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MOBILIZING CHANGE FOR WOMEN WITHIN COLLECTIVE TENURE REGIMES

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This paper assesses the effectiveness of a specific land tenure intervention to improve the lives of women, by asking new questions of available project data sets.

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ACRONYMS

CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
CLA	Communal Land Associations (Uganda)
CFM	Collaborative Forest Management
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
GCS	Global Comparative Study
ILO 169	International Labor Organization Convention Concerning Indigenous and Tribal Peoples in Independent Countries
KII	Key Informant Interview
MPTS	Multi-purpose Tree Species
RRI	Rights and Resources Initiative
SDGs	Sustainable Development Goals
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UN	United Nations
VGGTs	Voluntary Guidelines on the Governance of Tenure of Lands, Fisheries, and Forests in the Context of National Food Security
WRI	World Resources Institute

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INTRODUCTION

Forests provide shelter and resources to an estimated 2.5 billion people (FAO, 2018), including some of the world's most marginalized groups. Clarifying and securing forests tenure rights is important for the indigenous and other ethnic groups and local peasant communities that depend on forests and trees to sustain their everyday livelihoods (FAO, 2018). Important progress has occurred during the last twenty years, as changes in laws and regulations have redefined land and forest tenure rights to increase access for indigenous and local communities to areas previously claimed by governments (Larson, Barry, & Dahal, 2010b, 2010a; RRI, 2018). Shifting rights to resource users may lead to improved resource management and livelihoods for the indigenous peoples and local communities that are estimated to hold as much as 50%-65% of the world's land, largely under customary tenure (Mwangi, 2017; Anseeuw et al., 2012; Wily, 2018). It is estimated that at most one fifth of the land held by indigenous peoples and local communities is under their formal, legal ownership (WRI, 2017).¹

The relevance of forest and land rights, sometimes including women's rights specifically, has been increasingly understood and acknowledged by stakeholders from the global to the local levels in agreements and conventions such as the Sustainable Development Goals (SDGs), the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007), International Labor Organization Convention concerning Indigenous and Tribal Peoples in Independent Countries 169 (ILO 169, 1989), and the Voluntary Guidelines on the Governance of Tenure of Lands, Fisheries and Forests in the Context of National Food Security (VGGTs, 2012). The VGGTs reiterate the principle of gender equality, calling upon States to enforce equal access to resources (UN, 2013: 10). More recently, the Sustainable Development Goals (SDG 5) call for closing the gender gap by promoting equal rights to ownership and control of resources as a way to address social inequality and poverty (Bose et al., 2017). There are also agreements that focus specifically on the rights of women, such as the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW, 1979) and the Beijing Declaration and Platform for Action. For example, the latter, adopted in 1995,² endorses the call for equal access to economic resources, including women's right to inheritance, land, and property ownership. At the national level, there has also been substantial progress with regard to various constitutions and national laws (World Bank, 2009). On paper, "at least 115 countries specifically recognize women's property rights on equal terms with men" (UN Women, 2011).

There is wide agreement that clear, secure rights over land and natural resources are key components for addressing poverty and food insecurity (FAO, 2012; Dillon & Voena, 2018; Ghebru & Lambrecht, 2017; Muchomba, 2017; Namubiru-Mwaura, 2014; Sunderland et al.,

¹ Veit, P. & Reyntar, K. (March 20, 2017). By the Numbers: Indigenous and Community Land Rights. Retrieved from <https://www.wri.org/blog/2017/03/numbers-indigenous-and-community-land-rights>.

² UN Women. (2015). Summary Report: The Beijing Declaration and Platform for Action turns 20. Retrieved from <http://www.unwomen.org/en/digital-library/publications/2015/02/beijing-synthesis-report>.

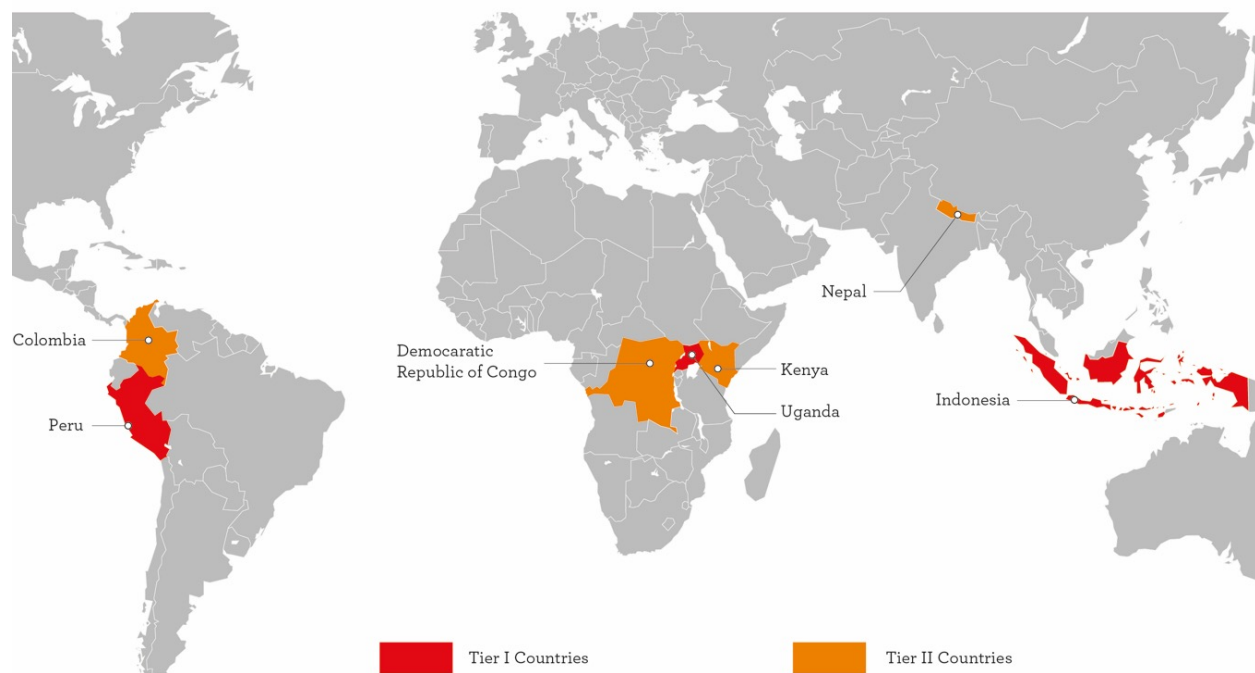
2014). However, in practice, forest rights remain highly insecure. First, the vast majority of the world's forests continue to be under state ownership by statutory law that often overlap with customary tenure regimes where the two legal systems are not harmonized. Second, despite important progress in constitutions and national laws in many countries, implementation and enforcement remain a major challenge (OHCHR, 2013). Third, even in situations where collective tenure is legally recognized, women are often marginalized and participate much less than men in decisions regarding land and forest use, management, and benefit distribution (Evans et al., 2017; Mwangi, Meinzen-Dick, & Sun, 2011; Sunderland et al., 2014; Zwarteveen & Meinzen-Dick, 2001). Institutional arrangements and discriminatory social norms limit women's access and control over resources and are often tied to their relationships with male relatives (Agarwal, 2003, 2009; Bose, 2013; Meinzen-Dick, Brown, Feldstein, & Quisumbing, 1997). Women often face different risks as tenure reforms are implemented, raising concerns about dual exclusion because of both the security of collective tenure rights and their status as women (Larson et al., 2019a).

While much has been learned over recent decades from progress in tenure rights recognition worldwide, there are still important knowledge gaps. One such gap relates to the question of under which conditions reforms can lead to better outcomes for women and other marginalized groups. Reforms targeting collective tenure are challenging, as different local arrangements determine how men, women, and other groups benefit from them. Understanding how reform implementation works in practice could create avenues to assess the outcomes for local communities and forests as well as to identify gender differences associated with these interventions (Mai, Mwangi, & Wan, 2011). To tackle these questions, this paper uses the framework developed by Doss and Meinzen-Dick (2018) to analyze the context of existing threats and opportunities as catalysts of change in reforms. The framework allows for better understanding the conditions that enhance women's ability to participate and benefit from reforms.

These issues are explored in this paper by leveraging an unusually rich set of data collected by the global comparative study (GCS) on forest tenure reforms conducted by the Center for the International Forestry Research (CIFOR) in Uganda, Peru, and Indonesia from 2014 to 2018. The Global Comparative Study on Forest Tenure Reform³ is a multi-actor, multi-method comparative study that combined research, engagement, and capacity building to generate insights around the factors that influence the emergence and implementation of forest tenure reforms. The project was undertaken in seven countries (See Figure 1). The project analyzed different reform processes to improve our understanding of how reforms operate in practice, so that decision makers, practitioners, and forest-dependent people can better advance implementation processes to achieve intended impacts on local tenure security, livelihoods, gender equality, and forest conditions.

³ CIFOR. Global Comparative Study on Forest Tenure Reform. Retrieved from <https://www.cifor.org/gcs-tenure/>.

Figure 1. GCS-Tenure Studied Countries



The GCS Tenure worked in seven countries; the differentiation between Tier 1 and Tier II is based on the methods used and the level in which these were applied. Those methods conducted at the national and subnational level included: 1) historical analysis; 2) legal analysis; 3) survey to government implementers. Those methods conducted at the village level included: 4) focus group discussions; 5) key informant interviews. Methods conducted at the household level included: 6) intra-household survey. Tier 1 countries refer to countries where all methods were implemented. Tier 2 countries refer to countries where no work was done at the village and household level.

This paper is organized in two parts. The first part provides relevant background information. It discusses a framework for analyzing women's land tenure security in collective tenure regimes; the research methodology on which this study is based; and the relevant reforms, laws, and norms in the countries covered by this study. The second part of the paper presents the results of the gendered analysis of these reforms. The discussion of results describes the extent to which women participate in or benefit from these reforms as well as how women's participation and benefits compare to those of their male peers, which will show the gender gap. The findings are presented by tenure regime and by type of reform (defined below). The paper seeks to inform ongoing and future reforms to ensure they reach out, include, and protect the rights of women and other groups that might be vulnerable in the context of reforms.

PART I. FRAMING WOMEN'S LAND TENURE SECURITY IN THE CONTEXT OF COLLECTIVE TENURE REGIMES

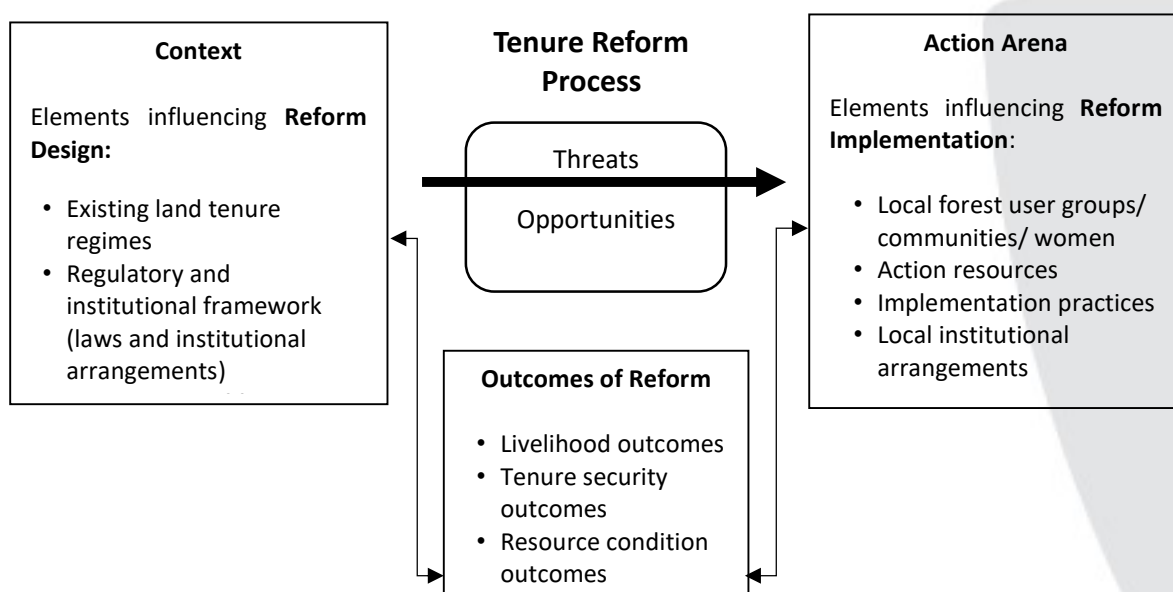
The analysis in this report is based on the framework for studying women's tenure security developed by Doss and Meinzen-Dick (2018), adapting it to characterize and understand how forest tenure reform processes influence tenure security outcomes for women (Figure 2). The report draws from three dimensions in the Conceptual Framework—context, action arena, and

outcomes—to analyze reform design and implementation and identify elements that influence reform outcomes.

In this paper, forest tenure reforms are defined as processes derived from changes in statutory regulations that modify the type of rights local communities and other organized groups have in forestlands. The reforms may include changes in laws, legal provisions, policies, and institutions. Reform processes are dynamic and may be adapted as they are implemented. The types of rights granted and how these rights can be transferred vary across and within countries; rights may even be referred to by different names (RRI, 2012; Larson et al., 2010a; Sunderlin et al., 2008). This paper argues that while changes in law provide forest dependent communities with a legal basis to access resources that are essential for their livelihoods, the new laws and provisions are often not enough to guarantee these communities the ability to exercise their new rights. In fact, it is important to understand which conditions enable reforms to yield better outcomes (Seymour et al., 2014; Notess et al., 2018). Our analysis seeks to respond to two questions:

- 1) To what extent have gendered considerations been integrated into the institutional arrangements framing the reforms' design and implementation? The analysis focuses on three elements: (a) whether the regulatory framework guiding the reform incorporates gender considerations; (b) whether equity and women rights issues are mainstreamed during reform implementation; and (c) whether the reforms have resulted in stronger engagement of women in local rule making and enforcement.
- 2) How do perceptions of reform outcomes differ among women and men? This paper assesses changes in women's perception of their tenure security, their participation in forest related activities, and their livelihoods. Further, it compares women's perceptions to those of men.

FIGURE 2. FRAMEWORK FOR ANALYZING WOMEN'S LAND TENURE SECURITY IN FOREST TENURE REFORMS



Source: Adapted from Doss and Meinzen-Dick, 2018: 6

This paper studies seven types of reforms that grant use or ownership rights to communities or to companies. These reforms can largely be aggregated into three categories, which are referred to as the overarching tenure regimes:

- 1) **Reforms that designated state lands for community use:** In these reforms, land is registered as state property, but governments legally transfer to, or recognize use and management rights of, communities. We found three types of reforms that meet these criteria. These reforms took place in Indonesia and Uganda.
- 2) **Reforms that designated state lands for company use:** In these reforms, the land is registered as state property, but companies are granted concession rights. These companies establish arrangements with local communities to access and use existing resources. This type of reform took place in Indonesia.
- 3) **Reforms that grant/recognize land ownership rights to communities.** These reforms formally recognize collective land rights. Within this category there are two types of reforms covered in this paper: (a) titled forest land for indigenous communities in Peru, recognizing their full ownership and perpetual use rights; and (b) community forests owned by villages or clans that are managed by a legally constituted organization on behalf of the community in Uganda. While Indonesia legally recognized local community rights to customary lands in 2012, these were not included in this report because demarcation and registration had only recently begun at the time of writing.⁴

A. Comparing and Contrasting Study Countries: Contextual Background

This paper analyzes reforms in Indonesia, Peru, and Uganda that have recognized collective rights to forest lands and devolved authority at different governance levels in the last 40 years. Indonesia and Peru are forest-rich countries, with 91 and 74 million hectares of forest, respectively, representing just over half (53% and 58% respectively) of their land area (FAO, 2016). Uganda is forest-poor, with less than 2 million hectares of forest, representing 9% of its land area (MWE, 2016). Population density is very low in Peru (25 people per km², and 9 people per km² in the Amazon region, INEI, 2015), and very high in Indonesia (147 people per km²) and Uganda (222 people per square kilometer).⁵

Reforms implemented in Uganda and Indonesia stem mainly from changes in laws and policies in the forests and environmental sectors (Mwangi, 2017; Safitri, 2015). They involve recognition of management and use rights to forest resources through permits and authorizations. Both are recent processes taking place after the 1990s, involving the devolution and decentralization of authority over forest or protected areas to community-based organized groups and local governments. In Uganda, reforms are tied to conservation interests; while in Indonesia social mobilization to access forests has promoted the establishment of varied social forestry schemes (Banjade et al., 2016; Siscawati et al., 2017; Nsita et al., 2017; Mwangi, 2017). In Peru, efforts to colonize the Amazon started with the agrarian reform in the 1970s and progressively moved

⁴ The study collected qualitative information (FGD and KII) on one village in Sulawesi under this regime type, but the case was not included in this report.

⁵ United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, <https://population.un.org/wpp/DataQuery/>. Last accessed May, 2019.

forward due to the mobilization of indigenous organizations (Monterroso et al., 2017). Legal recognition of indigenous communities promoted demarcation of their territorial claims that were formalized through communal land titling.

In all three countries, customary arrangements continue to be very important at the local level. In Uganda, customary tenure was recognized in the 1995 constitution, although customary rights are not well documented (Nsita, 2017). Our study of sites in the Lamwo region are interesting as the formalization process there is recent: while all village members belong to the Communal Land Association (CLA), two forest associations were established in 2006 to manage communal forests (Larson et al., 2019). In Indonesia, a 2012 court ruling recognized customary forests for the first time; however, the demarcation and registration of customary lands in practice is still limited (Myers, Intarini, Sirait, & Maryudi, 2017; Riggs et al., 2016). In Peru, despite significant progress in titling communal lands, indigenous organizations argue that more than 20 million hectares are still pending formalization (AIDSEP, 2016).

While the reforms covered in our study take different approaches and have different goals, they are driven by similar economic pressures in contexts where the forest-based communities face similar challenges and have important gender gaps in governance. Pressure over forest lands caused by increased population; migration; investments in infrastructure from expansion of roads, oil palm, mining, petroleum; and increased extraction of forest resources underlie the importance of tenure rights for forest dependent communities (Agrawal, 2014). Challenges remain to secure and support effective governance of areas where reforms are taking place to tackle existing pressures (Monterroso and Larson, 2019). For example, the scope of rights granted does not always correspond with the claims being made for forest land and resources. Changes in legal frameworks sometimes result in legal overlaps granting resource rights in the same areas to different right holders, which affects forest user groups and need to be resolved.⁶ Further, forest user groups are not always able to gain tangible benefits from the recognized rights. In addition, successful implementation requires constant negotiation and conflict resolution mechanisms to guarantee reform outcomes. Finally, across the three countries, there is little evidence that women participate in the drafting or implementation of reforms (Larson et al., 2019a).

i. Regional Variations in Indonesia

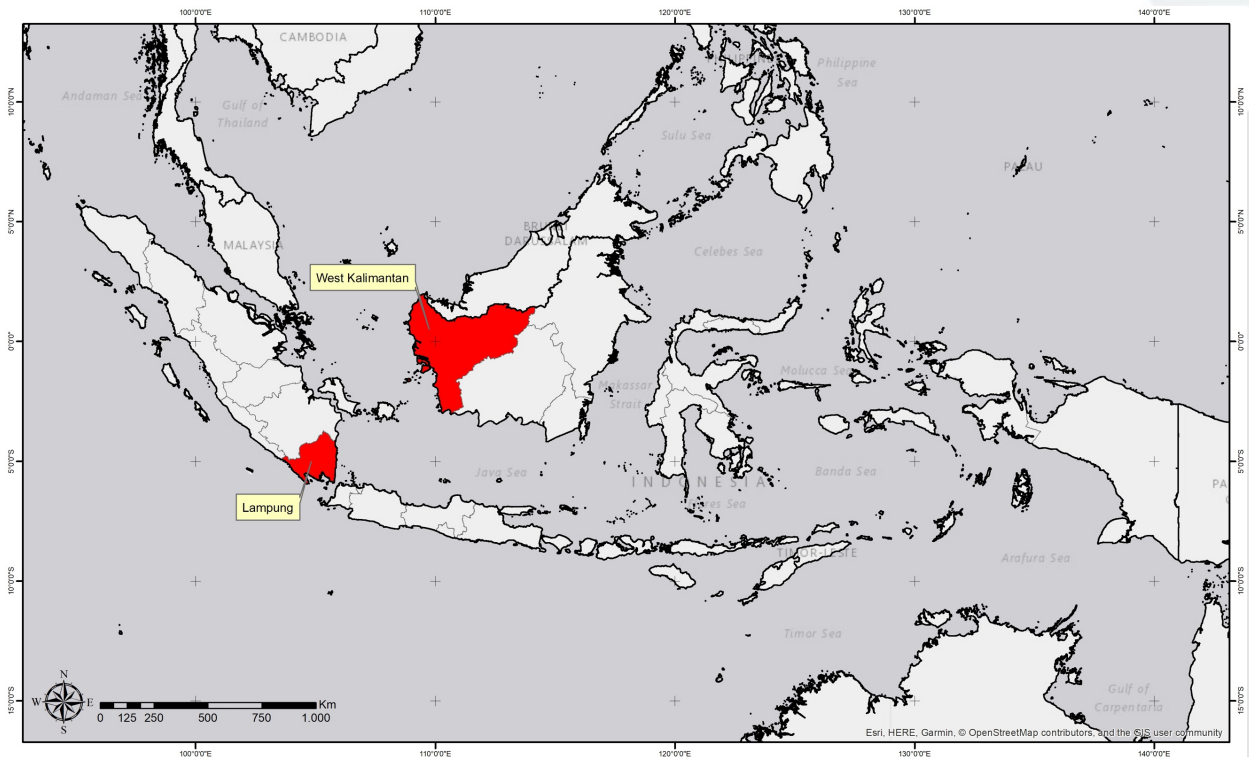
The study in Indonesia focused on two regions: Lampung and West Kalimantan (Siscawati et al., 2017). Forests are important in these areas, representing 124 million ha (66%) of the land area (MoFE, 2014), and agroforestry activities constitute the basis of livelihoods for local communities that depend on extraction of dammar, coffee, rubber and cultivation of cacao, coconut, rubber clove, and *parkia*. The remaining forests are a combination of natural forests

⁶ An example of these legal overlaps emerges when governments grant concession rights for the extraction of subsoil resources in the same areas where they have recognized rights to land. Another example is legal frameworks that regulate land rights and forest cover rights in different frameworks, allowing for overlapping of concession rights in areas that are recognized to belong to local communities and indigenous peoples. Overlaps may also emerge in situations where different institutions have mandates to regulate resources, for instance land, forests, and water are usually regulated by three different institutions.

(most of which have been already logged); agroforestry areas; and forest plantations of woody species, fruit trees, and other commercially valuable species including clove, rubber, durian, and dammar. Overall, FGDs report that forest conditions have worsened during the last 20 years due to conversion from natural forest to forests used for agricultural purposes; conditions are particularly bad in West Kalimantan due to the expansion of oil palm cultivation and mining (BPS, 2017). In these regions, tenure systems have been heavily influenced by government initiatives, their remoteness from the political center of Java island, and the dominance of the private sector. Lampung and West Kalimantan regions were the target of different transmigration programs from the early 1950s, which influenced extraction patterns and increased dependence on forest resources. In addition, social forestry schemes have been favored by NGOs and the government agencies that are involved in forestland reforms. (Herawati et al., 2017). In Lampung, for example, the implementation of social forestry schemes began in 2000 and is one of the most advanced in the nation. It has resulted in institutional mechanisms that require participants to reforest at least 400 trees per hectare (70% of woody plants and 30% fruit trees) by planting multi-purpose tree species (MPTS) as reported in the four community forests sites in Lampung (FGD).

Customary tenure systems predominate in these regions among the different ethnic groups living in and around the forests. Existing claims of customary rights, mainly in West Kalimantan, often overlap with state claims, resulting in boundary conflicts between traditional territories, state forest, and areas occupied by newcomers. In both regions, forestlands are managed both individually and collectively for extracting rubber and non-timber forest products, as well as hunting wild game (Liswanti et al., 2019).

FIGURE 3. REGIONS OF ANALYSIS IN INDONESIA: WEST KALIMANTAN AND LAMPUNG



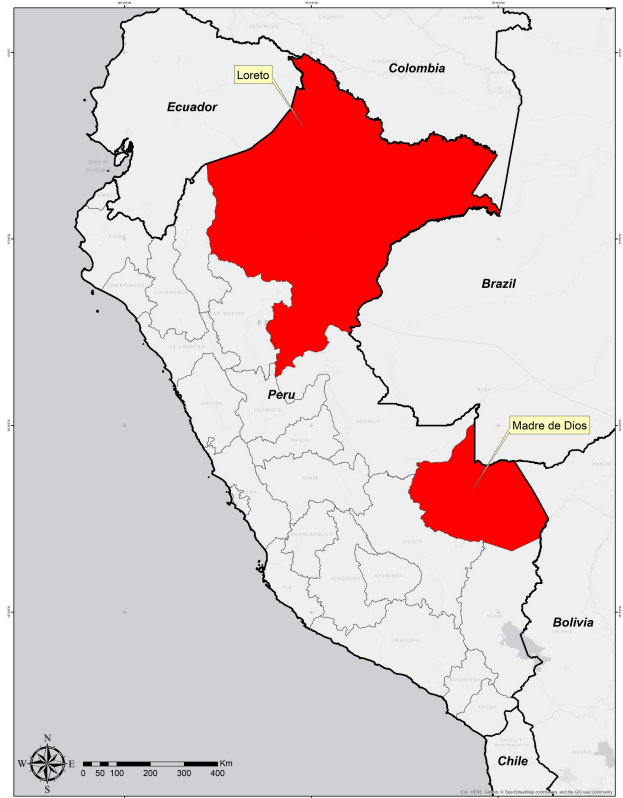
ii. Regional Variations in Peru

Our analysis in Peru focused on the regions of Madre de Dios and Loreto. Both regions were the center of government policies that promoted investment and colonization of the Amazon since the early 1900s (Monterroso et al., 2017). Loreto is the largest region in Peru. It has remained sparsely populated and holds 50% of the country's forests. While smaller, Madre de Dios is considered a biodiversity rich region, with 60% of the land under different categories of protected area. Pressure on forests, due to increased internal migration associated with expansion of mining in Madre de Dios and oil and gas extraction activities in Loreto, threatens indigenous lands. Most forestlands in Peru are natural forests.

Loreto holds the largest number of formally recognized indigenous communities in the Amazon, only half of which have also legally demarcated and titled their traditional lands (Monterroso & Larson, 2019b; IBC, 2016). In Madre de Dios, most of the communities and their lands have been formally recognized; however, increasing pressure from mining and petroleum interests threaten their ability to benefit from rights to land and conflicts with extraction companies are growing (Zamora & Monterroso, 2017).

Peru recognized indigenous collective rights to land in 1974; however, in 1975, forests were declared state owned and subsequently forestlands have been allocated by the state to indigenous communities in long-term usufruct (use rights) via contract. Although the Law of Native Communities recognizes the right of communities to manage the forests within their communal lands, communities on forest land are required to follow provisions in the Forest Law and apply for an authorization to undertake subsistence uses and must submit a management plan if the forest is to be used for commercial purposes. Of the 17 communities analyzed in this paper, only seven had registered forest management plans (Cruz-Burga et al., 2017a; Cruz-Burga et al., 2017b). In addition, communities on the borders of protected areas must comply with existing regulations and develop rules for managing forest and fauna resources. Local communities rely on forest resources for livelihoods.

FIGURE 4. REGIONS OF ANALYSIS IN PERU: LORETO AND MADRE DE DIOS



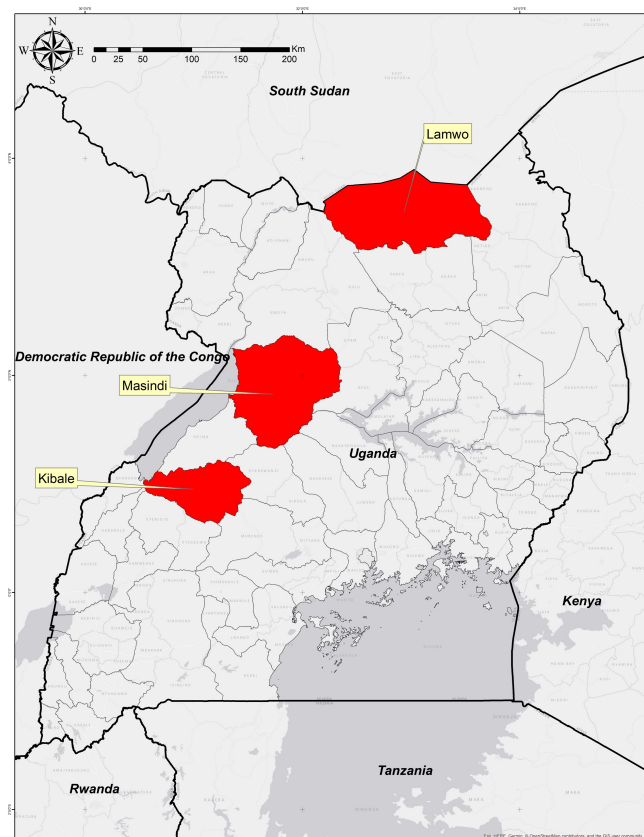
Timber, palm fruits, and bushmeat are traded locally in Loreto region, while extraction of brazil nut and timber are the most important income-generating activities in Madre de Dios. In both, agriculture and fishing are the most important subsistence strategies. Recently, a number of initiatives have targeted Loreto and local governments have been more supportive of reform implementation than in Madre de Dios.

iii. Regional Variations in Uganda

The analysis in Uganda draws from analysis in Kibale, Masindi, and Lamwo regions (Mwangi et al., 2017; Nsita et al., 2017; Musaka et al., 2017; Mshale et al., 2017). Large scale conversion of natural forest to other land uses, especially agriculture; uncontrolled migration; and increasing demand for forest resources have resulted in conflicts in all three regions. Most remaining natural forests are found in forest reserves that fall under different legal categories of protected areas managed by the national forest and wildlife services. These state forest reserves can be co-managed under collaborative agreements with adjacent communities, such as the ones found in Kibale (Mukasa et al., 2017).

Customary land tenure systems dominate in the regions of Masindi and Lamwo, yet, despite constitutional reforms recognizing them, these customary lands remain largely unregistered (West, 1967; Nsita, 2017). In Kibale, around 80% of the remaining natural forests are found on private lands under *mailo* system,⁷ with a large proportion of the land held by absent landlords. In Lamwo, on the other hand, forests continue to be governed by customary institutions, and some forests have been registered as customary forests in the name of villages and clans (Mshale et al., 2017). In Masindi, the boundaries between customary forests and state forests are contested and result in conflicts and restricted access for people who claim customary rights. Additionally, remaining natural forests are found in protected areas, managed by local forest authorities that establish restrictive management rules; however, uncontrolled migration into the protected areas has resulted the land being used for other purposes.

FIGURE 5. REGIONS OF ANALYSIS IN UGANDA: LAMWO, MASINDI, AND KIBALE



⁷ Mailo is a form of tenure recognized in the Land Act in Uganda; it is a legacy of the colonial system when lands were given to certain groups of people by the colonial authorities while recognizing the long-term occupancy of the people native to that area. Relations between the "landlords" and the "tenants" on mailo land are governed by the Land Act.

Reforms in these regions started in the early 2000s and were promoted by local governments and NGOs that supported the creation of forest user associations. Implementation has resulted in the establishment of more protected forest areas and has been accompanied by more restrictive rules about forest use and management. While extraction of forest resources is restricted, charcoal production is important in Kibale and Lamwo. In all three regions agriculture is the most important activity for livelihoods (Mukasa et al., 2017).

B. Data and Methods

This paper uses a mixed method approach, combining quantitative and qualitative data from Indonesia, Peru, and Uganda at the household, community, and national level. Data sources consist of literature reviews (globally and by country) and analysis of the regulatory framework guiding reform implementation (including laws, associated provisions and policies); a survey with reform implementers; and, at the village level, key informant interviews, focus groups discussions, and an intra-household survey.

Most of the data on outcomes of the reforms is based on village-level analysis. For each reform in each country, interviews were held in at least two villages (also referred to as “sites”). The research approach used three data collection instruments. First, 136 key informant interviews (KII) were held with female and male village leaders involved in reform, committees, or local organizations. These interviews collected information on local perception and knowledge of reform processes, existing implementation practices, gender disaggregated rights realization, and key constraints to tenure reform implementation. Second, 164 focus group discussions (FGD) were held with women and men (youth and adults) separately to elicit their views on the extent of rights granted to communities, implementation and impacts of reforms, and the challenges encountered in exercising these rights. These views will be described in more detail in Part II covering gender analysis of reforms. Researchers surveyed 1230 men and 1329 women, of which 1011 respondents are from Indonesia, 1006 are from Peru, and 532 are from Uganda. The surveys gathered information about household characteristics and assets, perceptions of tenure security or insecurity, and involvement in forest management for both participants and non-participants of the reform.

Table 1 below provides a quick view of sources of data and how they relate to the different reforms. These reforms are organized according different regime types. In this paper, tenure regimes refer to the set of institutions established in statutory regulations determining the array of tenure rights and who holds these rights. Each regime may allow different arrangements for granting those rights, each of these is described in the text as one type of reform. Seven types of reforms across three tenure regimes were analyzed (these are discussed in detail in Part II). The analysis in this paper (and hence the numbers in the table) is based only on those who participated in reforms. When helpful, data from non-participants was included to enable comparisons. Grounded theory (Charmaz, 2006) was used for the qualitative analysis of KIIs and FGDs and a codebook was created using NVIVO based on 12 family nodes and over 389 nodes to code all the documents. Family nodes organized informant responses around key issues including perceptions on livelihoods, tenure security, the content of rules and rights, the level of satisfaction with rights, conflicts, and customary systems (Quadvlieg, 2018). Weighted

sample averages were used for most of the quantitative analysis and Logit binomial models were used to predict tenure security and livelihood outcomes. Detailed results of this analysis are included in Annex 2.

Table 1. Data Availability by Type of Reform

Regime Type	Country, Reform, Location	Sites	FGDs	KIIs	Surveys
i. State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	4	13	5	44
	Indonesia: Community Forest in Lampung and Kalimantan	5	20	19	256
	Indonesia: Community Forest Plantation in Lampung	2	8	8	122
ii. State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	2	8	2	113
	Indonesia: Forest Partnership in West Kalimantan	2	7	9	110
iii. Community owned land	Uganda: Community Forests in Masindi	4	15	12	95
	Uganda: Customary lands, formalized in Lamwo	4	13	14	52
	Peru: Titled communities in Loreto and Madre de Dios	18	32	34	820
Total Data Collection Instruments Analyzed		41	116	89	1,612

i. Profile of the Respondents Surveyed

Within each site, households were selected using a random sample design. In each household, both female and male heads of household⁸ were interviewed.

Across three countries, 78% of the people surveyed live in villages where tenure reforms had been implemented. Results indicate there is a significant difference between countries regarding how people perceive their economic status. Only 7% of the people surveyed in Peru and 27% in Indonesia consider themselves poor, in contrast with Uganda, where 53% identified themselves as poor.

In terms of participants of reforms, respondents from nonreformed sites were more likely to be poor and have fewer years of education than those from reform sites in Indonesia and Peru. There was a gender gap in perceptions of poverty (with women more likely to say they are poor) and in education (with women less likely to be educated) among respondents in Indonesia and Peru. There were no significant gender differences in whether respondents perceived themselves as poor in Uganda.

C. Normative Frameworks Underpinning Gender Equity in Reform Processes

This section analyzes legal frameworks in our study countries that support gender equity and assesses the extent to which these have favored mainstreaming equity considerations and women rights issues into regulatory frameworks around forest and land tenure. First, this section looks at country-level adoption of international instruments that support reforms addressing equal access to resources and governance. The country-level review also looks at whether national Constitutions allow for equal protection and/or consideration of gender

⁸ We use the term female head of household here based on the understanding that a single household (often) has both male and female heads. We reject the concept that women “head” households only when there is no husband present.

justice and equity principles. Second, this section analyzes the extent to which gender equity has been mainstreamed in sectoral policies and whether gender considerations have been incorporated into the drafting and implementation of forest tenure reforms. Tables 2 and 3 provide a list of the instruments analyzed and assess the extent to which these have been adopted and implemented.

i. Broader Normative Frameworks Supporting Gender Equity in Forest Rights

Several international conventions and agreements favor equal access for women and men and enforce participation of all groups in the governance of and decision making for natural resources. Results from the legal analysis are shown in Table 2, which assessed each framework according to the level of available statutory protection and whether there has been some implementation at the national level.

All three countries have signed CEDAW and UNDRIP, which include specific calls on states to undertake the appropriate reforms to eliminate obstacles that prevent women, and particularly indigenous women, from effectively enjoying rights to land and other assets. From the three countries analyzed, only Peru has signed ILO 169, which includes specific provisions and principles such as the definition of indigenous peoples, the rights of consultation, and respect of customs and customary laws. Consultation is a key aspect in the cases studied, as investment interests threaten expansion in forest areas managed by local communities, and, for example, has been a particular concern for women in areas with oil palm expansion in Indonesia and mining activities in Peru (Elmhirst, Siscawati, Basnett, & Ekowati, 2017).

All three countries have signed the VGGTs, with different levels of implementation. Gender equality is promoted as one of the principles for implementation. On collective tenure and indigenous women specifically, these guidelines establish that “indigenous peoples and other communities with customary tenure systems that exercise self-governance of land, fisheries and forests should promote and provide equitable, secure and sustainable rights to those resources, with special attention to the provision of equitable access for women” (FAO, 2012). Existing data shows that more progress is being made on the VGGTs in Uganda in comparison to Peru and Indonesia, both where most of the actions focused in socialization and dissemination (FAO, 2016).

Another international instrument that targets gender equity in the access, control, and ownership of land and forests and other assets is Goal 5 of the SDGs, which specifically aims to “achieve gender equality and empower all women and girls” (see Bose et al., 2017). This goal calls for recognition and protection of women's rights to land and resources in indigenous and customary peoples’ territories. In all three countries, Goal 5 and other SDG goals that have gender dimensions have been referred to in the drafting of policies and programs on development of natural resources (Siscawati, 2019; Larson et al., 2019).

Finally, all three countries have incorporated gender equality or equity principles in some way within their national constitutions. In Uganda, constitutional reforms provide for gender balance and fair representation of both women and men and include affirmative actions in

favor of women (Mukasa et al., 2012). However, specific provisions that determine whether women may own land and other resources are found in sectorial policies. One interesting aspect of the Ugandan constitution is that the text uses all-inclusive language instead of using “man” to refer to both men and women. As stated by other socio-legal analysts, Peru and Indonesia’s constitutions use “man” to refer to both men and women (Montaño and Aranda, 2006; Siscawati et al., 2019). In both Peru and Indonesia, a lack of (a) gender-responsive provisions in laws that specifically refer to the rights of both women and men and (b) provisions within laws and policies guiding collective forms of tenure affect the agrarian and forest regulatory framework, as will be discussed next.

Table 2. International Instruments that Call for Incorporating Gender Considerations in Resource Access and Tenure

Framework	Indonesia	Peru	Uganda
CEDAW			
UNDRIP			
ILO 169			
VGGTs			
SDGs			
Constitutional support for gender justice/equity/equality			

Note: The colors indicate the status of design and implementation. Green: advanced, well developed, adequate or minimum statutory protection with well advanced implementation; Orange: somewhat effective, existing, or under development statutory protection and implementation with diverse levels of progress; Red: unavailable, non-existent, underdeveloped, and dysfunctional.

Source: Constitutional and sectorial analysis is based on (Safitri, 2015; Siscawati, 2019) for Indonesia; (Mukasa et al., 2012 and Banana et al., 2012) for Uganda; and (Soria, 2016 and Larson et al., 2019a) for Peru. The list of indicators and their assessment draw on the analysis developed by Keene and Ginsburg, 2017.

ii. Sectorial Normative Frameworks Supporting Gender Equity in Forest Rights

This section assesses how specific regulatory frameworks incorporate gender considerations and how these influence reform design and implementation. Legal frameworks analyzed included primary laws related to forests, land, and natural resources and environment; and, where existing, provisions to implement these laws and key sectorial policies. Analysis also covered whether countries have specific laws to protect customary and indigenous populations. Table 3 summarizes results according to four dimensions: (1) Does the framework establish women as a subject of rights/reforms? (2) How does the treatment of women compare to men? (3) Are there clear guidelines on how to include women and address gender issues during implementation? (4) Were the processes to draft/revise and implement these frameworks inclusive?

Uganda’s Forest Policy (2001) stands out in its support of gender equity. It is explicit about increasing tenure security for women; encouraging their active participation in decision-making, resource management, and benefits sharing; and promoting changes in attitudes and organizational cultures to break down gender barriers (Banana, et al., 2012). These policies are key in the process of implementing the above reforms; however, a study revealed that although the Forestry Policy, Forestry Act, and Forestry Plan all address gender and women’s specific

needs, none of these are backed up by relevant regulation and strategies for ensuring compliance (Mukasa et. al., 2012).

In Peru, the Forestry and Wildlife Law has adopted equity and social inclusion as important principles. Nonetheless, the lack of specific provisions and guidelines to mainstream this in implementation makes them difficult to operationalize. In addition, legislation on land tenure does not have any specific provisions regarding gender (Soria, 2016). In addition, while gender equality is a principle of the agrarian reforms in Peru, there is no sex-differentiation when referring to rights at the local level in collective tenure regimes, as rights are granted to the entire “community.”

In Indonesia, participation and gender justice are considered among the 12 principles that guide the implementation of agrarian reform and natural resource management (People’s Consultative Assembly Decree Number IX/2001 cited in Safitri, 2015). Gender has been mentioned in the latest Ministerial Regulation on Social Forestry (P83/2016, Chapter 5 article 58, page 38). Nonetheless, social forestry policies are perceived as gender blind because they do not address gender relations in application or implementation of any of the social forestry schemes (Siscawati et al., 2017:11). Also, there has been limited participation of indigenous women in formulating the bill on the Recognition and Protection of Indigenous Peoples and Social Forestry Schemes, resulting in formulations that do not incorporate concerns of women (Siscawati and Mahaningtas, 2012).

Table 3. Gender Analysis of Sectorial Frameworks Supporting Gender Equity in Forest Reforms

Framework	Indonesia	Peru	Uganda
Forest Policy			
Supports gender equity			
Encourages participation of women in decision-making			
Promotes changes in attitudes/org. culture			
Forest Act/Law			
Supports gender equity			
Encourages participation of women in decision-making			
Promotes changes in attitudes/org. culture			
Includes provisions to include women and gender issues during implementation			
Women were included/consulted in its drafting/revising			
Women involved in implementation processes			
Land Law/Act			
Supports gender equity			
Encourages participation of women in decision-making			
Promotes changes in attitudes/org. culture			
Includes provisions to include women and gender issues during implementation			
Women were included/consulted in its drafting/revising			
Women involved in implementation processes			

Framework	Indonesia	Peru	Uganda
Natural Resources/Environmental Act/Law			
Supports gender equity			
Encourages participation of women in decision-making			
Promotes changes in attitudes/org. culture			
Includes provisions to include women and gender issues during implementation			
Women were included/consulted in its drafting/revising			
Women involved in implementation processes			
Collective Membership Laws			
Count women as members, without discriminating			
Include women in decision-making, without discriminating			
Women are considered as equal beneficiaries, without discriminating			

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional.

Source: Constitutional and sectorial analysis is based on (Safitri, 2015; Siscawati, 2019) for Indonesia; (Mukasa et al., 2012 and Banana et al., 2012) for Uganda; and (Soria, 2016; Larson et al., 2019a) for Peru. List of indicators and their assessment draw on the analysis developed by Keene and Ginsburg, 2017.

These results show, in terms of women's involvement and inclusion of gender considerations during the design and implementation of regulatory frameworks, there is little participation of women or recognition of special groups such as women in the objectives of reforms. Based on the survey of implementing government agents⁹ conducted as part of this study, women participate very little in implementation and drafting of reforms across the three countries. The survey also found far more men (78%) participating in implementation in comparison to women (28%) (Larson et al., 2019a).

Gender is not typically considered an important objective of reforms. For instance, Uganda has the highest portion of government agents (23%) considering gender as an important aspect in defining the objectives of reform, while less than 5% of officials interviewed in Indonesia and Peru considered the recognition of these special groups as an objective. The survey's assessment of whether women are considered reform beneficiaries across the three countries shows that 13% of Ugandan implementers consider women as beneficiaries in contrast to 11% of Indonesia implementers and none in Peru. Of all three countries, only Uganda has promoted special reforms that target women's groups, and 90% of implementers surveyed reported awareness of these special reforms (Banana et al., 2012 and Mukasa et al., 2012). According to 54% of respondents in Indonesia, special reforms target the poor and 50% of reform implementers in Peru stated that special reforms target indigenous groups.

⁹ In total, 90 government officers (29 in Indonesia, 32 in Peru, and 29 in Indonesia) were interviewed to identify factors associated with the goals of reform and activities associated with implementation. See also Monterroso et al., 2019; Notes et al., 2018; and Nsita et al., 2017 for country level results in Peru and Uganda.

Part II. GENDERED ANALYSIS OF THE REFORMS

A. Forest Tenure Reforms Analyzed

To facilitate comparisons across reforms, a number of attributes are provided: (a) who receives the rights to forest lands; (b) the type of rights they receive and the length of time for which the rights are granted; (c) the purpose of the reform and the steps to acquire rights; and (d) the regulatory framework underpinning the reform. These are grouped by regime type (i, ii, and iii), as introduced previously and outlined in Table 1.

i. State Lands Designated for Community Use

Table 4 shows three reforms that are referred to as collaborative forest management (CFM): two in Indonesia, which are part of social forestry schemes, and one in in Uganda. These reforms required the formation of forest user groups, usually community-based groups that live near and around forest areas. In Indonesia, participants represented their households, while in Uganda participants were individuals and a household could be represented by both its male and female heads. For the most part, the rights recognized were the right to access and use land. Reforms in Indonesia also recognized management rights. In Indonesia, forest licenses were granted for two years and could be continuously renewed for up to 35 years. In Uganda, the length of the rights varied by case.

Table 4. State Lands Designated for IP/Community Use

Reform	Characteristics
Reform 1. Community Forests HKm Lampung and West Kalimantan, Indonesia	Who received rights? Organized forest user groups integrated by one household head. Which rights and for what length of time? Access, use, and management rights to timber and non-timber forest products (NTFP). Granted for up to 35 years. For which purpose? Forest Licenses allow extraction of timber in production forest areas and extraction of non-timber forest products in both production and protection forests. What do forest users need to do to acquire/exercise the rights? Establish a legally recognized organization to request a license that is granted to the organization and distributed through permits granted at the individual household head level. Which laws granted these rights? Forest Law No. 41, 1999. Forest Regulation 6/2007. Regulation Number P.83/MenLHK/Kum.1/10/2016.

Reform	Characteristics
<p>Reform 2.</p> <p>Community Plantations</p> <p>HTR</p> <p>Lampung, Indonesia</p>	<p>Who received rights? Organized forest groups, including associations and/or cooperatives integrated by head of households.</p> <p>Which rights and for what length of time? Forest licenses recognize access, use, and management rights of timber forest products. Granted for up to 35 years.</p> <p>For which purpose? Licenses allow establishment of forest plantations, including rubber, that can be established only in state forests classified for production.</p> <p>What do forest users need to do to acquire/exercise the rights? Forest user groups are required to establish a legally recognized organization to request a license that is granted to the organization with permits granted at the individual household head level.</p> <p>Which laws granted these rights? Government Regulation 6/2007. Regulation Number P.23/Menhut-II/2007.</p>
<p>Reform 3.</p> <p>Collaborative Forest Management</p> <p>Masindi, Uganda</p>	<p>Who received rights? Communities living near public forest reserve areas.</p> <p>Which rights and for what length of time? Access, use, and management rights. Duration is indeterminate and may vary by case.</p> <p>For which purpose? Establish co-management agreements with the National Forestry Authority; recognizing use rights in central and local forest reserve areas involving local communities for the extraction of subsistence resources including fuelwood and non-timber forest products. These agreements are aimed at reducing conflict and involving local communities living in protected areas.</p> <p>What do forest users need to do to acquire/exercise the rights? Forest user groups are required to establish a legally recognized organization and sign an agreement with local authorities.</p> <p>Which laws granted these rights? National Forestry and Tree Planting Act.</p>

Source: Yunan Firdaus, 2018; Banjade et al., 2016 and Siscawati et al., 2017; Mwangi, 2017; Musaka et al., 2017; Nsita et al., 2017.

ii. State Lands Designated for the Use of Companies

After reforms in West Kalimantan and Lampung, Indonesia, private and public companies manage forestland by agreement. The agreements are usually short term (no more than five years) and the rights granted vary in response to negotiations between companies and communities.

Table 5. Private-Concession Lands Used by Communities

Reform	Characteristics
Reform 4. Community- Company Partnerships West Kalimantan and Lampung, Indonesia	Who received rights? Organized communities living near areas given under concession to companies. Which rights and for what length of time? Use and management rights allocated for up to five years. For which purpose? Partnership agreements are established to avoid conflict situations between adjacent communities and areas given in concession to companies. What do forest users need to do to acquire/exercise the rights? Forest user groups need to be established through agreements between state or private companies and communities. Which laws granted these rights? Ministry of Forestry Decree P.39/2013, Peraturan Pemerintah number 6/2007. Peraturan Menteri LHK number P.83/MenLHK/Kum.1/10/201.

Source: Yunan Firdaus, 2018; Banjade et al., 2016; and Siscawati et al., 2017.

iii. Lands Owned by Indigenous Peoples and Communities

As indicated by the title, these reforms grant a larger set of rights. These rights include the right to access, use, manage, and make decisions in perpetuity. In Peru, demarcation of territorial claims by indigenous peoples allow for the recognition of ownership of lands and usufruct rights to forests (Monterroso & Larson, 2018). In Uganda's Community Forests, areas located within community lands are recognized to belong to villages and clans (Nsita et al., 2017). In Uganda, the Land Act established that villages and clans may be registered as Communal Land Associations (CLA) and apply for a certificate of customary ownership or freehold, which allows members to own and manage the land. But progress on recognizing, demarcating, and registering community forests and customary lands in Uganda has been slow (Knight et al., 2013; Shelley, A., 2017).

Table 6. Lands Owned by IP/Communities

Reform	Characteristics
Reform 5.	Who received rights? Villages, Clans, communal land associations (CLA), cooperative societies, farmers groups, or NGOs drawing

<p>Community Forests</p> <p>Masindi, Uganda</p>	<p>membership from the local community.</p> <p>Which rights and for what length of time? Management, maintenance, and control rights. In perpetuity.</p> <p>For which purpose? Forest areas located within a community's jurisdiction are declared community forests. Community forests are owned by a village or clan and managed by a legally constituted organization on behalf of the community.</p> <p>What do forest users need to do to acquire/exercise the rights? Forest user groups are required to establish a legally recognized organization.</p> <p>Which laws granted these rights? Forest Policy, 2001.</p>
<p>Reform 6.</p> <p>Customary lands, formalized</p> <p>Lamwo, Uganda</p>	<p>Who received rights? Villages and clans registered as communal land associations (CLA) following formalization procedures once they are recognized as legal entities.</p> <p>Which rights and for what length of time? Legally established CLAs can apply for a certificate of Customary ownership or Freehold. In perpetuity.</p> <p>For which purpose? CLAs can be formed for purposes connected with ownership and management of the land. Registration of certificate or title requires demarcating lands for common use including grazing, hunting, gathering of fuel wood, and other forest resources.</p> <p>What do forest users need to do to acquire/exercise the rights? Community forests owned by a village or clan can develop communal land management schemes and be managed by a legally constituted organization on behalf of the community. Such is the case of LAMWO where two forest management organizations exist: the Lamwo Environmental Protection Association (LEPA) and the Katum Community Forest.</p> <p>Which laws granted these rights? The Land Act, 1998, Uganda National Land Policy, 2013.</p>
<p>Reform 7.</p> <p>Titled Communities</p> <p>Loreto and Madre</p>	<p>Who received rights? Indigenous communities legally recognized.</p> <p>Which rights and for what length of time? Titles grant full ownership rights to agricultural and pastoral areas and long-term use rights to forest areas falling within the demarcated area.</p>

de Dios, Peru	<p>For which purpose? Communities are demarcated and titled.</p> <p>What do forest users need to do to acquire/exercise the rights? Communities need to be legally recognized.</p> <p>Which laws granted these rights? Law Decree No. 22175. Law of Native Communities and Promotion of Agriculture in the Lower and Upper Rainforests. Law No. 29763. Forest and Wildlife Law.</p>
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Source: Monterroso et al., 2017; Baldovino, 2016; IBC, 2016; Yunan Firdaus, 2018; Banjade et al., 2016; Siscawati et al., 2017; Mwangi, 2017; Musaka et al., 2017; and Nsita et al., 2017.

B. Women's Rights in the Reforms Analyzed

With regards to women's rights, membership in the analyzed reforms is defined by the norms established in specific regulatory frameworks. Therefore, who benefits from devolution and recognition of rights in reforms is influenced by who is recognized as the subject of reform (Keene and Ginsburg, 2017). The regulatory frameworks determine who will count as member of the collective, how the rights granted are distributed, and the institutional mechanisms chosen to formalize the rights (e.g., land title, customary certificates, forest permits, forest authorizations, partnership agreements, etc.).

In reforms where individuals (both men and women) could participate directly—through the Communal Land Associations, for example—women were able to benefit from the rights granted to the collective. This is the case of the reforms in Uganda and Peru, where customary or collective lands or forests are formalized, granting rights to the entire village or collective. The question arises as to who holds the title or certification in the name of the collective. The answer will depend on local norms that establish how women and men participate in governance structures (see Larson et al., 2015). In such cases, regulatory frameworks may establish provisions for group participation, such as during a demarcation process, but they leave it to the community to define how different members within the community will participate (Notess et al., 2018). Processes in laws or constitutions for documenting and preparing a community may allow for reviewing governance arrangements that lead to more equitable rules and enhance participation in decision making (Knight et al., 2013).

In Indonesia, however, because each household was granted rights and is represented by the household head, women often lost ground to their husbands because they were not considered direct participants or beneficiaries of reforms, and instead had to rely on their spouses' "intermediation." Such state-led interventions have reinforced stereotypes of "forests" and "demarcation" as male domains, which compromises women's participation in the design and implementation of reforms (Elmhirst et al., 2017).

C. Clarity and Extent of Women's Rights

At the local level, implementation of reforms implies changes in institutional arrangements governing land and forest resources. In practice, new legal provisions overlap with customary arrangements, including community by-laws; traditional practices; and cultural beliefs (that may or not be formalized), which determine who has access to, use of, and control over resources within the collective. For this study, intra-household survey data is used to assess how women and men perceived rules about forest use and access. Existing agreements and disagreements are also assessed in regard to whether women and men consider that: 1) rules and decisions about access and use are easy to understand; 2) rules and decision about resource use are well known by most of the people in villages; and 3) rules and decisions about resource rights are fair. Results are shown in Table 7. We also calculated the difference between men's responses in comparison to women's responses at the household and village level, this is defined as the gender gap (See Box 1).

BOX 1. CALCULATING THE GENDER GAP

Take for instance, the weighted average of responses from men and women from Indonesia involved in community forests in Lampung and West Kalimantan shown in Table 7. To calculate the gender gap, first, we assessed responses to the statement "Rules about forest access and use are easy to understand", where all people interviewed had four options: 1. Agree; 2. Neither agree nor disagree; 3. Disagree; and 4. Have no opinion. For calculating the gender gap, we used responses from respondents that reported participating (being a member) in reform processes, considering only those that agreed with the statement (as highlighted in Table 7). We used weighted average results from descriptive statistics (See Annex 2) and identified the difference between men's responses in comparison to women's responses at the household and village level. See the example from Indonesia's community forests in Table 7. A positive gender gap indicates that a larger portion of women agreed with the statement and negative gender gap indicates that a higher proportion of men agreed.

ASSESSING PERCEPTIONS AROUND RULES ABOUT FOREST ACCESS AND USE

Desired Conditions	Answer	State lands designated to use by communities		
		Reformed Member Male	Reformed Member Female	Gender Gap
1. Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Agree	64	66	+2
2. Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Agree	59	69	+10
3. Rules about forest use and access are fair (<i>decisions fair</i>)	Agree	55	54	-1

The findings (See Table 7) suggest that reforms do not necessarily result in rules about forest access and use that are perceived as clear, known, and fair. When rules are known and clear, they may not be perceived as fair. Those reforms reporting the highest results are found in customary land tenure systems in Uganda. These reforms show a larger percentage of women respondents who consider the rules to be fair and a larger portion of women and men who report the rules are known and clear.

Social Forestry Schemes in Indonesia also show high proportions of respondents stating rules are both known and clear. Despite more than half of the women respondents in partnership agreements in Indonesia stating they consider rules to be fair, known and clear, larger gender gaps raise concerns that women may be disadvantaged. Peru's titled communities report the worst gender gap for women in terms of fairness and clarity. On the other hand, men in CFM in Uganda report less knowledge of reforms. In community forests in Uganda, more women consider the rules to be not clear or well known in comparison to men, but their perception of fairness of the rules is quite similar to men.

Table 7. Perceptions Around Clarity of Existing Rules

Tenure Regimes	Country, Reform, Location	Meets Desirable Conditions					
		Respondents who say rules are fair		Respondents who say rules are known		Respondents who say rules are clear	
		% of Women	Gender Gap	% of Women	Gender Gap	% of Women	Gender Gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	44%	+2%	41%	+20%	44%	-4%
	Indonesia: Community Forest in Lampung and West Kalimantan	54%	-1%	69%	+10%	66%	+2%
	Indonesia: Community Forest Plantation in Lampung						
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	53%	-16%	57%	-12%	55%	-18%
	Indonesia: Forest Partnership in West Kalimantan						
Community owned land	Uganda: Community Forests in Masindi	56%	+1%	78%	-11%	62%	-21%
	Uganda: Customary lands, reformed in Lamwo	81%	+14%	76%	+4%	84%	+1%
	Peru: Titled communities in Loreto and Madre de Dios	36%	-22%	56%	+1%	43%	-23%

Note: The colors indicate the status of the enabling conditions. **Green**: effective, highly available, advanced, well developed, highly functional. **Orange**: somewhat effective, existing, under development, somewhat functional. **Red**: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. Grey denotes a high gender gap.

Source: Intra-household survey data. To review descriptive statistic results, see Annex 1.

D. Satisfaction with the Rights Granted by Reforms

This section analyzes FGDs with regard to the levels and sources of satisfaction or dissatisfaction with the new rights.¹⁰ To analyze qualitative data, responses were coded and the number of women and men reporting concerns were calculated, and types of concerns for each were noted.

Respondents in Lampung, West Kalimantan, and Kibaale link their satisfaction with the ability of the reforms to improve their livelihoods, the duration of the rights provided by the reforms, and the improvement in enforcement of rights to solve conflicts on boundaries and overlapping regimes. In the case of villages who had engaged in forest partnerships in West Kalimantan and Lampung, villagers link their satisfaction of rights with their ability to access land for cultivation, although people raised concerns about the content and duration of rights derived from short-term agreements with companies. In lands owned by communities, satisfaction is linked to improved livelihoods and ensuring government support through improved access to agriculture and forest extension services (E.g., seedlings, tree planting, nurseries, and reforestation) and training. In addition, in regions such as Loreto, Madre de Dios, and Masindi, expectations about satisfaction with rights were additionally associated with the ability of villages to address external threats, including increases in rule enforcement by government authorities.

Across reform types, based on the analysis of FGDs, 53% of the sites in land owned by communities expressed livelihood concerns, including 100% of Masindi sites and 50% of Loreto and Madre de Dios sites. Concerns in Peru and Uganda were related to restrictions on resource access. In Uganda, groups also mentioned the need for greater forest and agricultural extension services to provide training, inputs, and access to finance to increase income. In lands designated for communities, 61% reported livelihood concerns, in comparison to 27% in Lamwo customary sites. Table 8 focuses on the results of women's FGDs only, further assessing the livelihood benefits or restrictions associated with reform implementation. The ability to access income is overall related to increase income from the ability to diversify productive activities, access to wage labor, increased employment opportunities, and new markets. The ability to access land includes the possibility of accessing or expanding areas for agricultural production or extract forest resources. Access to extension services for both agriculture and forests includes access to inputs, tree seedlings, tree planting, nurseries, and reforestation.

¹⁰ Participants in an FGD were requested to indicate as a village the level of satisfaction with existing rights, they had three options: 1. Very dissatisfied with the rights to use forest resources and would like to see major changes; 2. Somewhat satisfied but would like to make some changes; and 3. Very happy and would make no changes. If an FGD stated they were somewhat dissatisfied or dissatisfied, they were then asked to explain. We coded these responses to identify the type of concern, then we categorized those according to whether they relate to 1. The content of rights or 2. livelihood concerns.

Table 8. Livelihood Concerns Associated with Rights Dissatisfaction

Tenure Regimes	Country, Reform, Location	Type of Livelihood Concerns				
		Ability to improve /access incomes, markets	Ability to access land, improve production and extraction (agriculture and forests)	Access to forest extension services, inputs, training, management	Access to agricultural extension services, inputs, training	Promote equal distribution of benefits
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	✓		✓	✓	
	Indonesia: Community Forest in Lampung and West Kalimantan		✓	✓		
	Indonesia: Community Forest Plantation in Lampung	✓✓		✓	✓	
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung		✓✓			
	Indonesia: Forest Partnership in West Kalimantan	✓✓				☒
Community owned land	Uganda: Community Forests in Masindi	✓✓	✓	✓✓	✓✓	
	Uganda: Customary lands, reformed in Lamwo	✓				✓
	Peru: Titled communities in Loreto and Madre de Dios	☒				✓

Note: the use of check mark “✓” indicates that this type of livelihood concern was reported at least once during FGDs. The use of “✓✓” means that more than one FGD reported this type of livelihood concern. The use of ☒ indicates that this type of concern was listed as a restriction taking place in villages.

Source: FGD analysis, women respondents only.

While results are based on the analysis of female respondents in FGDs, responses are similar to men’s, except that women mention the ability to promote equal distribution of benefits as another livelihood concern associated with acquired rights. This was mentioned in two of the reform types analyzed. In forest partnerships in West Kalimantan, women do not consider that agreements have promoted equal distribution of benefits. Women in titled communities in Peru report the need to promote more equal distribution of benefits, and also perceive that implementation of reforms has restricted women’s access to incomes and markets. This was

mainly associated with the implementation of restrictive rules for forest access. Results show the variety of livelihood concerns associated with the rights granted by reforms. The ability to address these concerns varies depending on the extent of rights granted and the purpose of reforms.

E. Women's Participation in Drafting Local Rules

In this section, data from the household survey is used to assess the performance of local institutions. Specifically, it looks at the extent women in reform areas participate in rule-making around forest products and harvesting as an important point of entry to assess distribution of benefits (Agarwal, 2000). Results show limited participation of both men and women in rule making across the three countries, with the highest portion of respondents responding affirmatively in Peru (40%), followed by Uganda (17%), and then Indonesia (9%). However, important variations emerge when disaggregating data by sex across reforms (Table 9). Uganda shows the most dramatic differences, with more than half of women reporting participation in Lamwo, 5% in lands designated for community use, and none (0%) in land owned by communities. Women's participation in Peru, in both types of reforms studied, is higher than in all other sites except Uganda's customary lands.

Throughout, gender differences are also evident. Men report more participation in rule making than women in Peru and Indonesia but less in Uganda where the gender gap in all tenure types is much smaller. The largest gender gap for women is in social forestry reforms (community forests and plantations) in Indonesia, followed by titled communities in Peru, then by Indonesia's Partnership schemes. The regime that reports the highest proportion of women (and men) participating in rule making is in customary lands in Lamwo, Uganda. This contrasts with responses obtained in Masindi sites where women's participation is very low. Despite the high percentage of respondents indicating they have participated in rule-making in Peru, the gender gap shows that men participate more in comparison to women.

Analysis of FGD and key informant interviews indicates that low levels of response on rule making may be explained by local community perceptions that rule making for forests is a responsibility of government institutions; this was mentioned repeatedly in sites that fall under state forest lands designated for the use of communities. It may also refer to the extent government institutions and other reform implementers provide room for discussing rules about forest use and management. For example, the case of Masindi and Peru contrasts with the perception that rules about forest access and use are highly restrictive. Perception that rules on forest access and use have become more restrictive with reforms is more common in research sites in Uganda and Peru than Indonesia.

Table 9. Women Participating in Rule Making (Household Survey)

Tenure Regime	Country, Reform, Location	% of women who reported participating	Gender gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	5%	-1%
	Indonesia: Community Forest in Lampung and West Kalimantan	6%	-25%
	Indonesia: Community Forest Plantation in Lampung		
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	1%	-14%
	Indonesia: Forest Partnership in West Kalimantan		
Community owned land	Uganda: Community Forests in Masindi	2%	-4%
	Uganda: Customary lands, reformed in Lamwo	39%	+6%
	Peru: Titled communities in Loreto and Madre de Dios	36%	-18%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. Grey denotes a high gap.

Source: Intra-household survey data. To review descriptive statistic results see Annex 1.

Binomial logit model was run to assess determinants of participation in rule making.¹¹ Results show that a larger number of years living in the village, being involved in conflict situations, and being involved in forest management activities (i.e. being a member of local forest organization and attending meetings about forest use and management) increase the probability that respondents will say that they participated in rule making. Peru and Uganda report a higher probability of respondents participating in rule making than Indonesia. According to the logic model results, the probability that a person will report participation in rule making decreases with the distance of the forests from the household and with a positive perception towards tenure security.

F. Women's Participation in Enforcing Rules

Rule enforcement is related to the previous section on rule making, as rights devolution has the potential to establish rules that better reflect local needs and knowledge. This in turn should lead to more effective enforcement through monitoring and sanctioning, and, hence, better forest conditions and improved livelihoods (Sun, Mwangi, & Meinzen-Dick, 2011). This is reflected in the results in Table 10, showing that women's participation in rule enforcement is higher in places where women are more involved in rule making. In general, however, as with rule making, women's participation in enforcement is also limited across countries. In Peru and Indonesia, larger gender differences are evident. In Peru, interestingly, women tend to participate more than men in rule enforcement; qualitative data indicate the participation of women in conflict resolution is common as pressure over forest areas increases, being more predominant in communities that have not been titled (Larson et al., 2019c). In Indonesia, community forests and plantations report the largest gender gap, with men participating more.

¹¹ The list of variables analysed and results are shown in Annex 2.

While the gender gap is smaller in forest partnerships in Indonesia, no women reported participating in rule enforcement. Overall, Indonesia reports the lowest levels of involvement in rule enforcement, which might also have to do with the perception that this, like rule making, is primarily a government responsibility.

Table 10. Women Participating in Rule Enforcement (Household Survey)

Tenure Regime	Country, Reform, Location	% of women who reported participating in rule enforcement	Gender gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	2%	-5%
	Indonesia: Community Forest in Lampung and West Kalimantan	6%	-25%
	Indonesia: Community Forest Plantation in Lampung		
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	0%	-12%
	Indonesia: Forest Partnership in West Kalimantan		
Community owned land	Uganda: Community Forests in Masindi	0%	-6%
	Uganda: Customary lands, reformed in Lamwo	35%	-3%
	Peru: Titled communities in Loreto and Madre de Dios	43%	+16%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. Grey denotes a high gap.

Source: Intra-household survey data. To review descriptive statistic results see Annex 1.

G. Outcomes of Reform – Tenure Security

Our analysis of tenure security is based on data collected at the household and village level. It assesses how men and women perceive tenure security changes since reforms were implemented, as well as household and village perceptions on the sources of security and insecurity. Our analysis shows that respondents are significantly more likely to indicate that their tenure security has improved when they participated in reforms. We asked respondents to assess three aspects of tenure security since reforms: 1) if they feel their rights to land and forests are strong and secure; 2) if they are confident their rights will be protected and enforced; and 3) if they are concerned about future disputes over rights (Table 11).

Results show that women's tenure security is much lower in some types of reforms than in others. For instance, both CFM in Kasambya and community forests in Masindi show a much lower portion of women perceiving that their rights are secure compared with other sites. Most reforms show large gender gaps; men are much more likely to give positive responses than women in all regimes of state lands designated for communities and state lands used by companies. The results across responses are mixed in Peru's titled lands, depending on the

specific question, but two of three questions demonstrate a high portion of women responding that their rights are secure. In the case of the third question, qualitative data in Loreto and Madre de Dios show a significant concern about disputed land rights related to conflict in the region (Larson et al., 2019c). The reform type that reports the strongest perception of tenure security for women is in customary lands in Lamwo; in that case a very large gender gap favors women.

Table 11. Perception of Tenure Security Since Reforms (Household Survey)

Tenure Regime	Country, Reform, Location	Meets desirable conditions of tenure security:					
		Since [reform] was implemented in my village...					
		I feel that my rights and access to land and forests is strong and secure		I feel confident that my rights will be protected and enforced		I am not concerned that someone might dispute my rights to access, use, manage or own this land/forest	
		% of women	Gender Gap	% of women	Gender Gap	% of women	Gender Gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	13%	-23%	19%	-17%	13%	-20%
	Indonesia: Community Forest in Lampung and West Kalimantan	61%	-13%	56%	-23%	43%	-31%
	Indonesia: Community Forest Plantation in Lampung						
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	45%	-16%	44%	-24%	38%	-30%
	Indonesia: Forest Partnership in West Kalimantan						
Community owned land	Uganda: Community Forests in Masindi	14%	+4%	14%	+4%	14%	+7%
	Uganda: Customary lands, reformed in Lamwo	91%	+29%	87%	+18%	87%	+52%
	Peru: Titled communities in Loreto and Madre de Dios	76%	-10%	75%	-6%	22%	+10%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. N/A indicates that data is

not available, this question was not asked in customary sites in Peru and Indonesia. Grey highlights large gender gaps.

Source: Intra-household survey data, to review descriptive statistic results see Annex 1.

A multinomial probit model was used to assess factors that influence positive responses to the three statements outlined in Table 11.¹² Results indicate that among the variables selected, factors determining perceptions towards tenure security include: gender (female), economic status (non-poor), being a member of an area subject to a reform, and being a member of a forest related organization.

At the village level, our FGD findings indicate that women and men have similar perspectives regarding sources of tenure security. We show results for women respondents only (Table 12). In Uganda and Indonesia, in sites within state land designated for the use of communities, most women's focus groups (65%) identify a lack of title or land certificate as the first reason for tenure insecurity. Other sources of tenure security mentioned by women in these villages include the perception that boundaries are clear and that rights are long term. On customary lands, clear boundaries and no conflicts are also important sources of security. Other sources of tenure security mentioned include permanent rights (mentioned by larger number of women's FGD) and clear boundaries (mentioned by larger number of men's FGD).

Table 12. Women's Perceptions of Sources of Tenure Security Associated with Reforms

Type of reform	Country, Reform, Location	Source of Tenure Security				
		Have title	Rights are permanent	No overlapping rights	Boundaries are clear	No conflicts
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	✓✓				
	Indonesia: Community Forest in Lampung and West Kalimantan	✓	✓		✓	
	Indonesia: Community Forest Plantation in Lampung	✓✓				
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	✓✓	✓	✓		
	Indonesia: Forest Partnership in West Kalimantan	✓✓				
Community owned land	Uganda: Community Forests in Masindi	✓✓	✓			

¹² The list of variables analyzed and results are shown in Annex 2.

Type of reform	Country, Reform, Location	Source of Tenure Security				
		Have title	Rights are permanent	No overlapping rights	Boundaries are clear	No conflicts
	Uganda: Customary lands, reformed in Lamwo		✓✓			✓✓
	Peru: Titled communities in Loreto and Madre de Dios	✓✓				

Note: the use of check mark “✓” indicates that this source of tenure security was reported at least once during FGDs. The use of “✓✓” means that more than one FGD reported this source of tenure security.

Source: FGD analysis, women respondents only.

H. Outcomes of Reform – Involvement in Forest Management Activities

This section further explores the extent to which women and men participate in forest management activities. It assesses whether respondents are: 1) members of a forestry-related organization, 2) attending meetings about forest use and management, and 3) involved in new forest management activities. Results are shown in Table 13. On average, just over a third (36%) of the people interviewed report participating in forest management activities in all three countries across types of reform; nonetheless, men participate more than women. There is a statistically significant difference between the proportion of people involved in new forest management activities in reform sites compared to non-reformed sites.

Although there is no indication that one type of reform offers better opportunities or incentives for being involved in forest management activities, most favorable results were found in customary lands in Uganda, Peru (titled communities) and Indonesia (participants of community forests and plantations). However, these types of reforms show huge gender gaps. Gender gaps are particularly large in Indonesia regarding membership in forest organizations and involvement in forest management, although women do report having participated in meetings. In Uganda, the highest level of participation is found in customary lands in Lamwo, and women report larger participation in forest management activities compared to men. There is a striking difference between results in these sites and the others in Uganda, which report much lower levels of participation.

Table 13. Involvement in Forest Management Activities (Household Survey)

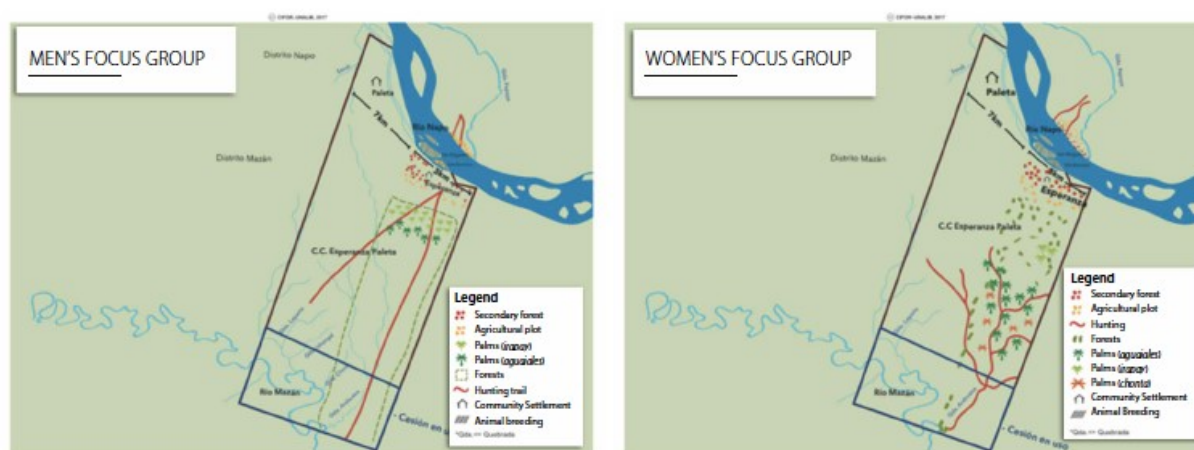
Tenure Regimes	Country, Reform, Location	Meets desirable conditions for participation in forest management activities					
		Member of local forestry organization (Yes)		Attends meetings about forest management (At least one time)		Involvement in forest management (Yes)	
		% of women	Gender Gap	% of women	Gender Gap	% of women	Gender Gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	5%	-1%	10%	-39%	7%	-22%
	Indonesia: Community Forest in Lampung and West Kalimantan	22%	-54%	74%	-12%	33%	-42%
	Indonesia: Community Forest Plantation in Lampung						
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	11%	-6%	11%	-8%	13%	-44%
	Indonesia: Forest Partnership in West Kalimantan						
Community owned land	Uganda: Community Forests in Masindi	4%	-2%	16%	-1%	4%	-2%
	Uganda: Customary lands, reformed in Lamwo	45%	-5%	55%	-8%	62%	+6%
	Peru: Titled communities in Loreto and Madre de Dios	22%	-1%	77%	-15%	34%	-10%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. Grey highlights large gender gaps.

Source: Intra-household survey data, to review descriptive statistic results see Annex 1.

However, these results do not reflect men and women's actual uses of the available resources. Take, for instance, Figure 7 showing two participatory maps¹³ analyzing how women and men outline existing land uses in communal lands in Peru, which shows that women and men use forests differently (Larson et al., 2019). These show that women extract non-timber forest products such as palm fruits for selling and identify good areas for agricultural production (Cruz-Burga et al., 2017a and 2017b). Despite gender differentiated use, results in titled communities show there is a greater gender gap in terms of women's active participation in formalized forest management activities.

FIGURE 6. PARTICIPATORY MAPS ANALYZING LAND USE



Source: Taken from Larson et al., 2019: 4.

It is expected that low participation in forest management will influence the ability to change forest management practices in a way that favors improvements in livelihoods. In response to this expectation, data was analyzed on people's perception of whether the implementation of reforms has encouraged changes in their practices and technologies for forest management. The household survey took into account the following forest management technologies and practices: nurseries; tree planting; reforestation; management plans; annual operating plans; fire management or forest permits; agroforestry; seed management; conservation of species; management of small farms, secondary forest and timber plantations, and agroforestry species; recognition of native species; training sessions on management practices; and community forest monitoring (oversight committees). Results are included in Table 14, which show that people perceive that reforms have allowed them to adopt different technologies and practices. Results in Peru are in line with the participatory maps above; the positive gender gap in titled communities indicate that women are adopting management activities in communal forests, despite not being recognized by external actors. Women are more likely to report adoption of forest management practices in titled communities of Peru and customary lands in Lamwo in comparison to men. While in Indonesia, although the percentage of women both in community

¹³ Maps were produced during Focus Group Discussions in one community in the Napo River region, by CIFOR and Universidad Nacional Agraria La Molina in 2015.

forests and forest plantations and partnerships is large, the portion of men reporting adoption of management practices is greater.

Table 14. Adoption of Forest Management Practices Due to Reform (Household Survey)

Tenure Regimes	Country, Reform, Location	% of women who report adoption of management practices	Gender Gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	5%	-2%
	Indonesia: Community Forest in Lampung and West Kalimantan	23%	-15%
	Indonesia: Community Forest Plantation in Lampung		
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	38%	-15%
	Indonesia: Forest Partnership in West Kalimantan		
Community owned land	Uganda: Community Forests in Masindi	2%	-4%
	Uganda: Customary lands, reformed in Lamwo	56%	+30%
	Peru: Titled communities in Loreto and Madre de Dios	58%	+26%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. N/A indicates that data is not available. Grey highlights large gender gaps.

Source: Intra-household survey data. To review descriptive statistic results see Annex 1.

To better assess the extent to which women were receiving forest extension services, the survey asked women and men whether in the past year they had received a visit by land or forestry government officials or NGO officers. Overall, men report more visits from government and NGO officers (57%) than women (43%). The gender gap in Indonesia is much larger in community forests and forest partnership schemes, where more than 70% of men report visits compared to about 28% of women. Only in Ugandan villages involved in CFM do women report a larger portion visited by government and NGO officers in comparison with men.

I. Outcomes of Reform – Livelihoods

In the household surveys, respondents were asked to indicate their agreement to the following statement “Ever since I joined the [reform], my income and livelihoods have improved.” Results are shown in Table 15. Overall, respondents in Indonesia and Peru agree with this statement. In Uganda, only those sites in Lamwo show positive results. Interestingly, in Indonesia, a larger portion of women respondents (57%) in villages where social forestry schemes have been implemented indicate perceiving livelihood improvements in comparison to men (52%). In titled communities of Peru, the opposite occurs, as a larger portion of men (57%) perceive livelihood improvements compared to women (49%). Still, overall the gender gaps in Peru are fairly small. Gender gaps are also fairly small in Uganda, with the exception of Lamwo where women are much more likely to report livelihood improvements in comparison to men.

Table 15. Women Reporting Livelihood Outcomes (Household Survey)

Tenure Regimes	Country, Reform, Location	% of women who reported improvement in income and livelihoods	Gender Gap
State owned land designated to be used by communities	Uganda: Collaborative Forest Management in Kasambya	5%	+2%
	Indonesia: Community Forest in Lampung and West Kalimantan	57%	+5%
	Indonesia: Community Forest Plantation in Lampung		
State owned land to be used by companies	Indonesia: Forest Partnership in Lampung	47%	-4%
	Indonesia: Forest Partnership in West Kalimantan		
Community owned land	Uganda: Community Forests in Masindi	2%	-4%
	Uganda: Customary lands, reformed in Lamwo	48%	+23%
	Peru: Titled communities in Loreto and Madre de Dios	49%	-8%

Note: The colors indicate the status of the enabling conditions. Green: effective, highly available, advanced, well developed, highly functional. Orange: somewhat effective, existing, under development, somewhat functional. Red: ineffective, unavailable, rudimentary, non-existent, underdeveloped, dysfunctional. N/A indicates that data is not available. Grey indicates a large gender gap.

Source: Intra-household survey data, to review descriptive statistic results see Annex 1.

DISCUSSION AND CONCLUSIONS

This research sought to assess the integration of gender into institutional arrangements framing reform design and implementation at multiple levels. It also sought to understand the outcomes of reforms for women in comparison to men in order to assess the evaluated reforms and conditions that led to better consideration of women's concerns and expectations. The findings are synthesized below.

1) Is There a Legal Framework that is Better for Women – Do Results Show a Difference on the Ground?

International conventions and national laws are important, and our analysis shows that there has been important progress in all countries. Nevertheless, outcomes on the ground depend on implementation. There are more targeted policy responses for women where equity principles have been incorporated into sectoral laws, such as in Uganda. The situation is very different from sectoral policies in Peru and Indonesia, which is linked to how the reforms are framed in terms of their goals, and which groups stand to benefit.

In Uganda, gender gaps are smaller than in other countries studied, and this may be explained by the fact that Ugandan sectoral policies had clear targets related to women. Nonetheless, results for both CFM and community forests in Uganda show low participation in forest

management for both men and women; which may be related to the main goal of those reforms being oriented towards conservation and involved increasing restrictions on forest use. These findings suggest the need for a review of the reform goals and the rights associated with the reforms so the expectations and needs of local people, with regard to livelihoods, are balanced with conservation goals. However, such a balance will be complicated because local people depend heavily on land for agriculture and Uganda has low forest cover.

Data from Lamwo in Uganda provides an exception, as women appear to be strongly favored over men in all assessed outcomes, including perception of tenure security, increased participation, adoption of management practices, and improved income and livelihoods. This should be analyzed in light of the robustness of existing institutional customary tenure arrangements and the extent to which ongoing reforms in customary lands align with interventions.

Results also show that overall satisfaction is not only measured by the extent of rights granted but also on the ability to protect them; ensuring that no overlaps or boundary issues impair the exercise of rights, particularly the ability to benefit from the rights gained. The analysis around satisfaction of rights also raises the need to reconsider the role of the State and other external actors in the process. Results show that livelihood concerns are associated with satisfaction of rights and perception of improved tenure security. This is particularly relevant when assessing reforms that recognize land rights to communities, where reform processes are perceived as completed once certificates and titles are granted. These results show the importance of continued support of collectives through extension services, strengthening productive systems, and capacity building to guarantee reform impacts.

In summary, the results suggest that sectoral policies and guidelines can facilitate implementation of broader gender principles when there is substantial effort to do so, and that reform goals should align with local needs and practices in balance with the need for conservation and protection of forest resources.

2) Is There a “Membership” Type that is Better for Women Demonstrated in the Results?

Women's participation in forest tenure reforms is affected not only by national policies and implementation but also communal governance structures and household dynamics. At the communal or group level, it depends on community considerations of membership status. Individual women can be members of some reforms in Uganda, but the women in our survey included such women and wives of members. Being represented through the male head of household, as in most reforms in Indonesia, may work well for some women but it depends on household relations. Therefore, identifying who is the subject of reforms and how women and men can be considered right holders is one of the different layers women need to go through to gain rights within collectives. Regulatory frameworks act as one, but not the only, entry point that will determine how women and men participate in reform design and implementation.

As with the legal analysis, qualitative data supports the finding that across sites women are not always (or often) considered full members with equal decision-making power in forest governance. For instance, even in titled communities in Peru where all members are recognized as co-owners of collective lands, men are lifetime members but women are not because they may leave their village upon marriage, divorce, or widowhood. Likewise, in West Kalimantan, only men are allowed to attend community forest meetings; a wife may attend only if her husband is unable to attend, but she cannot participate in decisions. In some communities in Madre de Dios, Peru, where rights over brazil nut extraction are devolved to the community, a woman cannot retain rights to the community forest if she is divorced or widowed. Rules in some sites in Indonesia and Peru that restrict communal land or collective resources for women after marriage are meant to prevent outsiders from acquiring land by marriage; however, the same rules do not apply to men.

Communal governance structures may also be composed only of men, or positions such as elders and chiefs may only be held by men. Consequently, even in cases where women are part of communal assemblies or in new organizational structures such as boards or committees, men continue to hold the authority, and views of women around forests and rules are rarely captured. As one villager said in Uganda, "Women are left out when it comes to making rules". There has been some progress, with more women holding village leadership positions in some of the sites studied over time, although rarely related to forests. Across the three countries, especially in Uganda and Peru, women are more actively engaged in local governance structures and have also organized women's committees and groups, though, again, rarely related to forests. These organizations play an important role in ensuring women have access to information about interventions in the villages, but they could also be key to promoting trainings about their rights gained through reform processes.

FGDs with women report specific barriers, including limited participation spaces and lack of forest governance mechanisms that allow women to participate more in decision-making. In general, women lack platforms allowing for more active participation. It is also evident that the lack of specific provisions that target women, including guidelines on how these groups should be informed and convened, risks perpetuating internal social differentiation, with direct impacts on outcomes for women's tenure security and livelihoods (Larson et al., 2019).

3) Is There a Model of Reform that has Better Outcomes for Women?

There is no regime or type of reform that performs consistently better across all variables for men or for women. In fact, results are highly varied, sometimes with huge unfavorable gender gaps for women and sometimes a gender gap in favor of women (such as the Indonesian social forestry cases). Perceptions around clarity of existing rights show that across reform types women know the rules, but across reform types there are concerns about the fairness of existing rules. Gender gaps prevail particularly in forest partnership agreements in Indonesia, community forests in Uganda, and titled communities in Peru. Even in cases where a larger proportion of women report a positive understanding of rights in comparison to men, this does

not mean women have the same or greater right to make decisions over forests and forest resources in practice.

Nonetheless, processes to devolve rights from the state to communities can influence internal debates on how existing rules affect men and women differently, while allowing new forms of organizing within the community that could empower women at the local level. There were cases in Peru where discussion of community by-laws allowed for women to gain rights, participate in community governing bodies, and access land individually without being married or relying in inheritance. This is consistent with findings of how establishment of CLAs in Uganda have provided space for discussing inequitable practices affecting women (Knight et al., 2013). These indicators could be used to better align the type of interventions where further dissemination of rules is needed and where the gender gap shows lack of understanding or clarity of rules. It can also be used to review where issues of fairness emerge, as in the case of titled communities in Peru and Partnership agreements in Indonesia.

Results show the variety of livelihood concerns associated with the rights granted by reforms. The ability to address these concerns varies depending on the extent of rights granted and the purpose of reforms. While women and men may have similar perceptions around the type of benefits, it is also important to highlight that women associate the distribution of benefits with the ability to meet their livelihood needs, especially as it relates to the ability to improve incomes and access new labor opportunities and markets. Reforms that seek to target women should take this into account.

Understanding how gender is being addressed and how women are being engaged in reform processes would contribute to identifying other structural problems of power and inequity that influence implementation and outcomes (Agrawal, Wollenberg, & Persha, 2014; Tyagi & Das, 2018; Yin, Zulu, Qi, Freudenberger, & Sommerville, 2016). Results presented here show there is a need to establish clearer guidelines on how women should be accounted for in implementation processes. This requires clearly identifying women as subjects of reform and including specific targets in reform goals that specify how women will benefit. This also calls for reviewing membership rules, not only defining who is the subject of reforms in statutory laws but also how women participate in local organizations and communal governance structures (Keene & Ginsburg, 2017).

A key implication of the low participation of women in formulating rules of access and use means that outcomes of reforms are less sensitive to women's concerns and needs. Interventions around reform implementation such as convening processes or mapping exercises that do not involve different groups may risk formalizing or perpetuating existing internal forms of social differentiation. Results from FGDs also highlight other contextual elements that constrain women and men from participation in rule making. One important aspect is related to existing rules about how communities interact with external actors.

Our results indicate that social forestry schemes (community forests and plantations) in Indonesia as well as titled communities in Peru appear to be reforms with high percentages of

women respondents having a positive perception of tenure security. Both CFM and community forests in Uganda show the lowest perception of tenure security. Interestingly, customary lands in Lamwo show the highest perception of tenure security, which is also among the regimes reporting the largest portion of women participating in rule making and enforcement. This is in line with previous studies highlighting the importance of strong institutions as drivers of tenure security (Place et al., 1994). The largest gender gap that disfavors women is found in reforms where the state retains ownership but allows communities or companies to use the land.

Conditions for improving forest management indicate that effort needs to be placed on promoting forest management. Very few women participate in rule making around forest management or in local forestry organizations as active members, despite women and local communities adopting forest management practices and being involved in rule enforcement. This needs further attention, not only because the possibility of accessing forest resources is linked to livelihood concerns but also because involvement in forest management activities has been linked to improved perceptions of tenure security. This calls for reviewing the involvement of women in forest management activities and better targeting forest extension activities associated with reforms. An important step in reform implementation would be to identify barriers, such as those related to existing rules that constrain women's participation in forest decision-making and governance structures. Also, further attention needs to be placed on how interventions promoted by external actors, including government officials such as those implemented as part of extension services, consider the concerns and expectations of women, men, and other vulnerable groups.

4) What are the Factors that Could Lead to Better Outcomes for Women?

These results show that there is no single law or reform that is clearly better than another on its own, given the number of other variables associated with implementation and context. From the data, however, important elements emerge that suggest enabling conditions that allow for more equitable outcomes for women and men and lead to better consideration of women's concerns:

- There is no perfect recipe for reform; understanding the history and the existing institutional framework is key for assessing any implementation process.
- Having normative frameworks in place is an important first step in reform processes, but should be accompanied by sectoral regulations and guidelines that specify women as subjects of reforms. Goals and purposes of reforms should be reviewed to take into consideration livelihood concerns and the scope of rights granted.
- Implementation processes should identify institutional cultures and ideologies that reproduce exclusionary practices and social differentiation. To avoid reinforcing these, implementation procedures and practices should be subject to ongoing monitoring and evaluation; reflection on the findings should contribute to learning and adjustments in implementation. Specific targets should be set for institutions tasked with implementation, and these targets should include the extent to which women's needs are being considered. International instruments, such as the SDGs, can help as they

offer a list of possible targets and indicators that can be used during monitoring and evaluation.

- At the sectoral level, specific provisions should provide concrete guidance on how to account for women's needs and interests during the different steps of implementation.
- Perceptions around clarity of existing rights show that across reform types women know the rules and often consider them fair, but gender gaps prevail. However, even where a larger proportion of women report knowing their rights in comparison to men, this does not mean that women have the same or greater right to make decisions over forests and forest resources in practice.
- Formalization processes, especially the legalization of customary tenure regimes, should be mindful of existing arrangements. Processes of rights devolution present an opportunity to influence internal debates on how existing rules affect men and women differently, while allowing new forms of organizing within the community that could empower women at the local level.
- Tenure security outcomes are linked to diverse sources of insecurity, existing overlapping rights over the same resources, and lack of clarity of boundaries. This calls for the need to consider conflict resolution or conflict transformation mechanisms during implementation. Women can be active in these processes, as shown in Peru. Ongoing reforms should allow for strengthening women's ability to support implementation processes.
- The forest sector is often perceived as men's domain; however, our results show that women are participating in meetings around forest management (although often with no decision-making power) and have adopted management practices. Improving extension services, including women, and targeting specific activities could have important implications both for livelihoods and for ensuring improved forests conditions.

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Annex 1. Descriptive Statistics Results by Tenure Regime and Membership Status ¹⁴

Table 16. Uganda: Collaborative Forest Management in Kasambya

Dependent Variables	Answer	State lands designated for use by communities	
		Reformed Member Male	Reformed Member Female
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	5.56	26.74
	Disagree	44.44	27.91
	Neither agree nor disagree	1.39	1.16
	Agree	48.61	44.19
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	5.56	26.74
	Disagree	69.44	22.09
	Neither agree nor disagree	4.17	10.47
	Agree	20.83	40.70
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	11.11	24.42
	Disagree	47.22	30.23
	Neither agree nor disagree	0.00	1.16
	Agree	41.67	44.19
Participated in making rules about forest product harvesting, use and management	Have no opinion	90.28	95.35
	Yes	5.56	4.65
	No	4.17	0.00
Participated in sanctioning rule breakers	Have no opinion	90.28	95.35
	Yes	6.94	2.33
	No	2.78	2.33
Ever since I joined the [scheme/program] I feel that my rights and access to land and forests is strong and secure	Have no opinion	94.44	93.02
	Disagree	0.00	1.16
	Neither agree nor disagree	0.00	0.00
	Agree	5.56	5.81
If I have a dispute about	Have no opinion	93.06	94.19

¹⁴ Membership status defines whether the respondent was a participant of the reform process analyzed.

Dependent Variables	Answer	State lands designated for use by communities	
		Reformed Member Male	Reformed Member Female
forest use and access, I feel confident that my rights will be protected and enforced	Disagree	1.39	2.33
	Neither agree nor disagree	0.00	0.00
	Agree	5.56	3.49
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	91.67	93.02
	Agree	8.33	6.98
	Neither agree nor disagree	0.00	0.00
	Disagree	0.00	0.00
Member of local forestry-related organization	No	94.44	95.34
	Yes	5.55	4.65
Attending meetings about forest use, management	No	44.44	87.20
	One time or more	48.61	10.46
Involvement in new forest management activities	No	65.27	45.34
	Yes	29.16	6.97
Since joining the scheme, I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	93.06	94.19
	Disagree	0.00	1.16
	Neither agree nor disagree	0.00	0.00
	Agree	6.94	4.65
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	94.44	94.19
	Disagree	1.39	1.16
	Neither agree nor disagree	1.39	0.00
	Agree	2.78	4.65

Table 17. Indonesia: Community Forests in Lampung and Community Forest Plantations in West Kalimantan

Dependent Variables	Answer	State lands designated for use by communities	
		Reformed Member Male	Reformed Member Female
Rules about forest access and use are easy to	Have no opinion	3	18

Dependent Variables	Answer	State lands designated for use by communities	
		Reformed Member Male	Reformed Member Female
understand (<i>rules are clear</i>)	Disagree	15	4
	Neither agree nor disagree	17	12
	Agree	64	66
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	3	18
	Disagree	19	3
	Neither agree nor disagree	19	10
	Agree	59	69
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	8	17
	Disagree	17	8
	Neither agree nor disagree	20	21
	Agree	55	54
Participated in making rules about forest product harvesting, use, and management	Have no opinion	0.00	7.69
	Yes	31.47	6.41
	No	68.53	85.90
Participated in sanctioning rule breakers	Have no opinion	0.00	8.33
	Yes	24.48	2.56
	No	75.52	89.10
Ever since I joined the [scheme/program], I feel that my rights and access to land and forests are strong and secure	Have no opinion	4.90	21.79
	Disagree	5.59	4.49
	Neither agree nor disagree	15.38	12.82
	Agree	74.13	60.90
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	3.50	20.51
	Disagree	4.90	4.49
	Neither agree nor disagree	13.29	19.23
	Agree	78.32	55.77
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/	Have no opinion	3.50	21.15
	Agree	1.40	9.62
	Neither agree nor disagree	20.98	26.28

Dependent Variables	Answer	State lands designated for use by communities	
		Reformed Member Male	Reformed Member Female
forest	Disagree	74.13	42.95
Member of local forestry-related organization	No	13.98	25.64
	Yes	86.01	74.36
Attending meetings about forest use, management	No	23.08	71.15
	One time or more	76.22	22.43
Involvement in new forest management activities	No	25.18	60.89
	Yes	74.83	33.33
Since joining the [scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	4.20	26.28
	Disagree	15.38	18.59
	Neither agree nor disagree	23.08	22.44
	Agree	57.34	32.69
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	4.20	19.23
	Disagree	20.98	8.97
	Neither agree nor disagree	23.08	14.74
	Agree	51.75	57.05

Table 18. Indonesia: Forest Partnerships in Lampung and West Kalimantan

Dependent Variables	Answer	State lands owned by companies	
		Reformed Member Male	Reformed Member Female
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	1.77	25.45
	Disagree	8.85	6.36
	Neither agree nor disagree	17.70	12.73
	Agree	71.68	55.45
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	0.88	25.45
	Disagree	9.73	5.45
	Neither agree nor disagree	20.35	11.82
	Agree	69.03	57.27
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	0.88	23.64
	Disagree	14.16	8.18

Dependent Variables	Answer	State lands owned by companies	
		Reformed Member Male	Reformed Member Female
	Neither agree nor disagree	15.93	15.45
	Agree	69.03	52.73
Participated in making rules about forest product harvesting, use, and management	Have no opinion	0.00	2.73
	Yes	15.04	0.91
	No	84.96	96.36
Participated in sanctioning rule breakers	Have no opinion	0.00	0.91
	Yes	11.50	0.00
	No	88.50	99.09
Ever since I joined the [scheme/program] I feel that my rights and access to land and forests are strong and secure	Have no opinion	13.27	29.09
	Disagree	3.54	3.64
	Neither agree nor disagree	23.01	22.73
	Agree	60.18	44.55
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	7.08	22.73
	Disagree	8.85	3.64
	Neither agree nor disagree	16.81	30.00
	Agree	67.26	43.64
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	5.31	26.36
	Agree	9.73	11.82
	Neither agree nor disagree	16.81	23.64
	Disagree	68.14	38.18
Member of local forestry-related organization	No	60.18	62.73
	Yes	39.82	37.27
Attending meetings about forest use, management	No	50.44	86.36
	One time or more	49.56	10.91
Involvement in new forest management activities	No	63.72	72.73
	Yes	35.39	20.91
Since joining the	Have no opinion	14.16	37.27

Dependent Variables	Answer	State lands owned by companies	
		Reformed Member Male	Reformed Member Female
[scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Disagree	13.27	13.64
	Neither agree nor disagree	34.51	26.36
	Agree	38.05	22.73
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	12.39	29.09
	Disagree	15.04	8.18
	Neither agree nor disagree	21.24	15.45
	Agree	51.33	47.27

Table 19. Uganda: Community Forests in Masindi

Dependent Variables	Answer	Community owned land	
		Reformed Member Male	Reformed Member Female
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	5.56	18.00
	Disagree	5.56	20.00
	Neither agree nor disagree	5.56	0.00
	Agree	83.33	62.00
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	11.11	14.00
	Disagree	0.00	6.00
	Neither agree nor disagree	0.00	2.00
	Agree	88.89	78.00
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	11.11	20.00
	Disagree	11.11	22.00
	Neither agree nor disagree	22.22	2.00
	Agree	55.56	56.00
Participated in making rules about forest product harvesting, use, and management	Have no opinion	94.44	72.00
	Yes	5.56	2.00
	No	0.00	26.00

Dependent Variables	Answer	Community owned land	
		Reformed Member Male	Reformed Member Female
Participated in sanctioning rule breakers	Have no opinion	94.44	72.00
	Yes	5.56	0.00
	No	0.00	28.00
Ever since I joined the [scheme/program], I feel that my rights and access to land and forests are strong and secure	Have no opinion	94.44	98.00
	Disagree	0.00	0.00
	Neither agree nor disagree	0.00	0.00
	Agree	5.56	2.00
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	94.44	98.00
	Disagree	0.00	0.00
	Neither agree nor disagree	0.00	0.00
	Agree	5.56	2.00
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	94.44	98.00
	Agree	0.00	0.00
	Neither agree nor disagree	0.00	0.00
	Disagree	5.56	2.00
Member of local forestry-related organization	No	94.444	96.000
	Yes	5.556	4.000
Attending meetings about forest use, management	No	72.222	42.000
	One time or more	16.667	16.000
Involvement in new forest management activities	No	27.778	86.000
	Yes	11.111	4.000
Since joining the [scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	94.44	98.00
	Disagree	0.00	0.00
	Neither agree nor disagree	0.00	0.00
	Agree	5.56	2.00
Ever since I joined the [scheme/program], my income and livelihood have	Have no opinion	94.44	98.00
	Disagree	0.00	0.00

Dependent Variables	Answer	Community owned land	
		Reformed Member Male	Reformed Member Female
improved	Neither agree nor disagree	0.00	0.00
	Agree	5.56	2.00

Table 20. Uganda: Customary Lands, Reformed in Lamwo

Dependent variables	Answer	Community owned land	
		Reformed Member Male	Reformed Member Female
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	2.38	5.48
	Disagree	7.14	0.00
	Neither agree nor disagree	16.67	21.92
	Agree	73.81	72.60
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	9.52	6.85
	Disagree	16.67	2.74
	Neither agree nor disagree	21.43	28.77
	Agree	52.38	61.64
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	9.52	6.85
	Disagree	19.05	0.00
	Neither agree nor disagree	23.81	26.03
	Agree	47.62	67.12
Participated in making rules about forest product harvesting, use, and management	Have no opinion	0.00	1.37
	Yes	7.14	21.92
	No	92.86	76.71
Participated in sanctioning rule breakers	Have no opinion	0.00	1.37
	Yes	2.38	9.59
	No	97.62	89.04
Ever since I joined the [scheme/program], I feel that my rights and access to	Have no opinion	66.67	58.90
	Disagree	11.90	0.00

Dependent variables	Answer	Community owned land	
		Reformed Member Male	Reformed Member Female
land and forests is strong and secure	Neither agree nor disagree	4.76	4.11
	Agree	16.67	36.99
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	66.67	54.79
	Disagree	9.52	1.37
	Neither agree nor disagree	9.52	15.07
	Agree	14.29	28.77
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	59.52	53.42
	Agree	30.95	0.00
	Neither agree nor disagree	4.76	9.59
	Disagree	4.76	36.99
Member of local forestry-related organization	No	50.000	54.795
	Yes	50.000	45.205
Attending meetings about forest use, management	No	59.524	64.384
	One time or more	40.476	32.877
Involvement in new forest management activities	No	69.048	50.685
	Yes	30.952	49.315
Since joining the [scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	66.67	56.16
	Disagree	23.81	0.00
	Neither agree nor disagree	2.38	9.59
	Agree	7.14	34.25
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	66.67	57.53
	Disagree	21.43	1.37
	Neither agree nor disagree	7.14	15.07
	Agree	4.76	26.03

Table 21. Peru: Titled Communities in Loreto and Madre de Dios

Dependent variables	Answer	Community owned land	
		Titled Men	Titled Women
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	4.48	13.87
	Disagree	18.63	27.01
	Neither agree nor disagree	10.85	16.30
	Agree	66.04	42.82
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	5.19	13.87
	Disagree	18.87	15.82
	Neither agree nor disagree	20.99	13.87
	Agree	54.95	56.45
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	5.19	14.36
	Disagree	19.81	38.93
	Neither agree nor disagree	16.75	10.71
	Agree	58.25	36.01
Participated in making rules about forest product harvesting, use and management	Have no opinion	0.47	0.00
	Yes	54.48	36.50
	No	45.05	63.50
Participated in sanctioning rule breakers	Have no opinion	0.47	0.00
	Yes	26.42	42.58
	No	73.11	57.42
Ever since I joined the [scheme/program], I feel that my rights and access to land and forests are strong and secure	Have no opinion	2.83	7.79
	Disagree	5.90	5.60
	Neither agree nor disagree	5.42	10.95
	Agree	85.85	75.67
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	2.83	7.06
	Disagree	8.73	6.08
	Neither agree nor disagree	7.78	11.92
	Agree	80.66	74.94

Dependent variables	Answer	Community owned land	
		Titled Men	Titled Women
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	3.77	7.54
	Agree	42.92	21.90
	Neither agree nor disagree	12.97	19.95
	Disagree	40.33	50.61
Member of local forestry-related organization	No	75.943	76.886
	Yes	23.349	22.141
Attending meetings about forest use, management	No	7.075	23.114
	One time or more	92.217	76.886
Involvement in new forest management activities	No	55.66	65.693
	Yes	44.104	34.063
Since joining the [scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	4.25	8.76
	Disagree	41.75	11.19
	Neither agree nor disagree	21.70	22.14
	Agree	32.31	57.91
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	3.07	8.76
	Disagree	12.97	18.49
	Neither agree nor disagree	27.12	23.84
	Agree	56.84	48.91

Annex 2. Results from Binomial and Multinomial Regression Analysis

Table 22. List of Independent Variables Used in the Regression Analysis

Variable ID	Independent Variables	Answer	Indonesia	Peru	Uganda
			Mean	Mean	Mean
	Socio-economic and demographic variables				
q1e	Gender of the respondent	1=female, 0=male	0.50	0.49	0.58
q1g	Years in school completed	Years	8.22	6.59	6.20
q3	Years living in the village	Years	32.10	29.18	22.87
q_9	Economic situation	01=very poor/poor; 0=no poor	0.27	0.07	0.53
age_v	Identifying vulnerable groups by age	1=men and women equal or older than 65 & women 18 or younger; 0=otherwise	0.04	0.08	0.07
	Resource tenure and tenure security				
q_18	Perception of tenure security to land/forest resources	0=worsened; 1=same as before; 2=improved	49.65	47.53	21.56
land_size	Size of the land farmers can use	Hectares	2.46	3.72	3.57
q_58	Involved in a land/forest related conflict	1=Yes, 0=No	0.05	0.19	0.19
	Forest-related variables				
distance_for est_plots	Distance from the household to either the forest or the plots they use	Minutes	0.94	2.05	1.17
q_42	Household obtains any commercially valuable forest products	1=Yes, 0=No	0.45	0.62	0.15
q_50	Involvement in new forest management activities	1=Yes, 0=No	0.33	0.35	0.40
q_52	Attending meetings about forest use, management	1=once or more; 0=never	0.31	0.82	0.44
q_54	Member of local forestry-related organization	1=Yes, 0=No	0.37	0.20	0.27
	Source: Survey results, Indonesia n=1011, Peru n=1006, Uganda n=688				

Table 23. List of Dependent Variables Used in the Regression Analysis

Dependent Variables	Answer	Uganda	Indonesia	Peru
		%	%	%
Communal Governance: Perception around Rules, Rule-making, and Rule Enforcement				
Rules about forest access and use are easy to understand (<i>rules are clear</i>)	Have no opinion	7.7	16.42	11.13
	Disagree	17.59	10.78	20.97
	Neither agree nor disagree	5.52	11.87	13.82
	Agree	69.19	60.93	54.08
Rules about forest access and use are well-known by most people in the village (<i>rules known</i>)	Have no opinion	9.59	16.42	11.43
	Disagree	19.48	10.48	18.59
	Neither agree nor disagree	8.72	12.56	16.9
	Agree	62.21	60.53	53.08
Rules about forest use and access are fair (<i>decisions fair</i>)	Have no opinion	10.17	16.22	11.93
	Disagree	17.73	13.65	28.63
	Neither agree nor disagree	8.28	14.64	13.32
	Agree	63.81	55.49	46.12
Participated in making rules about forest product harvesting, use, and management	Have no opinion	55.52	3.26	0.4
	Yes	16.86	8.9	40.36
	No	27.62	87.83	59.24
Participated in sanctioning rule breakers	Have no opinion	56.1	3.17	0.4
	Yes	12.06	6.13	33.8
	No	31.83	90.7	65.81
Reform Outcomes: Forest Sustainability				
Since joining the [scheme/program], I have adopted different technologies and practices for protecting, maintaining, and improving the forest	Have no opinion	73.98	53.02	22.27
	Disagree	5.23	9.4	22.27
	Neither agree nor disagree	1.74	16.32	18.19
	Agree	19.04	21.27	37.28
Reform Outcomes: Tenure Security				
Ever since I joined the [scheme/program], I feel that my rights and access to land and forests are strong and secure	Have no opinion	74.71	52.32	21.37
	Disagree	3.05	3.36	4.77
	Neither agree nor disagree	1.45	11.37	6.76
	Agree	20.78	32.94	67.1
I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest	Have no opinion	73.11	21.86	21.67
	Disagree	15.99	55.79	37.67
	Neither agree nor disagree	2.03	15.23	13.62
	Agree	8.87	7.12	27.04
If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced	Have no opinion	73.98	24.43	21.07
	Disagree	2.91	4.65	6.16
	Neither agree nor disagree	3.20	12.66	8.15
	Agree	19.91	58.26	64.61

Reform Outcomes: Livelihoods				
Ever since I joined the [scheme/program], my income and livelihood have improved	Have no opinion	74.56	51.63	21.87
	Disagree	5.67	8.01	13.02
	Neither agree nor disagree	4.36	12.46	21.17
	Agree	15.41	27.89	43.94

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Table 25. Multinomial Results: *Variables influencing: Ever since I joined the [scheme/program], I feel that my rights and access to land and forests are strong and secure*

Predictive variables

	Value	Std.Error	t.value	pval
q_1e1	1.18	0.60	1.96	0.05
q_91	-0.31	0.20	-1.52	0.13
q_521	0.36	0.20	1.80	0.07
q_541	0.42	0.19	2.26	0.02*
q_181	0.31	0.21	1.49	0.14
q_182	1.97	0.23	8.40	0.00***
land_sizeha	-0.39	0.15	-2.58	0.01**
distance_forest_plots	1.53	0.61	2.53	0.01**
reform_sex1	-1.10	0.61	-1.81	0.07
reformed_r-member	0.90	0.39	2.33	0.02*
reformed_r-non member	0.76	0.50	1.53	0.13
countryperu	0.63	0.23	2.77	0.01**
countryuganda	0.39	0.33	1.18	0.24
1 2	0.38	0.47	0.81	0.42
2 3	1.67	0.47	3.53	0.00***

Residual Deviance: 1391.225

AIC: 1421.225

Observations	1321
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 26. Multinomial Results: Variables influencing the statement: If I have a dispute about forest use and access, I feel confident that my rights will be protected and enforced

Predictive variables

	Value	Std.Error	t.value	pval
q_1e1	1.18	0.60	1.96	0.05**
q_91	-0.31	0.20	-1.52	0.13
q_521	0.36	0.20	1.80	0.07
q_541	0.42	0.19	2.26	0.02**
q_181	0.31	0.21	1.49	0.14
q_182	1.97	0.23	8.40	0.00***
land_sizeha	-0.39	0.15	-2.58	0.01***
distance_forest_plots	1.53	0.61	2.53	0.01***
reform_sex1	-1.10	0.61	-1.81	0.07
reformed_r-member	0.90	0.39	2.33	0.02**
reformed_r-non member	0.76	0.50	1.53	0.13
countryperu	0.63	0.23	2.77	0.01***
countryuganda	0.39	0.33	1.18	0.24
1 2	0.38	0.47	0.81	0.42
2 3	1.67	0.47	3.53	0.00***

Residual Deviance: 1391.225

AIC: 1421.225

Observations	1321
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 27. Multinomial Results: Variables influencing the statement: I am not concerned that someone might dispute my rights to access, use, manage, or own this land/forest

Predictive variables

	Value	Std..Error	t.value	pval
q_1e1	1.57	0.28	5.59	0.00***
q_521	0.39	0.14	2.78	0.01***
q_541	-0.33	0.13	-2.64	0.01***
q_181	0.75	0.17	4.50	0.00***
q_182	1.05	0.16	6.57	0.00***
reform_sex1	-1.16	0.29	-3.98	0.00***
reformed_r-member	-0.55	0.22	-2.50	0.01***
reformed_r-non member	-0.92	0.31	-2.95	0.00***
countryperu	-1.14	0.16	-7.35	0.00***
countryuganda	-0.75	0.24	-3.19	0.00***
1 2	-1.24	0.24	-5.18	0.00***
2 3	-0.35	0.24	-1.48	0.14

Residual Deviance: 2785.064

AIC: 2809.064

Observations	1601
Note:	*p<0.1; **p<0.05; ***p<0.01