

Scoping Knowledge of the Problems at Hand

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Introduction

Step 5 of the Protocol is a scoping exercise of a range of knowledge that can aid understanding of the problem definition that we agreed in Step 2: *How can community legal ownership of, and access to, forestland and forest resources be enhanced?*

One essential area on which Step 5 should focus, therefore, is the policy and legal history of land ownership in Peru. In section 2 below we therefore review a range of knowledge sources that shed light on communal land ownership and forest access rights for forest communities in Peru and some of the strategies that have been pursued for recognizing and protecting the rights of these communities. Specifically, we examine the scholarship on the development and status of indigenous and non-indigenous property rights over communal land in Peru, considering both recent advances and obstacles.

As noted in Step 2, while we are focusing specifically on land titling, we are also cognizant that there are other salient issues that have a bearing on the problem. Analyzing land titling issues leads to the introduction of a range of related issues such as income, equity, and sustainable forest management. Of particular importance is the role that forests play in rural livelihoods. Section 3 provides a synthesis of recent scholarship on this issue, including research from Peru.

Section 4 introduces an analytical framework for interrogating the causes of deforestation and forest degradation, noting that a universal theory of deforestation is, and is likely to remain, elusive. The causes of deforestation vary over time and space, so that knowledge on this subject will inevitably be context and situation specific. The framework presented here is thus indicative and suggestive, rather than comprehensive, and should be adjusted as appropriate on a case-by-case basis.

A key component of Step 5 is the identification of uncertainties and incomplete information in order to gain a more comprehensive understanding of the issues and the degree of consensus that exists around them, specifically regarding drivers and outcomes. This chapter concludes by identifying some of these uncertainties.

Peruvian Policy History of Indigenous Property Rights

The first policy related to community tenure in Peru emerged as part of the formal national policy agenda in 1974 following the installation of General Juan Velasco Alvarado as President.ⁱ The Revolutionary Government of the Armed Forces installed Velasco after removing the Belaúnde administration following widespread unrest over its decision to grant oil licenses to the International Petroleum Company in the northern Peruvian Amazon. Velasco's government championed a "Peruanismo" agenda aimed at supporting Peru's poverty-stricken populations, including agrarian reforms that expropriated property from wealthy landowners and returned it to "campesino" families, and the formal granting of land rights to indigenous communities in the Amazon.ⁱⁱ This legislation created a process for formally recognizing communal rights over traditional indigenous territories and emphasized land ownership rather than community concessions on public land as a means for community control. As explained in Step 2, as of 2015 there were 1343 indigenous communities in the Amazon region that had a formally recognized territory, but the average size of the territory is about 9000 ha per community (IBC 2015), and areas largely consist of agricultural lands, fallow and secondary forest lands, and some forest remnants. This implies that, except for a few communities that have larger forest territories of which they are owners, for instance the Matses in the north east bordering Brazil, in general indigenous communities in Peru do not have ownership of forest areas that allow them to derive significant income, for instance from selling timber.

The 1974 law was modified in 1978 when another military coup – this time following economic upheaval and massive inflation – installed a military government under General Francisco Morales-Bermúdez that gave in to the pressures of the International Monetary Fund (IMF).ⁱⁱⁱ The law revised by the Morales government constrained the type of peoples, and the amount of land, that might come under community control. This law created two classes of communities: Amazonian indigenous peoples were categorized as "indigenous"; while coastal and Andean agricultural communities were classified as "*comunidades campesinas*" (Smith 1979).^{iv} The communal land of legal indigenous communities has been protected by the imprescriptible and inalienable principles (see Step 2), which essentially implies that it is more difficult to trade or acquire land in indigenous communities. Inside *comunidades campesinas* it is not possible to hold individual title over land, but only usufruct rights, which can be withdrawn by the community board and community assembly. The revised law also allowed for communal reserves to be created in these areas. However, since this law has been created, only two communal reserves have been created.^{v, vi}

Following this flurry of activity in the 1970s, community titling-related policies remained relatively unchanged until Fujimori took over power in 1990 from Alan García Pérez, whose tenure was marked by economic depression, high inflation, and nationalization of the banks. To address the new economic crisis, Fujimori's administration implemented a number of neoliberal reforms after being pressured to do so by international financial institutions.^{vii} When Fujimori faced an opposition majority in congress, he staged a "self-coup" in which Congress was closed and the judiciary suspended, and created a "constituent assembly" in 1992. In 1993, this body

produced a new draft Peruvian constitution (Garcia Hierro 1995; Levitsky 1999).^{viii} While there was some degree of public approval through the 1993 referendum, historians have asserted that the government continued its authoritarian approach (Levitsky and Murillo 2012), including violating the civil liberties of opposition leaders and reporters, politicizing The National Board of Elections, and reducing oversight of the armed forces, the latter of which resulted in tanks being sent into the streets of Lima during protests (Levitsky 1999). This historical legacy of authoritarian control is critical for understanding why advocates today seek to secure stronger indigenous control over their territory in order to resist incursion by oil, gas, and mining activities.

Indigenous peoples' right to territory remained recognized in Fujimori's 1993 constitution, which requires the government to respect the cultural identity of Indigenous Communities (Government of Peru 1993).^{ix} However, at the same time the new constitution, and especially the Land Law of 1996 attempted to abolish the imprescriptibility and inalienability clauses that had been in place in the legislation until then. In addition, the Fujimori government moved to exercise greater national control over Peruvian forests through a constitutional amendment declaring that "all forests and natural resources" are patrimony of the state, and therefore, exploitation of any type of forest – public, private, or communal – is subject to state regulation.^x This policy still holds, so accordingly, if a community wishes to use timber and non-timber forest products (NTFPs) for commercial aims, it must first apply for an appropriate permit. Subsoil resources, such as oil, gas, or minerals, are also patrimony of the state and similarly require permits for exploitation (ACCA 2014; AFIMAD 2014; DAR 2014). There are no restrictions on subsistence use (Art. 17, Law N° 26821/(Peru, 1997)) over forest areas adjacent to title (or untitled) indigenous communities, *comunidades campesinas*, and *ribereño* communities.

Obstacles to Titling

Though some property rights are granted by law, the process for an indigenous community to formally apply for a title is long and resource-intensive. A community first must submit a formal application request. If approved, the community's general assembly must then meet to delineate property borders. Delineated land is classified as suitable for either agriculture or forestry by the Ministry of Agriculture (MINAGRI). A cadastral plan is created and the delineated area is checked to ensure it does not overlap with a protected area. Only then can the request be processed and the title granted. In practice, this process is slow and bureaucratic. The procedures not only require a rigorous understanding of the legal requirements, but also time and funding for travel to towns or cities where there are the relevant government administrative offices. Indigenous federations assist communities with these procedures, but the process has been lagging. Political and administrative decentralization has transferred titling authority to the regional governments who generally lack capacity to execute titling requests in a timely manner (FENAMAD 2014; IBC 2014; ORAU 2014; Regional Government of Ucayali 2014).

The process of decentralization, which was deliberated since the 1990s, but did not come into effect since the early 2000s, is progressing slowly and unevenly, with important differences between regions. Since 2007 authority for titling was handed for a period of four years to the *Organismo de Formalización de la Propiedad Informal* (Organization for the Formalization of Informal Property, COFOPRI), an agency that until then had only worked in urban areas. At present the regional governments are in charge of rural land titling, but are supported by the

Ministry of Agriculture in these efforts (Von Hesse 2014). However, commentators agree that regional governments still have limited capacity and funding to implement titling without support, such as the funds that are provided by the Inter-American Development Bank for this purpose. MINAGRI has responsibility for supporting the process, but also lacks capacity and resources. Land titling is also complicated by the number of state agencies that contribute to the process, for instance SUNAT, which needs to recognize the community as a legal entity, and MINAGRI, which needs to determine the designated land-use option of the titled land. There are currently a number of initiatives that aim to address these capacity challenges and to better define the institutional framework needed. For instance, the Norway-Peru-Germany Joint Declaration of Intent addresses titling indigenous communal lands prior to any REDD+ payments. The PTRT3 project is a land titling and registration project being funded by the Inter-American Development Bank, which is now entering its third phase.^{xi}

Progress with titling of indigenous communities has been slow, and much of the titling that has occurred has been the result of pressure on the state by indigenous organizations (Smith 2003). From 1974 to 1984, titling in areas with colonizers led to indigenous titles that were too small for these communities to continue their traditional land management practices, such as rotating agricultural fields. This issue of communities being titled small tracts of land, smaller than their historic territory, remains a complaint today.

In the 1980s, led by the Coordination of Indigenous Organizations of the Amazon Basin (Spanish acronym COICA), indigenous activities began to push for recognition of “territory” that included all resources within their granted area, as opposed to just use of land and topsoil (Chirif, García Hierro and Smith 1991). As a consequence of this indigenous activism, the government began to grant larger tracts of land to larger indigenous titles and territorial units. However, many communities continue to push for an expansion of their existing territories. The PTRT3 project and the Norway-Peru-Germany Joint Declaration of Intent seek to title new communal lands and to expand small existing communal lands (IADB 2015).

Current Titling Statistics

The Rights and Resources Initiative (2014) calculated that by 2012, indigenous communities owned or controlled a total of 16.6 million hectares of land, or almost 23 percent of Peru’s forestland. Furthermore, AIDSEP, the organization that represent a large group of indigenous federations in Peru, asserts that an additional 20M ha of land near communities ought to be recognized (Rights and Resources Initiative 2014). IBC (2015) has calculated that of the 2006 indigenous communities of Peru, 1880 are registered, but only 1343 have completed communal land titling, which means that 537 registered communities have not yet completed this process and 126 communities are not registered at all. The 1343 communities own a total of 11.7 million ha, a much smaller number than the Rights and Resources Initiative’s estimate mentioned above.

Scoping Knowledge on the Role of Forests in Livelihoods

Forests make vital contributions to meeting the subsistence needs of forest communities. This has led to proposals to enhance the contributions of forests to rural livelihoods in order to meet two forest development goals, namely to improve the welfare of the residents of forest communities; and to pursue sustainable forest use and management and thus contribute to tropical forest conservation, or at least, to slowing down deforestation and forest degradation.

The two goals have spurred related scholarship that seeks to understand how forests contribute to rural livelihoods. We refer to this as the forest dependence literature. As well, related research and development work has aimed to develop methods and tools to boost forest incomes among rural dwellers and promote the sustainable use, and thus conservation, of tropical forests. We refer to this as the community forestry literature.

Scholars on forest dependence often quantify how much forests contribute to livelihoods, and also how forest incomes are located within the complex livelihood portfolios of rural dwellers. A significant step towards understanding the contribution of forests in livelihood strategies has been a portfolio of studies undertaken under the auspices of the Poverty Environment Network (PEN).^{xiii} The PEN initiative undertook research in 40 study locations in 25 countries across the globe and collected detailed information on environmental income, including forest income as part of the livelihood portfolio of more than 8000 households.

The study supports the findings of previous assessments, which estimated that overall, forests contribute about 25% to total household income (e.g. Wunder 2001), including forest benefits that are traded or consumed directly. The synthesis of the PEN study (Angelsen et al. 2014) reveals that total environmental income is approximately the same as the income from agricultural production. Across the 40 study sites, forest income contributed 21.8% to total household income, while non-forest environmental income contributed 6.4% to total income. The same study disaggregates these numbers per continent. In the case of Latin America, the contribution of forest income to total income is the highest (compared to Africa and Asia) namely 28.3%. Non-forest environmental income is 3.6%, the lowest of the three continents (Angelsen et al. 2014). The largest contributors to income are wood fuel and timber, poles, and construction materials. Food, on the other hand, represents 30% of the total portfolio of forest income.

While these figures are significant indicators of the importance of forests in rural livelihoods, important differentiations between wealth groups of forest dependent communities can be observed. These differences were first observed in Zimbabwe (Cavendish 2000) and the differences were confirmed in the PEN studies. Essentially, the lowest income groups among communities who rely on forest incomes derive a larger proportion of their subsistence income from forests, whereas the more wealthy groups obtain the highest cash incomes from forests, compared to the poorer groups (Angelsen et al. 2014). Essentially, the better-off households appear to have the resources to harness commercial economic opportunities to exploit forests. As a result of these differences, the wealthiest 20% of the total population derives an absolute income from forests and environments that is five times that of the poorest 20% of the sample.

A further issue that is debated in the forests and livelihood literature is the safety-net function of forests in rural livelihoods strategies. This issue has been reviewed by Wunder et al. (2014), also based on the PEN results. The overarching conclusion is that forests are not the primary resource or option that rural people will turn to when a household suffers from a subsistence shock, for instance crop failure, accident, or disease. The role of forests is more important, however, when a subsistence shock is shared by an entire community, region or even country, for instance when a climatic calamity occurs. Even in these cases, however, households will first opt for reducing consumption, and only as a second option will they try to make up for lost income by turning to exploit forests or other natural environments.

For Peru, several studies have focused on forests and livelihoods, and the role that forests play in livelihood strategies, including the local data of the PEN study. For instance, de Jong et al. (2001) calculated household income and the proportional contribution of forests therein among floodplain farmers in the lower Ucayali River (Loreto Region). Total annual incomes ranged between USD 1874 and USD 3040. Some of the key factors that explained variation were total area of land under cultivation, age of the settlement, market access, and dominant land type used for agricultural production. These were all riverine communities, and they relied heavily on fishing as a food source, with the result that income from natural resources exceeded the 28.3% calculated in the Angelsen et al. (2014) study. For instance, a group of farmers with a cultivated area between 0 and 5 ha had an average annual income of USD 1874, of which USD 1159 (62%) was from agriculture, USD 323 (17%) from fisheries, but only USD 271 (14%) came from secondary and primary forests. The group with largest average income of USD 3040 had a productive area of over 15 ha. The income from agriculture was USD 1798 (59%), from fisheries USD 352 (12%), and from forests USD 576 (19%). The absolute value and proportion of forest income was higher among the highest income group, which only partly concurs with the results from Angelsen et al. (2014).

These figures, however, are in contrast with those provided by Kvist et al. (2001). In their study among communities slightly upstream from the communities in the de Jong et al. (2001) study, but still in the Loreto Region, they estimate average annual household income in seven communities ranging from USD 1688 to USD 2944. More relevant, their results suggest that among all villages extraction incomes contribute 64% to total income (USD 1374 of an overall average of USD 2188), whereas agriculture only contributes 30% and other activities 6%.

The last source reported on here is a comprehensive study undertaken in the Ucayali Region of the income of 578 households in 26 communities, both indigenous and *ribereño* communities (Porro et al., 2014). The difference between the previous two studies is that the Porro et al. (2014) communities are more remotely located, and not connected to one of the major fluvial arteries of the region. The study calculated average household incomes of USD 4785, with a mean of USD 3049 and a standard deviation of USD 7180, suggesting a significant variation in income. Forest and fish resources contribute 38.8% and 8.1% respectively, and agriculture and livestock 23.0% and 9.9% respectively, to total household income. The other categories included wages (12.4%), business (5.9%) and others (1.9%). These figures differ from the Angelsen et al. (2014) study especially in the latter categories, which may be a result of their remoteness.

The average can be nuanced by disaggregating income structures. About a quarter (24%) of the households qualify as high forest dependent in the Porro et al. study, but this represents a

threshold of 66.6% of income contribution from forests. The majority of the 578 households had a balanced forest-agriculture wage income portfolio, implying that at least two of those contribute a minimum of 25% to overall income. Of relevance to this study is that market access and resource endowment, rather than ethnicity, are dominant factors that influence total income and proportion of forest income (Porro et al. 2014).

Scoping Knowledge on the Causes of Deforestation and Degradation

There is no “universal” theory of deforestation and degradation, and given how the causes vary over time and space, such a theory is likely to prove elusive. Mono-causal explanations blame forest loss on single factors, such as population pressure, the high demand for tropical timber or clearance for alternative land uses. Mono-causal explanations have been criticized for failing to take into account the often complex causes of forest loss and the variegated ways in which they may interact to produce deforestation in one space rather than another. But if mono-causal explanations are unsatisfactory, then so too is the view that the causes of deforestation are impenetrably complex with no clear causal patterns evident (Geist and Lambin 2002).

A viewpoint that lies between that of mono-causality and impenetrable complexity and which has attracted a measure of consensus from scholars and policy makers is that there are different interactions between multiple causal factors, with different synergies of causation apparent in different places at different times. Many analyses now distinguish between direct causes (sometimes referred to as proximate causes) and underlying causes. To Geist and Lambin (2002) proximate causes are ‘human activities or immediate actions at the local level, such as agricultural expansion, that originate from intended land use and directly impact forest cover.’ Direct (or proximate) causes involve forest conversion to other land uses and the deliberate modification of forests at the local level; the felling of a tree in a particular space is, after all, an essentially local act.

Underlying causes, in distinction, are ‘fundamental social processes, such as human population dynamics or agricultural policies, that underpin the proximate causes’ (Geist and Lambin 2002, 143). Underlying causes relate to the social forces and pressures that shape actors’ behavior and which incentivize actors to fell trees. They may operate locally, but often operate from a distance. So, for example, underlying causes of deforestation include the international demand for agricultural produce such as beef, soybeans and palm oil (Boucher et al. 2011), while the clearing of forests to plant these crops is a direct, or proximate, cause. Likewise, tree felling in tropical countries to produce wood for international markets is a direct cause of forest degradation, which may in turn facilitate deforestation.

The Intergovernmental Panel on Forests was the first intergovernmental organization to adopt and work with the distinction between direct and underlying causes of deforestation and degradation. It developed a diagnostic framework to enable individual countries to trace the causal chains that affect their forests (Table 5.1). No order of importance was implied in the framework. The Panel noted that the correlation between underlying and direct causes of

deforestation is not always straightforward and the relative values assigned to forests and the alternative uses of forested land will change over time (United Nations 1996).

Eight types of underlying cause were identified (United Nations 1996). The first type is economic and market distortions, in particular the valuing of private goods such as timber that can be bought and sold and the undervaluing of the public goods values of forests. Second, policy distortions include building roads into forested areas that enable migration from those seeking to exploit the forests for commercial gain as well as from the rural landless poor. Other policy distortions included providing subsidies to actors to convert forests to other land uses and promoting forest colonization. Third, and of particular relevance to our work, insecurity of tenure refers to unclear property rights so that ownership of areas of forest is unclear, promoting open access and incursions from outsiders. Fourth, lack of livelihood opportunities refers to poverty and the lack of life opportunities that may lead the poor to exploit forests unsustainably, catering to short-term needs rather than the long-term viability of the resource base. Fifth, government deficiencies include lack of enforcement capacity resulting in limited compliance with laws and regulations, with transgressors often unpunished. Sixth, infrastructural, industrial or communications developments include shifts in the global prices of products, which may lead to forest clearance (for example, a rise in the price of agricultural produce leading to increased demand for agricultural land) and pressures for new land for urban expansion. Seventh, new technologies have accelerated land clearance. The invention of the chainsaw and its application to forestry in the early twentieth century revolutionized forestry and led to accelerated rates of tree felling. New technologies such as biofuels and genetically modified trees may also increase pressure on forest space. But technology is not necessarily a malign force in forests. New technologies may reduce wastage in wood processing, leading to reduced pressure for tree felling. Finally, demographic factors may affect forest use. While population increases in developing countries need not necessarily translate into deforestation, population hot spots in forested areas, perhaps due to colonization or road building, will increase pressure on forests.

The diagnostic framework was offered as a tool for countries to identify those causes of forest loss relevant for their national context. It was stressed that the framework was illustrative and that countries should add to and adapt the framework in line with national circumstances. The framework, it was suggested, could be used to identify those underlying causes associated with particular direct causes so that appropriate remedial policies could be designed. For example if a country is experiencing deforestation due to an increase in commercial palm oil plantations, then according to Table 5.1, the underlying causes may be economic and market distortions (column 1); infrastructural, industrial or communications developments (column 6); new technologies (column 7); or any combination of these factors.

Different underlying causes may combine and operate together. There may, therefore, be complex causal patterns that are difficult to disentangle. Eduardo Bedoya Garland argued in 1995 that the literature on the causes of deforestation in Peru offers no consensus, with explanations on the underlying causes including the technological characteristics of swidden and peasant agriculture, government economic policies, capital accumulation, and unequal relations between town and city. He considers one of the underlying causes of deforestation in the Upper Huallaga to be increased demand for cocaine, leading to more extensive agriculture in the region (Bedoya Garland 1995). Naughton-Treves (2003) attribute deforestation in Tambopata to the building of the Transoceanic Highway.

Table 5.1. Diagnostic Framework: Relationship between Selected Direct and Underlying Causes of Deforestation and Forest Degradation

Direct causes	Underlying causes							
	1	2	3	4	5	6	7	8
Replacement:								
By commercial plantations	X					X	X	
Planned agricultural expansion	X	X				X		
Pasture expansion	X	X				X	X	
Spontaneous colonization		X	X	X		X		X
New infrastructure						X	X	
Shifting agriculture:			X	X				X
Modification:								
Timber harvesting damage	X		X		X		X	
Overgrazing			X		X			
Overcutting for fuel			X		X			
Excessive burning				X	X			
Pets or diseases					X			
Industrial pollution					X		X	

Key

- 1 Economic and market distortions
- 2 Policy distortions, particularly inducements for unsustainable exploitation and land speculation
- 3 Insecurity of tenure or lack of clear property rights
- 4 Lack of livelihood opportunities
- 5 Government failures or deficiencies in intervention or enforcement
- 6 Infrastructural, industrial or communications developments
- 7 New technologies
- 8 Population pressures causing land hunger

Source: United Nations 1996.

Deforestation in Peru is modest, compared to other tropical forest countries, like Brazil and Indonesia. The 2015 FAO Global Forest Assessment gives a forest area for Peru of 73.973 million ha, or 57.8 % of the total land cover. This area declined from 77.921 million ha in 1990, to 76.147 million in 2000, 75.528 million in 2005, 74.811 million in 2010, to its current extent. This represents an annual deforestation rate of 0.2% (FAO 2015). The statistics produced by Peru's agencies calculate an annual decline of 110,000 ha between 2000 and 2013 (MINAM and MINAGRI 2015). According to BID and INDUFOR (2012) the main deforestation drivers are conversion to croplands (about half) and conversion to pastures (30 to 40%). RAISG (2015) reports that Peru contributes 9.1% of the total deforestation in the Amazon between 2010 and 2013, which puts it in fourth place. In addition to conversion for agriculture and pastures, RAISG

also identifies the increasing contribution of oil palm and cacao industrial plantations to deforestation since 2009. On the other hand, the contribution of smallholders to deforestation is suggested by the fact that for the last 10 years, over 90% of deforestation patches are smaller than one hectare (BID and INDUFOR, 2012).

The framework (Table 5.1) was designed before the emergence of illegal logging as a major international issue. Logging is a direct cause of forest degradation, and in Peru a significant amount of logging is illegal. Illegal logging may involve harvest in areas where the ownership of forest lands is uncertain, or where logging permits are lacking and/or where there are other failures in the implementation or enforcement of forest laws (column 5). These types of violations become more frequent as forest lands become more accessible through expanding road networks (column 6). But it should be stressed that these are generalized patterns, and the exact causes of illegal logging in Peru and elsewhere will vary between forest spaces and over time, with different actors bringing different subjectivities to bear on the debate.

Despite this ‘subjectivities problem’, accurate diagnosis of the causes of deforestation and degradation, of the insecurity of land tenure, and of the relationship between forest loss, forest tenure and Peru’s legal frameworks, in so far as this is possible, is an essential part of step 5 if instrument selection is to meaningfully engage with the problem at hand. For example, and self-evidently, it would not be worth using timber legality verification instruments to enhance security of land tenure in those forest spaces where the underlying causes are, for example, agricultural expansion or government-backed industrial mining.

Illegal logging in Peru is caused by the weak presence or absence of the state. It also is related to the limited ways in which medium and smaller logging operations can access finance and their relations of economic dependence along the timber value chain. Medium and small operators rely on timber traders, or other informal sources such as pawnshops, for the financing of their operations (Mejia et al. 2015). This informal funding has important consequences for logging and how it takes place. Small and medium operators require a quick turnaround when delivering their timber to the traders, so that they can pay off their loans, which are short term and have high interest rates. Medium and small operators do not have the time to go through the strenuous process of obtaining the necessary permits. Rather they pay off forest officials or other state officials if they are caught with timber that is not sourced following legal procedures.

Small and medium operators also rely on the buyers to whitewash the timber, which happens farther along the timber value chain. Commonly, large entrepreneurs hold concessions and pretend that the timber they bought from small and medium operators originated from their forest concessions. In addition, timber traders falsify documents, often in cahoots with corrupt forest officials, that launder into legal supply chains timber that was sourced illegally.

The limited reach of the state, widespread criminality, and corruption are thus key intervening variables that contribute to illegal timber, and that compromise indigenous peoples, as they are enticed and even coerced to go along with these practices (Cornejo 2007; EIA 2012).

Discussion and Conclusion

This chapter has scoped some of the knowledge that can shed light on the problem to be addressed. We have scoped knowledge in three areas: community land titling in Peru; the role of forests in rural livelihoods; and the causes of deforestation and degradation. An exhaustive treatment of all areas of knowledge that may be salient to the land-titling problem in Peru has not been possible, and forest communities may wish to scope other areas of knowledge depending on the local socio-economic and cultural context and the problem they wish to address.

It needs to be recognized that the process of knowledge scoping will inevitably lead to the identification of uncertainties. Uncertainty is a condition that arises when a phenomenon cannot be accurately established, measured, or understood due to knowledge gaps. The identification of uncertainty suggests further areas for scientific and social scientific research if the use of this Protocol is deliver effective results. Uncertainties have been identified for all of the areas examined in this chapter.

First, for community land titling, key areas of uncertainty concerns the regulatory environment and state apparatus in Peru. This includes the government decentralization process, which has created jurisdictional uncertainties between the national government and the regions, a situation exacerbated by the number of government institutions involved in community land titling and low staff numbers working for MINAGRI.

Second, different studies have arrived at different estimates on the income that forest communities can yield from their forests. It was noted that these differences could be explained by the differences in the remoteness, with some communities better connected to the major fluvial arteries of the region. There are also uncertainties on the extent to which more secure tenure will lead to improvements in the household income of forest communities.

Third, there are uncertainties on the causes of deforestation and forest degradation, which even in one country such as Peru will vary significantly from area to area and over time. Academic scholarship has an important role to play in filling knowledge gaps on forest loss, but due to the dynamic and shifting nature of causal patterns some degree of uncertainty is always likely remain on this topic. The input of local stakeholders is vital to filling knowledge gaps on the causes of forest loss, although it should be recognized that different socially situated actors will have very different subjectivities on what they consider to be the most important causes.

Notes

ⁱ Law of Indigenous Communities and Agrarian Development in the Regions of Selva and Ceja de la Selva” (Law 20653/1974).

ⁱⁱ The “Law of Indigenous Communities and Agrarian Development in the Regions of Selva and Ceja de la Selva” (Law 20653/1974).

ⁱⁱⁱ The government convened a constitutional convention in 1978 that prompted a return to Presidential elections. It also implemented a plan that favored neoliberal development policies.

^{iv} Campesino communities in the Andes may and often do include Quechua and Aymara speaking communities which, it can be argued, represent Andean indigenous people. When we refer to indigenous people in this entire document, we refer to indigenous groups in the Amazon lowlands or Andean foothills, who command their own indigenous language and who have collectively agreed that they be recognized as indigenous communities. *Comunidades campesinas* were regulated by the Ley de Reforma Agraria (D.L. 17716) and indigenous communities by Law 22175, “Law of Indigenous Communities and Agrarian Development in the Regions of Selva and Ceja de la Selva”. A third category of communities is *ribereño* communities. These are the non-indigenous farmers’ communities of the Peruvian, Amazonian lowlands.

^v The new administration limited this direction by narrowing, through constitutional amendments, communal rights to comprise only lands formally “gazetted” as indigenous. The reason for the constraining of formal trading of land was to protect outsiders from acquiring the land, even when economic development increased land prices (Chirif and García Hierro 2007).

^{vi} The Morales Bermudez regime followed with a new Constitution in 1979 that specified the conditions through which community forestry could be managed, which many asserted worked to undermine current and future development potential of lands designated under community forestry management. For example, the constitution forbids using indigenous and campesino community land for collateral, making it harder for these groups to obtain financing (Chirif and García Hierro 2007).

^{vii} Including privatizing many of the industries that had been nationalized by the Velasco Alvarado’s revolutionary government.

^{viii} Following ongoing international pressure, and Fujimori’s own apparent conclusions about enhancing legitimacy, the new 1993 Constitution reinstated regular elections and Congressional representation and was approved through a public referendum. While this takeover was condemned internationally, public opinion polls indicated that 80% of Peruvians supported these actions.

^{ix} In 1997, under Alberto Fujimori’s government, Law 26821 was passed that allowed indigenous communities to use natural and forest resources in their territory for subsistence purposes with no restrictions (Art 17, Law N° 26821/1997). This law, called the “Law for the Sustainable Use of Natural Resources” determines that Indigenous Communities have priority to explore natural resources within their land (Art. 18, Law N° 26821/1997).

^x Provisions of the 1993 constitution include recognizing the right of indigenous communities to dispose of agricultural lands by excluding a clause, present in the previous constitution, which declared the inalienable and indefeasible nature of Tierras de Comunidades Nativas y Campesinas (Indigenous and Rural Community Lands) (Art. 89, Peruvian Constitution 1993) (For a discussion of the components of land rights, see: Schlager and Ostrom 1992). However, because forests legally belong to the state, they do not have the authority to dispose of forestlands. In these lines, a community does not hold the right to its subsoil or water resources (García Hierro 1995).

^{xi} <http://www.iadb.org/en/projects/project-description-title,1303.html?id=PE-L1026>

^{xii} www1.cifor.org/pen

References

Angelsen, Arild, Pamela Jagger, Ronnie Babigumira, Brian Belcher, Nicholas J. Hogarth, Simone Bauch, Jan Börner, Carsten Smith-Hall, and Sven Wunder. 2014. Environmental income and rural livelihoods: A global-comparative analysis. *World Development* 64 : S12-28.

Australian Government. 2014. “Illegal logging.” Accessed November 25. *Department of Agriculture*. <http://www.daff.gov.au/forestry/policies/illegal-logging>.

Bedoya Garland, Eduardo. 1995. "The social and economic causes of deforestation in the Peruvian Amazon Basin: natives and colonists." In *The Social Causes of Deforestation in Latin America*, ed. Michael Painter and William H Durham. Ann Arbor MI: University of Michigan Press, pp.217-248 .

BID and INDUFOR. 2012. "Plan de Inversión Forestal, Componente III: Elementos para la identificación de áreas con mayor potencial para reducir emisiones de GEI en el sector forestal. Banco Interamericano de Desarrollo - Fondo Estratégico sobre el Clima, Lima, Perú."

Boucher, Doug, Pipa Elias, Katherine Lininger, Calen May-Tobin, Sarah Roquemore and Earl Saxon. 2011. *The Root of the Problem: What's Driving Tropical Deforestation Today?*. Cambridge MA: UCS (Union of Concerned Scientists) Publications.

Brack, Duncan. 2014. "Promoting legal and sustainable timber: Using public procurement policy." Accessed November 25, 2014. London: Royal Institute of International Affairs, Chatham House. http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140908PromotingLegalSustainableTimberBrackFinal.pdf.

Brown, D. et al. 2008. Legal Timber. "Verification and Governance in the Forest Sector." London: Overseas Development Institute. <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3472.pdf>

Cavendish, W. 2000. "Empirical regularities in the poverty–environment relationship of rural households: Evidence from Zimbabwe." *World Development*. 28(11): 1979–2003.

Chirif, A., García Hierro P., and R.C. Smith. 1991. "El indígena y su territorio son uno solo: estrategias para la defensa de los pueblos y territorios indígenas en la cuenca amazónica." Lima, Peru: Oxfam América.

Chirif, A. and P Garcia Hierro. 2007. "Marcabdo territorio. Progresos y limitaciones de la titulacion de territories indigenas en la Amazonia." IWGIA. http://www.iwgia.org/iwgia_files_publications_files/0302_MARCANDO_TERRITORIO.pdf

Cornejo, C. 2007. "Análisis situacional de concesiones forestales, tala ilegal y titulación de tierras forestales en la Amazonía Peruana." Documento de trabajo. Iquitos, Peru: IIAP/Focal Bosque.

Derecho Ambiente y Recursos Naturales (DAR). 2014. Confidential interview. In S. Lupberger (Ed.), Derecho Ambiente y Recursos Naturales.

De Jong, W., L. Freitas, J. Baluarte, P. van de Kop, A. Salazar, E. Inga, W. Melendez, and C. Germaná. 2001. "Secondary forests dynamics in the Amazon floodplain in Peru." *Forest Ecology and Management*. 150: 135-146.

Environmental Investigation Agency (EIA). 2012. "Lacey Act has teeth: US gets serious about illegal logging." *EIA*, August 20. <http://eia-international.org/lacey-act-has-teeth-the-us-gets-serious-about-illegal-logging>.

European Commission. 2003. "Forest Law Enforcement, Governance and Trade (FLEGT): Proposal for an EU action plan." Brussels: European Commission.

European Union. 2010. "Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market."

Food and Agriculture Organization of the United Nations (FAO). 2015. "Global Forest Resource Assessment: Desk reference." Rome: FAO.

Federación Nativa del Río Madre de Dios y Afluentes (FENAMAD). 2014. Confidential interview. In S. Lupberger (Ed.), Federación Nativa del Río Madre de Dios y Afluentes.

García Hierro, P. 1995. "San Lorenzo: Salud Indígena, Medio Ambiente, Interculturalidad." Lima: AIDSESP/Terra Nuova.

Geist, Helmut J. and Eric F. Lambin. 2002. "Proximate causes and underlying driving forces of tropical deforestation." *BioScience*. 52 (2): 143-150.

Government of Peru. 1993. "Peruvian Constitution. Art. 89 on the legal existence of rural and native communities." https://www.unodc.org/tldb/pdf/Peru_const_1993.pdf

Government of Peru. 1997. "Law N° 26821 for the Sustainable Use of Natural Resources/Art. 17."

Gulbrandsen, L. H. and D. Humphreys. 2006. "International Initiatives to Address Tropical Timber Logging and Trade." Report for the Norwegian Ministry of the Environment, The Fridtjof Nansen Institute.

Hoot, Whitney. 2014. "Our Conversation with ACCA [Association for the Conservation of the Amazonian Basin]." *University of Michigan School of Public Policy in Peru 2014*.
<https://umdpolicyperu2014.wordpress.com/2014/03/18/our-conversation-with-acca-association-for-the-conservation-of-the-amazonian-basin/>

Humphreys, D. 2006. *Logjam: Deforestation and the Crisis of Global Governance*. London: Earthscan.

IADB (Inter-American Development Bank). 2015. "PE-L1026: Rural Land Titling and Registration Project in Peru - Third Phase (PRT-3)". Accessed February 21, 2016.
<http://www.iadb.org/en/projects/project-description-title,1303.html?id=PE-L1026>

IBC. 2014. Confidential interview. In S. Lupberger (Ed.), Instituto de Bien Común.

Kvist, L.P, Gram, S., Cacaes A., and I. Ore. 2001. "Socio-economy of flood plain households in the Peruvian Amazon." *Forest Policy and Economics*. 150: 175-186.

La Asociación Forestal Indígena de Madre de Dios (AFIMAD). 2014. Confidential interview. In S. Lupberger (Ed.), Asociación Forestal Indígena de Madre de Dios.

Lawson, S. and L. McFaul. 2010. "Illegal Logging and Related Trade: Indicators of the Global Response." Accessed March 29, 2016. London: Chatham House.
https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/0710bp_illegallogging.pdf

-
- Levitsky, S. 1999. "Fujimori and Post-Party Politics in Peru." *Journal of Democracy*. 10 (3): 78-92.
http://scholar.harvard.edu/levitsky/files/SL_fujimori.pdf
- Levitsky, S. and M.V. Murillo. 2012. "Building institutions on weak foundations: lessons from Latin America." *Journal of Democracy*. 24 (2): 93-107.
<http://scholar.harvard.edu/files/levitsky/files/levitskymurillo-od-revisedchapter-june2012.pdf?m=1371485971>
- MINAM and MINAGRI. 2015. "Bosque-no bosque y pérdida de bosque 2000 - 2013 por categorías territoriales." Lima: Ministerio del Ambiente y Ministerio de Agricultura y Riego.
- Naughton-Treves, Lisa. 2003. "Deforestation and Carbon Emissions at Tropical Frontiers: A Case Study from the Peruvian Amazon." *World Development*. 32(1): 173-190.
- Mejia, E.; Cano, W.; de Jong, W.; Pacheco, P.; Tapia, S.; and J. Morocho. 2015. "Actores, aprovechamiento de madera y mercados en la Amazonía peruana. CIFOR Occasional Paper no. 145." Bogor, Indonesia: Center for International Forestry Research (CIFOR).
- Organización Regional de AIDSESEP-Ucayali (ORAU). 2014. Confidential interview. In S. Lupberger (Ed.), Organización Regional de AIDSESEP-Ucayali.
- Orozco, J. M. ; Mogrovejo, P. ; Jara, L.F. ; Sánchez, A. ; Buendia, B. ; Dumet, R. and N. Bohórquez. 2014. "Tendencias de la Gobernanza Forestal en Colombia, Ecuador y Perú." Cambridge: TRAFFIC.
- Porro, R., A. Lopez-Feldman, J.W. Vela-Alvarado, L. Quiñonez-Ruiz, Z. P. Seijas-Cardenas, M. Vásquez-Macedo, C. Salazar-Arista, V. I. Núñez-Paredes, and J. Cardenas-Ruiz. 2014. "Forest Use and Agriculture in Ucayali, Peruvian Amazon: Interactions Among Livelihood Strategies, Income and Environmental Outcomes." *Tropics*. 23(2): 47-62.
- Prestemon, J.P. 2015. "The impacts of the Lacey Act Amendment of 2008 on U.S. hardwood lumber and hardwood plywood imports." *Forest Policy and Economics* 50: 31-44.
- RAISG. 2015. "Deforestación en la Amazonia (1970-2013)." Accessed March 29, 2016.
http://raisg.socioambiental.org/system/files/deforestacion_en_la_Amazonia%281970-2013%29_0.pdf
- Regional Government of Ucayali. 2014. Confidential interview. In S. Lupberger (Ed.).
- Rights and Resources Initiative. 2014. "What Future for Reform? Progress and slowdown in forest tenure reform since 2002." Accessed March 29, 2016. Washington DC: Rights and Resources Initiative.
http://www.rightsandresources.org/documents/files/doc_6587.pdf
- Schlager, E. and E. Ostrom. 1992. "Property-rights regimes and natural resources: a conceptual analysis." *Land Economics*. 68 (3): 249-262.
- Smith, R. A. 1979. "Decision Making and Non-Decision Making in Cities: Some Implications for Community Structural Research." *American Sociological Review*. 44(1).
- Smith R.C., Benavides, M., Pariona, M., and E. Tuesta. 2003. "Mapping the past and the future; Geomatics and indigenous territories in the Peruvian Amazon." *Human Organization*. 62(4): 357-368.

Smith, R. and M. Salazar. 2015. "La seguridad territorial en el limbo: el estado de las comunidades rurales del Perú - Informe 2014." Instituto del Bien Común.

United Nations. 1996. "Intergovernmental Panel on Forests, Programme Element I.2, Underlying causes of deforestation and forest degradation." E/CN.17/IPF/1996/2. Accessed March 29, 2016. United Nations Department of Economic and Social Affairs.
<http://www.un.org/documents/ecosoc/cn17/ipf/1996/ecn17ipf1996-15.htm>

Von Hesse, Milton. 2014. "La titulación como palanca de desarrollo." *El Comercio*, February 16, 2014.
<http://elcomercio.pe/opinion/columnistas/titulacion-como-palanca-desarrollo-noticia-1709936>.

Wunder, S. 2001. "Poverty alleviation and tropical forests—what scope for synergies?" *World Development*. 29(11): 1817–1833.

Wunder, S. et al. 2014. "Safety Nets, Gap Filling and Forests: A Global-Comparative Perspective." *World Development*. 64: S29-S42.