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Lessons from Mesoamerican Community Forestry

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Acronym List

ACOFOP	Association of Community Forests of Petén
ADII	Association of Integral Indigenous Development
AIDESEP	Interethnic Peruvian Jungle Development Association
AMAN	Indigenous Peoples Alliance of the Archipelago
AMPB	Mesoamerican Alliance of People and Forests
CATIE	Tropical Agronomic Center for Research and Teaching
CBO	Community Based Organizations
CCMSS	Mexican Civil Council for Sustainable Forestry
CFE	community forest enterprise
CFM	community forest management
CIFOR	Center for International Forestry Research
COHRE	Centre on Housing Rights and Evictions
COICA	Coordinator of Indigenous Peoples of the Amazon Basin
CONABIO	National Commission for the Knowledge and Use of Biodiversity
CONAFOR	National Forest Commission
CORENCHI	Natural Resources Committee of Chinantla Alta
FAO	Food and Agriculture Organization
FORESCOM	Community Forest Services Enterprise
FPIC	Free, Prior, and Informed Consent
FSC	Forest Stewardship Council
FUNAI	National Indian Foundation
ICCA	Indigenous and Community Conservation Areas
ILO	International Labor Organization
IUCN	International Union for Conservation of Nature
MARENA	The Nicaraguan Ministry of Natural Resources and the Environment
MASTA	Unity of the Mosquitia People (Miskitu Asla Takanka)
MBR	Maya Biosphere Reserve
MCF	Mesoamerican community forestry
NTFP	Non Timber Forest Product
PES	Payment for environmental services

PINFOR	Forest Incentives Program
PINPEP	Forest Incentive Program for Small Forest or Agroforestry Landholders
PNF	National Forest Program (Brazil)
PRISMA	Regional Research Program on Environment and Development
PROCYMAF	Community Forestry Development Program
PRORENA	Program for the Promotion of Sustainable Management of Natural Resources and Local Economic Development
PSHA	Payment for Hydrological Service
RAACN	North Caribbean Coast Autonomous Region
RAACS	South Caribbean Coast Autonomous Region
RDS	Sustainable Development Reserve
REDD+	Reducing Emissions from Deforestation and Forest Degradation plus
REPALEF	Réseau des Peuples Autochtones et Locales Pour la Gestion des Écosystèmes Forestiers - Network of Indigenous and Local Populations for the Sustainable Management of Forest Ecosystems
RESEX	Extractive Reserves
RIBCA	Bri-Bri Cabecar Indigenous Network
RPBR	Rio Platano Biosphere Reserve
RRI	The Rights and Resources Institute
UNDP	United Nations Development Program
UNICAF-BRP	Union of Agroforestry Cooperatives of the Rio Platano Biosphere
USAID	United States Agency for International Development
UZACHI	Union of Zapotecas-Chinantecas Forest Productive Communities
VCA	Voluntary Conservation Area

Introduction

The indigenous peoples and forest communities of Mesoamerica have made major strides in forest governance that are unparalleled globally. With over 60% of its forests recognized to indigenous peoples or local communities, Mesoamerica stands out against other regions that lag far behind in tenure reforms.

Yet it is not merely the scope of recognition that distinguishes Mesoamerica from other regions, but also the diversity of experiences that have emerged from tenure reforms, both in terms of sustainable economic models based on community forest enterprises (CFE), as well as the construction of local authorities and self-governments. The economic and political institutions built on these rights vary quite substantially in the region, ranging from longstanding ejidos and communities in Mexico, to community concessions, municipal and communal forests in Guatemala, to community contracts and territorial titles in Honduras, to Autonomous Indigenous and Afro Descendent Regions of the Nicaraguan Caribbean Coast, to indigenous "reserves" in Costa Rica, and the Comarcas and Collective Lands of Panama.

This diversity is a reflection of the diverging political and economic contexts which have given birth to the community forestry processes of Mesoamerica: far from a monolithic experience of community movements achieving recognition, community forestry has been born from quite varied political junctures, interests and motivations.

This range of experience should not be taken to suggest that these processes have emerged in isolation. Governments, development practitioners, forestry and conservation professionals - and perhaps most importantly - the communities themselves have exchanged knowledge and learning on the strategies around achieving rights recognition and converting these statutory rights into secure tenure. The experiences of one country have often been used to inform policy, development projects or community strategies in neighboring countries on a host of issues related to the recognition, implementation, and generation of benefits based on collective rights.

Since 2010, these diverse indigenous and local community experiences have been the subject of accelerated learning and exchange through the Mesoamerican Alliance of People and Forests (AMPB, for its Spanish initials), a unique organization of political dialogue composed solely of indigenous peoples and local forest communities intent on strengthening and consolidating the gains in rights made in their countries stretching from Mexico to Panama. This Alliance has sought to expand the mode of exchange that has been so effective in Mesoamerica and extend it across other regions of the global tropics, in relationships with organizations such as the Indigenous Peoples Alliance of the Archipelago (AMAN) in Indonesia, the Coordinator of Indigenous Peoples of the Amazon Basin (COICA) and the Network of Indigenous and Local Populations for the Sustainable Management of Forest Ecosystems in the Democratic Republic of Congo (REPALEF) in Africa. By allying itself with its regional counterparts, the AMPB has sought to influence global climate change, environment and development policy for the global tropics, towards the generation of policy frameworks that are more supportive of securing and implementing rights, including those in Mesoamerica.

This strategy to multiply learning from Mesoamerican experiences through the AMPB constitutes an important opportunity to advance the latest lessons and knowledge of community forestry from Mesoamerica. In recognition of the wealth of literature that already exists on Mesoamerican community

forestry (MCF), this study has been designed to identify and analyze the materials available in Mesoamerica (scientific studies, policy briefs, grey literature and videos), analyzing trends and gaps, and how this literature might contribute to accompany community to community exchanges, in particular in Brazil, Colombia, Peru and Indonesia. We envision this work to be part of a broader "knowledge management" approach, where specific experiences can be linked to specific policy opportunities or political moments, and support such opportunities with concrete evidence and experience from Mesoamerica, in the formats most useful for the audience in question (policy makers, community or indigenous leaders, opinion leaders, development, conservation or forestry practitioners, etc.).

Brief summary of this project´s methodology

This report is the product of a two-pronged research process. The first includes an identification of the "universe" of materials dating back to 2000, available on community forestry in Mesoamerica, including academic journals, grey materials, policy briefs and videos, in English, Spanish, Portuguese and Indonesian. 433 separate materials were identified in English and Spanish, while no publications on MCF were identified in Portuguese or Indonesian. 370 of these materials were thoroughly reviewed by researchers with a specific methodology that allows for quantitative analysis of trends. The first section of this report provides a discussion on the trends of the 433, and gaps related to these materials. This discussion highlights key examples and high-quality literature for each issue in question, but it does not attempt to provide an exhaustive list of publications. All of the literature cited in this study is available in this database which will soon be made available online; if not available in the database, references are provided as a footnote. A special addition to each reference has also been made to allow the reader to identify the language of the original reference: an "S" or an "E" have been inserted following the year of the reference to respectively denote documents in Spanish or English.

The second component of this project, presented in the latter section of the report, relates to gauging the awareness of key actors of the experiences garnered in Mesoamerica on community forestry, and a perception of its relevance for different regions in the global tropics. Scoping for specific contexts was performed with studies in Brazil, Indonesia, Peru and Colombia, in addition to conducting a broader set of interviews and questionnaires with prominent leaders in environment and development globally, as well as practitioners across the globe. Section two of this report analyzes the outcomes of the surveys with global leaders, as well as the online survey which produced results from multiple regions around the world. The third section of this report presents the outcomes of the scoping studies performed in Brazil, Colombia, Peru and Indonesia, and provides a discussion of how MCF materials could contribute to these countries.

What´s in a name? Addressing multiple definitions of community forestry

One issue that became abundantly clear in the course of this research project was the variety of different understandings associated with the term "community forestry". In conversations with communities, rights advocates and environment and development practitioners from across the global tropics, definitions of this term ranged from donor-led projects with an ostensible emphasis on local participation, to forestry projects based on local rights (recognized or otherwise), to broader conceptualizations related to self-determination and endogenously defined development built on the control over and management of natural resources. The disparate interpretations of the term is a communications challenge in itself. We do not intend to provide a definitive answer to this question; for the purposes of this research project, we defined the term in a broad sense, highlighting the distinguishing feature of MCF: the recognition of collective rights. This was done to include the full

panoply of social, economic and political experiences of communities in Mesoamerica that have been undergirded by collective tenure reforms, not merely those that have formal or commercial forest management. Our universe of materials therefore reflect all experiences of collective action in the management of natural resources, exercised with some level of rights recognition.

In this spirit this work aims to provide lessons for other parts of the world, not as a template to be artificially transferred from one region to the next, but rather as a set of experiences that can generate important principles, lessons and pathways for ensuring strong, sustainable and democratic societies through the respect of the fundamental rights of indigenous peoples and local communities. We believe that these principles can contribute to shortening the learning curve for other regions just now entering stages of rights recognition, and are beginning to build new social, economic and political arrangements based on those rights.

Section I: Analyzing materials on Mesoamerican Community Forestry (MCF)

This report presents an overall appraisal of more than 575 materials identified on MCF. 370 of these materials (publications and videos) were reviewed in depth and analyzed both qualitatively and quantitatively, and key elements of their content were recorded in a database. Of these 370 documents, 32% are academic journal articles, representing the largest single format. More than half of the documents involve case studies including some comparative case studies. It is also noteworthy that 91% of the documents concern only one country. The remaining 9% are documents that are comparative studies of two or more countries.

In nearly two-thirds of the documents (70%) it was possible to verify information on the existence of formal recognition of collective rights. Reviewers also were asked to categorize whether the experience was presented in a scientific or narrative fashion: almost three-quarters were categorized as scientific, leaving 26% as narrative. 68% of the total number of materials were based on primary data.

Materials that address Mexican experiences (58%) far exceed those of the rest of the region. Guatemala occupies a distant second place (22%), while Nicaragua and Honduras experiences rank at third and fourth (15% and 12%, respectively). Materials on Costa Rica (4%) and Panama (3%), were far behind the others.

Of the 228 cases (62%) in which some type of information was identified characterizing the type of forest management present, 38% of these describe basic transformation of wood and in 36% the transformation process can be qualified as advanced. Basic extraction activities, such as the sale of roundwood, are carried out by the communities in 28% of the cases. References to external participation, through extractive activities for which they have to pay fees, is present in 11% of materials. In 20% of the cases there is no formal management, whereas in 6% there is management but there is no information on the level of this activity (see Table 1).

Management of NTFP is present in 178 cases (48%), where value-added extraction is present in 36% of the publications, while references exist on basic extraction activities with little or no added value in 24% of the cases. In 42%, it was possible to identify non-timber management activities, but it was not possible to determine the level of processing.

Table 1. Level of forest management reported individually
(doesn't include documents with multiple levels reported)

Type of Forest Management	Frequency	Percentage
Basic extraction by external agent, after paying for the right	7	3%
Basic extraction by the community without/with little added value (e.g. sale of roundwood)	26	11%
Basic transformation of wood (e.g. processing in sawmill)	49	21%
Advanced processing of wood (e.g. processing of commercial products)	59	26%
There is formal management, but the level of elaboration is not specified	14	6%

Source: Elaboration by author, based on analysis of the publications on MCF

With regards to the thematic focus of the materials, the top two topics in all countries - except in the case of Nicaragua where the most frequent theme is Institutions, values and indigenous knowledge - is Forest Production and Forest Conservation; the second leading theme is PES / REDD + in Costa Rica: the thematic topics in third and fourth place start to include other relevant issues, such as the internal functioning of CFE (Mexico, Honduras and Panama) and topics linked to local institutions and governance (collective rights, participation and representation in the management of natural resources and institutional arrangements).

Tenure reform

The unity of the term "tenure reform" belies what are usually dynamic and changing nature of rights for communities: even where strong property rights are granted de jure, a variety of forest, conservation and development regulations often limit or influence rights - especially management rights - in important ways. Nevertheless virtually all processes can identify key watershed moments for rights - and thus this category is important to understand the range of materials which focus on the statutory recognition of rights.

In Mesoamerica, tenure reforms have been studied in detail. Mexico's reform processes have been studied in great depth, some emphasizing the forest rights won in the 1980s and 1990s, others highlighting the roots of the governance platforms that accompanied those rights; other articles focus on the analysis of social movements, evolving forest and conservation policy, or the impact on CFE and broader community institutions. The tenure reform of the community concessions of the Peten has been studied with equal rigor, as have the Autonomous Regions of Nicaragua´s Caribbean coast (particularly the North Caribbean Coast Autonomous Region - RACCN). Comparative literature also addresses how different tenure allocations affect the evolution of institutions on the ground (Mexico, and Guatemala), including Central American cases (Monterroso and Larson, 2013, or Taylor et al, 2008). Relatively few articles focus on the tenure reforms since Honduras´ 2007 forest law. Costa Rica and Panama stand out for the relatively scant literature that focuses on tenure reform in each country.

The political struggle for rights

In almost all cases, Mesoamerican tenure reforms have occurred as a result of social movements demanding these rights. These political struggles have been documented in detail in Mexico and in Guatemala's Peten. A variety of work describes the historical context of the Mexican Revolution and the evolution of ejidos and communities, described in a number of journal articles and chapters in books (Bray, 2013a). Gómez and Méndez (2007)E&S describe in detail the process of the community concessions advocacy process in the Peten. The movement underlying the 1987 creation of the Autonomous Regions on Nicaragua's Atlantic Coast is presented in detail by Fruhling et al (2007)S,[1] and is briefly covered in several journal articles. Some articles briefly discuss historical contexts of Honduras´ various reforms affecting rights (Forest Trends 2013 S), and others summarize key political movements (such as the Environmental Movement of Olancho) though no comprehensive article outlining this historical struggle was identified. The political struggle behind what is now the Comarca Guna Yala is available in Spanish in some detail, while less historical information is available for the formation of the Comarca Embera Wounaan, though articles by Peter Herlihy such as Herlihy (1995)S[2] are a valuable resource in this sense. The Costa Rican case has been studied in less detail. Davis et al (2015)S summarizes specific elements of these processes across the region.

Technical lessons from rights reforms

Lessons around specific elements for land and resource recognition through community or territorial mapping/identification, demarcation and titling have been performed across the region, and have been documented in some detail in Nicaragua, Panama and Honduras. A broad set of work on mapping has been published by Peter Herlihy and Mac Chapin, and has even met some critical responses by a handful of American academics. Some debate about the dilemmas intrinsic in these titling processes have been put forth by authors such as Hale (2011)E,[3] Finley Brook and Offen (2009)E analyze the tensions that arise from territorial demarcation in and outside indigenous communities in the Atlantic Region of Nicaragua.

Territorial appropriation and implementation of rights

This category refers to actual implementation of rule and norms on the ground to put into place rights ensured by statutory recognition. It includes rules, norms and organizations mobilized for production (CFEs) as well as broader collective institutions (such as community or territorial governments). There is substantial overlap between this category and "tenure reform" though the difference between the two is sufficient to warrant a different category.

The most closely studied processes in this sense are Mexico, Guatemala and Nicaragua. In Mexico, the historical evolution of the ejidos and communities has been outlined clearly and in depth in both English and Spanish. The appropriation of resources and emergence of community control over forests, especially since the 1980s is covered in most literature – though it is only discussed in depth in a handful

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[1] Frühling, P., González, M. y Buvollen, H. (2007). Etnicidad y Nación: El desarrollo de la autonomía de la Costa Atlántica de Nicaragua (1987-2007). F and G Editores. Guatemala.

[2] Herlihy, P. H. (1995). La revolución silenciosa de Panamá: las tierras de Comarca y los derechos indígenas. Mesoamérica, 16(29):77-93.

[3] Hale, C. (2011). ¿Resistencia para qué? Territory, Autonomy, and Neoliberal Entanglements in the "Empty Spaces" of Central America. Economy and Society 40(2):184-210.

of studies, such as studies that focus on specific sites, including Bojórquez-Vargas, A. et al (2009)E or Tejeda and Marquez (2006)S. Antinori and Rausser (2007a) and (2007b)E incorporate a broader set of Mexican communities and analyze, respectively: the evolution of community institutions; factors that influence rule conformance (and thus forest condition) with the key role of participation; factors motivating Mexican agrarian communities with forests to participate and invest in forest production; as well as strategies around vertical integration. Merino (2006)S also provides a theoretical background of appropriation of natural resources – and highlights its importance for conservation initiatives (though there is no discussion of concrete experiences). Mexican analysis on this topic tends to focus on the productive aspects related to rights implementation.

In Guatemala's Peten, the process of collective appropriation of natural resources is described, as one among many issues in Gómez and Méndez (2007)E&S, while Monterroso and Barry (2012)E examine issues related to authority and legitimacy following rights recognition. Examples of territorial appropriation at a much smaller scale in highland Guatemala are provided by Elias and Fortin (2007)S.

In Nicaragua, the work analyzing the process of titling in the Caribbean Coast, much of it led by Anne Larson – has analyzed the very challenging process of building territorial institutions. This body of work includes: Larson (2010)E addressing the construction of institutional arrangements and constituting authority, and the challenges in territorial governance both in English (Larson and Lewis-Mendoza, 2012E) and Spanish (Larson and Soto, 2012S); (Larson and Mendoza-Lewis, 2009S) . In contrast with much of the literature in Nicaragua documenting illegality and the expansion of the agricultural frontier, especially beginning in the mid to late 2000s, Hayes (2007)E documents one more successful process of territorial appropriation in Nicaragua against an expanding agricultural frontier, and provides discussion of these results as well in academic journals (Hayes, 2007 and Hayes, 2008).

In Honduras, although appropriation is part of the discussion in a number of articles documenting CFM (Del Gatto, 2008S, Davis, 2014S), this project was unable to identify articles that delve more specifically into territorial appropriation and institutional evolution following rights recognition. This is a notable gap, since field reports from PRISMA researchers have shown that industrial interests in Honduras have often succeeded in effectively separating formal ownership from actual control (as Forest Trends, 2015 briefly mentions).

The Comarca Guna Yala is widely known for its high level of autonomy, but no study was identified that analyzed the process of territorial appropriation or strengthening vis-à-vis the Panamanian government (although Escobar, 2015 does discuss the role of CFEs in strengthening territorial control). Based on PRISMA´s fieldwork, it is evident that the process of territorial appropriation and evolution of authority has been quite different between the Comarca Guna Yala and Comarca Embera Wounaan, in particular, in addition to other Comarcas and Collective Lands governments, - yet analyses that studied this difference in detail was not identified.

In general there is relatively little literature that draws on a number of examples to examine the commonalities in the challenges faced by communities immediately following the recognition of rights. While only based partially on Mesoamerica, the studies led by the CIFOR tenure research project in the late 2000s (including Mesoamerican cases from Guatemala and Nicaragua) produced a number of useful articles in that regard such as Larson et al (2008)E, Larson et al (2009)S, Pacheco et al (2012)E and Monterroso and Larson (2013)E. These studies find that though the granting of tenure rights signifies an important achievement for many communities, new statutory rights do not automatically turn into rights in practice. They argue that greater attention must be given to the dynamic, historical processes that produce boundaries and institutions, rather than accepting these as givens. Davis et al (2015)S

provides a basic description of institutional evolution in Mexico, along with discussions on ACOFOP, the Honduran Mosquitia, the RACCN in Nicaragua, Talamanca, and the Comarca Embera Wounaan.

There are few videos that delve into this topic, but there are tangentially related videos focused on territorial surveillance and control, in Mayangna Territory (Forest Trends, 2016b) in Nicaragua, the community concessions of the Peten (Forest Trends, 2016a), as well as a broader video on Latin America (Forest Trends, 2016).

Factors underlying long-standing or resilient community forestry processes

There is a set of literature that analyzes the factors present in long enduring and/or resilient systems of community forestry management in Mesoamerica. This group is distinguished from other groups of literature that analyze commons management in that it focuses on commons that have demonstrated resilience or endurance over long periods of time. Baynes et al (2015)E draws on community forest management (CFM) successes in Mexico, Indonesia and Nepal and Martinez-Bautista et al (2015)S explore community forest projects in Mexico to analyze their success, identifying social capital as a critical factor. Gruber and Boskovic (2011)E present 4 key characteristics needed to ensure long-term effective and sustainable community-based natural resource management, citing cases from Romania, New Hampshire and Mexico. Lopez et al (2010)S explore how social, cultural and institutional factors are correlated to the success of 16 FCEs. In the series of research products generated by CIFOR in the late 2000s, Cronkleton et al (2008)S highlights key aspects of successful processes in Peten, Guatemala and in Nicaragua's Atlantic Coast Region.

Another set of studies analyze the particular qualities of resilience in collective rights processes, such as the resilience in Michoacan (Castro et al, 2012) and "adaptive management" described in Quintana Roo, Mexico (Bray, 2000: Ellis et al,2015E). In general, this type of studies are heavily focused on Mexico; notably absent from this literature are studies from the Bribri and Cabecar territories in Costa Rica, or the Embera and Guna Comarcas in Panama.

This literature is predominantly found in journal articles. Short briefs or videos that fall into this category were not identified during this research process. Nevertheless, TvUNAM (2015) (S with English subtitles) speaks in general terms about the theory of the commons with an interview of Elinor Ostrom and other researchers and illustrates this with examples from Mexican community forests.

Regulations

MCF experiences have won historic victories through a variety of forms of collective tenure recognition. Yet forest and conservation regulations have clearly emerged as key factors limiting the exercise of rights, increasing transaction costs for communities. A number of studies analyze how regulations have hampered effective community control, or made CFEs inviable.

Regulations are mentioned as a critical factor in a number of articles in Mexico, most recently in a report outlining the challenges of over-regulation from CCMSS Fernandez-Vazquez and Mendoza-Fuente (n.d.)S. It is also mentioned as important in a article broadly outlining the national situation in Mexico by Hodgdon et al (2013)E - citing regulations as one of the factors driving innovation from communities. A wide number of other studies discuss the burden placed by forest and conservation regulations in specific places, such as Merino and Martinez (2012)S. In her book on conservation and degradation, that is based on the analysis of six forest communities, Merino (2004)E dedicates a chapter to assessing the impact of public policies on community uses of the forest. She concluded that the communities need

strong social capital and solid institutions to overcome the barriers associated with regulations designed for industrial enterprises. In a PhD Dissertation Hajar (2011)E provides an in-depth analysis of regulations in Mexico and Brazil, and discuss' how regulatory frameworks for industrial models are inappropriately applied to communities, thus limiting the autonomy of communities and the viability of community forestry itself. These findings and more discussion are available in a shorter format in Hajar et al (2012)E.

In Guatemala, the unique regulations governing the community concessions have been studied as a part of a number of different efforts, including Pacheco and Paudel (2010),[4] and Pulhin et al (2010).[5] It is also discussed in Pacheco (2012), as well as Monterroso and Barry (2009). Broader regulation and legislation in Guatemala are discussed from community perspectives by Utz Ché (2015)S.

In an article by Hayes (2007)E she compares similar indigenous communities in Honduras and Nicaragua, and found that full allocation of rights - in particular management rights - are key for effective community control and conservation. Similar results were found by Hayes et al (2010)E drawing on cases from Mesoamerica and East Africa, highlighting that "rulemaking autonomy matters...the cases illustrate an important distinction between making rules and sustaining rules. A lesson here is that local forest management institutions can make new rules to address changing situations and try to improve their governance, but outside forces often strongly impact or constrain the effective application of these nascent institutions."

There is a large group of studies that analyze the role of protected areas in restricting or undermining rights (addressed in another section). Davis and Kandel (2016)E&S summarize a series of case studies on this topic in Mesoamerica and highlight the importance of implementing the rights-based approach to conservation. Merino y Hernandez-Apolinar (2004)S describe the destruction of community institutions as a result of public policies around the Monarch Butterfly Biosphere Reserve. From a series of case studies in Mexico, García-Frapolli et al (2009) E outlines the most common difficulties that arise with Mexican policies on natural protected areas, including the exclusion of local people's perspectives, values and belief. Merino (2012)S presents from a political ecological perspective, a set of five institutional factors that hinder the development of CFM in protected areas policy. Other studies demonstrate how protected areas undermine indigenous rights in Guatemala (Elias, 2012)E, Tejeda and Marquez (2006)S shows the same in Chiapas.

Socio-political dimensions of community forestry

A broad range of materials focus on the social and political dimensions of governance, incorporating analysis of local communities, second-level forest associations, and a variety of different ways in which these organizations interact with each other, and their various political relationships with government agencies, NGOs, and even the ways in which these organizations articulate with markets. ACOFOP has been the subject of intense study in this regard, including Taylor (2009)E highlighting the role of second level organizations in the defense and support of community concessions, Sharma Paudel et al (2012)E analyzes the role of ACOFOP (as well as other second level organizations in Nepal) in deepening and

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[4] Pacheco and Paudel (2010). Communities and forest markets: Assessing the benefits from diverse forms of engagement. Chapter in Forest for People: Community rights and forest tenure reform. Edited by Anne Larson, Debora Barry, Ganga Ram Dahal and Carol Pierce Colfer. CIFOR. London and Washington

[5] Pulhin et al (2010) Regulations as Barriers to Community Benefits in Tenure Reform. Chapter in Forest for People: Community rights and forest tenure reform. Edited by Anne Larson, Debora Barry, Ganga Ram Dahal and Carol Pierce Colfer. CIFOR. London and Washington

consolidating local benefits from forests and tenure gains, while Taylor (2012)E highlights their role in mediating diverging interests and objectives, and proposes an approach to actively address tensions to ensure continued viability and strategically respond to crossroads local organizations face.

A good deal of work has been done on the same topic in Mexico. Antinori and Garcia-Lopez (2008)E provides a broad historical overview of the emergence and evolution of inter-community forest associations in Mexico, often shifting from political to service-oriented operations, complemented with field data from Durango and Michoacan; the study also evaluates measures of effectiveness in a variety of indicators. Cronkleton (2011)E discusses the Mexican CFEs as embedded in wide-ranging governance partnerships at various levels, facilitated by rights recognition of local communities, a supportive legal framework and a history of supportive government programs. Garcia-Lopez (2013)E analyzes how second level organizations – both "bottom-up" and "top-down" emerge and adapt to communities´ objectives and challenges in Durango, Mexico. Molina (2011S) provides an analysis of multi-governance institutions in Oaxaca for biodiversity conservation, as does Bray (2012)E who notes that multi-scale governance is necessarily "turbulent", in addition to highlighting that "realizing economic gains from ICCAs for strict conservation may require something very different than traditional natural resource management."

Some work focusing on socio-political dimensions of governance is available in Honduras, mostly focused at the local level, especially for the municipal process of Leparitique analyzed by Nygren in an academic format in English (Nygren, 2005) as well as shorter versions in Spanish (Nygren et al, 2005S). Jones (2003)E also incorporates some socio-political description and analysis in examining factors that influence the success of forest cooperatives.

In Nicaragua, Larson (Larson and Lewis-Mendoza, 2012) analyzes governance in Nicaragua's Caribbean Autonomous region and highlights the role of power relations in the dynamics of multi-level governance, in particular establishing institutions and constituting authority after territorial titling. There is useful work in academic formats in both English and Spanish (Larson and Lewis-Mendoza, 2010E: Larson and Lewis-Mendoza, 2012E; Larson and Soto, 2012S; Larson and Mendoza-Lewis, 2009S).

Substantially less work has been done in Costa Rica and in Panama, though Candelas et al (2013a and 2013b)S does provide discussion on inter-organizational relationships in Alta Talamanca. Davis et al (2015)E&S provide a broad overview of the evolution of multi-level governance in Mexico, and in ACOFOP (Guatemala), MASTA (Honduras), the RACCN (Nicaragua), RIBCA (Costa Rica) and the Comarca Embera Wounaan (Panama).

Local democracy and democratization of natural resource use

As a subset of the materials covering socio-political aspects of community forestry, there are some document that focus on the democratization of natural resources. In Mexico, Mitchell (2005)E examines various case studies and demonstrates why policies, agreements, and other measures involving forestry must incorporate local concerns and democratic decision making. This is not only true of Mexico or the rest of Latin America but in any country with substantial forests. Mitchell (2006)E, in his article, compares two Mexican communities, and hypothesizes that CFM in Mexico serves as an ideal case of ecologically beneficial and democratic decision-making, or ecological democracy. He aims to extend ideas of ecological democracy by linking empirical findings to political ecology theory and community forestry literature. Mitchell (2008)S assesses the level of democratization of two communities in Oaxaca and finds that despite the forest administration being quite democratic, challenges still exist with regards to gender equality, internal conflicts and with some outdated forms of decision making.

In Guatemala, Sharma Paudel et al (2012)E examines the emerging role of secondary level organizations in the democratization of forest governance by analyzing two cases of forest-based collective action in Nepal and Guatemala. She explores the conditions surrounding the emergence and growth of these secondary level organizations, and examines the nature of their organizational approaches, strategic actions, and the resulting outcomes in terms of democratizing forest governance. The organizations discussed in this paper are products of broader decentralization processes and organized and empowered forest people.

Relationship of community forest enterprises (CFEs) with broader community institutions

As social enterprises, the governance of CFEs are inevitably intertwined with issues of broader community governance. The largest set of literature (and number of community experiences) analyzing this issue is from Mexico, which has identified and delineated a wide variety of institutional forms both for, dividing costs and benefits of forest management, as well as, decision-making. These forms are based on or linked to ejidos or communities - the legal form of collective tenure in Mexico: Bray et al (2006)E provides a helpful description of the evolution of these institutions and their current diversity: "ranging from making the enterprise directly dependent on the community governance structures to creating a clear division between community and entrepreneurial governance through Community Councils and Managers, and to dissolution of the single CFE model into sub-coalition enterprises. This variety shows that it is possible to combine community governance forms and entrepreneurial organizational forms to compete successfully in the marketplace." Notably useful articles include Antinori and Rausser (2003)E which analyzes how community governance structures adapted to a growing role in forest management and what factors promote collective action; Bray (2002)E describes the blending of traditional with enterprise institutions as key for the construction of a community enterprise by Purpecha communities in San Juan Nuevo. Orozco-Quintero and Davidson-Hunt (2010E) have similar findings for the San Juan Parangaricutiro case. Others focus on the relationship between traditional and scientific knowledge involved in such processes, such as in a unique article focused in highland Michoacan by Klooster (2002)E.

Rosas-Baños & Lara-Rodriguez (2013)S propose a local endogenous development focus (Toledo) and analyze how in San Pedro el Alto (Mexico) the economy moved from that of a subsistence peasant economy to a post-peasant economy characterized by its ability to generate and manage economic profits. Other studies, such as Tanaka (2012)E chapter 4 take a much more critical tack and identify key problems underlying CFE performance which relate significantly to broader community goals, the ability to set clear objectives and obtain qualified staff. Gasca-Zamora (2014)S identify constant tensions between traditional community governance values and market-oriented enterprise operations in the Sierra Norte of Oaxaca. Villavicencio (2009)S also delves into these tensions in Oaxaca, describing the tensions between tradition and entrepreneurial efficiency - and the practice of rotating leaders every three years which drains human capital in the CFE but strengthens social cohesion. Additionally, a number of studies examine the dynamics in second-level organizations and the tensions between managing trade-offs between economic and political objectives. All of these share the particular history of Mexico - relating to the evolution of the strong community form of governance that has evolved over the past 100 years.

A broad set of studies have also examined this issue in Guatemala, including in the community concessions of the Peten, where - despite some important institutional antecedents - CFM institutions were forged over a short period of time in the process of rights-recognition. Important studies on the

tensions between the political governance of the concessions (in ACOFOP) and a second level community forest enterprise (FORESCOM) provide important lessons in this area. Others highlight the different attributes of political vs entrepreneurial leadership (Castaños y Castro, 2014S; Escobar, 2015S). Other areas in Guatemala provide important contrasts with ACOFOP, where strong customary institutions prevail in Mayan communities, with differing relations with government institutions - and interact in highly diverse ways in much more population dense highland forests. Carias and Keenan (2016)E provide important insights about the level of "embeddedness" of the CFE within the broader community playing a major role in decision-making processes.

In Honduras, there is some literature on relatively incipient enterprises in the lowland indigenous forest frontier in the Muskitia, and some documents highlight the potential congruency of indigenous institutions and the production of Batana oil (Hodgdon and Sandoval, 2013). Padilla and Contrero Veloso (2008)S describe tensions between productive cooperatives and traditional Miskitu governance structures. Galo Sacasa and Davis Rodriguez (2014) S observe that the utilization of wood, is promoting a more mercantilist vision among Miskito youth, that according to community members, puts the sustainability of the resource at risk and undermines the collective management system.

Some attempts to launch CFEs in Nicaragua have similarly examined the issue. Hodgdon et al (2015)E&S points to the centrality of social capital in addressing the difficulties of an CFE in Mayangna territory, where conflicts arose and led to the failure of the initiative. Mairena (2007)S also provides a description of tensions, complementarities and sources of conflict between traditional authority structures and newer forms of organization such as CFEs.

In Panama, much less literature is available on collective indigenous institutions and enterprises, although some exists on the Guna model of tourism, as well as basic information on the relatively recent experience of CFE in the Comarca Embera Wounaan. Escobar (2015)S is one of the most recent and in-depth descriptions of tensions between traditional governance and the emerging community forest enterprises.

Economic dimensions of community forestry

There is a broad set of literature that focuses on the economic performance of community forest enterprises. Of the 370 materials thoroughly reviewed, "forest production" ranked either first or second in all countries, while "internal operation of EFCs" appeared in the top three in Mexico, Honduras and Panama. Most of these materials highlight the strong timber (and sometimes non-timber forest products, NTFP) performance of specific processes such as ACOFOP, or communities in Oaxaca, Michoacan or Quintana Roo. The materials available in video focus very heavily on these sorts of experiences, highlighting the productive achievements of strong CFM experiences, (these include: Integradora Comunal Forestal de Oaxaca (2009)S; Asociación Forestal del Quiché (2010)S; Instituto de Conservación Forestal (2011)S; Life Mosaic (2015)S; ProNatura Veracruz, A.C. (2013)S; Estudios Rurales y Asesoría, A.C. (2016)S; CCMSS (S.F.)S; and a series of videos from CATIE in spanish). The in-depth, academic literature on this topic is very much focused on cases in Mexico and Guatemala (one such is Visión Rural (S.F) S)

There is also a notable set of literature that focus on demonstrating the viability of more incipient processes of community timber or NTFP management, especially in Honduras, and Nicaragua. This material is often produced by organizations that provide support for these initiatives, such as international cooperation with Hodgdon and Sandoval (2015)E&S in the Honduran Muskitia and PRORENA (2013)S in forest communities in Honduras.

Most forest management studies focus either exclusively (or primarily) on the market value of timber operations; there are less studies that examine these values within broader community livelihood goals, including discussions of the relationship between timber, NTFP management, and other economic activities, particularly agriculture. Several experiences have highlighted how these relationships are important to the objectives and performance of CFEs. These relationships are highlighted by Monterroso and Barry (2009)S, and Radachowsky et al (2011)E in the case of ACOFOP where the livelihood differentiation between resident and non-resident concession communities make for clear comparative distinctions. Diemont (2009)E analyzes cases of Mayan communities, including Mexican ejidos and Belizean communities - discussing traditional Mayan agroforestry communities, including a discussion of forest management as subordinate to agricultural strategies. Other studies examine changes in agriculture related to community forestry programs, in Quintana Roo, such as Dalle et al (2011)E. Examples of some studies that take into consideration broader community livelihoods include Escobar (2015)S which analyzes the Comarca Embera Wounaan.

There is, in general, an under-representation of materials that not only analyze CFEs within broader livelihood strategies - but also that document experiences of communities which may have low-level or sporadic timber management activities, but that have used them effectively towards broader community goals. The weight and relevance of these communities have been recognized by a number of authors, including Bray (2007); yet they have been much less studied than communities with higher relative incomes and levels of capitalization. Some studies exist, such as Bojorquez-Vargas et al (2009)S which highlights the formation of local institutions for community forestry in Chiapas in a campesino community in Chiapas where timber income makes up a minority share of the community income. Torres Rojo y Magaña (2006)E provides an analysis of factors important for CFE success in Mexico, and provides a discussion on CFEs as perhaps not a central economic activity - but serves as a "motor" for other economic activities. Barkin (2012) is good example of an article looking at the autonomy of local communities, and also focusing on using forest resources not merely for a timber/NTFP enterprise, but for starting broader economic activities not necessarily focused on timber/NTFP. Nevertheless, given that these communities may make up the majority of community forest enterprises, this appears to be a gap in current research.

A good deal of theoretical work has been advanced in understanding the CFE - this work appears almost exclusively in academic formats (dissertations, books or academic journals). In Mexico, authors have drawn on common property theory (Bray et al, 2007)E&S, theories of the firm (Maldonado, 2015E) in Mexico, as well as collective action theory, to understand diverse strategies for facing transaction costs in Quintana Roo (Carias-Vega and Keenan, 2016E), analyzing economic strategies of second level organizations in Guatemala and Mexico (Tanaka, 2012 E), understanding how CFEs deal with market uncertainty in Mexico (in Oaxaca: Klooster, 2015S), and the governance implications for economic diversification of CFEs (Taylor, 2009E) in the Peten.

A number of other studies focus on specific financial and production dimensions of CFEs in Mexico, useful for understanding specific economic and market dynamics within the country, such as Cubbage et al (2013E and 2015E) which analyzed financial dimensions, competitiveness and market opportunities in Mexico.

There is also another set of literature that document different community strategies to articulate with markets. Vidal (2005)E performs a survey of company perspectives on agreements with communities in Mexico, providing a typology of community-company agreements: joint venture; timber concessions leased from communities; out-grower schemes; and corporate social responsibility projects. Molnar et al

(2008)E examines how communities in Mexico and Brazil respond to market shifts, while Bray and Merino (2003)E document the opportunities of globalization conferred on CFEs through globalization. Forster et al (2014)E examines the factors that enable insertion into markets in Mexico, highlighting forest endowment and social organization. Estudios Rurales y Asesoría A.C. (2014)S provides perspectives on recent experiences in Mexico where adverse market conditions have dealt many communities a heavy blow, based on a dialogue in Michoacan.

Vertical Integration

There is a substantial set of literature that focuses on a variety of dimensions related to vertical integration in CFEs - almost all of this literature focuses on Mexican experiences. These studies cover a wide range of issues, including Klooster et al (2015)S that analyze the benefits and limits of vertical integration in a community enterprise in Oaxaca. Others such as Antinori and Rausser (2007 and 2007a)E analyze the motivations for communities to invest in timber production and their strategies around vertical integration. There is a wide level of cognizance by researchers that more vertical integration is not necessarily always best for communities: Antinori and Rausser (2009)E analyzed benefits and vertical integration in three Mexican states and found that greater vertical integration does not necessarily correlate with more local benefits. Others emphasize the need for strong community levels of governance to integrate vertically, in addition to constructive relationships with NGOs and other external actors. Cubbage et al (2013)E evaluates financial competitiveness in different stages of vertical integration of Mexican CFEs. Carias and Keenan (2014 and 2016)E analyze organizational forms and their implications for transaction costs at different levels from across the spectrum of vertical integration - providing novel insights into how CFE structures can be approached.

There is very little literature outside of Mexico that addresses vertical integration in depth - much of this relates to the actual reality of Mexican enterprises having won much more experience in this regard. Analyses on ACOFOP are cognizant of the pitfalls of blindly integrating, for example Monterroso and Barry (2009) warn against this tendency. Strategies to integrate are very much part of the discussion in more incipient enterprises across the region, such as those described in Jones (2003)E in Honduras, or the descriptions of CFE projects in Nicaragua. Nevertheless studies on Mexico make up the bulk of analysis on this topic.

In general, videos often promote the merits and benefits of vertical integration (such as USAID, 2016); no videos identified in this project take a more analytical or critical view of this issue.

Table 2. Environmental, social and economic impacts, according to type of management

Type of Management	Environmental Impacts	Social Impacts	Economic Impacts
No formal management	· Positive: 30% · Mixed: 36% · Neutral/No info: 16% · Not Applicable: 20%	· Positive: 18% · Mixed: 24% · Neutral/No info: 33% · Not Applicable: 24%	· Positive: 11% · Mixed: 31% · Neutral/No info: 33% · Not Applicable: 22%

Basic extraction by external agent, after paying for the right	· Positive: 29% · Mixed: 21% · Neutral/No info: 38% · Not Applicable: 13%	· Positive: 17% · Mixed: 38% · Neutral/No info: 21% · Not Applicable: 21%	· Positive: 33% · Mixed: 33% · Neutral/No info: 17% · Not Applicable: 13%
Basic extraction by the community without / with little added value	· Positive: 44% · Mixed: 30% · Neutral/No info: 18% · Not Applicable: 8%	· Positive: 35% · Mixed: 25% · Neutral/No info: 21% · Not Applicable: 19%	· Positive: 32% · Mixed: 37% · Neutral/No info: 14% · Not Applicable: 18%
Basic timber transformation	· Positive: 44% · Mixed: 30% · Neutral/No info: 18% · Not Applicable: 7%	· Positive: 37% · Mixed: 33% · Neutral/No info: 16% · Not Applicable: 14%	· Positive: 41% · Mixed: 41% · Neutral/No info: 6% · Not Applicable: 13%
Advanced timber transformation	· Positive: 57% · Mixed: 22% · Neutral/No info: 10% · Not Applicable: 11%	· Positive: 43% · Mixed: 22% · Neutral/No info: 12% · Not Applicable: 23%	· Positive: 56% · Mixed: 23% · Neutral/No info: 2% · Not Applicable: 18%

Source: Elaboration by author, based on analysis of the publications on MCF

Diversification in Community Forest Enterprises (CFEs)

Regarding challenges that CFEs deal with, there is the question of diversification of their activities from timber production to NTFP or conversely. Most of the literature addresses this issue from the productive and entrepreneurial point of view. Those studies are mainly done in Mexico and some studies in Petén, Guatemala. Gerez and Purata (2008)s, in a general guide for community forestry in Mexico, present diversification as a source of employment and better incomes. Racelis, A. and Barsimantov, J. (2008)E "document and analyze the recent and rapid regional commercialization of small diameter, lesser-known tropical hardwood species as polewood in Quintana Roo, presenting the promises and perils for sustainable management and resource diversification in the context of Mexican economic". CCMSS (2008)s in very brief report, present 5 forest communities, all of which have developed community eco-tourism, and in one case, this new activity has replaced the wood extraction. In the case of forest concessions in Petén, Radachowsky et al (2011)E provides a management unit-based analysis and evaluation of the evolution of these forest concessions and finds that: "Concessions with greater product diversification have been less susceptible to market uncertainties." Hodgdon et al (2013)E, in a presentation of the potential of developing a REDD+ project in the Rio Platano Biosphere Reserve, shows the challenges that community concessions face and identifies the lack of diversification as a threat to the permanence of forest concessions. Payment for environmental services is presented as a way to diversify concessions income.

Most of the research is of case studies or comparative case studies, and for Mexico there is an assessment of the national Program for Community Forestry Development (PROCYMAF) by Torres Rojo and Amador Callejas (2015) S that find that as a CFE specializes in vertical integration, enterprises may follow two roads: further specialization with more investment and higher dependence upon forestry activities, or move towards diversification with less dependence to forestry activities.

Beside the economic approach adopted by many studies, there are others, albeit much fewer, that focus on the governance implications of diversification, as in the case of ACOFOP in Petén or the influence of governance change on diversification with the creation of work groups in Mexican ejidos. Taylor P. (2009) E finds that although ACOFOP now encourages associated community forest concessions to diversify beyond commercial timber into collectively organized non-timber forest activities, it brings new governance issues with new participants, objectives and organizational logics that challenge ACOFOP to change while maintaining characteristics that support successful advocacy of its members' interests. In Mexico, Wilshusen P. (2007) S observes that the creation of work groups in certain ejidos has motivated a diversification.

In Honduras we can find a comparative case study of 5 community cooperatives from Jones (2006)E that observes how diversification to timber production became essential to be able maintain the main resin tapping activity. It also compares two pathways to integration: a fast one promoted by external actor's projects that eventually did not last; and a slower, endogenous pathway where the community managed an enduring integration. This document is an exception and does not address diversification as a central theme.

Environmental dimension of CFEs

A group of studies analyze the influence of forest endowment (extension and quality of valuable trees) on the success of CFEs. Forster et al (2014)E analyze the influence of community organization and forest endowment in community insertion into timber markets in 53 communities in Quintana Roo. In a broad review of experiences supporting community forestry in Mexico, Segura (2014)S finds a positive correlation between social capital and natural capital. Torres Rojo and Magaña (2006)E and Torres et al (S.F.)E find that property size is a determining factor in CFE operations success and vertical integration. They even warn that community forestry conducted at low scale might provide incentives for greater forest liquidation of surplus forest, which might lead to higher land use change. In Guatemala´s community concessions, resource reserves are also an important factor discussed in Monterroso and Barry (2009)S as well as Radachowsky et al (2011)E and in much of the literature on the community concessions in general, since it has been a key determining factor for concession performance.

Most of the work on environmental endowment is focused on timber, though some exceptions exist, for example, Jones (2003)E focuses on Honduran community cooperatives and finds no relation with forest endowment. In a unique study, Tucker (2007)E analyzes the relationship between biophysical conditions and institutions (both private and collective) in western Honduras, finding the two positively correlated. This issue is widely known in the commons literature and is frequently referenced in materials on MCF; nevertheless the bulk of this research has focused on Mexico and Guatemala, and to a lesser extent Honduras, mostly related to the emergence of CFEs in these regions.

Another set of studies analyze the relative dependence on forest products and its relationship to community governance or deforestation. These discussion are present in a national level stocktaking in Mexico (Torres Rojo and Magaña)E, in Digiano et al (2013)E which compared deforestation in

informally privatized ejidos with common held ejidos, and found that forest dependency did not correlate with forest conservation. Other studies exist in Mexico (Tejeda and Marquez, 2006)S and in eastern Guatemala (Gibson et al, 2007). Like the influence of forest endowment on success, most of this literature is focused on Mexico and Guatemala.

CFEs and forest certification

There is a broad set of literature available on certification in the region, with materials focused on Mexico, Guatemala and Honduras - with the number of materials ranked in that order. Mexico contains approximately half of the certified community forests of the world; the large number of materials in this country reflects that reality. This literature from Mexico includes CCMSS (2016)S is an example of a recent document that presents the three certification standards in Mexico, while Gerez and Alatorre (2007)S presenting a historical account of certification in Mexico, while others such as Martinez and Colin (2003) analyze the rationale, costs and benefits of certification for communities in Oaxaca, Michoacan, Durango, Chihuahua and Quintana Roo. Fernandez (2015a) and (2015b) analyze market trends in Mexico related to certification. Anta Fonseca (2004)E shows how FSC legitimizes community forestry management (CFM) by granting CFEs a certain respect regarding other agrarian activities, environmentalist and political interest groups that denigrate community forestry.
A wide variety of studies have also been performed in the Peten, where FSC certification is a prerequisite for the granting of community concessions. This includes Hughell and Butterfield (2008)S which show the influence of certification on forest fire incidence and deforestation, or Finger-Stich (2002) E which presents how FSC strengthened CFE by providing a important outside support and legitimacy to their uses and rights over land, forests, and related resources.

In Honduras, Hogdgon and Sandoval (2015) S show that FSC made CFM visible and demonstrated its viability. Bieri and Nygren (2016) E show how broader dynamics beyond the community circumscribe the potential of certification for community forests, while Bieri (2011) E shows how certification can strengthen customary resource rights and help obtain government approval for usufruct contracts.

No regional studies were identified on certification, though a variety of publications were produced by Rainforest Alliance in English and Spanish in 2015 (by Ben Hodgdon), in a series of studies labeled "Forest Conservation through Certification, Markets and Strengthening of Small- and Medium-sized Forest Enterprise," including six case studies in Mesoamerica (Mexico, Guatemala, Honduras and Nicaragua). This study supports the growing body of research demonstrating that community-based forestry production can be an effective approach to conserving forest resources while also generating significant social and economic benefits for marginalized communities.

The literature on certification includes journal articles, a wealth of grey literature, as well as policy briefs (available in Mexico, largely from CCMSS).

REDD+ and community forestry

There is an important set of literature that links the particular experiences around rights in Mesoamerica with REDD+. Some documents focus on the relevance of these experiences for strategies within Mesoamerica, such as Deschamps (2012)E which highlights the potential role of CFEs in developing the national REDD+ strategy in Mexico. In a similar vein, Hodgdon et al (2013)E highlights the role of the community concessions of the Peten in Guatemala´s national REDD+ process. Other authors such as Kaimowitz (2008)E highlight the particular advantages Mesoamerica has in building

REDD+ (in comparison to other regions), including its progress in rights recognition, strong environmental institutions and payment for environmental services programs. ONU REDD (2012) similarly highlights the recognition of rights in Mesoamerica as important progress towards REDD+.

Other materials, such as Bray (2010)E use the experience of Mexico to show how REDD+ can be achieved in other countries, and Bray (2013)E makes a similar case - both are in short, easily digestible formats. Larson (2011)E[6] uses the experiences of tenure reform - some of which occurred in Mesoamerica - as relevant lessons for REDD+. Cronkleton et al (2011)E examine the role of multi-scaled institutions in the development of CFM in Mexico, Brazil and Bolivia. Other materials, such as CCMSS (2010)E&S show how community managed forests, including for wood production, can capture and store more carbon than can forest conservation regimes in which wood-harvesting is prohibited.

There is substantial literature (not included in this review) that discusses the experiences of PES in Costa Rica and Mexico and their importance for REDD+; nevertheless we were unable to identify literature that delved deeply into the aspects related to collective tenure involved in the Costa Rican case - revealing a gap in the literature.

Critical analysis, pitfalls and power relations in community forestry processes

In terms of numbers, there are many more studies that highlight the potential or successful cases of CFE, than there are cases that analyze CFE failures, pitfalls, or critical analysis of community governance processes. Of the 370 documents thoroughly reviewed, 35% were presented as successful cases of collective action, 15% presented mixed results, while 27% were presented as lessons learned. Of the cases that described a link between collective action and specific outcomes, 66% reported positive environmental outcomes (33% mixed, and less than 1% reported negative outcomes), over 55% of materials reporting on social outcomes indicated positive outcomes (over 40% with mixed results, and less than 2% reporting negative outcomes), and of the documents reporting economic outcomes, 55% reported positive outcomes (43% with mixed outcomes, and again less than 2% reporting negative outcomes).

Nevertheless, there are a number of studies that prominently feature key problems involved in community governance, such as asymmetric local power relations, chronic mismanagement, failed attempts at productive enterprises, corruption or other governance dysfunctions, or the (sometimes substantial) gap between legal ownership and actual control of benefits from such recognition. These articles are helpful in understanding the variety of perspectives, interests and agendas that intersect in community governance - that are many times overlooked or addressed only briefly in other literature. Some examples of this literature includes an important set of work in Quintana Roo, Mexico, including Kiernan (2000)E which analyzes the political economy of community governance for biodiversity; Wilshusen (2007)E also analyzes the role of social capital in power relations and elite persistence in a forestry association in the same Mexican state, and in Wilshusen (2007a)S the formation of "work groups" as a response to chronic management difficulties is analyzed. Garibay (2005)S provides an analysis of community leaders of San Juan and the different discourses used to gain local support and external legitimacy, and the inequitable distribution of benefits in a broadly successful economic initiative. Boyer (2007)S analyzes a case of failed collective action that led to deforestation and illegal logging in northeastern Michoacan. Vergas and Brenner (2013)S present a political ecology analysis of community eco-tourism activities in La Vantanilla in Oaxaca that has generated a new set of power

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[6] Larson, A. (2011) Forest tenure reform in the age of climate change: Lessons for REDD+. Global Environmental Change. Volume 21, Issue 2.

relation around this non-traditional activity. Pérez-Cirera (2004)E explores how power distribution affects the likelihood that members solve over-extraction and under provision problems in 38 local forest user groups in Chihuahua. Awareness of such issues is also consistently described and analyzed in the wealth of literature on Mexico produced by Leticia Merino.

In Honduras, Nygren (2005E) highlights how institutional decentralization does not necessarily come with institutional democratization and political accountability of forest authorities and community representatives to local populations. Nygren et al (2005)S provide an analysis of actors in the same setting. In Nicaragua, the work led by Larson (2010)E or Larson and Lewis-Mendoza (2012)E is helpful. Other studies in Nicaragua focus on failed attempts at launching CFEs (Hodgdon et al, 2015), or problematic community relations that exacerbate vulnerability (Ocampo, 2010)S.

There are relatively few studies that attempt to analyze these types of challenges across different national contexts. Tanaka (2012)E is one exception, addressing the underlying tensions and complicating factors faced by CFEs in Guatemala and Mexico. Likewise, Monterroso and Larson (2013)E analyze tenure reforms in three sites in Guatemala and Nicaragua and explicitly call for approaches that transcend traditional collective action frameworks to incorporate power relations. Hale (2011)S[7] draws on cases from Honduras, Guatemala and Nicaragua to highlight the contradictions inherent in territorial rights recognition, and challenges assumptions related to the efficacy of rights-recognition as an effective measure towards achieving self-determination of indigenous peoples.

Based on our findings, therefore, there are in general a small number of studies that have substantially addressed these challenges in community governance. Some literature exists, but there is very little literature that has attempted to incorporate a broad number of experiences in different territorial and national contexts beyond individual countries or communities. In this context it is important to mention the series of research efforts led by CIFOR and available in the flagship "Forests for People" book of 2009 - which notably took an approach of analyzing tenure reform from a number of different contexts, including cases from Guatemala and Nicaragua. This group of research focuses largely on tenure reform (and not merely on community governance problems), but does begin much of the first reflections on authority relations in tenure reform. Some exceptions exist, such as the Larson et al (2009)E&S,[8] and associated articles, though that draws on a limited number of cases in Mesoamerica, which focuses on CFE experiences in Guatemala and Nicaragua.

A second issue relates to the formats in which these studies are available. There are very few briefs that summarize these issues (though they are included, for example, focused on CFEs in Mexico in Hodgdon et al (2013)E. No videos were identified that address this issue at all, much less incorporating a variety of different contexts.

Public policy and development support for community forestry

Apart from specific tenure reforms, there is a group of materials that focus on public policy with regard to CFM. A large part of this literature is focused on conservation and forestry regulations, and adverse economic policies, all of which may undermine community rights and/or control. Yet there is another set of documents that discuss, analyze or propose a more constructive set of policies for countries where

[7] Hale, C. (2011). Resistencia para qué? Territory, Autonomy, and Neoliberal Entanglements in the "Empty Spaces" of Central America. Economy and Society 40(2):184-210

[8] Larson, A., Barry, B., Dahal, G.H. y Pierce Colfer, C. (eds.) (2010). Forests for People: Community Rights and Tenure Reform. Earthscan, London. Washington D.C.

rights have been recognized at large scales. This is important, when considering that rights recognition usually signifies a dramatic shift in institutional arrangements - these experiences could help to inform governments how to make policy-making shifts when rights are recognized. In some interviews, some advocates expressed concern that government reticence to recognize rights was precisely due to the lack of clear guidance about the role of the state after rights recognition.

A considerable set of documents outline the experiences and lessons of public policy in relation to CFM. In many ways, the Mexican experience is unique in that considerable efforts have been deployed to support and cultivate collective action in Mexican community forests, in particular the PROCYMAF program. Segura (2014S) provides a recent description and analysis of the PROCYMAF program in Mexico and its application in Oaxaca, while Rodriguez et al (2015)S also provides a description of the design, evolution and results of the program, in addition to an earlier article available in English. Segovia et al (2004)E. and Anta Fonseca (2015S) provide a description of the evolution of forest policy, including the programs that followed PROCYMAF, and a description of this experience from the perspective of CONAFOR. Torres Rojo y Amador (2015)S analyzes these programs (PROCYMAF, PROCYMAF II and subsequent programs) specifically with regard to their impact on vertical integration.

Other articles in Mexico focus on the National Commission for the Knowledge and Use of Biodiversity (CONABIO) and its role in supporting collective action for ICCA in Michoacan, as outlined Camou-Guerrero et al (2013)E. Rodriguez (2007S) proposes a model of public policy for community governance, based on the experience of PROCYMAF. Merino and Segura (2007)S comment on the effects of Mexican forest policy on forest communities. Rios-Cortez (2012)S analyzes the impact of the forest pilot plan in Quintana Roo. Martinez-Bautista et al (2015)S analyze community forest projects in Mexico to analyze their success, with social capital appearing as a critical factor.

Development support and NGOs working with community forests

There are a relatively small group of documents that delve deeply into the models of development accompaniment to communities with recognized rights. There are several documents published by aid agencies themselves, which in general, show less rigor in critically analyzing success or lessons learned in their own initiatives.

There are, however, other documents that provide important insights, such as Orjuela (2015)S which analyzes the influence of aid agencies in the development of institutional arrangements, drawing on the Peten and Nicaragua´s RACCN. Taylor (2008)E also draws on community self-systematization processes in Guatemala and Nicaragua that provide insights for technical assistance to communities. Barismontov (2010)E analyzes the relationship of Mexican forest communities with external NGOs and foresters, and analyzes the nature and outcomes of these interactions for productive community management, concluding that the "availability of actors motivated by concern for community capacity instead of timber income may be a determinant of community forestry development". Antinori and Rausser (2007)E assess the effect of integrating local community representation with outside technical expertise on forest management in Mexico. In Honduras, Jones (2003) E discuss' the positive and negative aspects of participation of Honduran cooperatives in international aid projects, with insights into community governance of aid projects.

It is notable that the large majority of materials available on public policy in support of community forestry is available largely in academic formats and in Spanish. There is clearly a wealth of learning

contained in this documents that is not available in short formats, and is not available at all to non-Spanish speakers.

Payment for Environmental Services (PES)

There are a variety of articles that discuss PES; there are a particularly large number of studies on PES in Mexico, including the political economy of its evolution and eventual legislation, early design concepts and considerations (Alix García et al (2009)E), as well as a variety of studies examining its effectiveness in social and ecological terms. Some articles focus mainly on the PES program with little attention to community rights (FAO (2013)E; Alix García et al (2009)E), while others specifically differentiate PES impacts for land rights and how PES influence community conservation choices or community governance more broadly. Yanez Pagans (2013)E analyzes how the type of payment (lump-sum payment or wages) influences the collective action; Kerr (2014)E examines PES programs around the world, among which 11 ejidos in the PSHA in Mexico, and recommends that in facing the potential tradeoff a PES initiative may face between stronger conditionality and stronger potential for institution-building to manage the commons, a focus on institution-building is likely to be a better bet. Roland Nieratka (2016)E observes that "the institutionalized structure of community governance and responsibility for a forest territory has provided strong baseline structures and incentives for organisation that has been further strengthened by the environmental services payments."; Madrid (2011)S brings a reflection on the hydrological services in Mexico and the key elements that have to be included in public policies that aims to guarantee the provision of these services and the full respect of community based organizations since they are the majority of the landowners. Reyes et al (2012)S assesses PES in Mexico in relation with common property and concludes that those programs depend more to the success in social participation than biophysical elements used to select the sites that benefits from PES. Cameron (2015)E reports the experience of Marqués de Comillas highlighting some of the conditions that scholars considered likely to affect protection of common-pool resources such as forests or fisheries

It is notable that many documents highlight the fact that Mexican PES programs present a very low additionality, which is that nothing proves that the areas under PES would have been cut if there wasn't any compensation.

There is a broad range of literature on PES in Costa Rica, many of which focus on individual land rights; there is a general lack of in-depth analysis of the PES program in Costa Rica that focuses on articulation with collective rights in indigenous territories (ADIIs). Borge Carvajal (nd)S provides perhaps the most extensive description and analysis of the PES program in indigenous territories; while Candelas et al (2013)S provides a discussion of the program in Alta Talamanca. Herrera-Ugalde, M. E. y Castillo, J.P. (2012)S provides in depth discussion for the PES program in the Talamanca Cabecar Territory. Davis et al (2015)E&S briefly describes the program. Given the historical trajectory, significant social and ecological impacts witnessed by fieldwork performed by PRISMA - it is notable that there is little recent literature on the topic, and very little at all in English that describes the achievements and lessons of the program. Based on PRISMA´s fieldwork, there appears to be an opportunity to provide an updated and in-depth analysis of these programs, in particular focusing on the highly differentiated results in different indigenous territories, in particular Talamanca and the Caribbean Coast in comparison to most other indigenous territories.

In Guatemala, some work has been done around PINFOR and PINPEP. VonHedemann and Osborne (2016)S analyzed those programs in relation with communal administration from the political ecology approach. Those program have strengthened communal organizations but it is still considered a double edged process as the communities fear to be dispossessed by a technocratic state. Other work has

highlighted the process of a voluntary carbon project (Guatecarbon), or the presence of the community concessions as critical for the national REDD+ process.

Gender

There are few materials that attempts to understand the role of gender in community forestry, of the 377 documents reviewed in detail, only 10 addressed gender as a central issue. Much literature is written with an explicitly normative framework designed to highlight the merits of gender equality as a goal in itself. It is notable that many studies have been done in the RACCN (Nicaragua) where the community forestry is still emerging but is in a crucial moment of recognition of indigenous territorial rights and no study addresses this topic in detail for the Mexican cases. Flores et al (2016)S in a policy brief compiles studies on gender in the RACCN and identifies deficient governance and cultural barriers as the main hindrance to women's participation. It highlights the importance of women participation as it implies an increase of transparency in forest management. In the Mexican case Baynes et al (2015)E identifies 5 success factors for community forestry among which gender equality is found as a factor that strengthen cohesion in the forest communities. However, overall there is relatively little understanding of the role of gender in collective property rights recognition, and a focus on normative value of gender equality with little to no focus on its instrumental importance for social or ecological outcomes.

Migration and community forestry

In Mexico there is a part of the literature that analyze the effect of out migration and, to a lesser extent, aging of the comuneros on the functioning of community governance in forest. Lopez et Al (2010)S analyze the socio cultural and institutional factors that correlate with CFE success and found that temporary emigration in communities adversely affects the conservation of natural capital. Merino (2012)E analyze the out migration in Oaxaca and find that individual rights get strengthened in comparison with collective rights, the collective capacities to control and manage resource get diminished and there is less human resource to do the community work necessary for this management. Martinez y Merino (2011)E assess the demographic factors that make more complex the CFM. One of the most direct impacts of migration is the gradual aging and a growing presence of female-headed single-parent households and elderly couples with no family in the community. Less manpower available for cultivation, firewood collection, and housing construction. Migration limits the number of agrarian landowners susceptible to occupy duties, which in turn contributes to system erosion. Duran et al (2012)E with regards to the ICCA initiatives, observe that a "threat to local conservation initiatives in Oaxaca concerns the fact that to cover many of the associated costs communities are dependent upon the existence of a productive rural population with an active presence on the land. Robson (S.F.)E observe that while change through out-migration can undermine traditional governance systems and erode social and cultural reproduction, innovative institutional adaptations and the existence of strong transnational ties may help reduce community vulnerability.

Rights, peace and security

Of the 375 documents thoroughly reviewed, less than ten addressed security or violence as a central subject of study. These documents include literature such as Duran et al (2010)E on multi-level governance, deforestation and violence in Guerrero Mexico, or PRISMA (2014) on how rights prevents or resists narco-trafficking in Mesoamerica, or Bray (2007)S on the reduction of conflict in community forest areas, or the multiple benefits of community forestry in Mexico, including social peace (Bray et al, 2007). Nevertheless, an extensive set of literature has highlighted the role of collective rights in the

construction and reproduction of social cohesion (or social capital) in rural territories – which in turn is linked to a broad body of literature related to rule compliance, well-being, equity, citizen security and peace. There are, therefore, a broad series of rigorous findings that are relevant for violence, security and post-conflict scenarios – though they have largely not been framed as such.

It is also notable that agreements on community rights were directly linked to peace negotiations or agreements for the Autonomous Regions of Nicaragua´s Caribbean Coast; in the community concessions of Guatemala, and (much more indirectly) in the community rights model in Mexico. A group of in-depth literature is available on Nicaragua´s Peace Process and the evolution of the Autonomous Regions of the Caribbean Region – though there are no materials that sum up this process and the evolution (and lessons) in a single, more digestible format. Similarly, in-depth articles are available regarding the history of ACOFOP, its inception in the context of the 1996 Guatemalan Peace Accords, though few materials are available that focus exclusively on the post-war aspects of this process. The previously cited work on narco-trafficking has shown how ACOFOP has prevented the expansion of illicit activities; yet it is notable that there is no single document or video that summarizes the series of achievements of ACOFOP over a long period of time specifically related to peace and security.

Procedural rights: Free, Prior and Informed Consent (FPIC) and consultation

One important gap identified in this review was the dearth of materials on procedural rights - referring to concepts of free, prior and informed consent (FPIC), or processes of consultation. Procedural rights have represented fundamental discussions in countries across the region on a variety of government, private, donor and multi-lateral initiatives; though historically many of these processes have been cursory or deeply problematic. Nevertheless, based on PRISMA´s work in the region, much of the most important progress on this front has come in the past six to seven years. There are a number of experiences in which indigenous peoples, in the absence of clear protocols for procedural rights, have politically forced the issue in processes related to REDD+ or forest legislation (Costa Rica, Panama, Mexico, or Honduras), sometimes devising their own protocols for such processes. One such experience includes negotiation with extractive interests and arriving at detailed agreements for the conditions under which resource exploration would occur in the Honduran Muskitia. These experiences have been briefly described in PRISMA publications, but have not been the subject of more rigorous study.

Decentralization

The bulk of the literature on decentralization (understood here as distinct from tenure reform - although some authors refer to tenure reform as itself decentralization), refers to Guatemala and Honduras, and describes decentralization processes which are largely detrimental to local voices and participation in the use of natural resources. These include Elias and Wittman (2005)S and Gibson and Lehoucq (2003)E, which analyze decentralization at a national level in Guatemala, and Elias (2008)S that analyzes one case from the Guatemalan highlands. Nygren (2005)E analyzes decentralization in Honduras, while Nygren et al (2005)E provides analysis in the same country in Spanish - both in academic formats. Larson et al (2007)E analyze decentralization processes in Bolivia, Brazil, along with Nicaragua, Honduras and Guatemala with the following finding: "What is most notable in these cases is that improved land tenure security, titling, and access are not usually part of forestry or decentralization policies but rather represent other, bottom–up social processes."

Evidence of effectiveness of community governance

Ecological results

The viability of community forestry as a strong institutional arrangement for sustainability is central to the literature on the topic globally, and Mesoamerica is no exception. 62% of the literature addresses sustainability (234 out of the total 377 documents reviewed in depth). There is an enormous body of literature on this topic, and is perhaps the central (or a central) theme in the bulk of materials. Authors such as David Bray, Leticia Merino and the CCMSS, among many others, have published widely in Spanish and in English on the topic in Mexico, while a broader variety of authors have published on a number of experiences in Central America. The experiences of Mexico are available in brief formats from CCMSS and CONAFOR; the most recent document synthesizing ecological results in Mexico comes from Davis et al (2016)S, which is also available in English as a chapter in a broader study (Davis et al, 2015). Some other brief formats of specific Central American experiences are available from PRISMA and Forest Trends; videos also substantially address this topic, mainly in Mexico and Guatemala, but including also Honduras, Nicaragua, Costa Rica and Panama.

There is a smaller but significant amount of materials that produce and analyze new primary data on land use or land use cover change - almost exclusively produced for academic journals, and are widely cited in the previously mentioned literature. In Mexico this includes a broad series of documents, briefly summarized in Davis et al (2016)E&S, much of which were highlighted in a summarized fashion in a summary of literature on secure tenure and forest condition in Seymour et al (2014)E.[9] This set of literature includes the ecological achievements of community forestry, including Bray and Kleipeis (2005)E analyzing Quintana Roo, Gómez-Mendoza et al 2006 analyze the Sierra Norte of Oaxaca, Barsimantov and Antezana (2012)E which analyzes Michoacan, while Barsimantov and Kendall (2012)E performed an ambitious study analyzing common property regimes across 733 municipalities in eight states.

A variety of studies analyze community forests in comparison to private or public management regimes. This includes Digiano et al. (2013)E which shows the ecological contributions of eight ejidos in Southeastern Mexico compared with nearby privatized ejido land, Duran et al (2005)E analyzes community forests and protected areas in Quintana Roo and Guerrero, Ellis and Porter-Bolland (2008)E compare community forests in the Central Yucatan Peninsula against the Calakmul Biosphere Reserve in Campeche, and Silva-Flores (2016)E analyzes forest quality in the Western Sierra Madre in Mexico.

In Guatemala most of the literature focuses on Petén and the community concession experience. There are a number of studies that demonstrate the ecological contributions of CFM vs protected areas, such as Hodgdon et al (2015)E, in a report for Rainforest Alliance, as well as Radachowsky et al (2011)E, as well as Fortmann et al (2014)E. Grogan et al (2015S & 2016E), in a journal article and in a report for Rainforest Alliance, assess the environmental impact of those concessions through the analysis of post extraction regeneration of the trees and demonstrate their sustainable practices. At a national level there are less studies, though Elias et al (2008)S is notable for highlighting the forest condition of communal lands.

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[9] Seymour, F., La Vina, T., and Hite, K. (2014). Evidence linking community-level tenure and forest condition: An annotated bibliography. *Climate and Land Use Alliance*.
http://www.climateandlandusealliance.org/wp-content/uploads/2015/08/Community_level_tenure_and_forest_condition_bibliography.pdf

There is less literature on Honduras, though land use analysis in the absence of rights in the Muskitia is analyzed by Hayes (2008)E; Forest Trends (2013)S provides a summary on community forestry outcomes in the country, Davis (2014)S documents outcomes of community forests in Olancho, while Bieri (2011)E show ecological results of certified community forests in Honduras.

In Nicaragua, Smith (2011)E documents forest recovery in indigenous communities in the Bosawas Biosphere Reserve. Stocks et al (2007) E, analyzes the contributions of indigenous communities in forest condition in comparison to colonists and MARENA management in the Bosawas Reserve, while Hayes and Murtinho (2008)E show how common property indigenous territories are better able to confront the agricultural frontier when compared to public management.

In Costa Rica, Candelas et al (2013)S studies the role of forest governance and institutional arrangement between indigenous people and external agents in Alta Talamanca. The results are mixed as some threats persist. They recommend improving the level of cooperation and coordination among those actors. In Panama, Nelson et al(2001)[10] demonstrates the effectiveness of collective territories vs protected areas in the Darien. Vergara and Potvin (2014)S present a general panorama of conservation tools and recall the primordial role of PNA and indigenous Comarcas.

There are very few documents that produce new primary data that address more than one country. Important exceptions is research comparing indigenous communities in Honduras and Nicaragua, with recognized rights only in the latter, in Hayes (2007)E (a PhD Dissertation), a journal article (2007a)E. A comparative study in the Mexican and Guatemalan Mayan Forests is provided by Bray et al (2008)E which shows community managed forests to be at least as effective as strict protected areas.

There are few articles that discuss these issues at a regional level, though one brief format is available in Spanish in Programa ONU REDD (2012)S. Davis et al (2015)S provides an overview of the ecological results available in Mexico, Guatemala´s Peten, Nicaragua´s RACCN, Talamanca in Costa Rica and the Comarca Embera Wounaan in Panama.

Within the materials on conservation, there is also a group of literature focused specifically focused on voluntary forms of community conservation, much of addressing or using the IUCN category of Community Conservation Areas (ICCAs). Most of this literature is focused on Mexico, including a thesis focused on a successful case involving the Oaxacan organization CORENCHI; Velasco (2011)S compares CORENCHI with communities without collective conservation action, in addition to others such as Duran et al (2012)E analyze VCAs in Mexico in the broader conservation context, while Camou-Guerrero (2013) analyzes the role of CONABIO in cultivating local institutions in ICCAs.

Social and economic results

Social impacts are identified in 47% of the publications (27% positive, 18% mixed and 1% negative); While 50% of the publications address economic impacts (28% positive, 22% mixed and 1% negative), and 34% of the documents identify some type of impact in all three categories (environmental, social and economic).

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[10] Nelson, G. C., Harris, V., Stone, S. W., Barbier, E. B., and Burgess, J. C. (2001). Deforestation, land use, and property rights: empirical evidence from Darien, Panama. *Land Economics*, *77*(2), 187-205.

The vast majority of materials that discuss social and economic results of community forestry are case studies focused on specific CFEs. An enormous wealth of materials on this topic is available in Mexico, in Guatemala (mostly on the community concessions of the Peten), substantial materials in Honduras, with a handful of cases discussing Nicaragua, Costa Rica and Panama - largely reflecting the state of progress in these latter countries with CFEs in general. Most of the cases that address economic and social impacts also incorporate environmental impacts as a central part of their analysis (in other words, there are few documents that only address social or economic impacts. Social impacts usually include investment in community projects, infrastructure, education, health care, as well as social cohesion.

It is notable that the materials that discuss economic or social impacts of CFM have remained almost exclusively focused on local level impacts (jobs, income, infrastructure improvements) with very little discussion of the contribution of forest communities to broader national economic indicators. In this same line of thinking, there are no studies that analyze the differences between industrial and community forest contributions. This is notable, for example, when considering that the development literature between peasant/small scale agriculture vs industrial agriculture has been extremely well developed - an enormous wealth of literature analyzing productivity, efficiency, contribution to regional and national development and economic growth (using a variety of approaches) has underpinned a healthy debate for many decades now. A similar debate is not seen in the community forestry literature. Other relevant issues that could be linked to forest resources could relate to "dutch disease" - and the perverse economic and governance effects of high-rent resource wealth under elite control. Given the continued dominance of the perception that forest industry is the most efficient and productive sector, it seems as though further research could be done to compare the two through a variety of economic lenses, such as job creation, multiplier-effects, productivity (including multiple uses of landscapes), tax contributions, and economic growth, among others.

Videos

The 47 videos reviewed in this project demonstrated a relatively high degree of homogeneity, demonstrating the potential of community forestry, usually focused on individual community cases. Most of these videos focus on Mexico or Guatemala, though there are a handful that focus but also include Honduras, Nicaragua, Costa Rica and Panama. These videos focus mainly on the enterprise and forestry elements of community forestry. In Mexico, many videos discuss the evolution of industrial forest management to community management, in Guatemala many of the videos focus on the community concessions. Estudios Rurales y Asesoría, A.C. (2016)S present the state of community forestry through 3 cases across the country and PRONATURA (2013)S presents the successes of 4 UZACHI's communities in exploiting their forest and their historical process to recover community control from other actors

Among these videos on CFEs, two sub-groups stand out. First, a group of six videos produced by CATIE between 2011 and 2012, present CFE throughout the region (RAACS, Copen Honduras, Emberá Wounan Panama, RACCN, Petén, Hojancha Honduras). Each video shows an experience of community forestry. Community members are interviewed, as well as experts who accompanied the process, and the end of each video features lessons learned from the experience. The second subgroup includes six videos produced by the AMPB, which describes CFE initiatives and the problems faced by the members of the AMPB in their territories, including Guatemala, Honduras, Nicaragua and Costa Rica.

In Mexico, there are documentaries aimed at the general public that were broadcast on television as special reports, such as Televisa Mexico (2010) S, El Universal TV (2010) S and Grupo La Reforma (2011) S. These documentaries are quite general and aim to enhance the image of CFM.

There is a smaller group of videos whose focus goes beyond technical business aspects. The UNDP conducted a video on the titling of indigenous lands in the Nicaraguan Muskitia. The PRISMA Foundation produced 2 videos on the recognition of land tenure and control in the face of the invasions of settlers in the Honduran Muskitia and in the Mayangna territories in Nicaragua. Forest Trends made a group of videos specifically on the subject of territorial control and surveillance. One of these videos focuses on the entire Central American region while others presents cases of community control in the Mayan Biosphere Reserve in Petén and in the Mayangna-Sauni Arungka (Matumbak) Rosita-Nicaragua Territory.

A particularly important video for the case of Mexico is that of TVUNAM (2010) that extensively presents Elinor Ostrom's theory through excerpts from an interview with this renowned Nobel peace prize recipient. Many issues are addressed in this documentary, each of which are illustrated by the experience of community forestry in Mexico.

Conclusions and areas for further research

This section provides a brief summary of the main areas where further research or new formatting might be useful for further learning on MCF:

Research and formats

- Further research in Panama and Costa Rica on indigenous institutions, their evolution related to rights recognition - in particular related to authority, legitimacy and rule-conformance.

- There is room to synthesize the findings of a broad group of materials that discuss the initial challenges following rights recognition, for launching CFEs but also in the construction of institutions.

- More studies focused on "low-level" CFM, where timber/NTFP may not be the primary economic activity.

- Economic analysis of MCF beyond local economic indicators such as job creation and income; such studies could focus on multiplier-effects, productivity (including multiple uses of landscapes), tax contributions, and economic growth, among others.

- More in depth analysis of rights recognition, implementation and benefits in Honduras through community contracts following the 2007 Forest Law.

- Research demonstrating the variety of political strategies for achieving recognition and security of tenure from across the region.

- More comparative studies from different local and national contexts to analyze similarities and differences experienced across a broad range of scenarios; this could be done through a variety of thematic approaches, such as regulation over community forestry, public policy and development support, Critical analysis, pitfalls and power relations and ecological results of community governance.

- More in-depth research on the functioning of the indigenous PES model in Costa Rica.

- An up-to-date analysis on strategies for implementing FPIC and consultation processes in Mesoamerica; progress over the past 8 years is largely undocumented.

- There is room to summarize and compile the variety of lessons in development support to draw broader lessons, and compare and contrast across regions; in addition to making this information available in policy brief or video formats.

Potential for new formats:

- There are a broad series of documents on Mexico, the country where the most significant public policy support for community forests has been marshalled. These documents are available in English and Spanish in several academic formats, and are available for immediate use - abbreviated formats such as policy briefs and videos could complement efforts to promote these policies.

Section II. Awareness of Mesoamerican Community Forestry (MCF) experiences: Global results

To complement the review of materials on experience´s on MCF and identify needs for disseminating lessons from these experiences to inform processes, initiatives and policies in the global tropics as well as in specific countries (Brazil, Peru, Colombia and Indonesia), both quantitative as well as qualitative information was gathered and analyzed with key stakeholders involved in CF. Accordingly, a series of in-depth interviews with global leaders as well as country specific leaders in conservation, development and community rights were carried out to understand their awareness of MCF experiences, the perceived relevance in their fields of work and potential areas of advancing lessons on community forestry. These interviews and country specific studies were complemented by an online survey distributed through a variety of online mechanisms, which returned 161 responses, in English, Spanish, French and Portuguese. The following is a summary of the findings of this component of the research, beginning with the results of the online survey, followed by an analysis of the semi-structured interviews with global leaders, and finally analysis for each of the specific countries previously mentioned.

Limitations of research

It should be noted that there may be selection bias in the samples obtained in the online survey results as well as the semi-structured interviews carried out both at national and global levels. At each country level, conversations with consultants seem to suggest that interviews were more likely to be obtained where relationships already existed with the individual carrying out the interview. In some cases, this made for an important influence of particular institutions close to specific work carried out on tenure (for example in Peru), or who have had contacts with Mesoamerican institutions through a variety of initiatives and relationships. We believe this may partially explain, for example, the substantially higher level of awareness (as well as depth of knowledge) of individuals in the Peruvian case. This seemed to be true for the international level interviews as well, as respondents were more likely to respond when they had heard of Mesoamerican initiatives or who had had previous contact with PRISMA and its researchers.

For the online survey results, it should be noted that the majority of respondents asserted that rights were important for their work (88% gave the topic a rating of 4 or 5, on a scale from 1 to 5). This may suggest that the respondents were already predisposed to learning about MCF, and may not respond to important groups that do not see rights or MCF as relevant. For these reasons, we believe the online survey results may actually overestimate the actual level of knowledge among broader development, climate change, forestry and conservation cohorts.

Overall results of the online survey

Geographic focus of work

The online survey revealed that 68% of respondents (109 of the 161 respondents) were familiar with MCF experiences. When broken down by their geographical focus of work, predictably, the highest percentage of familiarity with these experiences were in Mexico in Central America (85%), followed

respectively by multi-regional individuals (83%), Latin America (69%), Asia (66%) and Africa (53%), (see Chart 1). Unexpectedly, according to the on-line survey, the percentage of familiarity with MCF experiences in Asia is practically the same as Latin America, whereas, in Africa there is less knowledge of the experiences.

Chart 1. Knowledge of the MCF experiences,
according to geographic focus of work
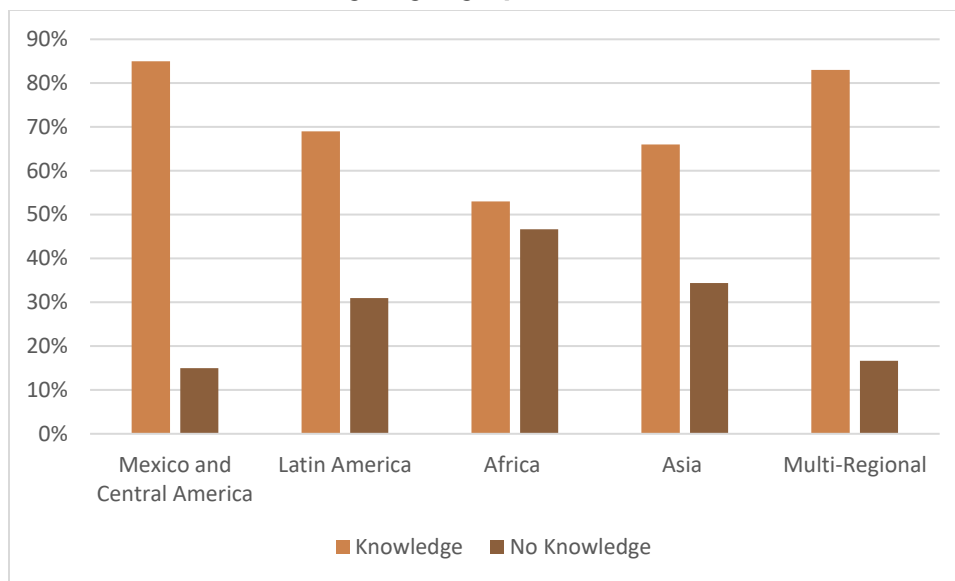
Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Of the 69% of the survey respondents familiar with MCF experiences, Mexico ranked first overall as the most well-known case (72%), followed by Costa Rica (50%), Guatemala (47%), Nicaragua (25%), Honduras (24%) and Panama (15%). The order of this ranking holds when groups are divided by region for Africa, Asia and Multi-Region; however in Latin America, Guatemala is more well-known than Costa Rica. The full breakdown of this data by geographic focus is provided in Table 3.

It is noteworthy that Costa Rica occupies the second place in level of general knowledge, given that according to the review of materials, Costa Rica is one of the countries with the least quantity of materials identified. We suspect this may reflect the conflation of PES experiences to individual farms and plots with PES in collective indigenous territories (which has been widely disseminated).[11]

There were some noticeable differences in the level of knowledge of MCF experiences when disaggregated according to the kind of organization/agency the respondent works in.[12] The survey found that when you take the percentage of total respondents by category type, respondents working with international development agencies have the greatest knowledge about experiences in MCF (88%),

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[11] Some other trends that are revealed in the survey results are that among the subregions: it is the category of "Multi-regional" where there is the highest levels of knowledge in all experiences, even more than in the subregion of Mexico and Central America. And in Latin America, the experiences from Guatemala (62%) are almost as well-known as those in Mexico (69%). In contrast to Africa, where experiences from Costa Rica (58%) are almost as well-known as Mexico (63%). The latter is probably attributed to the same reasons noted above.

[12] The categories included: Community-based organization, NGO, International development agency (bilateral or multilateral), Government, Academic or researcher, Private sector and other.

followed by academics-researchers (73%), government (64%), NGOs (62%), and an equal percentage among community based organizations and the private sector, both with 50% (see Chart 2).[13]

Table 3. Knowledge of particular country experiences, according to geographic focus.

Geographic focus	Mexico	Guatemala	Honduras	Nicaragua	Costa Rica	Panama
Mexico and Central America	82%	59%	47%	29%	47%	6%
Latin America and sub-regions	69%	62%	21%	31%	45%	21%
Africa and sub-regions	63%	29%	8%	17%	58%	13%
Asia and sub-regions	71%	33%	14%	19%	43%	10%
Multi-Regional	87%	60%	33%	33%	60%	27%
Other	67%	0%	67%	0%	33%	0%

Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Chart 2. Percentage of respondents with knowledge of MCF, within each type of organization.[14]
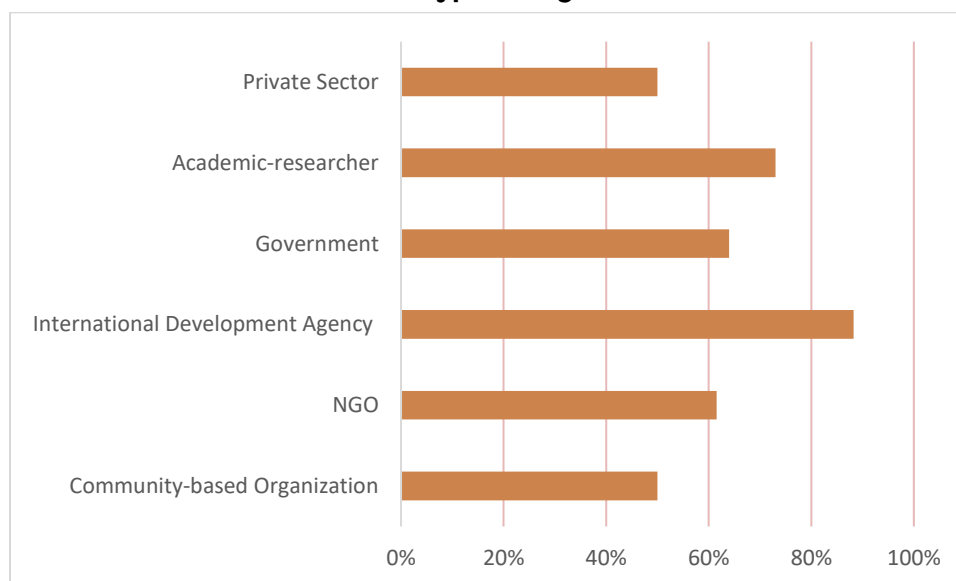
Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

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[13] However, of all the respondents to the survey, only 8 respondents said they worked in CBOs, and only half of those (4) had knowledge of MCF experiences. The same situation exists with regards to respondents from the private sector.
[14] Since the number of respondents differed among types of organizations; the percentage was calculated based on the total of respondents in each type of organization, eg, there were q total of 63 researchers that responded to the survey; of which 46 had knowledge of MCF

In most cases, community-based organizations were the least knowledgeable of MCF experiences, with the exception of experiences in Panama[15]. In Panama, the academic-research sector is the group that has the least knowledge (with only 6%), this is unanticipated given that this group occupies the second highest levels of knowledge with MCF experiences (73%). Also worth noting is that none of the respondents from community-based organizations registered any knowledge of community forestry experiences in either Honduras or Nicaragua.[16]

Information concerning MCF experiences considered relevant

The online survey asked respondents about the relevance of the MCF experiences with regard to addressing any environment or development challenges in their thematic or geographic areas of work, as well as the relative importance of community or indigenous land rights issues for their area of work.[17] The results from the survey confirm the relevance of lessons from MCF experiences for informing efforts in all three areas (environmental challenges, development challenges and community or indigenous land rights) regardless of geographic focus, as reflected in the following charts on the importance of land rights (Chart 3 and Chart 4).

Chart 3. Relative importance of Indigenous and Community Land Rights (on a scale of 1 to 5)[18]
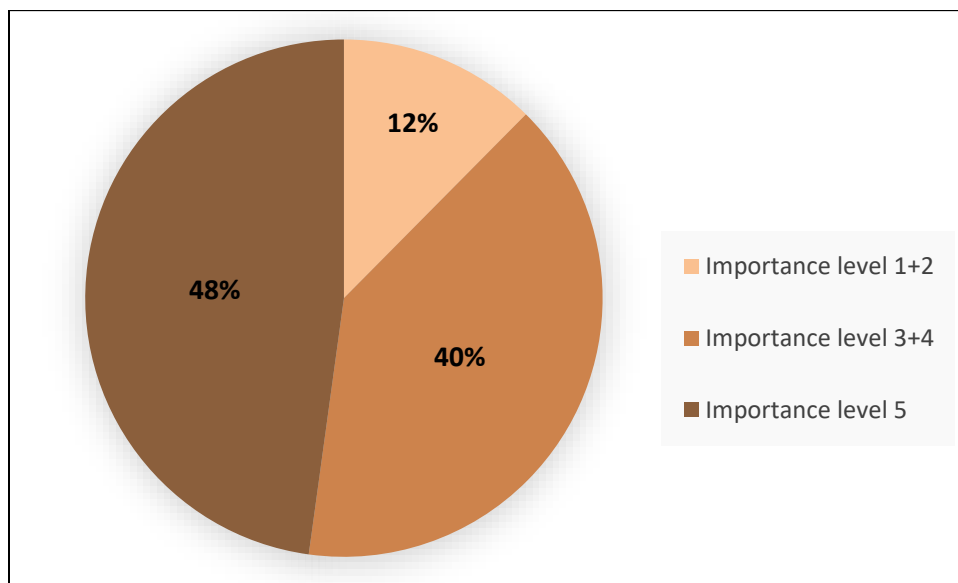
Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

As chart 3 demonstrates, only 12% of the respondents indicated that territorial or indigenous rights are of low importance (answers 1 and 2) for the work they do; While 88% considered it relevant (48% for answers 5 and 40% for answers 3 and 4). And as indicated in Chart 4, the highest percentages of people who consider rights as important,[19] are respondents that focus in Asia (94%) and Africa (91%). On a

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[15] However, of all the respondents to the survey, only 8 respondents said they worked in CBOs, and only half of those (4) had knowledge of MCF experiences. The same situation exists with regards to respondents from the private sector.

[16] However, there is not a sufficient sampling size in this category to make any conclusions.

[17] The questionnaire asked them to rate its importance on a scale of 1 to 5 where 1 = low prominence, 5 = high prominence.

[18] High levels of importance may reflect selection bias.

[19] Based on adding answers 3, 4 and 5 together.

scale of 1 to 5, in both cases the average rating exceeded the overall average of 4.07, reaching 4.31 for Asia and 4.09 for Africa.

Chart 4. Relative importance of Indigenous and Community Land Rights, according to geographic focus (on a scale of 1 to 5)
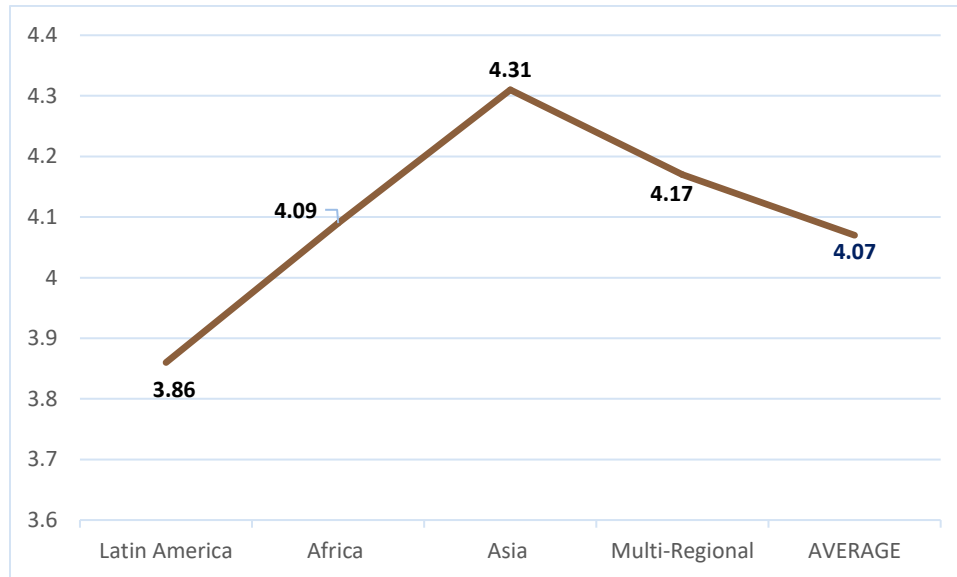
Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Additionally, the survey found that conservation/sustainability was the highest ranking answer for the perceived relevance of community forestry experiences amongst all those interviewed online.

Most valued source or format of knowledge of experiences of MCF

When asked how they had heard about these experiences, the most frequent response was through "experts or colleagues", followed by "conference, workshop or seminar", with "academic journals" ranking third. The full list is provided below in Table 4.

Similarly, when taking the average score for the level of confidence given to the source (in a scale of 1 to 5), the order of the reliable sources are the following: Experts or Colleagues (4.29); Conference, Workshop or Seminar (4.15); Academic Journals (4.05); Credible Websites (3.99); Gray Literature (3.57); Policy Briefs (3.47); while Newspaper or Magazine (3.20) and Video (3.17) were the least valued formats. Table 5 provides these overall averages of reliability as well as the reliability of the source for each geographic focus area.

As is to be expected the preferred format for learning about MCF experiences differs according to the type of organization the respondent works for (see Table 6). Among community-based organization, the most valued formats are Conference, workshop or seminar (4.38), Experts or Colleagues (4.25) and Video - Websites (4.13, each); Less valuable formats are Academic Journals (3.00) and Policy Briefs and Newspapers and Magazine with 3.25 each. And, as for respondents from governmental agencies, the most valued formats are Experts or Colleagues (4.52) and Academic Journals and Conference, workshops or Seminars (4.36 each); the least valued were Newspaper / Magazine (3.48) and Video (3.72). In general, this group rated each of the formats positively, with all their scores above average.

Table 4. Knowledge of the MCF experiences, according to source-format

Source Format	Frequency	Percentage (based on 109 responses)
Experts or colleagues	68	62%
Conference, workshop or seminar	60	55%
Academic Journals	52	48%
Credible websites	36	33%
Visit to the site or exchange with members of the community	36	33%
Grey literature (NGO)	32	29%
Newspaper or magazines	21	19%
Policy Brief	21	19%
Video	7	6%

Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Table 5. Level of confidence of different learning formats, according to geographical focus (Values awarded on a scale from 1 to 5, in ascending order of importance)

Evaluated Formats	Latin America	Africa	Asia	Multi-Region	Overall Average
Experts or Colleagues	4.33	4.16	4.34	4.22	4.29
Newspaper or Magazine	3.31	3.36	3.00	3.11	3.20
Academic Journals	4.12	3.96	4.06	4.17	4.05
Credible websites	3.88	4.13	4.03	4.06	3.99
Grey literature (NGO)	3.50	3.67	3.50	3.67	3.57
Video	3.21	3.36	3.34	2.78	3.17
Policy Brief	3.48	3.40	3.88	3.33	3.47
Conference, Workshop or Seminar	4.10	4.42	4.13	3.72	4.15

Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Among respondents affiliated with NGOs, the most valued formats are Experts or Colleagues (4.31) and Conference, Workshop or Seminar (4.15) and the least valued formats are Video (3.10) and Newspaper or Magazine (3.13). Similarly amongst respondents of International Development Agencies, the most valued source is Experts or Colleagues (4.52) and Academic Journals (4.36) and the least valued formats are Video (3.00) and Newspaper / Magazine (3.35).

As is to be expected among Academics or Researchers, the most valued source of information on MCF is Academic Journals (4.33), followed by Experts or Colleagues (4.24); while the least rated formats are Video (2.92) and Policy Briefs (3.03).

Finally, with regard to respondents from the Private Sector, the most valued format is that of Conferences, workshops or seminars (4.38), followed by the Experts or Colleagues and Academic Journals (4.25 each). The least valued are Video (3.13) and Newspapers / Magazine (3.13). In this group, the Policy Brief and Reliable Websites have high scores in comparison with other types of organizations.

Table 6. Level of confidence of different learning formats, according to organizational affiliation (Values awarded on a scale from 1 to 5, in ascending order of importance)

Evaluated Formats-Sources	CBO	NGO	Int´l. Dev. Org	Gov´t	Academic/ Researcher	Private Sector	Overall Average
Experts or Colleagues	4.25	4.31	4.24	4.52	4.24	4.25	4.29
Newspaper or magazine	3.25	3.13	3.35	3.48	3.10	3.13	3.20
Academic Journals	3.00	3.64	4.00	4.36	4.33	4.25	4.05
Credible Websites	4.13	3.95	4.18	4.16	3.84	4.13	3.99
Grey Literature (NGO)	3.50	3.85	3.65	3.72	3.40	3.36	3.57
Video	4.13	3.10	3.00	3.72	2.92	3.13	3.17
Policy Brief	3.25	3.62	3.71	4.04	3.03	4.13	3.47
Conference, Workshop or Seminar	4.38	4.15	3.71	4.36	4.11	4.38	4.15

Source: Elaboration by author, based on the responses received in the Survey on Community Forestry

Results of semi-structured interviews

The results of the interviews with global leaders help to contextualize and analyze the online survey results. Like the online survey results, the majority of respondents said they had heard of MCF; yet this knowledge was extremely varied and ranged from general impressions, focused on one or two

emblematic community forestry experiences, to a much smaller group which had a deeper knowledge on a variety of experiences in the region.

Responses in terms of the experiences they were familiar with were generally congruent with the online results, with Mexico and Guatemala featuring prominently among those cited by respondents – occasionally with one or two other countries. Honduras, Nicaragua and Costa Rica were occasionally mentioned alongside either/both Mexico and Guatemala, while very few respondents reported any knowledge about Panama.

The weight of experts and colleagues was reaffirmed in several interviews; the most substantive knowledge several informants had were related to specific research processes or activities related to the individual's existing work, or within the same institution. There were few cases in which the substantive knowledge of these cases came from outside of the logic of their own work and ongoing activities. In this same vein, our results suggest that many conservationists are not aware of MCF– unless they specifically have a social focus to their work: specialists in protected areas or species diversity appear to be much less likely to have heard of these experiences.

In a number of cases where the respondents´ work is focused in other regions, impressions of MCF were often described in amorphous terms as the reverse conditions that they are facing in their own work. In other words, they understood Mexico to be a place where rights are secure, where they are insecure in (for example) Cambodia; or it is a place where communities enjoy strong institutions and economies with government support, where this has not occurred in (for example) Brazil. Virtually all respondents agreed that secure tenure was important for both development and sustainability – though most informants did not describe the pathways, strategies or pitfalls in obtaining such security in Mesoamerica.

Some respondents were very aware of this lack of contextual information and expressed a desire to learn more about the diversity of contexts and strategies in Mesoamerica around tenure – but felt there was no available tool that would allow them to quickly access and absorb such information.

One important finding from the interviews (both semi-structured and online questionnaire) was the tendency for experts in conservation and/or forestry to be much more likely to say that the information they had seen was overly simplistic. The online surveys showed that those who identified as conservationists or foresters[20] were almost twice as likely than the average to say that materials they had seen were overly focused on achievements, and would like to see more lessons learned (there was no discernable pattern of these answers with the different ways they had heard about MCF experiences). These findings are consistent with the semi-structured interview results, where some conservationists (those who were familiar with these experiences) tended to say that their personal experience or research with rights demonstrated a more nuanced picture than many of the materials focusing on community forestry (especially grey literature). Experiences where rights had been won but were not implemented, or where recognized indigenous peoples territories were undergoing degradation (due to population factors, market expansion, institutional decay, or from the agricultural frontier), were mentioned as under-represented in materials presented by organizations promoting rights in the region, such as PRISMA Foundation, the Mesoamerican Alliance of People and Forests (AMPB), and the Rights and Resources Initiative (RRI). 10 out of 18 of the conservationist/foresters that were interviewed said

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[20] This group includes those who responded with "forester" or "conservationist" with no more than two other specialty categories.

either they wanted more learning, or that insufficient context was given in the materials – this was also something echoed by practitioners and academics in each field (as each section discusses).

Another important finding – cited by one indigenous rights expert – was related to the impression that these experiences were focused only on highly sophisticated forestry techniques that would require high levels of capital, training and organization, to even begin to think about such activities in other countries. This understanding of community forestry made it a remote goal for many communities in other regions who have much more immediate agendas of survival. This suggests that possible.