without significant explanation. To address this, local conservation practitioners, government officials, and indigenous people have been participating in two types of REDD+ training workshops facilitated by Conservation International, a transnational NGO active in the region. The first of these, referred to as the Training of Trainers (TOT), is designed to create a team of indigenous practitioners who can represent the needs and desires of their communities at regional and national decision making roundtables, known as Mesa REDD+, and who can convey the opportunities and challenges of participation back to their communities in a manner that is culturally appropriate. The second type are workshops for government officials, conservation practitioners, and indigenous leaders, designed to offer further insight into the processes that constitute REDD+ at the national and global scales. In both cases, terminology is central to the training.

In this article, I ask what can the circulation and (mis)application of REDD+ terminology tell us about the dynamic relationship between western scientific and traditional knowledges? To address this question, I examine the ways in which different types of actors, including

conservation practitioners, indigenous people, and policy makers, encounter and engage with the key terms *climate change*, *REDD+* and *ecosystem services* in San Martin, Peru. This case study is based on data collected using participant observation at training workshops and meetings, interview data, content analysis and social network data collected in San Martin and Lima, Peru, and the United States, from April 2012 – May 2013. I first trace the emergence and evolution of these key terms in the academic literature to provide broad context for their use. I then analyze the ways in which different actors encounter and understand these terms. I conclude that while these terms can be difficult to understand due to their technical, western scientific nature, integrating traditional knowledge into conceptions whenever possible can facilitate greater engagement of local actors.

Site Description

Peru is a global center for biological diversity, with numerous endemic species and a remarkably high diversity of habitats (Rodríguez and Young 2000). Located in the eastern Andean foothills, San Martin is a particularly biologically diverse region of Peru. The gradients in elevation, rainfall, and soil types have created diverse habitats for flora and fauna, including several rare, recently described bird species (Merkord et al. 2009) and the critically endangered yellow-tailed woolly monkey (Shanee et al. 2007). The tropical Andean forests of San Martin and its neighboring regions contain species diversity that is comparable to Peru's Amazonian lowlands, which covers 20 times more land (Shanee et al 2014). Yet, it is also a region where the pressures on biodiversity are particularly acute; as the "breakfast belt" of Peru, clearing land to make room for coffee, tea, and cereal production have driven rates of deforestation to among the highest in the country (Chatterjee 2009). Though setting aside land for conservation purposes is

a priority for the national and regional governments, financing the management of that land is challenging. REDD+ is therefore seen as an attractive option for generating funds.

The Peruvian government has been planning for REDD+ since 2008, and Peru is currently undertaking readiness activities within the framework of the World Bank's Forest Carbon Partnership Facility (FCPF 2015). The Ministry of the Environment (MINAM), is the leader of the national Mesa REDD+, and serves as the technical secretariat for subnational Mesa REDD+s to ensure that regional activities fit with national standards. Mesa REDD+ San Martin was the first regional Mesa REDD+ to be formed in Peru, in August, 2009, and is currently the most active. It is led by la Autoridad Regional Ambiental (ARA), the regional environmental authority, which is part of the government. An advisory council led by ARA and made up of representatives of organizations that are directly engaged with designing and implementing REDD+ projects in the region, serves to make policies and technical guidelines for REDD+ in the region. In addition, there are two technical committees consisting of NGOs, government agencies, and indigenous representatives active in the region, one responsible for environmental aspects of REDD+, and the other responsible for addressing the social aspects of REDD+.

San Martin has the 5th largest indigenous population of all of the departments of Peru, representing 4% of the region's population (INEI 1997). Awajun (Aguaruna), Kechwa (Lamas Quechua), and Shawi (Chayahuita), are the three indigenous groups in the region, governed by seven federations. In addition, a regional office for development, la Oficina Regional de Desarrollo de Pueblos Indígenas de San Martín (ORDEPISAM), includes representatives of each of the groups, and operates within the regional government. The participation of indigenous people in Mesa REDD+ is a priority for the regional government and NGOs working in the area,

and is the focus of significant capacity building activities among NGOs. ORDEPISAM is among the most active actors in Mesa REDD+.

Methods

This study is based on multi-sited fieldwork carried out from April 2012 – June 2013 in Lima, Peru, San Martin, Peru, and New York and Washington, DC. Analysis is based on data collected during participant observation of REDD+ planning meetings and training workshops, and semi-structured interviews. These interviews were with 2 sets of actors: the first, representatives of 37 institutions engaging in REDD+ in the region, and the second, indigenous participants of regional training workshops on REDD+. The institutions in the first set of actors included government entities working at the regional and national scales in Peru, conservation NGOs, regional universities in San Martin, agricultural cooperatives, and indigenous federations. These institutions were chosen based on snowball sampling beginning with three initial key institutions: CI, a transnational conservation NGO active in the region, ARA, the regional environmental authority, and ORDEPISAM. Interviewees were individuals that act as the institutional representatives at Mesa REDD+ meetings, and who are the liaisons with other organizations in the context of REDD+. In some cases, this included several individuals within the same organization.

The second set of actors was made up of individual participants and practitioners in REDD+ training workshops conducted by conservation NGOs and local government authorities for indigenous people in San Martin. These workshops were designed to create a team of trainers who would represent the region's indigenous communities at Mesa REDD+. Through the workshops, these translators learned about the concepts behind REDD+, its development, and the opportunities and challenges it could offer their communities. Participants in these workshops

were indigenous men selected by the leaders of the indigenous federations; their ages ranged from their early 20's to late 40's, and their livelihoods included farming, teaching, and practicing law.

During interviews for both sets of actors, respondents were asked about their educational and linguistic backgrounds, as well as the frequency and manner in which they give and receive information about the key terms *climate change*, *REDD+*, and *ecosystem services*. These terms were selected based on initial interviews and participant observation of capacity building workshops. Each of these terms has different attributes that affect the way in which actors engage with them. Climate change, for example, has been widely discussed within the news media and has been a source of academic inquiry for several decades. Initial observations indicated that it was the most likely term for actors with which they had some familiarity. Ecosystem services is a more technical term that exemplifies the current trend toward market-based approaches to conservation. REDD+, an acronym in wide use within San Martin and Peru, more generally, is the most recent and specific of the three terms, and serves as a mobilizing force for conservation in San Martin.

During interviews, representatives were asked the following questions about the key terms:

1. How do you define the key terms *climate change*, *REDD+*, and *ecosystem services*?
2. Where did you first learn about these concepts?
3. Which of these concepts are the easiest to understand and explain to others? Why?
4. Which of these concepts are the most difficult to understand and explain to others? Why?
5. Where do you get information about each of these concepts?
6. To whom do you give information about each of these concepts?

All interviews were tape recorded, transcribed, and coded using MAXQDA 10, a qualitative analytic software package. Analysis of interviews, as well as organizational and

policy documents, focused on the frequency and context in which the key terms were used by different sets of actors, and the ways in which their usage and intension (Putnam 1975) shifted in different contexts. These results were combined with observations from meetings and workshops to consider how different actors perceive and engage with the key terms. In addition, content analysis of the key terms using citation counts of peer-reviewed literature in Web of Science is presented to show the larger trends of usage over time.

Analysis

Climate Change

Usage in the Academic Literature

Climate change is the oldest of the three terms in this study. It first appears on Web of Science in 1864 in the Journal fuer Ornithologie (Von 1864), but was missing from the literature for several decades. There were a few mentions of climate change during the middle part of the 20th century, beginning in the 1940s in relation to post-glacial climate change (Quarterly Journal of the Royal Meteorological Society 1949) and climate change and bird speciation (Fleming 1942). Past climatic changes and modeling climate change were topics in the literature through the early 1970s, when the effects of climate change on humans was raised as a concern by Kopec (1971) and Roberts (1976). Anthropogenic climate change first appeared in the literature during the early to mid-1970's, with papers such as Kellogg (1973), Kellogg & Schnieder (1978), and Cooper (1978). Within a decade, scientists began to hone in on the link between carbon dioxide emissions in the atmosphere and climate change (i.e. Manabe & Wetherald 1980; Madden & Ramanathan 1980). Interest in the causes and effects of climate change increased at a slow,

steady pace from the mid-1980s until the early 2000s, when the number of citations more than doubled in 2003 to 5559 from 2418 in 2002 (see Figure 5.1).

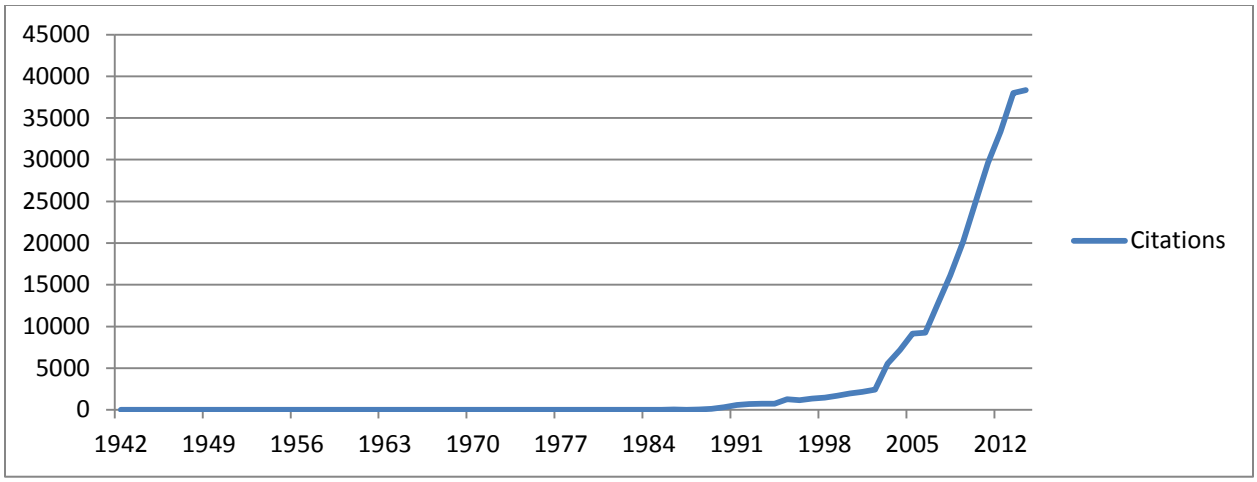

Figure 5.10. Number of citations for *climate change* in Web of Science by year

The increasing rate of publications focusing on climate change seen in Figure 5.1 reflects growing awareness and concern about climate change in the international policy arena over the last few decades. For example, the first noticable increase in the number of peer reviewed articles focusing on climate change seen in Figure 5.1 was in 1990, when the number of publications increased by over 120% from 1989. By 1992, there were 704 articles published on climate change, marking another increase of 130% compared with 1990. This jump corresponds with the United Nations Conference on Environment and Development, also known as the Earth Summit, held in Rio de Janeiro, Brazil in 1992. This conference was significant because it was the largest gathering of world leaders to develop a common agenda on environment and development (Swiderska 2002). One of the three international conventions that emerged from the Earth Summit was the Framework Convention on Climate Change (FCCC or UNFCCC), which focused on the reduction of greenhouse gas emissions (ibid.). Three years following the Earth Summit, in 1995, there is another significant increase in publications - 1265 compared with 742 the year before, or a 70% increase. This three year delay may correspond to the timing of

publishing in peer-reviewed journals, which often require lengthy review periods. By the year 2005, there were 9138 publications, almost 2000 more than the year before, 2004. In this same year, Costa Rica and Papua New Guinea proposed REDD+ as a way of mobilizing international funding to reduce carbon emissions from deforestation at the 11th Conference of the Parties (COP) at the UNFCCC (Alvarado et al. 2007).

Usage in San Martin

Climate change, or *cambio climático* in Spanish, was in frequent use in San Martin, and was a common topic of conversation in meeting of regional policy makers, NGOs, aid agencies. It was also a common term used by local actors, particularly farmers. During interviews, organizational representatives and conservation practitioners were generally not able to recall a specific moment in which they first encountered the term, but instead reported an awareness of the issue developing from exposure to international and national media. Several practitioners reported a shift in the focus of their work to climate change around 2005-2006; this timing corresponds with both a marked increase in the number of publications on climate change and the presentation of REDD+ at the 11th COP of the UNFCCC (Alvarado et al 2007). Two practitioners mentioned hearing the term "global warming" before hearing "climate change," which both described as being new to the region. One noted that the first time she had heard this new term was at a capacity building workshop held by two conservation NGOs in 2010. About 30% of practitioners reported learning about issues surrounding climate change during college classes, and the rest developed their knowledge through the course of their work.

Indigenous leaders and members of agricultural cooperatives had a more difficult time recalling when they first encountered the term. However, many described a general awareness of changes that they had experienced in the climate of the region over the last 10 years, such as

more frequent drought events, higher temperatures, and flooding. For farmers, these changes were reported as having a significant effect on their crop yields. Indigenous participants in the capacity building workshops reported learning about climate change during the course of the workshops, but two-thirds reported having heard about it prior to the workshops, often through the media.

Climate change was a frequent topic of conservation NGOs' capacity building efforts in the region. The definition for climate change in the workbooks and flashcards that were most widely used in the region was "the change of normal weather patterns around the world over a long period of time" (Stone & Leon 2010:53). When asked how they explain climate change to those not familiar with it, one practitioner who regularly facilitated capacity building workshops responded,

> "you don't define it as a concept, but you define it as experiences they have lived. For example, the ways in which it affects crops, decrease in flow of water, changes in temperature – hotter, colder, and long stretches of drought and no rain or more intense rain."

This explanation was the most common offered as a definition during interviews by practitioners, policy makers, and indigenous participants in capacity building workshops. Those who went on to explain that these events are related to long-term changes in weather patterns resulting from anthropogenic activity were workshop facilitators, participants, or those who gave frequent presentations on REDD+-related activities. While interviewees frequently mentioned that climate change was the easiest of the concepts to explain, most explanations were limited to the effects rather than the factors and processes that cause it. This was a significant concern for many practitioners. As one indigenous practitioner explained,

> "there is no awareness gained by people explaining climate change by saying that there is variation in temperature, or scarcity of water. They understand the effects, but few understand the cause, what the limits are for emissions, what the natural boundary is, and

> what the effect is of those who are responsible for emitting carbon, what the link is to deforestation, or how to measure it. They only know something is happening. And whether they understand it or not, they will still pay the consequences."

The processes that affect climate and the causes of climate change were dominant themes of many workshop sessions, and overviews of these were frequently included in regional and national stakeholder meetings on forest conservation. During one workshop session in which facilitators were explaining the relationship between carbon emissions and greenhouse gases, the conversation shifted to the role that developed countries, particularly the United States, play in carbon emissions. After hearing descriptions of how families in US own multiple cars and drive everywhere, and that there are large power plants to generate electricity for US houses, one indigenous participant asked, "Why doesn't the US want to reduce their emissions? Why do we have to, when we don't have cars or many motorcycles in our communities and they have many?" This question reflects a sentiment that came up repeatedly when interviewees explained the cause of climate change in their definitions. In several cases, developed countries were cited as being responsible for climate change as result of their high emissions levels. There was also a awareness expressed in several explanations by participants that those actors that emit the most carbon are not the ones most affected by climate change.

Ecosystem Services

Usage in Academic Literature

Over the last few decades, e*cosystem services* has been receiving increased attention as a way to communicate societal dependence on the environment (Daily 1997; de Groot et al. 2002; Gómez-Baggethun et al. 2010), and is the most technical of the three terms in this study. Though explicit concern for *ecosystem services* within ecology and economics is only about 35 years old, Mooney & Ehrlich (1997) argue that the notion upon which it is based, that natural resources are

not infinite, can be traced back to George Perkins Marsh's *Man and Nature* in 1864. The modern conception originated with Westman's (1977) 'nature services,' in which enumerating the social benefits that ecosystems provide would facilitate informed policy and management decisions. It was further developed as a pedagogical tool to demonstrate how biodiversity loss would affect the well-being of society by Ehrlich & Ehrlich (1981), and de Groot (1987). The Millennium Ecosystem Assessment (2003) marked a critical point in which *ecosystem services* moved beyond the realm of pedagogy to the policy agenda and has led to an exponential increase in the literature on the concept (Gómez-Baggethun et al. 2010) (see Figure 5.2). Despite the lengthy history of the concept and numerous examples of its use in a variety of contexts, developing a definition that enables meaningful comparisons among different projects and policy contexts continues to be a challenge (Boyd 2007; Boyd and Banzhaf 2007; Wallace 2007; Fisher et al. 2009). The ambiguity of the definition of *ecosystem services* and the challenges that this creates for comparison among different contexts is of particular concern for REDD+, as it is an international program that relies on market-based mechanisms to decrease deforestation and forest degradation and increase rates of reforestation in a variety of cultural and political contexts (Clements 2010).

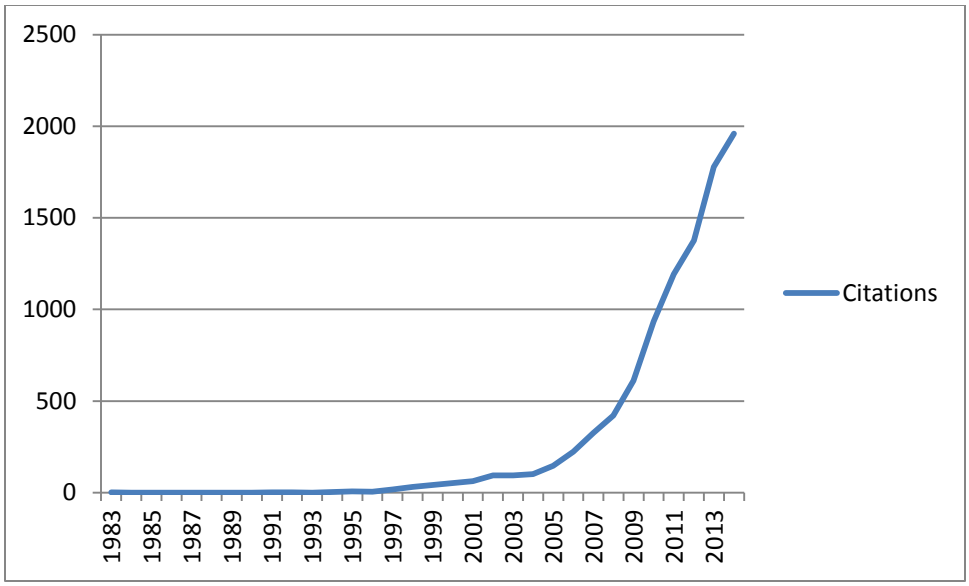

Figure 5.2. Number of citations for *Ecosystem Services* in Web of Science by year

Usage in San Matin

While not as frequently used in San Martin as *climate change*, *ecosystem services*, or s*ervicios ecosistémicos* in Spanish, was a term that practitioners all reported being familiar with, and most policy makers and indigenous leaders reported having heard before. Unlike climate change, interviewees could identify specific moments when they first heard the term. For practitioners who had recently completed an educational degree in natural resource management and related fields, this first encounter was most often during classes. For policy makers and practitioners who have been out of school for more than a decade, their first encounter was often through workshops, reports, or more generally in the course of their work. For the indigenous participants, it was always during capacity building workshops over the course of the previous year.

Ecosystem services was defined in capacity building materials as "the benefits people obtain from ecosystems. Ecosystems provide essential services for people all over the world. These include: services that provide food, water, timber, and fiber; services that control climate, floods, disease, waster, and water quality; cultural services that are a source of spiritual benefits

and also enjoyment." (Stone & Leon 2010:54). It was the term that was least attempted of the three terms, with only 81% of interviewees offering a definition during interviews. Those that did attempt to define it gave explanations that were similar to that used in the capacity building workshops. Those that did not attempt to define it were indigenous leaders who were not directly engaging with Mesa REDD+, representatives in the private sector, and members of agricultural cooperatives who reported have not attended many meetings of Mesa REDD+ or capacity building workshops on REDD+.

While ecosystem services was the least attempted of the three terms, practitioners frequently mentioned that it was comparatively easy to explain during capacity building workshops. As one practitioner explained,

> "When we are talking about ecosystem services, we explain that the forests give us things beyond what we usually imagine. When we work with the indigenous, for example, they say 'for me the forest is my pharmacy, my market, my hardware store; it's where I get my wood, it's a market because it's where I get my food, it's a pharmacy because it's where I get my medicine.' These are ecosystem services."

Interviewees who worked in conservation, natural resource management, and policy making most often defined the term as benefits that people receive from healthy ecosystems. Most workshop participants were able to define this term by using examples of ecosystem services that they received from forests, such as clean water, fish from the river and animals to hunt, and plant materials for handicrafts. One indigenous participant explained that although ecosystem services was a new term, the concept was not new. He explained, "before, we did not exactly identify ecosystem services not because we thought that the forest only gave us wood, but we never valued its role in regulating of weather." While ecosystem services was considered an easy concept to explain because of the many examples that could be pulled from everyday experience, the valuation of ecosystem services and its role in REDD+ was rarely mentioned.

REDD+

Usage in the Academic Literature

Reducing Emissions from Deforestation and Forest Degradation (REDD+) first appeared in the literature in 2006, a year after it was presented at the United Nations Framework Convention on Climate Change 11th COP as a way of mobilizing international carbon finance to reduce deforestation in developing nations(see Figure 5.3) (Alvarado et al 2007). It is premised on a system of payments for ecosystem services and is the most recent market-based mechanism for conservation (Dressler et al 2014). REDD+ began as RED (Reducing Emissions from Deforestation), then evolved to REDD (Reducing Emissions from Deforestation and Forest Degradation), and finally, to REDD+, which includes conservation, the sustainable management of forests, and the increase of carbon reserves or stocks (Velarde et al 2010; Arhin 2014).

REDD+ involves the provision of financial compensation for the reduction of greenhouse gas emissions from deforestation and forest degradation (Alvarado et al. 2007; Angelsen 2008; Poffenberger & Smith-Hanssen 2009) and is seen as key to combating climate change (Gibbs et al. 2007; Huettner et al. 2007). Funding for REDD+ projects is intended to come through a voluntary carbon market, yet most funding is currently aimed at "REDD+ Readiness" activities which build the governance mechanisms necessary to manage a market (Fletcher et al 2016). While there are approximately 500 pilot projects worldwide, there is comparatively little data concerning the outcomes and implications (ibid.). However, topics addressed in this literature include: the difficulties of quantifying the carbon emissions of nation-states (Gibbs et al. 2007) and determining the 'right price' for forgone land use; the challenges in establishing a market for REDD+ credits and in developing the capacity to verify emission reductions; the need for constant long-term financing for forgone land (Alvarado et al. 2007);

determining the most effective scale for implementing support for REDD+ projects (Angelsen 2008); supporting the participation of small local stakeholders; the possibility that REDD+-induced changes in land use trends could exacerbate poverty; and the possibility that the focus on carbon could compromise the quality of ecosystem management (Huettner et al. 2008).

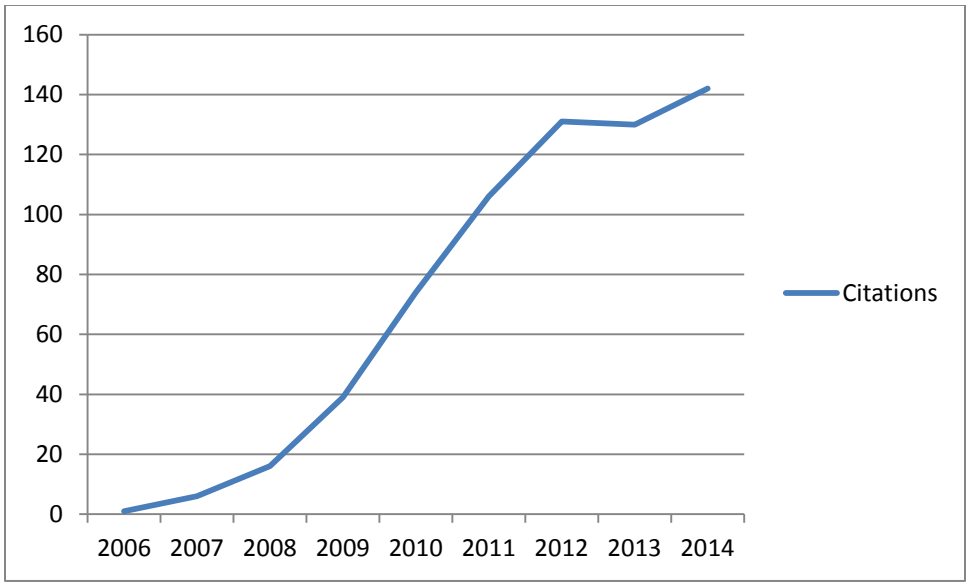

Figure 5.3. Number of citations for REDD+ in Web of Science by year

The frequency of publications on REDD+ has grown steadily since it was first proposed at the UNFCCC COP11 in 2005. The period of most marked increase was from 2008-2011, in which the number of publications on REDD+ increased by 115%. This period corresponds to what den Besten et al (2013) describe as an expansion of actors engaging in REDD+, which led to the development of new ideas and concepts about REDD+. During this time, three main discourses on REDD+ emerged; the first, was critical of the emphasis on markets and carbon for addressing deforestation. The second, while critical of REDD+'s potential for addressing conservation priorities, focused on the strengthening of governance mechanisms and the development of social and environmental safeguards. The third advocated for REDD+ and favored investment in the voluntary carbon market (ibid.). The steady rise in publications from

2008-2011likely was due to the debates stemming from these three discourses, as well as uncertainty regarding REDD+'s development. In 2010, the debates regarding social and environmental safeguards culminated in the Cancun Agreements at the UNFCCC COP16 (Rajamani 2011). The leveling off of publications in 2012 may be due to a decrease in debates about safeguards following the Cancun Agreement and an increasing on implementing REDD+ Readiness activities in preparation for REDD+ implementation.

Usage in San Martin

REDD+ has been an increasingly frequent topic of discussion in San Martin since 2009. Though all interviewees reported having encountered the term at meetings or workshops over the previous few years, their comfort and ability to explain REDD+ varied widely, and all reported it as the most difficult to explain of the three terms. This was widely attributed to its complexity. A couple of practitioners mentioned confusion over the acronym. One explained,

> "all acronyms that come with the REDD+ process are difficult, the whole issue of REDD + terminology: the RPP [the Forest Carbon Partnership Facility's Readiness Preparation Proposal], climate change conventions [i.e. the UNFCCC] and carbon measurements, inventory, all of them."

REDD+ was defined in the capacity building materials as "reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries" (Stone & Leon 2010:55). Policy makers and representatives of conservation organizations all first defined the acronym by spelling out what it stood for; most defined it as a funding mechanism to address deforestation in the region. For example, one policy maker described it as "a voluntary mechanism to decrease deforestation by avoiding those actions that cause deforestation and forest degradation." Only those that facilitated capacity building workshops mentioned the meaning of the "+" at the end. Most representatives from the private

sector and indigenous federations defined REDD+ by stating what the acronym stands for without elaboration. Several interviewees who represented organizations that were not directly involved in conservation or natural resources management were unable to say what the acronym stood for, though all reported hearing about it frequently and knew that it had to do with deforestation and climate change. The indigenous participants of the capacity building workshops always gave the full name, *Reducing Emissions from Deforestation and Forest Degradation*; most mentioned funding to support alternative activities to mitigate deforestation. Those who worked in conservation mentioned hearing of it earlier than those in other sectors; generally, conservation practitioners reported hearing of REDD+ before the forming of Mesa REDD+ in 2009, while other actor-types reported learning of it as recently as 2011. All but one workshop participant reported first hearing of REDD+ within the context of the workshops.

Movement of Terms

In interviews with 37 organizational actors, there were 880 reported exchanges of information regarding the three concepts. During interviews, interviewees were asked who they spoke to about these terms in the context of their work and engagement with Mesa REDD+. These exchanges included both giving and receiving information about these key terms. Their responses ranged from descriptions of who they received information from about the effects of climate change in their communities in the case of indigenous people, to who they explained REDD+ to during capacity workshops in the case of practitioners. The different rates at which information about these terms were exchanged highlights the degree to which actors are engaging with them in the region. Climate change was the most used term, with 39% of the total exchanges, REDD+, the least defined of the terms, was the next most used, with 33%, and ecosystem services was the least used of the three, with 28% (see Table 5.1).

Table 5.1: Exchanges of Information by Term

Term	# of Reported Exchanges	Percentage of Total
Climate Change	344	39%
REDD+	287	33%
Ecosystem Services	249	28%
Total	880	100%

Discussion

Climate change, *ecosystem services*, and *REDD+* are three key terms that are widely adopted and applied by diverse sets of actors in natural resource governance. Their prevalence is indicative of a shift over the last couple of decades in conservation priorities from locally-oriented natural resource management to globally-oriented initiatives aimed at addressing climate change. At the same time, the urgent need to understand the complexities of climate change is driving research into highly specialized natural sciences, making it increasingly difficult to incorporate that knowledge into different contexts (Benn & Martin 2010). This is a central concern among conservation practitioners working in San Martin who see the lack or inconsistent understanding of key terms and concepts in REDD+ as a major challenge for decision making processes. This concern is shared by policy makers and indigenous leaders, who frequently mentioned understanding and adopting key terms as necessary for making their voices heard.

A frequent explanation that was brought up in interviews for why these terms were so challenging was a lack of educational opportunities and exposure to western scientific knowledge, as many of the concepts central to REDD+ are based on western scientific worldviews. To address this, practitioners running capacity building workshops worked to build an understanding of the key concepts for indigenous participants. As one practitioner noted:

> "We had to determine how to relate these [concepts] to their own background, to their own concepts and reality. And try to do it in an interesting way because these are issues that are not day-to-day issues, they are not like health issues, or educational issues, which some indigenous are passionate about. So we had to make it an easy-going process."

They did this by designing the workshops as an iterative process; instead of following a set curriculum and timescale, workshop facilitators only moved forward when participants could demonstrate that they understood key concepts by explaining them in their own words. However, the most technical concepts, such as ecosystem services and the carbon cycle, frequently had to be revisited because many participants had considerable difficulty grasping the concepts. This created challenges for the workshops facilitators who had to continually revise their program and expectations. It also created frustration for participants who had stronger backgrounds in science, and thus grasped the concepts more rapidly. This challenge was noted during several interviews; as one policy maker working at the national scale explained:

> "It is very difficult to explain concepts [when there is no previous scientific knowledge]. it is a problem because you have to simplify some concepts so much that they are no longer technically true – they don't reflect what you are trying to explain. And that is actually very complex when you start trying to build on knowledge and you don't have the most basic level of scientific knowledge, and so it becomes really hard for some concepts."

Yet, though many of the indigenous participants in the workshops had trouble giving the technical definition of *ecosystem services* that was presented in capacity building materials, they frequently reported that it was an easy term to explain to members of their communities. This was because there were many examples of ecosystem services upon which their communities benefited that they would use in explaining the concept, such as clean water, fish in the river for food, and game for hunting. The same was reported for climate change. When explaining climate change, indigenous participants had little difficulty giving examples of changes that they had noticed in their communities. For example, drier conditions affecting crops, or more frequent

flooding events. However, explaining the anthropogenic aspects of climate change was reported as more difficult, and only a few were able to explain the carbon cycle in detail using illustrations. REDD+ was reported as significantly more difficult to explain.

The challenges created by technical concepts are not limited to those without training in Western scientific knowledge. During interviews with organizational actors, the number of reported exchanges of information decreased as the terms became more specific, with *climate change*, the most general, being most often mentioned, and *ecosystem services*, the most specific, the least mentioned. Similarly, those organizational actors who reported using the more specific terms also were those who had the most access to technical expertise in these areas, such as national and international NGOs, government entities, and IGOs. In many cases, these actors reported having experts in-house, or had regular contact with other organizations with such expertise. These technical experts also were most often reported as the sources of information by other actor types in the region. This trend also has been noted with another highly technical term, *carbon sequestration*. In their research in Australia, Miller et al. (2007) found that factors such as gender, education, and income status factored heavily on an individual's knowledge of and willingness to engage in debates about carbon sequestration. Specifically, individuals who had higher degrees and larger incomes were more likely to be knowledgeable about carbon sequestration and actively engage with debates about planned initiatives in their areas.

One of the implications of these findings is the need to better understand and incorporate traditional worldviews about the environment into conservation interventions. While practitioners and policy makers frequently mentioned the importance of respecting traditional knowledge, I found that few practitioners gave concrete examples of traditional knowledge, or demonstrated an understanding of the dynamic relationship between traditional and western

scientific knowledge. As Rudiak-Gould (2014) notes, traditional knowledge is often dismissed for being based on observation, when it is dynamic and often shaped by the reception of scientific knowledge. This was apparent in one practitioner's explanation that

> "the people here know a great deal about the landscape – about the trees, the birds, the crops. But what they can't physically see, they don't understand, so we have to be very creative when explaining *carbon*, or *carbon dioxide*, or even what *sea-level rise* means, because very few of them have ever seen the ocean."

While not an uncommon perception of local, traditional knowledge, this was not a universal view among practitioners. Another practitioner gave an example from an earlier workshop of how indigenous views of land management were very much aligned with land use planning,

> "we were explaining land use planning, what a planned area is, where you identify where there is harvesting, where there is a reserve. One of the Awajun, for example, said, 'we know this concept, but we do not have the word for land use planning. For us, it is called "taki mata," "good living." So, these concepts are not different than what we want. But we have to clarify the term.'"

This example demonstrates the importance of identifying ways in which scientific and traditional worldviews may be aligned and provide opportunities for more inclusive conceptions of key terms.

Conclusion

The results of this research demonstrate that terms are not merely transported from one place to another – across scale, geographies, disciplines, and worldviews. They are engaged with and applied in different contexts by individuals whose understanding of them is shaped by their worldviews (Nadasdy 2011).For actors in San Martin, understanding and adopting the concepts behind REDD+ is seen as critical for their participation in decision making processes. This was especially true for indigenous participants and leaders, who repeatedly mentioned that while the terms used in REDD+ are often difficult to understand and explain, they also are a requirement for participation. When faced with challenges in conveying the technical aspects of climate

change and ecosystem services, practitioners and indigenous participants frequently used examples from everyday experiences to explain the concepts behind them. REDD+, in the other hand, was significantly more challenging. Despite its frequent use among many different types of actors, the understanding of the term was often limited to terms for which the acronym stood.

This research also highlights the disproportionate emphasis on western scientific knowledge within REDD+ initiatives. During interviews, practitioners and policy makers focused on the lack of educational opportunities and scientific knowledge as the main cause of confusion over meaning. While they also mentioned the importance of traditional knowledge for indigenous participation, practitioners often had a simplistic understanding of the relationship between scientific and traditional knowledge. Indigenous participants, on the other hand, frequently incorporated traditional knowledge into their explanations and understanding of terms. Developing REDD+ projects that better incorporate traditional knowledge with scientific knowledge is key to supporting the engagement of local actors in REDD+.

CHAPTER 6

CONCLUSIONS

In this dissertation, I have explored the role that translation plays in conservation, with particular attention paid to how translation affects participation in decision making processes. I have drawn on perspectives found in political ecology, post-colonial studies, and the politics of knowledge and scale literatures to outline a framework for seeing translation as more than between languages, but rather, as including knowledges, scales, and interests. Though this research was located geographically in the Peruvian department of San Martin, its capital city, Lima, and New York and Washington, DC, these sites were simultaneously local, regional, national, and global, as knowledge and resources moved through networks of institutional and individual actors engaging in REDD+.

The major findings in this dissertation research have broad practical and theoretical implications for conservation and environmental governance. Among the most significant are that NGOs play a critical role in bridging different types of actors, and in facilitating the participation of indigenous and local peoples in decision-making processes. However, NGOs and other international actors continue to play a dominant role in the exchange of information about REDD+. As a result, the voices and interests of local level actors may not be sufficiently represented in regional governance networks. (Chapter 3).

Chapter 4 explores the barriers to participation in REDD+ decision making processes. It concludes that those actors that speak the dominant languages, Spanish and English, who are comfortable with western scientific knowledge, and who live near cities have the most access to information about REDD+ and the most opportunity to participate in decision making processes. While there are efforts to increase access to information for those actors that do not speak the

dominant languages or who have more traditional worldviews, the burden is still very much on them to acquire new skills in order to participate in decision-making processes. Learning and incorporating traditional knowledge into REDD+ projects, translating educational and information materials into indigenous languages, and developing mechanisms for engaging more remote communities may help change the language of engagement.

Finally, Chapter 5 examines the ways in which different actors understand and engage with key terms. The results demonstrate that terms are not merely transported from one place to another – across scale, geographies, disciplines, and worldviews. They are engaged with and applied in different contexts by individuals whose understanding of them is shaped by their worldviews (Nadasdy 2011).For actors in San Martin, understanding and adopting the concepts behind REDD+ is seen as critical for their participation in decision making processes. In addition, this chapter also explores the disproportionate emphasis on western scientific knowledge within REDD+ initiatives. Developing REDD+ projects that better incorporate traditional knowledge with scientific knowledge is key to supporting the engagement of local actors in REDD+.

Avenues for Future Research

As conservation concerns become increasingly focused on global climate change, the need for a larger body of work in global ethnography grows. Political ecology has a very strong tradition in exploring the local context of struggles over environmental issues with connections to national and global debates (Purcell & Brown 2005), but there are comparatively few examples that look at the context of global decision making. While official decisions made by the Rio Conventions, such as the UNFCCC, are widely publicized, there is little information about the roles that non-state actors, such as NGOs, indigenous groups, and the private sector,

play in influencing such negotiations (Witter et al 2015). As the UNFCCC COP 21 in Paris approaches this November, expected to be a landmark conference with an anticipated 40,000 participants, the relationships among these actors, and their modes and degrees of influence over priorities and outcomes will become increasingly complex. Further research into the dynamics that enable and shape participation in such events will shed light on all scales of engagement, and would have both practical and theoretical significance.

Another avenue of future research concerns the need to better understand the institutions that play significant roles in decision making processes at various scales. Many of these institutions act as vehicles for moving information and funding among actors at different scales and working in different sectors. Transnational NGOs, such as CI, are examples of these, and are increasingly recognized within the global environmental governance literature as having significant influence in global decision making (Biermann 2010). Further, the majority of those NGOs with the most influence in global REDD+ policy making have headquarters in prominent geographical centers for REDD+ in the United States and Western Europe; Washington, DC, for instance, is home to seven such NGOs: The Nature Conservancy, Conservation International, Care International, Winrock International, the Blue Moon Fund, Forest Trends, and the World Bank (Gallestrom & Munroe 2013). This geographical centralization likely is due to the ease of access that these NGOs enjoy with key governmental and multilateral agencies that are similarly based in these cities. Further research into the dynamics of this centralization would be helpful in understanding to what extent physical location affects their influence in global networks, how it influences the creation and maintenance of strategic alliances, and how actors who are not similarly located navigate this dynamic.

Transnational NGOs are networks, in and of themselves (Gallestron & Munroe 2013). Yet, in many studies, this one included, they are treated as single actors. What I have presented in this dissertation is a first layer of analysis; future analyses that incorporate institutional ethnography would be very helpful not just in understanding how field offices and headquarters work together, but in exploring to what extent such institutions facilitate South-South exchange of knowledge and practices. In the case of this research, I made the choice to count institutions such as CI, the United Nations, The Nature Conservancy, and the World Wildlife Fund (WWF) as single actors for several reasons. First, I was limited in terms of time and resources; conducting such an analysis would require a team of researchers with strong ties to the institutions that they were studying. In addition, it would require that the institutions and interviewees, themselves, understand the significance of such an analysis, as it requires considerable time on both the researcher and respondent's part. Second, is the issue of access. In many cases, institutional actors are hesitant to allow researchers access to the personnel and organizational materials required to do such research. This issue came up in the context of my research in San Martin when an NGO that I was working with raised concerns that my research might be overly critical of the organization, itself. Because I had established a strong relationship of trust with the local offices, and was transparent both in the process of conducting my research and in presenting my preliminary findings, I was able to allay any concerns that I was interested primarily in "Bagging a BINGO," that is, focusing my research on critiquing the problems created by a big, international NGO. It was also helpful that the focus of my research questions were on critiquing conservation practice, generally, rather than focusing on a critique of the organization, itself. However, this issue has serious implications for conducting engaged research.

Practical Implications

Institutional ethnography that explores the structure and connections of large, transnational NGOs and multilateral institutions, is not just intellectually significant, but has practical implications, as well. During interviews, several representatives of large transnational NGOs with staff of a few hundred or more indicated that they were not as aware of the scope and breadth of their institutional network as they should be. In many cases, this was attributed to the nature of connections being linked to individuals within this organization as opposed to the organization, as a whole. These connections were often lost or moved with the employee when they left the organization. In other cases, the sheer size of the organization and its network created challenges for understanding its structure, especially when it overlapped with multiple geographic contexts and fields of practice. Understanding the nature of organizational networks such as these would be helpful for these organizations to ensure that information and resources moved efficiently. It would also be useful for other actors in the network as they would have a clearer picture of asymmetrical power relationships, and opportunities for linking with actors that have more access to information or resources.

Among the most significant challenges that I have encountered through my fieldwork and during current job in conservation practice is in bridging the worlds of practice and academia, specifically, in facilitating the translation of scientific knowledge to inform practice. Practitioners on the front-lines that I have worked with rarely have formal training in the social sciences. While many of those that I spoke with in the course of this research voiced concern over a general lack of understanding and attention to the social aspects of conservation, such as the effects of conservation interventions on livelihoods or a lack of understanding of the significance of local knowledge for conservation, few had the time or resources to explore the

implications of these issues. Even for those practitioners working in global headquarters of conservation NGOs with training in the social sciences, access to the scientific literature is often severely limited due to the high costs of journal subscriptions and restricted budgets. This is a significant impediment to understanding the latest findings and critiques in the literature that should be addressed in practice. This came up in several interviews with practitioners who were frustrated at their lack of access. At other points, in became apparent through discussion that interviewees were not aware of scholarly critiques of practice that had significant implications for their work.

The politics of translation in conservation is complex and multi-faceted. It encompasses a broad set of literatures, including political ecology, the post-colonial literature, and the politics of knowledge and scale, and it has far-reaching implications for conservation practice. Understanding and addressing the roles that knowledge, translation, and power play in enabling effective participation is critical to balancing global conservation priorities for climate change with local needs.

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