The Governance of Natural Resources

A synthesis of PIM Flagship 5 activities during 2017–2019

Rebecca McLain

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Contents

List of tables and boxes

Tables

Boxes

Acronyms

BBNA	Bayesian Belief Network Analysis
CCRO	Certificate of Customary Rights Occupancy
CFE	Community forest enterprise
CIFOR	Center for International Forestry Research
CoRe	Collaborating for Resilience
CSO	Civil Society Organization
FES	Foundation for Ecological Security
FTA	Forest, Trees and Agriculture
ICARDA	International Center for Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDO	Intermediate Development Objective
IFPRI	International Food Policy Research Institute
ILC	International Land Coalition
ILRI	International Livestock Research Institute
IWMI	International Water Management Institute
JVLUP	Joint village land-use plan
KNU	Karen National Union
LULA	Land Use Planning and Land Administration
MELA	Monitoring and Evaluation of Land in Africa
MPA	Marine protected area
MSP	Multistakeholder process
NES	National Engagement Strategies
NGO	Non-governmental organization
PIM	Policies, Institutions and Markets
PLUP	Participatory land-use planning
PPA	Participatory Prospective Analysis
PRM	Participatory rangeland management
SLLC	Second-level land certification
ToC	Theory of Change
VLUP	Village land-use planning
WLE	Water, Land and Ecosystems
WPLUP	Woreda participatory land-use planning

Acknowledgment

Introduction

The Governance of Natural Resources flagship (Flagship 5) within the CGIAR Research Program on Policies, Institutions, and Markets (PIM) addresses the policy and institutional foundations for improved management of natural resources, whether held in common or individually. Poorly defined rights and a weak commitment to shared governance lead to degradation of resources and low provision of ecosystem services. Research in Flagship 5 investigates where and how tenure insecurity constrains productive and sustainable management of natural resources, and how community groups and individuals who use the same resources in different ways can govern them, with recognition of multiple claims and the preservation of ecosystem services. Much of the work focuses on land, but rights to other resources, such as water, fish stocks and forests, are also covered. The rights of women and members of marginalized groups, their roles in stewardship of resources, and the contributions of natural resources to women's livelihoods, receive particular attention.

PIM5 scientists, working with partners in governments and civil society, use research findings to identify actions that can strengthen the tenure rights of poor and marginalized people, particularly women and communities; improve governance of natural resources; and enhance constructive interaction between resource users within shared landscapes. This strong focus on improving outcomes through sound, evidence-based policies and interventions is central to PIM's mission. Flagship 5 scientists and partners in government and civil society work to a Theory of Change (ToC), whereby knowledge co-produced and disseminated by centers and partners is used by policy makers, private sector actors, non-governmental organizations (NGOs) and civil society organizations (CSOs) and others, to shape new policies and reforms, build new skills and capacities, and direct public and private investments that enhance tenure security, especially for the poor and the marginalized, and contribute to sustainably managed and more productive shared landscapes.

Flagship 5's activities are informed by a Theory of Change (ToC) (Annex A). The ToC posits that improved tenure and governance research methods, in combination with analyses of the effects of tenure and governance mechanisms, and development of options for communities and individuals to improve tenure security and governance, will provide a diverse set of social actors with the information they need to promote tenure reforms, policy and institutional reforms, more equitable and productive resource management, and a greater capacity to perform tenure and governance work themselves. These actions will then lead to greater and more equitable access to and management of productive assets, favorable enabling environments, and increased capacity in partner research programs, as well as an increase in the capacity of partner development organizations and communities to carry out research and develop innovative solutions to tenure and governance issues. Overall outcomes will be: increased productivity; greater equity and inclusion; improved enabling environments; more benefits from ecosystem goods and services; and national partners and beneficiaries with the knowledge and skills needed to sustain and improve on these outcomes.

The flagship scientists inform the ToC by carrying out research that examines the following questions:
- What are the drivers and consequences of tenure insecurity?
- What mechanisms and institutional arrangements can address threats to tenure security and strengthen tenure over land, water and other natural resources?
- How can the interests and knowledge of different actors sharing a common landscape

be identified and reconciled in ways that better secure the livelihoods of women, youth, and other poor and vulnerable groups?

- How can a better understanding of political economy processes contribute to more equitable outcomes for the poorest users within shared landscapes?
- What tools and indicators can be used to assess tenure security and create accountability for implementation of reforms?

Research activities are carried out by scientists based in eight CGIAR centers affiliated with PIM5, including IFPRI, Center for International Forestry Research (CIFOR), World Agroforestry (ICRAF), International Water Management Institute (IWMI), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), International Livestock Research Institute (ILRI), WorldFish and the International Center for Research in the Dry Areas (ICARDA). The second five-year phase of PIM began in January 2017 and ends in 2022.

This synthesis of research findings and outcomes under the flagship has the goal of helping PIM5 leaders and scientists better communicate the salience of the flagship's research to the development agendas of its current and prospective donors and other partners. The study also assesses the alignment of research outputs in serving the goals of the Theory of Change and addressing core research questions.

The synthesis covers the period 2017–2019. Most of the materials reviewed were published or released during that period. However, a handful of articles and briefs published in early 2020 are included since they covered research, workshops or trainings finished in 2019. A list of materials for review was put together by compiling the deliverables listed in Flagship 5's project reports for 2017, 2018 and 2019. The combined list for all three years included 59 deliverables for Flagship 5.2.1 (Tenure) and 86 deliverables for Flagship 5.2.1 (Governance). Table 1 shows a breakdown of the types of products included in the annual project reports. The number of products is an underestimate, as not all PIM5 products are listed in the project reports. In particular, many blogposts, conference/workshop presentations

Table 1. Deliverables catalogued in Flagship 5 project reports (2017–2019)

Type of product	Flagship 5.1.1	Flagship 5.2.1	Total
Blogpost	3	3	6
Book chapter	1	0	1
Concept note	1	3	4
Conference paper/ presentation	11	3	14
Dataset/map/ game/model	2	5	7
Brief/factsheet/ infographic	6	14	20
Journal article	9	14	23
Manual/guide	5	8	13
Report	19	28	47
Training materials (unspecified)	1	5	6
Video/podcast/ radio spots	1	2	3
Website	0	1	1

and multimedia products (videos, radio spots, webinars) are not recorded in the project reports. Due to the large number of projects, not all are described in detail in the narrative.

It is important to emphasize that nearly all of the work that is funded through PIM5 and that is described in this report was done through collaborations with at least one, and often many more, partner organizations. The partnering organizations are too numerous to mention here, but aside from the home institutions of PIM5-affiliated scientists, they include other Collaborative Research Programs, governments (multiple levels and sectors), donors, international and national NGOs, CSOs, communities, resource user and indigenous group federations, and, more rarely, private sector firms.

The synthesis is divided into three sections. Section 1 reviews and synthesizes the findings and outcomes of the flagship's research. Section 2 documents progress in implementing the Theory

of Change, and the degree to which research activities are aligned with that Theory of Change. Section 3 identifies key aspects of PIM5 research findings and outcomes to highlight for donors, and sketches out how PIM5 can begin to position itself to contribute to and advance CGIAR's goals for

the five impact areas under 'One CGIAR'. These five impact areas are: nutrition and food security; poverty reduction, livelihood and jobs; gender equality, youth and social inclusion; climate change adaptation and greenhouse gas reduction; and environmental health and biodiversity.

1   Research questions and findings

The five questions described in the introduction guided PIM5 activities during 2017-2019. These dealt with the following five aspects of tenure and governance: (1) drivers and consequences of tenure insecurity; (2) mechanisms and institutions for enhancing access; (3) involving multiple perspectives for landscape governance; (4) using political economy analysis to improve understandings of tenure reform; and (5) tools and indicators for assessing tenure security and the effectiveness of tenure reforms. Findings from research focused on each of these questions are described in this section.

1.1   Drivers and consequences of tenure insecurity

PIM5-supported researchers addressed the topic of tenure insecurity drivers and their consequences from three angles: (1) women's rights; (2) individual or household rights more generally; and (3) collective rights. PIM5-supported work on women's rights is foregrounded in this section because women's rights are often weaker than men's rights, and therefore women are more likely to experience negative consequences associated with tenure insecurity.

1.1.1   Women's land rights and tenure insecurity

In their literature review, 'Women's land rights as a pathway to poverty reduction: Framework and review of available evidence,' Meinzen-Dick et al. (2019) lay a foundation for guiding PIM5's research on women's land rights and where reforms need to be focused to strengthen women's land rights. The review identifies a number of shortcomings and gaps in the evidence about the

links between women's land rights and poverty reduction. Many of the shortcomings they identify are research design issues, such as failing to include counterfactuals, paying insufficient attention to selection bias and endogeneity, and relying on small sample sizes.

However, some gaps in the knowledge about women's land rights and poverty exist because of how researchers conceptualize and measure rights, as well as whose rights within a household they measure. For example, few studies document which specific rights women hold in the bundle of rights, the security of those rights, or the extent to which women are aware of their rights. Equally problematic, most studies measure land rights at the household level, rather than identifying who within the household has rights and documenting the types of rights that each household member has. As a result, the differences in tenure security for women who are heads of households, and women who are not, are obscured. Geographically, significant gaps exist in coverage of women's land rights, with studies in African contexts dominating the literature, and only limited coverage of women's land rights in Latin America and Asia.

Among the topics that Meinzen-Dick et al. (2019) identify as needing more work are: (1) how women acquire land; (2) how they control the use and benefits derived from their land; and (3) how having rights to land contributes to reduced domestic violence and changes in the women's relationship with their husbands or male relatives. A useful next step would be for PIM5 researchers to prioritize which of the topics they identify are the most urgent to address.

Following up on Meinzen-Dick et al.'s (2019) findings, Monterroso et al. (2019b) used Doss

and Meinzen-Dick's framework[1] to structure a mixed methods comparative case study of how well community forest reforms in Uganda, Peru and Indonesia took into account women's concerns, as well as how the outcomes of the reforms differed by gender.[2] They examined three types of reforms: (i) reforms in which state lands were designated for community use (Indonesia and Uganda); (ii) reforms in which state lands were designated for company use (Indonesia); and (iii) reforms that granted or recognized the ownership rights of communities (Peru and Uganda). In Peru, reforms recognized full ownership and perpetual use rights to titled forest lands belonging to indigenous communities; in Uganda, legally constituted entities manage community forests on behalf of the villages or clans that own them. Monterroso et al. found that none of the countries did a very good job of incorporating gender equity considerations into their legal frameworks, and only Uganda included some clear targets related to women in its forestry policies. Overall, women have limited access to decision making, and their views and concerns are often not paid attention to when forest management committees develop rules governing forest use and management. Broader community governance structures and household dynamics play a strong role in determining whether and how women participate in community forest tenure reforms, but how those dynamics play out in practice varied across the cases.

Monterroso et al. conclude that a key step to achieving gender equity through community forest tenure reforms is to structure such reforms so that they explicitly address women as subjects of the reform, including providing guidelines for how to incorporate women's considerations during reform implementation. For example, in addition to being included in decision-making processes, they argue that women also need to be included in conflict resolution processes, and extension services need to be tailored to meet their needs. Additionally, they recommend that ongoing monitoring and evaluation of the impacts of reforms on women should become standard practice. Their research indicates that, although legal recognition is important, it does not guarantee that individuals will be able to exercise their legal rights. It is therefore critical to identify and take into account other entry points that affect how women participate and benefit from community forest tenure reforms. Remedies they suggest include: programs that build the capacity of women to participate more extensively in formalization processes; and gender awareness training for government officials, NGOs and communities.

Pradhan et al.'s (2019) research on women's land rights in Nepal echoes many of the same themes, except in the context of household and individualized landholdings. Their study looked at how Nepalese women's rights to personal and joint property, together with where they are in their life cycle and the nature of the social relations within their household, affect their empowerment. They found that a woman's position within the household affected whether she could actualize her property rights, and that as their positions changed within their household over time (i.e. daughter, daughter-in-law, wife, mother, mother-in-law, widow), women used different strategies to assert claims or to preserve rights over personal and joint property. Daughter-in-laws in joint households, and widows in either joint or nuclear households, were the least able to actualize their property rights, leaving them vulnerable to abuse or neglect by other family members. Having a title to land became important for widows as it provided them some assurance that their family would continue to care for them as they aged. However, Pradhan et al. also found that there were risks associated with women attempting to strengthen their claims

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1   Doss and Meinzen-Dick's (2020) framework consists of four components: (1) the context in which women's land rights exist; (2) threats and opportunities (i.e. the factors that strengthen or weaken those rights); (3) the 'action arena', which includes the actors who can affect women's tenure security, and the resources that actors can draw on to achieve their desired outcomes; and (4) the desired outcome, which is women's land tenure security. This framework helps researchers and practitioners better understand each of the individual components, as well as how the components interact to strengthen or undermine women's rights to land. Understanding these relationships makes it possible to more accurately identify those points where reforms or other measures are most likely to result in changes that lead to stronger women's land rights. Importantly, some of the factors that negatively affect women's land rights require social change and cannot be addressed solely through policy or legal reforms.

2   The comparative study by Monterroso et al. (2019b) was part of a larger study, CIFOR's Global Comparative Study on Forest Tenure Reforms. See project website: https://www.cifor. org/gcs-tenure/

to personal property (gifts and dowry), as doing so can weaken their claims to joint property, including land, houses, agricultural tools and other assets. Indeed, land registration efforts in the study area had limited impact on women's empowerment because women were reluctant to claim formal title due to the social risks associated with doing so. A key take home message from Pradhan et al.'s work is that when development projects seek to transfer assets to women, such as land or livestock, it is important to understand the range of ways in which households assign property rights, as well as when and how women are likely to choose to exercise their claims to property rights.

A study of pastoralist women's access to land and resources, in the context of village land-use planning in Tanzania (Kisambu et al. 2017), revealed patterns similar to those identified by Monterroso et al. (2019b) and Pradhan et al. (2019). A key challenge that pastoral women encountered was a lack of venues where they could make their views about land or resource management heard. Additionally, many women had limited awareness of their rights; others were aware of their rights but were reluctant to exercise them, citing the social risks of doing so. Equally important, they found that many men were also unaware of women's rights under national laws, and many expressed an unwillingness to change customary practices that prohibit women from owning land. Kisambu et al. identified several entry points for providing pastoralist women in Tanzania with more secure rights. Chief among these include Women's Rights and Leadership Forums (WRLF), supported by local and international NGOs. PIM5 has supported research on these forums, which were established to provide "a space for pastoralist women to learn about and defend land rights, strengthen women's leadership and public participation, and enhance women's economic empowerment" (Dungumaro and Amos 2019). The forums bring together 20 women with four male customary leaders, and, among other things, provide training in women's rights to land. The customary leaders also receive training in social welfare challenges for women and how those can be addressed. The women in the group receive entrepreneurship and leadership skills training, and some also have become paralegals. Women respondents indicated during a focus group session that the project has led to changes in men's attitudes. Specifically, they noted that now that men have seen the positive economic

impacts of their wives participating in the project, they are now more willing to let their wives attend WLRF meetings. There has also been a decrease in domestic violence, and women are now reporting domestic violence and taking their cases to the courts, something which had not happened prior to the project.

Ghebru (2019b) used the World Bank's Land Governance Assessment Framework data from 10 African countries to determine to what extent they had achieved gender parity with respect to recognition of women's land rights, land policy and program implementation, and the accessibility and sustainability of programs or interventions. His analysis showed that the countries included in the study have made only limited progress toward achieving gender parity in land reform programs. This result, which held true for both women's individual and group rights, concurs with Monterroso et al.'s (2019b) finding that legal frameworks often only weakly incorporate gender considerations, and that gender equity falls short when reforms are implemented. His work adds further support to the notion that more attention needs to be paid to ensuring that gender considerations are explicitly included in legal frameworks, and that guidelines are developed to ensure gender equity is achieved in reform implementation.

1.1.2 Individual and household holdings

PIM5-supported researchers examined drivers of tenure insecurity for individual or household land using national-level survey data in Ghana (Ghebru and Lambrecht 2017), Nigeria (Ghebru and Girmachew 2017), and Mozambique (Ghebru and Girmachew 2019a). These large studies made it possible to perform robust statistical analyses on disaggregated data to improve understandings of inter- and intra-household differences in sources of tenure insecurity. The studies in Nigeria and Mozambique measured two sources of tenure security, which were labeled as individual and collective risk. Individual risk was defined as the perception of risk of a private land dispute occurring; collective risk was defined as the perception of risk of land being expropriated for public or private purposes. The analyses showed that the distinction between sources of tenure insecurity is important to capture, as it can vary by gender, migrant status, position in household, proximity to urban centers, nature of land markets, and other socio-economic and geographic descriptors.

In all three countries, pressure from urbanization and expanding land markets was associated with higher levels of tenure insecurity at the community level. Other drivers of tenure insecurity at the community level included in-migration (Ghana and Mozambique) and increased economic development (Nigeria and Mozambique). Social connectedness was positively associated with tenure security in all three countries. Perceptions of tenure insecurity were higher for women and migrants in the three studies. A follow-on comparative analysis of the links between tenure rights, tenure security and rural transformation dynamics in four countries (Ethiopia, Malawi, Mozambique and Nigeria) showed that women's position with respect to land rights tended to be worse in areas undergoing intense population pressure, land commodification and agricultural commercialization (Ghebru 2019b).

Data disaggregation revealed important differences within social categories. In Nigeria, for example, perceptions of risk of expropriation by the government were higher for women plot managers in male-headed households than for women plot managers in female-headed households. Ghebru and Girmachew (2017) speculate that this may be because women in female-headed households may have more limited exposure to land regulations and fewer connections with political leaders. Their study supports Meinzen-Dick et al.'s (2019) argument about the need for collecting tenure data from all women, not just female heads of households. In Mozambique, a gender difference emerged in the types of perceived tenure risks. Women perceived collective risks (fear of land loss) as a greater source of tenure insecurity; whereas men perceived that individual tenure risks (fear of land disputes) to be the greater source of insecurity. Although these econometric analyses provide useful insights about the drivers of tenure insecurity in several African countries, they do not provide information about the consequences of tenure insecurity, such as the impacts on agricultural productivity, levels of poverty or degree of land degradation.

However, two econometric studies in Ethiopia and one in the Kyrgyz Republic did explore the consequences of tenure insecurity on individual and household-held land. Ghebru and Holden (2019) examined the links between tenancy and poverty in Ethiopia. Their research revealed that landlords were much less likely to be at risk of falling below the poverty line than tenants. They also found that landlords who fell below the poverty line at some point in their lives, were able to escape poverty sooner than tenants. They argue that Ethiopia's restrictive land policies, which limit how long land can be leased and the amount of land that can be leased, may be exacerbating tenure insecurity for potential landlords, thereby making it more difficult for poor tenants to gain access to the additional land that might allow them to move more quickly out of poverty.

Kosec et al. (2018) examined the relationship between migration patterns and land access for young adults in Ethiopia. They found that young adults with greater access to land, particularly good quality land, were less likely to migrate out of their home area permanently; if they migrated, they also moved less far from home. Young adults with greater access to land also were more likely to be employed in agriculture than those who had less access. However, several factors mediated the effects of land access on permanent migration and agricultural employment among young adults. Specifically, the predictive power of land inheritance was greater in areas with less dynamic markets, with poorer soil quality, and in areas that were further from urban centers. Kosec et al. conclude that policies that free up land for individual young people, or that reduce the restrictions on land rentals, would provide a broader segment of the rural young adult population with greater income earning opportunities. At the same time, investments are needed in sectors other than agriculture in order to create a greater diversity of livelihood options.

Kosec and Shemyakina's (2019) research on land privatization in the Kyrgyz Republic is a rare example of a longitudinal study; it also expanded Flagship 5's investigation of tenure impacts into the health sector. The research team obtained data from national household surveys conducted before, during and after state and collective farms were privatized. Their analyses revealed that privatization was associated with better health outcomes for children, with children between the ages of one and five years old benefitting the most.

Kosec and Shemyakina speculate that having private ownership gave people greater access to credit, but provide no evidence that landholders actually sought to obtain credit once they obtained land. Nor do they provide evidence that having

land ownership made people feel more secure. The absence of such evidence is likely due to the absence of relevant variables in the datasets that they drew upon, highlighting one of the challenges of working with pre-existing data (i.e. data may not have been collected for all the variables of interest). One option for clearing up some of these uncertainties, if time and resources permit, would be to include a set of interviews to find out whether the arguments – i.e. that greater access to credit and feelings of greater security are associated with privatization – hold true in the study context.

1.1.3 Collective holdings

PIM5-supported studies focusing on collective tenure concerned contexts where collective rights – either ownership or long-term use and/or management rights – have been recognized or devolved to communities to some extent. Relevant studies included research-engagement projects in Peru, Uganda, Indonesia, Kenya, Nepal and Colombia, all of which used Participatory Prospective Analysis (PPA) to assess and inform tenure reform implementation efforts, as well as a study that used multi-village surveys and focus groups to identify drivers of tenure insecurity for pastoralist women in Tanzania. A comparative case study of conflict management in Peru, Uganda and Indonesia also examined tenure insecurity on collective holdings through the lens of conflict management (Larson et al. 2019a). The issue of tenure insecurity and its consequences also emerged as a key area of concern in case studies documenting the social, economic and ecological outcomes of community forest enterprise (CFE) development in Guatemala, Nepal, Mexico and Namibia (Stoian et al. 2018; Gynch et al. 2020; Sharma et al. 2020)[3].

Major sources of tenure insecurity, as identified across Phase 2 PIM5 studies of collectively held lands, are discussed in this section.

Lack of titles/rights recognition: The lack of titles for (or equivalent statutory recognition of) customary or collective rights to land was described as a source of tenure insecurity for collectively held lands in Peru (Monterroso et al. 2017), Colombia

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3 In Namibia, the economic enterprises center around community-based wildlife management rather than forests, but for the sake of simplicity, they are included here in the CFE category.

(Arango 2018; Velasquez-Ruiz 2018), Indonesia (Liswanti et al. 2019) and Uganda (Mshale et al. 2019b). Without such documentation, communities are in a weak legal position if the national government decides to issue a logging or mining concession for the land in question, a situation that arises with some frequency in all of these countries. The pervasive assumption in many countries that forested lands are not being used to their full potential, and that they should, therefore, be allocated for other uses, contributes to insecurity associated with lack of title. Arango (2018) describes the situation for ethnic groups in Colombia who lack collective titles to their land:

> "The delimitation and clarification of 'idle lands' is still one of the most sensitive elements for ethnic groups in the regions without collective titling, as most of these areas are, according to the State's official categories, merely public use areas, as they are not delimited or registered as traditional lands belonging to ethnic groups."

In both Peru and Colombia, tensions over untitled collectively held lands and government concessions have led to violent conflict.

Weak law enforcement: Weak enforcement of laws and policies by the state was another commonly listed source of tenure insecurity. In Participatory Prospective Analysis (PPA) workshops in Uganda, participants indicated that this was particularly a problem in cases of land disputes between community members and more powerful outsiders (Mshale et al. 2019a, 2019b). Likewise, focus groups in Peru reported lack of enforcement on the part of government officials in cases of encroachment by outsiders as a source of insecurity (Larson et al. 2019a). In Tanzania, a key issue was the lack of enforcement of the legal requirement to include grazing areas and livestock corridors in Village Land Use Planning (VLUP) (Kisambu et al. 2017).

Lack of awareness of rights: Community and user group members in many PIM5 studies cited limited awareness of their statutory rights to land as a source of tenure insecurity for collective lands. For pastoralists in Tanzania, lack of knowledge about land rights placed them in a disadvantageous position vis-à-vis agriculturalists who encroached upon pastures and livestock watering sites. In Uganda, participants in PPA workshops mentioned

lack of knowledge of their rights as a key force driving tenure insecurity on community forests (Mshale et al. 2019a, 2019b; Mukasa et al. 2019a).

Lack of coordination across levels of governance and sectors: Research on collectively held lands found that tenure insecurity was often caused by or linked to inconsistencies in government policies between sectors and between governance levels. Both of these contributed to a generalized lack of uncertainty among community members regarding what was or was not legally permitted in community forests. In some countries, decentralization processes were underway or only recently completed, and uncertainty regarding the distribution of authorities and responsibilities at the subnational level was common, leading to inconsistent implementation of policies and tensions between national and subnational governance entities (c.f. Mwita 2017; Monterroso and Larson 2018a).

Economic development and financial policies: In all of the countries studied, economic development policies at the national level favoring agricultural and/or industrial development had a cascading negative impact on tenure insecurity for community held land, much of which outsiders view as 'vacant wasteland' (if rangeland) or 'unused valuable resources' (if forests). Two key issues associated with these policies included: (i) state-sanctioned agricultural encroachment; and (ii) overlaps of state and community land claims:

i.   **Agricultural encroachment:** In both rangeland and forest contexts, economic development policies that provide incentives for converting these ecosystems to agricultural land – policies which many governments as well as donor organizations favor – were a source of tenure insecurity associated with collectively held lands. In dryland areas of Tanzania (Dungamaro and Amos 2019) and Tunisia (Frija et al. 2019), such policies reduce access to grazing lands and watering sites, threatening the viability of pastoralist and agropastoralist livelihoods. The conversion of riverine or seasonal marshlands to irrigated perimeters in dryland zones is particularly threatening to pastoralist livelihoods, as such areas are often crucial fallback zones in times of drought. In forested areas, such as the Peruvian Amazon (Montessoro et al. 2017) and Colombia (Ortiz-Guerrero et al. 2017), policies favoring agricultural development

provide incentives for residents and outsiders alike to convert forested land to cropland, reducing community members' access to forest products and contributing to environmental degradation. In some areas, such as northern Tanzania, agricultural encroachment is also linked to internal population growth and climatic shifts that have changed rainfall patterns, increasing internal demand for agricultural land (Dungamaro and Amos 2019).

ii. **Overlapping state/community claims:** Nearly all of the PIM5-supported studies about collectively lands described overlapping claims between state and community lands as a source of insecurity. In many of the study sites, national governments commonly issue large-scale land concessions for agriculture, logging, mining, and oil and gas development, often with no or inadequate consultation with communities beforehand. Researchers in Peru, for example, identified multiple types of overlapping claims, including overlaps of native lands with forest concessions and oil and gas concessions issued by the state, and state-administered protected areas (Monterroso and Larson 2018b). Similar issues existed in Indonesia around the siting of oil palm plantations (Li 2018), agricultural concessions in Myanmar (Suhardiman et al. 2019a) and mining in Colombia (Arango 2018).

Violent conflicts and land conflicts among user groups or communities: In some areas of Colombia, tenure insecurity for collectively held lands is a side effect of violent conflict linked to the decades-long drug wars. In one region, for example, nearly half of the indigenous *resguardos*[4] are located in the municipalities where drug war-related conflict was severe enough that many indigenous residents abandoned their land (Velasquez-Ruiz 2018). Once a peace agreement was finalized, the residents returned to their land only to find that *campesinos* (peasant farmers) had occupied much of their land. In other areas, tenure insecurity is linked to disputes between different

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4   *Resguardos* are defined in Colombia's Decree 2001 of 1988 as "a special legal and sociopolitical institution composed of one or more indigenous communities that enjoys the guarantees of private ownership through collective titling, is in possession of its territory, and is governed for its management and internal affairs by an autonomous organization protected by indigenous law and its own norms" (cited in Arango 2018).

user groups over ownership claims to land and resources. In Tanzania, an effort in one village to implement joint village land use planning, which would have provided the village with a Certificate of Customary Rights Occupancy, was stymied by conflict between pastoralists and agriculturalists over how much land should be set aside for grazing (Mwita et al. 2017). In Uganda, forest users felt their tenure security was threatened by migratory pastoralists, whose practices included seasonal burning to improve pasturage for their animals (Mshale et al. 2019b).

Beliefs and social norms: Beliefs and social norms within communities are a source of tenure insecurity for women (Monterroso et al. 2019b), indigenous peoples (Zamora and Monterroso 2019) and pastoralists (Sulle and Mkama 2019). For women, lack of ownership rights places them in a weaker position vis-à-vis their husbands or male relatives, and makes it difficult for women to earn a living in cases of divorce or widowhood, or if they leave their household to escape domestic violence (Pradhan et al. 2019). In Peru, participants in PPA workshops believed that neither the national or regional government places a priority on indigenous issues, an attitude which they felt was a contributing factor to the delays in implementing native community titling legislation. In East Africa, pastoralists are often viewed by many agriculturalists with disdain, and by government officials as insufficiently modern. They rarely participate in village and district meetings, in part because of their mobility patterns, but also because meetings are often scheduled on market days when they are selling their livestock, or because they are intentionally ignored (Sulle and Mkama 2019). As described in greater detail in Section 1.2, women and pastoralists often are not well-represented in community forest management committees, and even if physically present, may not feel safe to give their opinion about management decisions.

1.1.4 Key themes and reflections
- Tenure security for both individually and collectively held land is likely to be threatened in areas where customary systems are weak, and the state governance system lacks the capacity or political will to enforce rights.
- In areas where customary systems are still largely functional, state economic development policies that promote large-scale agriculture, mining and industrial scale logging, or

encourage smallholders to convert forests or rangeland, often pose the greatest threat to tenure security for both individually held and collectively held land.
- The consequences of tenure insecurity vary by context and the landholder or land user's social position. However, the primary tenure insecurity outcomes found across the studies described in this section include: social conflict, out-migration of youth from rural areas, displacement and loss of access to livelihood resources.
- Certain groups, including women, pastoralists and indigenous peoples, are more apt to experience tenure insecurity, and women within pastoralist and indigenous communities are most at risk. Although many countries have enacted legal reforms that grant women the right to own land, customary laws that prohibit women from owning land continue to prevail in many areas.
- There is a clear need to tailor land reform programs in ways that do a better job at addressing gender inequities in statutory and customary laws and policies. Monterroso et al.'s (2019b) comparative study of the impacts of community forest reforms on women in Uganda, Peru and Indonesia provides a promising pathway for addressing inequities in state-based systems; namely by explicitly incorporating gender issues into regulatory reforms, providing practitioners with guidance on how to do that, and putting into place a monitoring system to track whether progress is being made.
- The gender inequities in customary systems are far more challenging to address, as doing so requires major shifts in deeply entrenched belief and value systems. Programs such as the Women's Rights and Leadership Skills Forum for pastoralist women in northern Tanzania, which combines livelihood, empowerment and legal awareness training, and dialogue with men as well as women, to shift views about women's social status, offer some promise for success.
- Urbanization, commercialization of agriculture, and vibrant land markets were identified as key drivers of tenure insecurity in Ghana, Nigeria, Ethiopia and Mozambique, a finding that suggests that these factors are likely to be tenure insecurity drivers in other African countries.
- Research on individual/household land tenure in Ghana, Nigeria and Mozambique found that plot holders in rural areas removed from urban

centers, where commercialized agriculture was uncommon, and with limited land markets, tended to perceive that lands acquired through customary tenure arrangements were secure.

- Flagship 5's research on the drivers and consequences of tenure insecurity on individual and household land in African countries points to the need for flexible land reform policies that can take into account the differences that exist in tenure security between areas undergoing rapid economic transformation and those where change is occurring less rapidly. An alternative, which will be discussed in greater detail in Section 1.2.4, is to strengthen locally-developed hybrid tenure systems that are adapted to local land administration capacities.

1.1.5 Future research

- More in-depth investigation of when, where and for whom customary tenure provides – or doesn't provide – tenure security in African contexts.

- Expansion of the disaggregated analyses in econometric analyses, to encompass young people, the elderly and migrants.
- Expansion of the econometric studies to examine the impacts of tenure insecurity as well as drivers of tenure insecurity.
- The Kyrgyz Republic study suggests that tenure security may play a role in improving nutrition, particularly for younger children. This points to the need for further research on the health outcomes that are associated with different forms of tenure or levels of tenure insecurity. Such studies could be expanded to examine food security as well as nutrition.
- Given that Africa's population of young people is expected to increase significantly over the next three decades, more work on young people's access to land is needed. However, it would be helpful to incorporate a component that examines what the impacts of youth out-migration are on household and community well-being over the short and long term to see whether what appears to be a negative outcome of limited access to land for rural youth is, over time, a neutral or even positive outcome.

Table 2. Types of collectively held lands studied by country

Study site locations	Type of collectively held land included in the research
Latin America	
Colombia	Multiple types of collective tenure, some with full recognition of rights, and others that allow for collective titling without recognizing ancestral rights
Guatemala	Community forest concessions on state land
Mexico	*Ejidos*[a] and indigenous community forests
Peru	Native community titles
Africa	
Ethiopia	Participatory range management (PRM) and community forests
Kenya	Community forests
Namibia	Wildlife conservancies
Tanzania	Certificates of customary occupancy rights (CCOR)
Uganda	Multiple types of collective tenure (community use rights to state land, collaborative forest management, customary land with statutory recognition)
Asia	
Indonesia	Social forestry schemes (two types: (i) community forests and (ii) community plantation forests)
Nepal	Community forests

Note:

a   Schumacher et al. (2019:5) define an ejido as "a communal land tenure system that ensures the rights to use farmland, conduct collective activities and establish rural settlements."

1.2 Mechanisms and institutions for enhancing access

Much of Flagship 5.2.1's research portfolio examines whether recent tenure and institutional reforms in Africa, Asia and Latin America have reduced tenure insecurity or increased rural inhabitants' access to land and other natural resources. Most of the studies examined the impacts of, or challenges associated with, formalization of collective rights. Table 2 lists the different types of tenure reforms studied. Other mechanisms examined, but in less detail, were state-based registration of individually-held land, land banking, and hybrid tenure for water allocation in eastern and southern Africa (van Koppen and Schreiner 2018, 2019). Many of the studies of collective rights recognition identified the formation of user group associations and social alliances as important elements in successful efforts to enhance tenure security (c.f. Monterroso et al. 2017; Stoian et al. 2018; Gynch et al. 2020; Sharma et al. 2020). However, such institutions were not the explicit focus of PIM5-supported research. A substantial body of work examined the use of multistakeholder processes (MSPs), which can function as mechanisms for resolving land conflicts. Given the relatively large number of PIM5-supported studies focused on MSPs, and that they are important for reasons other than enhancing tenure security, these are covered separately in Section 1.3.

1.2.1 Rights recognition and devolution (forest reforms)

PIM5 researchers examined reforms involving the statutory recognition of rights to collectively held land or the devolution of all or some rights to local communities or indigenous groups in Ethiopia, Guatemala, Indonesia, Mexico, Namibia, Nepal, Peru, Tanzania and Uganda. The reforms can be grouped into two major categories (RRI 2018): (i) reforms involving lands owned by Indigenous Peoples (IPs) and communities, and where they have use, management and exclusion rights, as well as rights of due process and compensation in perpetuity; and (ii) lands which the state has designated for the use of IPs and communities (state-owned lands), and where communities have use rights, and either management rights or co-management and exclusion rights, but where the state can withdraw or modify those rights without providing due process or compensation.

Grounds for optimism about reform implementation

The research on tenure reforms involving rights recognition or devolution found grounds for optimism as well as challenges associated with reform implementation. Among the grounds for optimism are that **benefits have materialized** in some areas from tenure reforms aimed at strengthening rights to collectively held resources. In a comparative study of the impacts of formalization of collective rights, Larson et al. (2019b) found that when community members were asked whether they felt their rights to land and forests were secure since collective rights recognition, and whether they were confident their rights would be enforced, more than three-quarters of the respondents in all three countries replied affirmatively. Both types of collective regimes (i.e. community owned or designated for community use by the state) had similar outcomes for tenure security. When the communities that had undergone tenure reforms were compared with control communities (i.e. whose lands were held under customary regimes that were not recognized statutorily), they found that, in both Indonesia and Peru, members of control communities were more likely to indicate that their tenure security had changed for the worse; in Uganda the reverse was true.

In all three countries, in communities with statutory recognition of collective rights (whether ownership or use rights) a larger percentage of respondents reported that their income from agriculture or forestry had improved than was the case in the control communities. While not an unqualified success, this data indicates that members of communities which have statutorily recognized forest rights are doing better in some respects than members of control community. Pastoralists who have acquired collective use rights to rangelands in Ethiopia also report improvements in their livelihoods as well as in rangeland conditions as a result of PRM programs (Flintan et al. 2019); women in these communities also report that they have greater opportunities for participating in resource management decision making.

Another reason for optimism is that **community forest enterprises that have emerged following reforms have experienced some successes**. A set of studies funded in part through PIM5 examined

the evolution and benefits of community forest enterprises (CFEs) in Guatemala, Mexico, Namibia and Nepal. In-depth studies were conducted in Guatemala (Stoian et al. 2018) and Nepal (Sharma et al. 2020); CFEs in Mexico and Namibia were studied as part of a comparative case study project (Gynch et al. 2020), which also included Guatemala and Nepal, based on a literature review. In Guatemala, where community forest concessions have been operational since 1997, a PIM5-supported household and enterprise study carried out through a collaboration between CIFOR and Bioversity, found a positive relationship between indicators of socioeconomic progress (e.g. income, investments, savings, capitalization of community enterprises, as well as asset building at household and enterprise levels) and the presence of forest concessions with functional CFEs (Stoian et al. 2018). Forest conditions have also improved, suggesting that the community forest concessions are managing the forests in a sustainable fashion (Gynch et al. 2020). Similar results were documented for Nepal (Gynch et al. 2020; Sharma et al. 2020). In Mexico and Namibia, where CFEs have less restricted access to valuable forest products and where national governments working in collaboration with international NGOs and donors have provided strong technical, administrative and marketing capacity building programs, some CFEs have become sufficiently successful that they have attracted private sector investment; others are sufficiently profitable that they have become self-funding.

Gynch et al.'s (2020) comparative study of CFEs in Nepal, Guatemala, Namibia and Mexico indicates that **CFEs in all four countries function as social enterprises** that seek to become financially viable, while also improving livelihoods and environmental conditions in their communities. They describe a three-stage process of investment readiness that is triggered when rights are devolved to communities. In the first stage, investment is focused on developing forest user groups and resource management plans. In the second stage, as the community gains experience in forest management, CFEs are created or licensed by the community user groups. In the third stage, as CFEs become more profitable, they begin to attract private investment through joint private sector-CFE ventures, such as the wildlife conservancies in Namibia, or the emerging blended finance mechanisms that provide credit

to CFEs in Guatemala. Importantly, in all four cases, CFEs create employment opportunities for community members, distribute a share of any profits to community members, and invest profits in providing public goods, including schools, roads and clinics, as well as taking measures to improve forest productivity. In short, CFEs foster social innovation in rural communities by providing services and addressing problems that neither the state nor the market is able to address. However, their long-term success hinges upon the presence of supportive policy environments and large investments (whether from public, private or civil society sources) through all of the stages.

Barriers to reform implementation

"It is important to emphasize that the role of the state – the responsibility of the state to indigenous peoples and local communities – does not end when the implementation of a reform is completed." (Larson et al. 2019a)

Although reforms aimed at strengthening collective rights have yielded significant, albeit variable, benefits, they have also encountered significant barriers that impede their implementation. A common theme in the research on collective rights recognition or devolution is that, all too often, the intended beneficiaries of reforms are unable to fully exercise their newly recognized or granted rights. As a result, and not surprisingly, many of the factors identified as tenure insecurity drivers in the studies described in Section 1.1 surfaced as barriers to reform implementation. A list of those factors is provided here. Refer to Section 1.1.3, Collective holdings, for more detail on each factor.

- Lack of titles to land and resources
- Weak enforcement by the state
- Lack of awareness of rights
- Lack of coordination across levels of governance and sectors
- Economic development policies favoring agriculturalists and resource extractors
- Overlapping state and customary claims (often linked to the issuance of forest, mining or agricultural concessions without consulting communities)
- Cultural norms/beliefs restricting the rights to land of women, indigenous peoples and pastoralists
- Violent conflicts and overlapping territorial claims

In addition to the factors discussed in Section 1.1.3, some additional factors – that apply more specifically to reform implementation rather than to tenure insecurity in general – were identified through reform implementation research.

Overly strict regulations and complex bureaucratic procedures: Onerous regulations and time-consuming bureaucratic procedures for developing management or land-use plans and obtaining titles or certificates were described as sources of tenure insecurity in all of the studies about collectively held lands. In Peru, a study of native community titling documented more than 38 steps for indigenous communities to obtain title to their territories (Monterroso and Larson 2018c). In Nepal, regulations restricting commercial operations in community forests constrain the ability of community enterprises to obtain enough raw material at a low enough cost for wood product operations to be profitable (Sharma et al. 2020). Aside from reducing access to key resources for rural community members, overly strict regulations and complex bureaucratic procedures have created conditions favorable to government corruption, since the resources being regulated are necessary for basic livelihood needs.

Bureaucratic practices and politics: A common theme in the studies of community forest/rangeland reform implementation was the inadequacy of the land and forest administration infrastructure, particularly at the local level. In Peru, for example, regional land administration offices have neither the budget nor the personnel with the skills necessary to do their jobs (Monterroso et al. 2019a). Lack of resources at the local government level is exacerbated by differences in regional and national priorities. Tensions also exist between regional and national levels of governance as to who is responsible for implementation, an issue that has been exacerbated with decentralization coinciding with the renewed efforts to implement native community titling. A similar situation exists in Tanzania with Village District Councils, who often lack the resources and staff needed to do Village Land Use Planning (VLUP) (Mwita et al. 2017). Inadequate budget allocations for decentralized governance entities, and heavy reliance on NGOs to do the job of local governments, was found in all of the studies related to forest reforms. Lack of clarity in government responsibilities was accompanied by a lack of transparency and accountability in many cases. Politicians whose interests weren't aligned with forest tenure reforms sometimes resisted efforts to implement them by refusing to push for adequate budgets for field offices.

Framing of policies and laws: Monterroso et al. (2019b) argue that some of the challenges with reform implementation are related to the ways in which laws and policies are framed, or more specifically, in what they leave out. With respect to gender, for example, Monterroso et al. found that the forest, natural resource and land legal frameworks in Peru and Indonesia provided few provisions that encourage gender equity or women's participation in decision making or reform implementation. And while Uganda's legal framework explicitly supports gender equity, its land law lacks provisions that encourage women's participation in decision making or implementation.

Community-level blockages: In addition to bureaucratic and legal framework impediments, reforms also suffered from blockages at the community level. In some cases, the barriers were similar to those found at higher levels of governance; specifically lack of transparency, lack of accountability, corruption and elite capture. In the PPA workshops, a commonly identified barrier at the community level was limited knowledge about how to manage forests in ways that would meet the requirements for state-approved management plans. More importantly, perhaps, many communities had limited capacity to establish and sustain financially viable CFEs (Gynch et al. 2020; Sharma et al. 2020). In some cases, the issue was lack of knowledge about how to develop value-added products that would be more financially lucrative, or lack of business and financial management skills (Cruz-Burga et al. 2019). In other cases, the issue was lack of connections to profitable markets and unfamiliarity with how to market their products.

Suggestions for improving the track record of forest reforms include: (i) simplifying rights actualization processes (Monterroso et al. 2017; Sharma et al. 2020); (ii) including reform implementation as part of budget allocations to local governments

(Mwita et al. 2017; Flintan et al. 2019); (iii) investing in coordination and collaboration mechanisms – between levels of governance, between sectors, and between government and NGOs – that promote information exchange and formal agreements to implement joint action (Monterroso et al. 2019 a); and (iv) building gender and ethnic minority concerns into reforms (Larson 2019).

1.2.2 Individual or household land certification and titling programs

Another strand of research on mechanisms for enhancing tenure security examined the outcomes of programs aimed at registering rights to individual or household held lands. Ghebru (2019a) and Ghebru and Girmachew (2019b) used panel survey data to assess the impacts of a second-level land certification (SLLC) program implemented in four regions in Ethiopia on land rentals, incidence of land conflicts and landholder income. They found that women's access to and control over land, both sole and jointly held land, was greater in areas where SLLC had taken place. Additionally, distress rentals decreased and sharecropping increased, indicating that access to land had improved. They found that having an SLLC had no impact on perceptions of tenure security or access to credit. However, perceptions of tenure security and credit access were more likely to be positively associated with possession of an SLLC in more urbanized areas. They conclude that, in future, SLLC programs should target peri-urban areas, where positive effects are more likely to occur. They call for additional research that looks at how SLLC possession is related to agricultural productivity, land rental market participation and investments on owner-operated land.

In a webinar reporting on data from studies looking at land access and perceptions of tenure security in Ethiopia, Malawi, Mozambique and Nigeria, Ghebru (2019c) showed that policy reforms designed to enhance tenure security in all four countries have been weakly and unevenly implemented. Lack of effective implementation has resulted in a decline in the tenure security of more vulnerable groups, such as women, migrants and poor landholders, groups that typically have subsidiary and undocumented land rights. Key elements contributing to poor implementation of reforms include inadequate financial and technical capacity on the part of local and

national governments, as well as rent-seeking and corruption by elites and government officials. To reduce the risk of unintended consequences, Ghebru (2019c) calls for policy reforms that are more closely aligned with local practices and administrative capacities.

Looking more closely at Nigeria's efforts to implement systematic land tenure registration, Ghebru and Kennedy (2019) found that urban residents were more willing to pay for land registration (i.e. Certificate of Occupancy), whereas customary institutions seemed to provide adequate tenure security in rural areas. They identified a number of shortcomings of the state land administration system: (i) the registration system is centralized, and (ii) registering land is complex and time-consuming. Consequently, transaction costs for registering land are very high. Additionally, many landholders are unaware of land registration procedures, the national government lacks the resources needed to implement and maintain the land registration system, and corruption is common. To address these issues, Ghebru and Kennedy (2019) recommend a more flexible approach to land registration, in which attention is focused on registering lands in locations where demand for Certificates of Occupancy is high, such as peri-urban areas. They also call for measures to enhance the capacity of state agencies to deliver land services, and greater reliance on GIS-based technology for demarcating parcel boundaries. However, they do not provide insights on how these improvements will be funded.

1.2.3 Land banking

Dupre-Harbord et al. (2018) assessed the effectiveness of land banking as a strategy for Nepal to provide landless residents with access to land, and small-scale farmers with access to larger plots of land. Land banking was initially proposed in 2005 as an alternative to Nepal's previously unsuccessful efforts at land redistribution. The idea behind land banking was that landowners with surplus land, which they often leave fallow out of fear that leasing it out will result in tenants claiming the land as theirs, could deposit the land in the land bank. The land bank would then fix rental and lease conditions for persons seeking access to farmland. Landless farmers could lease the land from the land banks at rates below those they would normally pay a landlord, but sufficiently high for the land bank to be self-

sustaining. The 2015 Land Policy recommends that landlords pay higher tax rates for land left in fallow. If land reforms under way incorporate this recommendation, by putting surplus land in the land bank, the owner could avoid the higher tax rate. At the same time, the Nepalese government introduced a land zones approach for local, provincial and federal-level land-use planning. The zonal approach aimed to reduce land fragmentation and shorten fallow periods.

The land bank system and land zone approach were intended to benefit small-scale and marginal farmers. However, in practice, few small farmers could meet the minimum plot size required for participating in the land bank and lacked the resources to make investments that would increase agricultural productivity. Although these issues could be addressed through land pooling, the current one-year tenancy period is too short to incentivize investments needed to shift from subsistence to commercial farming.

Co-operatives – that permit farmers to access land through the land banks as a group and obtain the resources for enhancing agricultural productivity – have been proposed as an alternative to the current system. However, Dupre-Harbord et al. argue that their effectiveness in Nepal is hampered by the limited capacity at all levels of governance to provide the support that is needed for co-operatives to prosper. Key governance challenges to the use of collective approaches include the risk of elite capture of benefits, lack of coordination between scales of governance, an inadequate degree of fiscal devolution, and insufficient resources for extension programs. Additionally, deeply engrained social divisions and power imbalances make it difficult for co-operatives to prosper in Nepal. To address the gap between the theory and practice of collective action in Nepal's small-scale farm sector, Dupre-Harbord et al. recommend that the Nepalese government develop a support package that is geared toward small-scale farmers.

1.2.4 Hybrid tenure systems

In a study of the shortcomings of water permit systems in Malawi, Kenya, South Africa, Uganda and Zimbabwe, van Koppen and Schreiner (2018, 2019) suggest replacing the current, largely dysfunctional water permit system with a hybrid of statutory and customary rules. In the current system, a legacy from British colonial rule, both

large- and small-scale water users must obtain permits. Micro-scale water users are exempt from the permit requirement but have a weaker legal standing relative to permit holders in cases when demand for water exceeds the supply. The monetary cost and burdensome administrative process for obtaining water use permits are prohibitively expensive and time-consuming for small-scale users, and as a result, most small-scale users end up using water illegally. Van Koppen and Schreiner propose an alternative approach in which small- and micro-scale water users would both be exempt from the water permit requirement but would have equal legal standing as permit holders (i.e. large-scale water users). At the same time, large-scale water users would need to negotiate mutually agreed upon benefits or compensation agreements with small-scale users when applying for a water permit from the state. If the system that van Koppen and Schreiner describe were to be adopted, the national government would need to recognize customary water rights, and customary law would govern water use and conflicts among small- and micro-scale holders.

The issue of hybrid tenure systems also surfaced in PIM5-supported research in Madagascar (Ranjatson et al. 2019). Like many African countries, Madagascar has enacted land reforms that encourage smallholders to obtain land certificates, which can be applied for through land offices at the commune level.[5] However, Ranjatson et al. found that, in practice, very few rural landholders obtained land certificates. Although much cheaper and less time consuming to obtain than state-issued titles, the cost of a land certificate is still beyond the financial capacity of most rural inhabitants. Moreover, there is some question as to whether landholders feel that their rights to land which they hold under customary tenure, and which the state now recognizes as such, are sufficiently insecure as to warrant obtaining a land certificate. Meanwhile, communities have

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5   Communes are the lowest semi-autonomous, decentralized state governance entities in Madagascar, situated within Regions, the next highest (and only other) decentralized state governance entities. Communes are composed of several *fokontany*. *Fokontany* are quasi-administrative entities that form a bridge between village-level governance entities (*fokonolona*) and the communes. They are quasi-administrative because the *fokonolona* provides the centralized state with a list of candidates for the *fokontany's* leadership positions, but the state selects the final candidates and has the authority to remove them. The *fokontany* also lack legal status and have neither administrative nor financial autonomy.

developed a variety of informal hybrid tenure systems, which blend elements of customary and state systems, and which appear to provide sufficient assurance of tenure security for many landholders. Ranjatson et al. suggest that, rather than imposing a land registration system which the Malagasy government lacks the capacity to administer, it would be more effective to learn more about locally-developed hybrid systems and take steps to strengthen them.

1.2.5 Key themes and reflections

Outside organizations, notably international NGOs and donor organizations but also universities and private firms, have played an important role in smoothing the way for tenure reforms, whether aimed at collective or individual/household land, to be implemented. While their role is important and likely to remain so for some time, national and subnational governments also need to step up to the plate and assume their responsibilities for reform implementation. This includes public investment in community forest enterprises, and making sure that processes aren't too complex or costly.

Internal social movements and user group federations have played a critical role in making reforms possible and in ensuring that the reforms are implemented and adjusted in the event of unanticipated negative consequences. Federations that link large geographic areas and that are well-connected with organizations beyond their country's borders have been able to fend off efforts by national governments to 're-territorialize' community forests. A good example is the Federation of Community Forest Users Nepal (FECOFUN) in Nepal, where community forest user groups have pushed back against the state's efforts to take back some of their rights.

Many of the reforms appear to be out of sync with government capacities. This holds true for reforms that affect collective tenure as well as those that are aimed at increasing tenure security and access to individual/household land. The situation is exacerbated by decentralization efforts, which have taken place at the same time as forest and land tenure reforms in many countries. In this period of transition, much lack of clarity exists as to how responsibilities are to be divided between national and subnational governance

levels, and, perhaps more importantly, who is going to pay for the services that previously were a national responsibility, but have now become local responsibilities. As noted in Section 1.2.4, interventions aimed at strengthening locally-developed hybrid systems could potentially address the lack of capacity issue.

Many of the reforms are also out of sync with community capacities. As described in Section 1.2.1.2, reforms often impose onerous planning, permitting and application burdens on communities, many of whom lack the skills needed to meet those demands. Without outside assistance from NGOs, many communities and individuals would not be able to actualize their rights. An example of the steps that an NGO in India is taking to help villagers actualize collective rights to land and forests is described in Box 1.

1.2.6 Future research

The experiences with customary rights reforms documented in PIM5 studies indicate that there is a pressing need for more applied research on approaches, like the Women's Rights and Leadership Skills Forum in Tanzania, that can facilitate changes in the beliefs, social norms and practices of bureaucrats, donor organizations and community members, particularly around women's and pastoralists' rights to land and natural resources, and their involvement in decision making. Ideally, such research would also explore and seek to develop or refine tools for integrating the concerns of women, indigenous peoples, pastoralists and other vulnerable groups into legal frameworks and reform implementation processes.

Poor articulation between national and subnational levels of governance emerged as an impediment to forest reforms in many of the studies. Research that can provide insights regarding workable approaches for improving those connections is needed.

Given the potential contributions of CFEs to individual and household incomes, as well as their potential to generate funds for investments in community infrastructure, research focused on gaining a better understanding of the financing options and investment potential at different stages of CFE development, as well as the measures or strategies that can be taken to nudge CFEs along into investment readiness, is warranted.

Box 1. The 'Promise of the Commons' initiative: Actualizing forest and land rights in India

In September 2018, researchers from three CGIAR Research Programs (CRPs) – Forest, Trees and Agriculture (FTA); Water, Land, and Ecosystems (WLE); and PIM5 – participated in a workshop to explore how the three institutions could collaborate on landscape restoration (Msabeni 2018), with each institution bringing its area of expertise to the table. Rather than creating a new structure for undertaking this joint action-research, the team decided instead to invest in strengthening and expanding the reach of existing structures. The Foundation for Ecological Security (FES), an Indian NGO, invited the three CRPs to provide input to their 'Promise of the Commons' initiative, which aimed to scale up its landscape restoration activities. What they needed from researchers was input on monitoring and assessment, valuation of ecosystem services, tools for working with villagers, and training for NGOs, all in the context of action research.

Three months later, FES and the International Food Policy Research Institute (IFPRI) held a planning workshop to work out what the research partnership between FES and the CGIAR research programs would look like (Ratner 2018). A key decision was made to focus not just on the commons, but on the 'ecosystem' of the commons, including its social and institutional dynamics, enabling policy environment, and biophysical trends and status. As the focus was on scaling research rather than implementation research,[a] the team felt the project would need to incorporate activities aimed at changing people's mental models of how ecosystems work.

The resulting plan of action included three components: (i) local action; (ii) policy engagement; and (iii) public awareness (Rahul et al. 2018). The partners identified monitoring, evaluation, learning and assessment (MELIA) as a priority, with an immediate need for tools to measure and document lessons about how intentional multi-level change occurs in complex systems. For the component aimed at changing mental models, the partners decided to focus on making more use of social media for outreach, developing activities that could be integrated into K-12 curricula, and mounting a campaign to increase public awareness of the value of commons for people's livelihoods. During 2019, the partnership put their ideas into action[b].

In one of their first projects, a team from FES and researchers from the three CRPs initiated orientation programs in 14 villages in Kadana, India, to assist communities in mapping their boundaries and completing the applications for acquiring revenue village status. By November 2019, the District Level Committee had approved the villages' proposals for conversion to revenue status and had sent a request to the Bureau of Revenue for their approval.

A FES team implemented a similar project in another district to assist villagers in completing applications for them to obtain formal recognition of their rights to their community forests. FES organized a workshop for district-level officials to increase their awareness of the requirements of the 2006 Forest Rights Act, which is the legal basis for providing secure rights for forest communities. At the same time, they mounted an awareness campaign in the district and assisted villagers in mapping and completing applications to have their rights formally recognized. As in Kadana, the applications have now been approved at the district level and forwarded to the Bureau of Revenue.

Note:
a 'Scaling research' is research that supports the pathways for scaling implementation beyond the pilot stage. 'Implementation research' is research that seeks to understand how implementation could be more effective. There are three types of scaling: scaling out, or replication; scaling up, or focusing on research that changes the enabling environment; and scaling deep, or influencing people's assumptions and mental models.
b Information about the 'Promise of the Commons' initial projects was obtained from a draft outcomes statement provided by PIM5 administrators.

1.3 Involving multiple perspectives for landscape governance

"[M]ulti-stakeholder platforms can effectively channel and accelerate the collective influence of civil society and other stakeholders on policy reform and implementation"

(Ratner and Smith 2014, 21)

During Phase 2, PIM5-supported researchers have implemented projects that make use of a variety of approaches designed to involve multiple perspectives for landscape governance. Many of the projects expand or refine approaches initiated in previous years. Chief among the approaches that have been used (and are still being used) are 'Collaborating for Resilience' (CoRe) (used at multiple governance levels), various types of Participatory Land Use Planning/Management (used at varying scales), Participatory Prospective Analysis (PPA) (used at multiple governance levels), Bayesian Belief Network Analysis (BBNA) (used at the national scale), collective action games (local application), and 'Promise of the Commons' (used at varying scales). Multiple perspectives are also incorporated into landscape governance through standard participatory workshops at various scales (local, national, regional) that bring together diverse stakeholders to share knowledge about and perspectives on contentious issues.

1.3.1 Lessons from subnational multistakeholder processes: A realist review

Sarmiento Barletti et al.'s (2020) realist review of subnational multistakeholder processes (MSPs) that were established to address land-use and land cover change makes an important contribution to the theory and practice of MSPs through an examination of the program theories underlying such processes. They identified the following four program theories for the MSPs in the 19 cases they analyzed:

1. **Sustainability-social inclusion** initiatives: If local people are included in initiatives promoting sustainability, they will be motivated to support the initiative, and as a result, land-use practices will improve, reducing local people's vulnerability to internal and external shocks.
2. **Development-sustainability** initiatives: If forests are protected or rehabilitated, there will be more economic opportunities, the benefits of which will be distributed among local stakeholders; the benefits will exceed the income they used to get, thereby motivating people to participate in the initiative.
3. **Enhanced participatory decision-making** initiatives: If local communities are allowed to co-manage resources and have opportunities for co-learning or capacity building, the resources will be used more sustainably, and economic benefits will increase.
4. **Multilevel governance** initiatives: If social capital is increased through collaborative decision making and coordination between multiple levels of governance, the result will be a participatory process that is perceived as legitimate and which, therefore, will have greater buy-in from those who participate in it, as well as from broader society.

The four program theories share in common the goal of helping to develop sustainable land-use solutions through a participatory progress. Although the MSPs differed in their ways of doing things, priorities and assumptions, fundamentally they all sought to obtain buy-in from diverse social actors.

Sarmiento Barletti et al.'s review identifies four common lessons learned, lessons which they argue call for shifting from using a project approach that "… focuses on project design followed by project engagement to one focused on designing for engagement". The lessons are that: (i) commitment is necessary for MSPs to work effectively; (ii) engaging the stakeholders who will be implementing the project is critical; (iii) the stakeholders who can affect change need to be engaged in a meaningful way; and (iv) participants – especially those with more power and influence – need to be open to learning and listening from others, and willing to adapt to change. They point out that these lessons have implications for initiatives supporting MSPs, with two of the most important ones being that it takes resources and time to develop trust, build political will, and establish the network of connections that is needed to be effective. They also note that measuring the success of MSPs is challenging, because even if the MSP's specific goals aren't met, the participants may still feel that the social capital developed or the learning that occurred made the collaboration a success.

Characteristics of the subnational MSPs that achieved their desired outcomes included:

- Being linked into broader processes that aim to change practices at multiple levels of governance
- Mapping out relevant stakeholders and institutions, including the social and power dynamics of their relationships with each other and other social actors
- Identifying potential barriers to implementation at multiple levels
- Working to get buy-in and solid commitments of support from higher levels

These activities all take time and require adaptive learning to do successfully. Sarmiento Barletti et al. conclude that future research might usefully include analyses of national-level and grassroots MSPs, as well as field research, to develop richer and more in-depth understandings of how MSPs function, what their outcomes – intended and unintended – are, and how different stakeholders perceive the usefulness and effectiveness of engaging in MSPs.

1.3.2 Collaborating for Resilience (CoRe)

> "A policy mandate cannot substitute for careful attention to stakeholder roles, relationships, and motivations in initiatives to promote collaborative resource management" (Ratner et al. 2018, 808).

In Phase 2, PIM5 supported the development of journal articles describing the use of an action-research oriented MSP known as 'Collaboration for Resilience' (CoRe) in natural resource conflict management situations. The CoRe approach was developed by WorldFish during Phase 1 of PIM5. CoRe researchers affiliated with PIM5 have also collaborated with the International Land Coalition (ILC), to help integrate the CoRe approach into MSP platforms formed and supported through the National Engagement Strategies (NES) initiative. CoRe, which emphasizes active listening as well as sharing and debating competing points of view so as to arrive at a common vision, is an example of an MSP that falls into the multilevel governance initiative category identified by Sarmiento Barletti et al. (2020).

The CoRE approach emerged out of the fields of conflict management and collaborative governance. Its program theory is that a structured process that combines dialogue and action with learning can help participants build collaborative governance capacity and strengthen local livelihoods in situations where competition exists over natural resources. It is based upon three principles of engagement: (i) building a collective understanding of the context through dialogue among diverse participants; (ii) jointly developing a strategy for engaging decision makers; and (iii) continually reflecting on progress toward desired goals and adapting approaches as needed.

Three articles describe the use of the CoRe approach in reducing conflict and improving management of large lake systems in Cambodia, Zambia and Uganda during 2012–2014 (Ratner et al. 2017a, 2017b, 2018). In all three sites, fisheries were declining and strong tensions, sometimes erupting in violent conflict, had emerged between commercial and artisanal entities. Workshops took place in three phases and were designed to: (i) build a common understanding among stakeholders with an interest in lake management of the issues, future prospects, constraints and barriers to the current management situation; (ii) discuss options for collective action to achieve a mutually agreed upon purpose; and (iii) develop an action plan, including specific commitments on the part of individuals and organizations participating in workshops, as well as a framework for monitoring and evaluating outcomes. The researchers also provided support for evaluation activities, such as surveys, interviews and focus groups. They periodically held smaller meetings with stakeholders to validate their findings and create opportunities for collective learning. Toward the end of the project, researchers and practitioners from the three sites compared and synthesized lessons learned. In all three sites, the sustained process of multistakeholder dialogue combined with co-learning resulted in reduced conflict and improved collaboration among previously competing stakeholders. In addition to improving relations between governmental authorities and communities, sustained conversations and co-learning also increased the responsiveness of governmental and traditional authorities. Unexpected positive outcomes also occurred when priorities other than fisheries emerged through the stakeholder dialogues. In all three sites, the application of the CoRe approach to fisheries management led to broader positive impacts, such as building new connections with

international donors in Uganda, developing transboundary collaboration on trade in Zambia, and, in Cambodia, applying the dialogue approach to other issues, such as indigenous people's land rights.

The lessons learned through these projects echo those identified by Sarmiento Barletti et al. (2020). Keys to success across the three cases included: (i) stakeholder commitment to the process, including on the part of government agencies; (ii) engagement of implementing agencies at multiple levels; (iii) government participants who were willing to listen and be open to local insights and needs; and (iv) meaningful engagement of all actors who can affect change, including those who might initially be skeptical of the process. Also echoing Sarmiento Barletti et al. (2020), success in the three cases depended on: (i) allowing enough time for participants to build relationships of trust; (ii) having adequate funding; and (iii) mapping out the social and political landscape to identify points of leverage, support and opposition or resistance. Additionally, Ratner et al. (2018) emphasize that collaboration demands a certain degree of tolerance for uncertainty and risk; and that a strong network of civil society organizations is needed if stakeholders with little power are to have effective input into policy reform decisions.

During Phase 2 of PIM5, CoRe researchers collaborated with the International Land Coalition (ILC) to integrate the CoRe approach into National Engagement Strategies (NES) platforms, which currently operate in 29 countries. The NES platforms advocate for people-centered land governance policies and their implementation, but recognize the need to engage in a significant and constructive way with government ministries and politicians, without whom neither reforms nor implementation are likely to take place. NES platforms using the CoRe approach seek to bring about policy changes and track their outcome. They do this through building a common agenda among diverse stakeholders, providing support for coordinated action on the part of the stakeholders, and, through a participatory process, developing a set of mutually agreed upon indicators to measure progress toward the reform objectives.

In 2017, CoRe co-organized a workshop for NES facilitators to build their capacity to engage

effectively in policy reform efforts[6]. The ILC-CoRe collaboration also supported the publication of a series of NES platform 'good practice' guides (ILC 2017a, 2020a, 2020b, 2020c, 2020d). These publications document how each NES was established, how it operates internally, how it engages with the national government, the challenges it has experienced, and lessons learned. At the request of NES facilitators, the ILC-CoRe collaboration also published a guidance note, 'Engaging government for policy influence through multistakeholder platforms' (Ratner et al. 2019). The guidance note, which is aimed at practitioners, provides advice on how to: (i) implement a joint situation analysis of the policy landscape and identify points of entry for bringing about change; (ii) define the focus, role and composition of an NES platform for the relevant national context; (iii) plan how to develop the NES; and (iv) undertake evaluations of progress so as to be able to adapt as conditions change. As yet, documentation of whether and how the CoRe approach has enhanced NES platform effectiveness has not been published.

1.3.3 Land-use planning and range management approaches

Participatory planning and resource management projects that were supported or studied in Phase 2 of PIM5 include: Joint Village Land Use Planning (JVLUP) in Tanzania; Participatory Range Management (PRM) in Ethiopia; Participatory Land Use Planning (PLUP) in Vietnam; and Land Use Planning and Land Administration (LULA) in Indonesia. Within Sarmiento Barletti et al.'s (2020) typology, these approaches fall into the enhanced participatory decision-making category. JVLUP and PRM also have strong elements of sustainability-social inclusion initiatives, although elites tend to dominate decision making in both approaches. The land-use planning approaches used in Vietnam and Indonesia appear to be more oriented toward the development-sustainability initiative category.

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6   The workshop proceedings are documented in a report entitled 'Learning Workshop – Global NES and CBI in LAC Quito 11-14 July 2017: Workshop report.' No information is provided in the report about who the author is, what organization published it, or the date of publication.

Joint Village Land-Use Planning (JVLUP)

ILRI researchers supported through PIM5 implemented an action-research project to pilot JVLUP in Tanzania as part of a sustainable rangeland management project (Mwita et al. 2017). JVLUP is a state-recognized process in which two or more villages work out how to manage resources they share in common. The process results in the formation of a land user association, which can then apply for a certificate of customary rights occupancy (CCRO). The JVLUP process was carried out by joint land-use committees composed of community members, with assistance from the government and an NGO. However, at one site, negotiations collapsed after participatory mapping of the shared commons was done, due to conflicts between agriculturalists and pastoralists over the size of grazing areas. At the other site, a joint grazing committee was formed, which then developed a resource-use plan and submitted an application for a CCRO. Although meant to be inclusive, in practice village elites dominated the decision making. Many villagers were unfamiliar with joint land-use planning and became frustrated with the length of time it took to complete the process. The scaling out of JVLUP to other areas is in question, since neither the local nor the national government have budgeted to support more plans, and replication is dependent on the availability of donor and NGO funding.

A related contextual analysis of single village land-use planning (VLUP) at four sites in Tanzania (Sulle and Mkama 2019) found that pastoralists were often excluded from, and their concerns ignored in, village land-use planning. Yet despite frequent and violent encounters between agriculturalists and pastoralists over land, many villages had not included grazing areas or livestock corridors in their plans. This oversight violates the law governing VLUP, which requires that such spaces be included in areas where pastoralists are present. In addition, planning activities were organized in ways that did not make them readily accessible to pastoralists, particularly pastoralist women. To increase tenure security, Sulle and Mkama suggest the formation of peace committees to rebuild trust between agriculturalists and pastoralists, and capacity building for local governments so that they are able to enforce the legal requirement that livestock corridors and grazing areas be included in VLUPs.

Participatory Range Management

In Ethiopia, ILRI researchers affiliated with PIM5 assessed the impact of Participatory Range Management (PRM) on rangeland management and tenure security in two pastoral regions during 2017 and 2018 (Flintan et al. 2019). They examined two distinct forms of PRM: an early form, and a later form whose implementers had had the opportunity to learn from and improve upon the earlier project. The initial PRM project used kebele[7] boundaries as the rangeland management unit, and assisted communities in establishing associations with formal legal standing as the community-level governance units. They also helped set up a multistakeholder pastoralist forum at the zonal level[8] to address conflicts, provide input into rangeland governance decisions, and serve as a forum where pastoralists' concerns could be discussed with government representatives from multiple administrative levels.

The later PRM project used the full extent of each community's customary rangelands as the management unit, which covered a much larger area than one kebele. They opted to work with communities to revise and strengthen existing customary governance institutions rather than creating a new institution. They also helped establish Pastoral Advisory Committees at the zonal and regional level and a Rangeland Management Platform at the federal level. Both types of PRM projects relied heavily on funding from donor organizations and NGOs. The projects essentially followed the same steps: (1) an initial scoping phase to identify the issues, map the proposed management unit, develop a stakeholder analysis, and establish a rangeland governance entity; (2) a planning or negotiation phase to decide how the rangeland was to managed and designate roles and responsibilities; and (3) management plan implementation.

Both early and later versions of PRM projects made a concerted effort to involve women in all phases, with varying degrees of success. A variety of techniques were used to give women opportunities to voice their ideas and concerns and enjoy benefits

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7   The kebele is the lowest administrative unit of the Ethiopian government.

8   Zones are an administrative unit that includes kebele and woreda.

from PRM. These included: holding separate meetings for men and women; promoting activities in which women and men were equally involved and which were designed to benefit both genders equally; and providing training about women's rights and equal opportunities. To foster women's empowerment, the early PRM project supported women-centered livelihood activities (e.g. incense and gum production and milk processing); the later project set up savings and loan associations for women. Both types of projects encouraged women to become members of planning and management committees. The later project also used a technique known as Social Analysis and Action to bring men and women together in dialogue groups to discuss and make decisions about social inequities, and to challenge restrictive social norms and other obstacles to gender equity.

These techniques appear to have succeeded in including women. In most of the communities evaluated, respondents reported that women were involved in decision making. While fewer women than men participated in higher levels of governance and range improvement activities, they were, nonetheless, involved. In a household survey, there was a general consensus among respondents, including women, that women had greater access to rangeland resources and a greater role in rangeland management as a result of the PRM project. However, the respondents also identified barriers to women's participation. The main barriers mentioned were that women lacked the time to participate due to their everyday workload, the distances involved in attending meetings were too far, and the prevalence of cultural perceptions that women lack the organizational capacity to do management.

Overall, respondents agreed that the projects had improved livestock health, range conditions, livelihoods and tenure security over rangelands. However, Flintan et al. (2019) point out that the long-term sustainability of PRM is not assured,


Box 2. Woreda Participatory Land-Use Planning (WPLUP)

In Ethiopia, PIM5 contributed support via ILRI for the development of a manual on Woreda Participatory Land-Use Planning (Ministry of Agriculture 2018). The manual, which was developed in close consultation with the Ethiopian government, provides guidance on how to structure a participatory planning process for improving pastoral land use and access and reducing land conflicts.

Unlike PRM, the WPLUP process feeds into *woreda* development planning and does not have the objective of transferring rights to communities. However, like PRM, it involves an initial scoping, stakeholder analysis, team formation and mapping phase; followed by additional data collection, formulation of a *woreda* land-use plan, and development of a monitoring and evaluation system. Once a budget and workplan have been developed, the draft plan is presented to the regional planning office, and if approved, finalized.

The manual provides instructions for a variety of data collection activities, some of which are highly participatory and designed to elicit local knowledge. Other activities are much more technical. The manual clearly states that the purpose of the *woreda* land-use planning process is to bring "stakeholders together to develop a common vision and agree [on] land use in the future." It goes on to say that the process "provides an opportunity for otherwise marginalised groups to take part including women, youth, disabled, elderly pastoralists, fishers and hunter-gatherers."

The manual includes a resource benefit analysis tool for use in a participatory process, to identify what the key resources are, who controls them, who uses them and who benefits from them, as well as other tools designed to engage a broad spectrum of stakeholders. Whether WPLUP processes will achieve their stated objective of ensuring inclusivity in land-use planning remains to be seen.
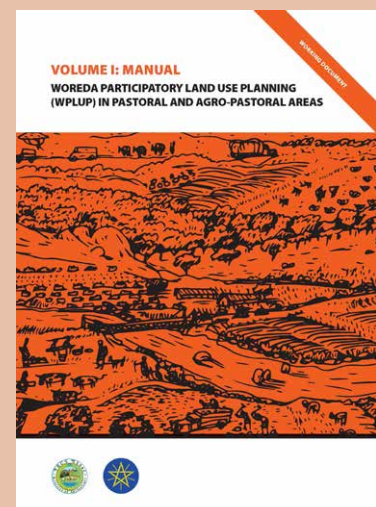
as the process remains separate from government planning processes, and there is no legal framework specifically aimed at supporting PRM, thus making it unlikely that local governments will include it in their budgets. A land-use planning approach known as Woreda Participatory Land-Use Planning (WPLUP) is being piloted by the Ethiopia's Ministry of Agriculture to address the need for embedding rangeland management into governmental structures (see Box 2).

Other participatory planning approaches

With support from PIM5, World Agroforestry Center researchers provided technical assistance for participatory land-use planning (PLUP) in Vietnam (Do et al. 2018; Vu et al. 2018) and Indonesia (Aenunaim et al. 2018). Land-use planning processes in both countries are meant to be inclusive of groups frequently left out of planning. However, the two reports from Vietnam provide little information about how the processes are structured or unfolding. The report on provincial-level planning describes PLUP as being very centralized and hierarchical, with little engagement of any villagers, much less those belonging to vulnerable groups. One result has been that the plans are developed with land classifications that reflect what the government believes their use should be, rather than what their use actually is. The mismatch between the two systems has led to plans that fail to recognize traditional land uses, and subsequent conflict during the land allocation process. Neither report provides details about how the organizers of these planning processes sought to make these participatory planning processes inclusive.

Like their Vietnamese counterparts, Do et al. (2018) describe a lack of community engagement in Indonesia's LULA processes, particularly in areas where indigenous peoples are present. They note that the land allocations emerging from PLUP are often contentious, again, most notably in customary territories. However, they provide no details on how or whether these conflicts are resolved, how the planning processes are structured, or how they might be made more inclusive.

1.3.4 Participatory Prospective Analysis

As part of CIFOR's Global Comparative Study on Forest Tenure Reforms, researchers piloted Participatory Prospective Analysis, a multistakeholder futures scenario building and action plan development process, in Peru (Zamora and Monterroso 2019), Colombia (Ortiz-Gerrero et al. 2018), Nepal (Banjade et al. 2020), Indonesia (Liswanti et al. 2019), Uganda (Mshale et al. 2019a, 2019b; Mukasa et al. 2019a), and Kenya (Mukasa et al. 2019b; Tibalazika et al. 2019). These PPA projects fall under PIM5's remit.

PPA is a methodology developed by Bourgeois et al. (2017) that helps participants identify steps they can take toward building a desired future. As with other MSPs, PPA seeks to enable a diverse set of stakeholders to develop shared mental models of the socio-political system, identify points of entry for removing barriers to reform implementation, and create an action plan that will allow them to achieve their desired future. In Sarmiento Barletti et al.'s MSP typology, PPA falls most strongly into the participatory decision-making category, although it also has elements of multi-level governance initiatives, depending on whether it incorporates participants from both national and subnational levels.

PPA consists of three stages, all of which take place in participatory workshops. In its original form, PPA was structured to take place over six consecutive days. However, the researchers involved in the CIFOR studies, found that holding two or three shorter workshops spread out over time was more feasible for most stakeholders (Bourgeois et al. 2017). During the first stage, participants develop a list of the 'forces of change' that result in tenure insecurity, and then, through an analysis of how these forces affect each other, identify the driving forces of tenure insecurity. In the second stage, participants consider how the different driving forces might change over time, and then based on different possible configurations of change, develop a set of plausible scenarios for what the future might look like. In the third stage, participants analyze pathways to each of the possible scenarios, and then identify actions that can be taken to forestall the negative futures, and those actions that can be taken to enhance tenure security. The pathways to the future are developed using backcasting, a technique in which the participants work backwards along the probable pathways from the future scenarios identified back to the present situation.

Although the workshops are important for generating dialogue and future scenarios, equally important for the long-term success of the PPA is the creation of three groups of actors to shepherd the process from workshop design to action plan implementation (Bourgeois et al. 2017). The three groups include: (1) a support group composed of high-level government officials, and civil society and customary leaders; this group has an advisory role, and ideally these participants will champion the action plans developed during the PPA process; (2) an expert group composed of diverse stakeholders who, in combination, can provide input on all elements of the socio-political system that shapes reform implementation; this group identifies forces of change, develops scenarios and creates action plans; and (3) a task group composed of facilitators and technical experts with computer literacy skills; this group facilitates the workshops, records decisions, and performs structural and incompatibility analyses from the data on driving forces.

The PPA workshops proved successful at engaging a diversity of social actors in the development of a list of driving forces, creation of narratives for multiple possible futures, and identification of potential pathways for improving tenure security. Clear differences emerged among different actors (e.g. NGOs, government, community leaders) over how tenure security can be achieved, indicating that the PPA process does permit a diversity of perspectives to emerge. Nonetheless, workshop designers found that it was important to adjust the process if social norms prevent some participants from voicing their perspectives. For example, the research team in Uganda initially started with mixed gender groups. However, it quickly became clear that men dominated the conversation, and women were reluctant to speak up. As a result, the research team held a separate workshop for women. The research teams in Kenya and Peru held separate workshops for women for the same reason. The separation of men and women proved important, because in all cases the women-only groups had somewhat different perspectives on the drivers of tenure insecurity, as well as on the potential remedies for addressing them. The research teams also found differences between subnational and national-level results, and between the results of PPA processes held in different locations within countries. The differences between scales and geographic areas illustrate the importance of designing PPA processes that

incorporate workshops at multiple scales and multiple regions.

All of the workshop reports indicated that the participants had developed action plans, but it is too soon to determine whether those action plans have been acted upon. However, preliminary feedback suggests that the workshops will be influential in the long run. For example, a local NGO in Nepal has adopted the PPA approach as part of its efforts to support collaborative planning between local communities and government officials. A Ugandan government official was also lobbying to adopt it. In Indonesia, national-level stakeholders indicated that it would be useful to adopt PPA at the provincial level to build community awareness of and buy-in for social forestry.

1.3.5 Bayesian Belief Network Analysis

In Tunisia, range ecologists who believed that good rangeland governance was necessary for effective restoration approached ICARDA and ILRI researchers affiliated with PIM5 to have a quantitative assessment of rangeland governance done in the Tatouine region (Frija et al. 2019). PIM5 supported the development of a model that could provide a quantitative assessment of the causality pathways for achieving good governance. Factor weights in the model can be varied to compare how different scenarios affected the probability of achieving good governance for different land tenure categories (e.g. private, collectively owned, and public lands used collectivity by many tribes) and levels of previous infrastructure investment. Frija et al. selected Bayesian Belief Network Analysis (BBNA) as the process for analyzing qualitative input from diverse stakeholders in a quantitative way.

The BBNA process consists of five phases: (1) a scoping phase to identify and assess policies, regulations and laws affecting rangeland management; (2) stakeholder mapping at the local level, and identification of the key contextual factors believed to influence range governance; (3) assignment of factor weights; (4) development of a network structure that captures the relative importance of different factors and the nature of interactions between factors; and (5) creating a model of the network with conditional probability tables that are populated with the data. In Sarmiento Barletti et al.'s typology, BBNA fits into

the participatory decision-making category, but also has elements of multi-governance initiatives.

To combine local knowledge and expertise with technical knowledge, the researchers organized a series of workshops to develop the network structure, identify relevant governance indicators, and assign weights to the indicators. Through these workshops, data was collected from farmers as well as government representatives. Once the analysis was completed, additional stakeholder workshops were held to validate and discuss the findings. This step proved to be critical for improving the quality of the results and enabling the scientists to fine-tune the research questions and hypotheses. Overall, the application of BBNA in this case study showed a 40% probability of having weak rangeland governance in the Tataouine region of Tunisia. Additionally, the scenarios indicated that collective landownership was the least favorable to good governance of the three tenure types, and private ownership was the most favorable. Farmer association management performance, and the relationship between the associations and land management councils, were the two factors that most strongly influenced rangeland governance, followed by tenure type and investment category. Freja et al. concluded that it is feasible to improve rangeland governance for collective land if investments are made in expanding the reach and organizational capacity of farmer associations and land management councils. Data from the workshops informed the design of Tunisia's pastoral code reforms (Werner et al. 2018). The model is part of a larger toolkit for rangeland restoration that the International Union for the Conservation of Nature (IUCN) intends to pilot in Egypt and Jordan.

1.3.6 Collective action games

Collective action games are another mechanism by which diverse perspectives can be included in land governance. In Phase 1 of PIM5, ICRISAT and IFPRI researchers experimented with using collective action games in India and Colombia as a way to simultaneously learn how people make decisions about farming practices that affect water resources in their area, and provide a venue in which people can become aware of their interdependencies with respect to ground and surface water and, presumably, internalize the value of cooperation. For Phase 2, the

researchers focused on developing game protocols, training manuals, and videos in both Hindi and English for the games tested in India. The games have been posted to a publicly accessible website (Gamesforsustainability.org), along with links to the training materials. Like other approaches described in this section, a key objective of the games is to facilitate the development of shared understandings about resource systems, as well as behavioral change. If embedded in other intervention frameworks, collective action games fit most easily into Sarmiento Barletti et al.'s sustainability-social inclusion category.

PIM5-supported researchers, Meinzen-Dick et al. (2018), Bartels et al. (2019), and Falk et al. (2019), published the results of the collective games to explore water-use issues in three states in India (Andhra Pradesh, Madhya Pradesh and Rajasthan). The games were developed and tested in collaboration with an NGO, the Foundation for Ecological Security (FES). All three projects found that participation in the games resulted in participants learning about water use and management. Additionally, subsequent assessments by a local NGO in Andhra Pradesh and Madhya Pradesh indicated that communities that had participated in the games were more likely to use water registers and adopt water governance rules than those who had not taken part in the games, indicating the likelihood that the games had contributed to behavioral change. Both the studies by Meinzen-Dick et al. and Bartels et al. explored whether cash payments to participants changed their play or learning. The results were inconclusive – Meinzen-Dick et al. found that monetary incentives made no difference; Bartels et al. found that although cash incentives didn't affect how participants played the game, they did have a positive impact on their learning.

The researchers identified several factors that affected learning and cooperation. Changing the parameters of the games to allow communication between participants resulted in improved learning, as well as increased cooperation in the game itself. Transparency in decision making had an effect on the decisions that individuals chose to make during the games as well. Participants were less likely to engage in opportunistic behavior if they knew that their decisions would be made public (Bartels et al. 2019). The game environment also modified normal social dynamics. In the words of Falk et al. (2019, 267), "the games can bring to the table diverse power constellations in a relatively safe space", providing an environment where youth, women and less educated

Box 3. A framework for measuring social learning from collective action games

If collective action games are used as interventions to accelerate learning about ecosystems, and, presumably, influence behavior, then tools for measuring whether learning occurs, whether such learning leads to behavioral change, and whether the learning persists over the long term are all questions that need to be answered. Sheldon et al.'s (2018) review of social learning in participatory processes proposes a framework for answering these questions. Shelton et al. (2018, 8) define social learning as: "…the acquisition of new cognitive and relational knowledge about a system…at the individual, group, and system levels as a result of social interaction among stakeholders."

The framework conceptualizes the points where researchers can assess whether and how learning flows through the system. Figure 1A represents learning at the individual, group and society level. Those levels of learning indicate entry points for restricting or advancing learning, and are placed outside of Figure 1B. which depicts the flow of social learning through a participatory process.

To assess whether learning progresses through the system, researchers must measure social learning for individuals who participate in the process, groups that participate in the process, individuals outside the process, social networks and the system as a whole.
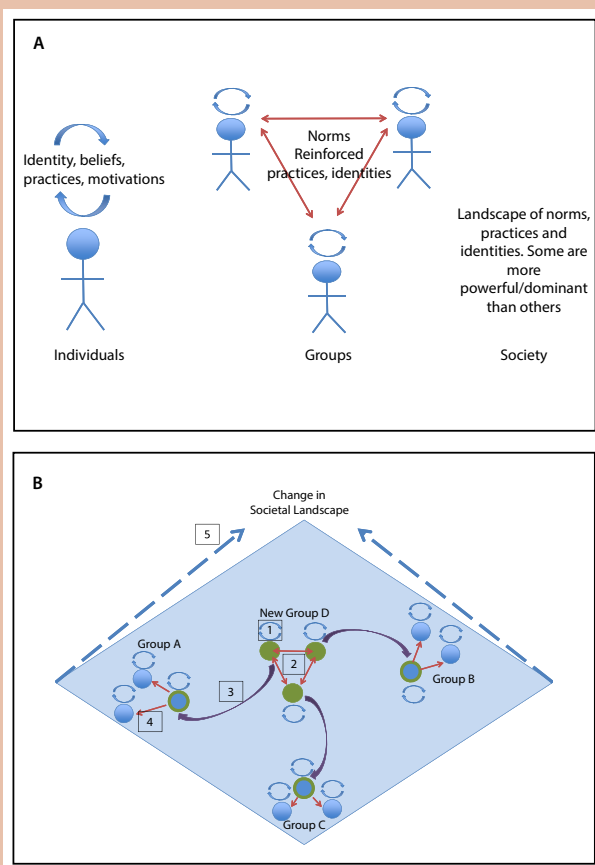
Figure 1A. Levels of learning outside the participatory process

Figure 1B. Flow of social learning through a participatory process
- Level 1. Individual learning during the participatory process
- Level 2. Group learning resulting in understandings and norms; which creates 'new group D'
- Level 3. Individual learning persists and becomes part of that individual's way of life, even if it doesn't match the norms of other groups they belong to (groups A, B and C)
- Level 4. Learning is transmitted from group D participants to other individuals in their communities/groups
- Level 5. Societal learning that emerges from the practices that are changed at group levels, or that is obtained through the collective action the group uses to change institutions

Source: Shelton et al. 2018.

participants could engage in decision making, a role that normally would be reserved for older, better educated men.

Researchers in all three projects concluded that the games were most useful if embedded into larger intervention frameworks, such as multistakeholder decision making or community engagement processes. They all recommended the use of collective action games as a low-cost tool for enhancing learning in participatory processes. Meinzen-Dick et al. (2018, 50) observe that

the learning is a two-way street, with both the community members and project staff hosting the games benefitting from the process:

> "Games provide FES[9] with a tool to engage with the community in an entertaining, engaging manner, which in turn triggers a process whereby the community and the organization learn and move towards solutions together."

However, Meinzen-Dick et al. caution that implementing the games requires skilled facilitation: facilitators need to be both skilled in active listening and willing to let participants make their own discoveries.

Falk et al. recommend that future research on the use of collective action games focus on improving understandings of how these games interact with multistakeholder processes to produce social learning. To do that, they argue, will require developing methods for measuring the impact of learning games beyond immediate post-game measurements. A key question around which to focus such research is, "Does knowledge change brought about through participation in games lead to changes in behavior and institutions, and eventually, better outcomes?" As a first step toward implementing such research, in another PIM5-supported project, Shelton et al. (2018) developed a framework for measuring learning from collective action games (see Box 3). Meanwhile, the games have already had some real-world impacts. FES, the Indian NGO which collaborated on the project, has already begun to use the games, or modified versions of them, in their program interventions, and they have recommended the games to other NGOs and government agencies.

1.3.7 Key themes and reflections
- All of the multistakeholder process (MSP) projects emphasize participation, but they differ in the extent to which an 'outside' structure is used, their methodological complexity, who participates and when.
  - On one end of the continuum are the collective action games, which are the most structured, and potentially the most technical. Unless community members participate in designing the games, their

role is limited to playing the game. BBNA is also highly structured, and is probably easier to participate in meaningfully if one has some technical training. However, the process leaves room for participation at various points in the model development and application. In the Tunisia example, the research team valued local knowledge so structured the process so that a full range of stakeholders was involved in developing the model structure as well as providing input on weight factors and validation of results.
  - CoRe is on the opposite end of the continuum. Participants structure the process themselves and decide on issues they wish to engage with and how they wish to do that. Depending on the issues and how the group chooses to engage with them, the MSP can readily accommodate participants with little technical knowledge or education. Although groups using the CoRe approach can decide to use technology or complex mathematical equations, those aren't essential elements of the process. The other MSPs fall somewhere in between the two ends of the continuum, with PPA falling more toward the highly structured side and PRM and JVLUP more toward the less structured end.
- The MSPs differ substantially as to whether they take a 'long game' approach or have a relatively short time horizon, and also in the likelihood that what is learned during deliberations or games leads to action on the ground.
  - The games are meant to take place over a short time period, and even with a debriefing afterwards, participants are generally only involved for the day unless they co-design the game. As a stand-alone MSP, the games aren't structured to lead to action, hence the reason for embedding them in other intervention frameworks.
  - BBNA and PPA have a longer time horizon than the games but fall toward the shorter-term horizon side. They differ in that the BBNA process ends with model development, and it is up to those who learn from the model to decide whether they wish to take action or not. PPA results in action plans, which in theory lead to action. Whether they do or not remains to be seen. Like the games, both BBNA and PPA could be folded into an

intervention framework, and used as tools for informing decisions and, in the case of PPA, creating action plans that would feed into the larger intervention framework.

  – The various land-use planning MSPs in theory have long time horizons, although whether they do in practice is not yet clear. And in theory the planning activities lead to action, but again, whether they do in practice is not yet clear.

  – CoRe is on the opposite site of the continuum from the collective action games in that it is intentionally designed to be a long-term process and it is organized in a way that encourages action (although action may not always materialize). PRM is also designed for the long-term and Flintan et al.'s (2019) indicates that, at least in its initial phase, planning has resulted in action on the ground with positive outcomes.

• A key assumption of the MSPs that involve planning (i.e. CoRe, PRM, JVLUP, PLUP, LULA and PPA), is that conversing and working together will enable participants to learn from each other and, as a result, the group will end up with plans that are both workable and equitable. However, a take-home message from PIM5 studies of MSPs is that power imbalances likely exist and it is important to build in mechanisms for addressing them so that those who are less powerful or reluctant to speak will have an opportunity to provide input in a safe space. A common approach to doing that is to hold side meetings with those groups and report on those results to the larger group.

1.3.8 Future research
• Sarmiento and Barletti et al. (2020) emphasize that their review dealt only with subnational MSPs. They recommend that further research examines whether their results hold true for other scales (e.g. grassroots and national).
• Research that examines in-depth the various approaches to addressing power imbalances, and identifies the contexts in which they work well (or don't work well), would be a useful addition to this body of work.
• As PPA, PRM and JVLUP become more widely used, it would be useful to design a comparative study that explores whether the

plans they produce actually get implemented, and if so, under what circumstances and what, if any, modifications were considered necessary as they were being implemented.

1.4 Improving understandings of tenure reform using political economy analysis

Much of PIM5-supported research emphasizes the role that political economy plays in shaping the extent to which tenure insecurity exists and how the costs and benefits of tenure reforms are distributed. Political economy analysis is a research approach that seeks to make visible "the interaction of political and economic processes in a society: the distribution of power and wealth between different groups and individuals, and the processes that create, sustain and transform these relationships over time" (DFID 2009, 4)[10]. Political economy analysis enables researchers to identify the winners and losers of particular political choices and how those choices affect development interventions. Such analyses make it possible to assess whether particular policy reforms or institutional changes are feasible, and to understand why reforms are not implemented or have unintended consequences. They are also useful for identifying leverage points for policy change and the types of support that are needed to enable reform implementation.

Topics that PIM5-affiliated researchers have explored through a political economy lens include land governance reforms in Myanmar (Suhardiman et al. 2019a, 2019b), national land planning in Laos (Suhardiman et al. 2019c), land banking in Nepal (Dupre-Harbord et al. 2018), and land tenure reforms in Peru (Monterroso et al. 2017). The findings from these studies illustrate why tenure and governance reforms cannot be achieved solely through a legalistic approach that relies upon changes in law and policy. They demonstrate that a relational approach (i.e. one in which emphasis is placed on understanding how social actors relate to each other in terms of power and social standing) can uncover how reforms will affect more powerful social actors and, if they are negatively

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10   In 2009, DFID produced a 'how to' manual for practitioners and scholars interested in using political economy analysis to inform policy reform. The manual describes a systematic approach for assessing power dynamics at multiple scales.

affected, whether the power dynamics are such that they will resist or seek to undermine reform implementation.

1.4.1 The political economy of land-use planning in Myanmar and Laos

In a collaboration between the International Water Management Institute (IWMI) and PIM5, Suhardiman et al. (2019a, 2019b, 2019c) developed a series of political economy analyses of land-use planning in Myanmar and Laos. Suhardiman et al.'s (2019a, 2019b) research on Myanmar's efforts to reform its land laws provides a good example of why policy makers and practitioners need to be aware of pre-existing power dynamics and social relations. A National Land Use Policy, established in 2016, called for a national land law that would recognize customary and communal land rights; it also established a committee to adjudicate cases of land expropriation that occurred prior to the current regime's rise to power. Suhardiman et al. (2019a) found that these reforms were incorporated into the National Land Use Policy only after pressure from external aid organizations and local civil society organizations forced the government to use a broad-based consultative process. They also found that little progress had been made toward recognizing customary and communal rights or adjudicating land expropriation cases. On investigating why so little progress had been made, they discovered that Myanmar government officials, many of whom benefited from land expropriations during the previous regime, have resisted incorporating provisions that would recognize customary and communal land rights into a proposed new land law, and very few cases of land grabbing have been adjudicated. Suhardiman et al. (2019a, 370) conclude:

> "These land reform efforts in Myanmar showcase structural challenges that emanate from a degree of path dependency that haunts the country's land governance. This is most apparent in how ongoing reform processes and outcomes have been significantly hampered by the existing power structure and relations embedded in the country's government institutions and legal systems."

Their take-home message is that when advocating for tenure and governance reforms, it is important to consider who will lose and who will benefit from those reforms, and to identify what power relations will need to change in order to institute the reforms and improve the chances that they will be implemented.

In a related study, Suhardiman et al. (2019b) contrast government land policies in Myanmar, which disfavor smallholders' land claims, with the land policy instituted in those portions of Myanmar that are under control of the Karen National Union (KNU), the leading organization for Karen self-determination. The KNU Land Policy recognizes and protects customary land rights. In areas where the KNU and Myanmar centralized government share power, farmers have been able to use 'quasi-legal' KNU-issued land titles to regain expropriated land. Although the central Myanmar government does not recognize the KNU-issued land titles as legally valid, government officials at the local level have accepted them as proof of a claim in land disputes. Moreover, the central Myanmar government lacks the power to contest KNU-issued titles in areas where the KNU exerts political control. Farmers take advantage of the co-existence of these overlapping legal and political systems to secure and expand their land claims. At the same time, through the issuance of land titles that are widely recognized as valid, the KNU solidifies and expands its power in the areas under mixed government-KNU control.

Suhardiman et al. (2019c) also explored the political economy of participatory land-use planning in Laos. They found that participatory land-use planning in Laos is characterized by competition between government agencies, between national and village-level governance institutions, and between different village factions, as each seeks to exert control over resources. Within the government, tension exists between the agriculture and forestry departments, with each seeking to maximize the amount of land designated for either farming or forestry. The struggle over which department will win out has high stakes because large amounts of donor funds are linked to Laos achieving a target of 70% forest cover, while Department of Agriculture has a national target of ensuring that roughly 19% of the land in Laos is devoted to agriculture. Meeting both targets is not feasible, given that other land uses, such as residential or industrial use, are also important. Between the national and local governments, tension

exists over whether swidden agriculture should be permitted, with the national-level actors against it and the local-level actors in favor of it, albeit in a regulated form.

Within villages, tension exists between those with long-standing claims to land and relative newcomers who must obtain access to land through the first-occupant families. These tensions have led to disjunctures between national and village-level land-use planning objectives and between formal and actual land use, with farmers caught in the middle. Suhardiman et al. (2019c) argue that these gaps persist, despite efforts to eliminate them, because they benefit government officials at multiple levels as well as local community elites. At the same time, they found that farmers and communities are resisting those aspects of national land laws and land-use plans that inhibit their ability to farm upland areas, notably the prohibition on swidden agriculture which is meant to force highland residents down onto the plains where their activities will be more easily controlled. Although farmers continue to practice swidden agriculture in the highlands, they do so under conditions of tenure insecurity since their activities are illegal.

1.4.2 The political economy of land banking in Nepal

Several other PIM5-supported studies highlight how historical power relations and social structures impede the implementation of reforms aimed at supporting small-scale farmers or vulnerable groups such as women, ethnic minorities and members of lower social castes. In Nepal, an IWMI-PIM5 collaboration found that policies aimed at providing small-scale farmers with greater access to land have often had the opposite impact, an outcome that Dupre-Harbord et al. (2018) attribute to path dependencies similar to those seen in Myanmar:

> "…the unsuccessful land reforms of the past reveal the immense challenge in reforming a system where the power of land is central to holding political power and feudalism is deeply entrenched in the state apparatus. Many of the political leaders are the large landlords which land reforms are trying to undermine and reduce their power."

The failure to implement land reforms has had a disproportionately negative effect on women's tenure security. Although women have legal rights to inherit and own land, they struggle to exercise those rights due to social norms that women can't inherit land, their lack of awareness of their land rights, and the lack of appropriate facilities, such as toilets or breastfeeding areas, for women at land offices.

1.4.3 The political economy of native community titling in Peru

In a CIFOR-PIM5 study, 'Reclaiming collective rights: Land and forest tenure reforms in Peru (1960–2016)', Monterroso et al. (2017) use a political economy lens to trace the trajectory of reforms affecting land and forest tenure for indigenous peoples in the Peruvian Amazon. By examining the political context underlying regulatory changes and their outcomes, they show that a number of laws have significantly affected indigenous tenure rights, whether intentionally or not. Rights recognition efforts began in the early 1970s and gained momentum during the 1980s and 1990s as social movements supporting indigenous rights became more influential. However, it wasn't until the late 2000s, after several violent confrontations occurred between government representatives and indigenous peoples, that broad public support emerged for implementing the reforms that strengthened indigenous collective rights, and progress toward native community titling improved. As in Myanmar, a broad-based social movement advocating for reform implementation, together with pressure from international organizations, played a key role in shifting the government's position.

1.4.4 Key themes and reflections
- Gaps often exist between the theory and practice of policy and legal reforms. Existing power imbalances within communities, between communities and government officials, and between different levels and sectors of government, contribute to and exacerbate those gaps. It isn't enough to change the law; social norms and bureaucratic cultures also need to be changed, especially if women and indigenous peoples are to benefit from tenure and governance reforms.

- Political economy analysis can help policy reform advocates identify where gaps in implementation exist or are likely to emerge, and therefore what levers for change will be needed to minimize or eliminate those gaps. However, such gaps may also be due to lack of government capacity to implement reforms at national and subnational levels. This suggests the need for reforms that are tailored in ways that are more closely in alignment with national and subnational governance and administrative capacities.
- Powerful actors whose interests are threatened can stall both the development of reforms and their implementation. If reforms are to succeed, it is important for scholars and practitioners to figure out ways to nudge powerful actors into being supportive of reforms. It may be necessary to make changes incrementally in order to provide time to form coalitions with enough power to counter resistance and opposition from those in power.
- Social movements and alliances of communities with each other and with CSOs, NGOs and donor organizations play a role in bringing about change, but they can only go so far without changes in governmental structures, practices and cultures.
- Economic development policies are sometimes the most important counterforces challenging the implementation of reforms that favor collective tenure rights to land and forests. When seeking reforms, it is important to consider policies in sectors outside land administration or natural resources that might have perverse effects on reform implementation.
- Land-use planning is not an apolitical process; power imbalances need to be accounted for if participation is to be meaningful.

1.4.5 Future research
- In-depth investigations of successful and unsuccessful attempts to address extreme imbalances of power, change bureaucratic cultures and practices, and reduce other structural barriers to reform, are needed to help identify strategies that work, and the contexts in which they are effective or ineffective. Questions that need answers include: who can/should take on the task of effectuating transformational change? How can such changes be achieved? What role can/must social movements play in transformational change?

Table 3. Multistakeholder processes categorized as tools

Multistakeholder process	Description
Collaborating for Resiliency (CoRe)	CoRe projects helped resolve complex natural resource conflicts and supported the development of national engagement strategies.
• Conflict Management	Piloted CoRe, a process for managing conflicts over fisheries in Cambodia, Uganda and Zambia; adapted to develop collective action for socio-ecological resilience in Guatemala
• National Engagement Strategies (NES)	Adapted CoRe process to enable NES groups to engage more effectively in policy reform advocacy and implementation accountability for people-centered land governance
Participatory Prospective Analysis (PPA)	PPA adapted to identify drivers of tenure insecurity and develop a pathway to a desired future forest tenure system
Joint Village Land Use Planning (JVLUP)	Adaptation of Tanzania's village land-use planning approach to contexts where multiple villages share resources
Bayesian Belief Network Analysis (BBNA)	Adapted BBNA to function as a tool for developing a quantitative assessment of rangeland governance in Tunisia, for the purposes of identifying which factors are most likely to influence restoration projects
Collective Action Games	Developed collective action games to enable social learning about the socio-ecological interdependencies linked to groundwater and surface water use, and, ultimately, to collective action, leading to more sustainable water use

1.5 Tools and indicators

Between 2017–2019, PIM5 researchers worked in collaboration with partner organizations to develop, refine and/or adapt a number of tools and indicators aimed at either assessing tenure security, enhancing reform implementation accountability, or both. PIM5 researchers have tended to use a diverse set of tools and research methods, permitting them to incorporate a greater diversity of perspectives into research and research-engagement activities. This section provides an overview of many of the tools and indicators produced or adapted in Phase 2.

1.5.1 Tools

Multistakeholder processes

If tools are conceptualized broadly, then arguably MSPs are a type of tool. These processes are listed and briefly described in Table 3[11]. Additional details are provided for each of these processes in Section 1.3.

Realist reviews: The importance of contextual factors

Two PIM5-supported teams (McLain et al. 2018b; Sarmiento-Barletti et al. 2020) tested the usefulness of the realist synthesis approach to scientific evidence review for improving understandings of how specific types of tenure and governance interventions work. Over the past decade, the realist review has become an important tool in the fields of medicine and public health for understanding how, why and for whom programs work, as well as when and where they work as intended. Realist reviews provide an important complement to systematic reviews which focus on determining whether interventions work.

McLain et al. adopted a realist synthesis approach to tease out the contextual factors and mechanisms that affected the environmental outcomes associated with marine protected areas (MPA) governed under different property regimes. Their review found that the simultaneous presence of three types of legitimacy – legal legitimacy, social acceptability and ecological credibility –

characterized governance systems in the MPAs with successful ecological outcomes, independent of the property regime. Meaningful involvement of local fishers and shellfish harvesters in MPA design, management and monitoring and evaluation played a key role in helping establish and strengthen the legitimacy of successful MPAs, and was lacking or weak in those that were unsuccessful.

As described in Section 1.3, Sarmiento-Barletti et al. (2020) applied a realist review approach to assessing the literature on MSPs related to land-use and land cover change. The realist review approach allowed them to identify qualities associated with the most successful MSPs. These included being embedded in broader processes that aimed at bringing about changes in practices and policies at multiple levels of governance; taking time to do research and hold dialogues to identify potential roadblocks and the capacities of local implementers; building political will at higher levels of governance; and structuring the process to encourage adaptive learning.

Conceptual frameworks, assessments and monitoring and evaluation tools

PIM5-supported scientists have devoted much attention to developing conceptual frameworks and diagnostic tools; these frameworks and tools have aimed to enable scientists to pinpoint where entry points for effectuating change exist and to improve understandings of the factors that contribute to or inhibit reform implementation. Developing effective monitoring and evaluation tools has been another priority, since without such tools, it is difficult to know whether the intended outcomes are being achieved, as well as where, and what changes in procedures or activities are needed in order to make a course correction. Table 4 describes examples of frameworks developed, adapted or applied in projects supported through PIM5, all of which have been described in previous sections.

Knowledge transfer, outreach and training materials

A key aim of PIM5 is to ensure that the knowledge produced through its research and research-engagement activities is infused to diverse change agents, including government officials, donor organizations, NGOs and CSOs, community and customary authorities, and private firms.

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11   PRM is not included in this list because although it was a topic of PIM5 research, PIM5 researchers did not adapt or refine the process.

Table 4. Frameworks, assessment, and monitoring and evaluation tools developed, refined or applied

Framework	Description	Application
Framework for monitoring and evaluation of land for Africa (Ghebru 2017)	Adaption of World Bank's Land Governance Assessment Framework for use in monitoring progress on land governance in Africa to support implementation of the African Union's Declaration on Land. Most modifications have to do with adding indicators to measure progress on land rights for women, pastoralists and other vulnerable groups.	Applied in 11 African countries
Framework for women's rights analysis (Doss and Meinzen-Dick 2020)	Lays out the key elements that affect women's tenure security and describes how those elements interact. Enables the identification of points where changes are needed or where it is feasible to expand or strengthen women's rights. Draws on the Institutional Analysis and Development (IAD) framework.	Applied to PIM5-supported study of how women have been affected by community forest reforms in Peru, Uganda and Indonesia (Monterroso et al. 2019b)
Tenure diagnostic for Forest Landscape Restoration (FLR) assessments (McLain et al. 2018a)	Rights actualization model for identifying where tenure is likely to favor or inhibit adoption of FLR interventions, and what types of tenure and governance reforms are needed to support large-scale restoration. Draws on the IAD framework.	Informed PIM5/GIZ-supported research on tenure and FLR in Madagascar
5Capitals-G (Stoian and Rodas 2018)	Gender-responsive adaptation of the 5Capitals toolkit, which assesses the poverty impacts of value chain development. The adapted version assesses how asset endowments at the household and collective enterprise level differ by gender, and identifies constraints on women that are linked to cultural norms and values.	Piloted on forest concession enterprises and members in Guatemala by PIM5-supported researchers and partners
Framework for assessing the enabling environment for community forest enterprises (CFEs) (Sharma et al. 2020)	Diagnostic tool for assessing whether an enabling environment is present for CFEs and identifying intervention points for improving the likelihood of success. Draws on Baynes et al.'s (2015) framework of five success factors for community forestry.	Developed and piloted in Nepal by PIM5-supported researchers and partners
Community forest enterprise investment readiness pathway (Gynch et al. 2020)	Conceptual framework linking community forest rights devolution to financial investments and environmental and social outcomes.	Developed but not yet applied
Learning measurement framework (Shelton et al. 2018)	Tool for guiding efforts to measure whether learning takes place in participatory processes, as well as whether participation in such processes leads to behavioral change at individual, group and societal levels.	Developed but not yet applied

As a result, most PIM5-supported activities include the development of one or more types of knowledge infusion, outreach or training materials. Table 5, which lists examples of materials produced during Phase 2, illustrates the types and diversity of outreach materials that PIM5 researchers are using to ensure that research findings become widely available. In addition to these and other documents and multimedia products too numerous to mention, most PIM5-supported activities involve organizing workshops or trainings. These events and materials aim to reach diverse audiences, including government actors at multiple levels, donor organizations, other researchers, community members and authorities.

Table 5. Examples of guides, games, maps and other tools produced through Flagship 5

Tool category with specific tools
Manuals and guides to support gender integration
• Integrating gender in development of participatory forest management plans in Kenya: A 'how to' note
• Integrating gender into development of sub-catchment management plans in Kenya: A 'how to' note
• Pastoral women's rights and leadership forums, Tanzania: Experience, impact and lessons learned
• Enhancing social inclusion thought local dialogues on natural resource management
Collective action game protocols, software, datasets and user/training manuals
• Gamesforsustainabilty.org practitioners' website and training manuals
• Public good experiment data from a water game adapted to Rajasthan/India
• Experiment protocol for experiment based institutional capacity development of stop dam managers in Madhya Pradesh
Multistakeholder processes training materials, guides and design templates
• The role of multistakeholder forums in subnational jurisdictions: Methods training manual and tools for in-depth research
• Cross-regional synthesis of lessons from International Land Coalition National Engagement Strategies
• Guide for co-elaboration of scenarios: Building shared understanding and joint action for reform and security of forest tenure
• Engaging government for policy influence through multistakeholder platforms: A guidance note
Rangelands governance tools, training materials and datasets
• Frameworks, tools and approaches for the assessment of rangeland governance
• Data, models and tools for studying rangeland tenure reform in Tunisia
• An evaluation of participatory rangeland management in Ethiopia: Its impact on land security and land use planning, rangeland governance and productivity (poster)
• Woreda participatory land-use planning (WPLUP) in pastoral and agro-pastoral areas
Maps, infographics and models
• Map of customary boundaries in Indonesia
• Mekong: Land and livelihoods along the Laos-China railway (infographic)
• Models of participatory conservation, successes and failures (website and interactive webmap)
Native community titling (Peru)
• Steps for acquiring a native title (infographic in Spanish)
• Guía práctica para el proceso de titulación de comunidades nativas (Practical guide for the native communities titling process)
Forest management-related guides, databases and podcasts
• Fostering joint forest and water conservation at the local level: A 'how-to' note.
• The 'water towers' of East Africa: Policies and practices for enhancing co-benefits from joint forest and water conservation (podcasts)
• Database with household and enterprise data in Guatemala
• A guide to investing in collectively held resources

1.5.2 Indicators

During Phase 2, PIM5 affiliated researchers devoted relatively limited attention to developing indicators for generalized use in assessing tenure security and reform implementation accountability, perhaps because a wide range of indicators already exist for such purposes (i.e. World Bank's Land Governance Assessment Framework, ILC's Global Land Governance Index, the Food and Agriculture Organization's (FAO) Voluntary Guidelines on the Responsible Governance of Tenure). Additionally, much of the work supported through PIM5 is done using participatory approaches. Although many participatory projects incorporate indicators into monitoring and evaluation activities (e.g. NES, PPA, PRM), typically the participants develop a set of indicators customized to the context in which the research takes place.

The Monitoring and Evaluation of Land in Africa (MELA) project was a PIM5-supported activity in which new indicators were developed with

the intention that they be applied broadly. The MELA framework was developed in response to the African Union's 2009 Declaration on Land Issues and Challenges in Africa, which called for member countries to put into place systems for tracking progress in their land governance commitments. Twelve African countries are piloting the framework. Project participants opted to use the World Bank's Land Governance Assessment Framework as a starting point and then incorporated a dozen additional indicators tailored to fit the African context. The custom indicators consist of quantitative measures that will allow participating countries to measure progress toward ensuring that women, indigenous peoples, pastoralists and other vulnerable groups have rights to land in practice, as well as in law, and to assess the extent to which landholders perceive that they have tenure security. Working groups have been established in each country to further customize the generalized MELA framework so that it captures the information participants deem appropriate for their country's context. Members of the working groups serve as 'champions' for the framework, with the expectation that their involvement will increase the likelihood that the framework will be applied. As with other Phase 2 projects, it is too early to tell whether that expectation is being met.

1.5.3 Key themes and reflections

- Co-producing and applying tools with community members, government field agents and specialists, and development practitioners has proved to be an effective way to ensure that tools are widely understood and used. However, it can be a struggle to develop tools or research approaches appropriate for community members who are less-educated or illiterate. It can also be a struggle to move conceptual frameworks from the idea stage into practice.
- Some of the more useful tools and approaches (e.g. CoRe, realist reviews, BBNA) are time-intensive; long-term funding is important to ensure that they are able to produce quality results.

1.5.4 Future research

- There is increasing interest in the links between beliefs and conservation behavior. Development of tools, or the application of tools (such as Shelton et al.'s (2018) social learning framework) that can provide insight

on such links, is an area in need of further exploration. Additionally, more studies, such as assessments of whether behaviors changed in areas where residents had engaged in collective action games, are needed. Another related area to explore is how well the collective action games work when embedded in larger interventions.

- Many PIM5 projects make extensive use of maps as tools for collecting data but very few incorporate spatial analysis or data visualization into their analyses. It would be useful to investigate how spatial analysis could be used to further tenure/governance research. This will likely become increasingly important with the implementation of One CGIAR, and a shift toward research that integrates multiple disciplines since spatial analysis is widely used for measuring ecological outcomes. Additionally, geographic information systems can also be used to perform a variety of social analyses. As an example, it might be instructive to add a geospatial component to the work done by Ghebru and his colleagues on tenure insecurity drivers in Nigeria (Ghebru and Girmachew 2017), Ghana (Ghebru and Lambrect 2017), and Mozambique (Ghebru and Girmachew 2019a). Spatial analysis could pinpoint tenure insecurity hotspots and coldspots; information which might usefully inform the siting of land registration initiatives or forest landscape restoration programs.

1.6 Assessment of and reflections on potential future research priorities

1.6.1 Drivers and consequences of tenure insecurity

PIM5-supported research addressing tenure insecurity drivers and consequences provides good coverage of the drivers of insecurity for individuals and households in countries selected from three regions in Africa (West Africa, East Africa, Southern Africa), but the studies in Nigeria, Ghana and Mozambique are silent regarding the consequences of tenure insecurity. An important next step is to expand those studies to capture the impacts of tenure insecurity on land investments, household and individual income, food security, out-migration patterns, poverty levels, incidence of domestic violence and other variables of interest.

The individual/household tenure studies found that tenure insecurity is concentrated in areas close to cities, where there are large populations of in-migrants, and where agriculture has become commercialized. In light of this finding, the researchers recommend that land registration initiatives focus on those areas, since elsewhere the customary systems are providing sufficient tenure security. However, given that most African countries lack the capacity to administer land registration or titling programs, it is questionable how much security a land title or certificate will provide in the long run. Van Koppen and Schreiner (2018) and Ranjatson et al. (2019) suggest that an alternative approach that is likely to be more sustainable is to undertake efforts to strengthen locally-developed hybrid tenure systems, rather than imposing a system that is beyond the capacity of most countries.

On the topic of women's tenure insecurity and its consequences, PIM5-supported researchers have made some very useful contributions. However, more work clearly needs to be done to address the shortcomings and gaps identified by Meinzen-Dick et al. (2019). Three avenues of research related to gender that are worth further investment include: (1) expanding the application of the Doss and Meinzen-Dick (2020) framework to additional study sites; (2) expanding the work that Pradhan et al. (2019) have done on gender and intersectionality in Nepal to other countries; and (3) testing the applicability of the Women's Rights and Leadership Forum approach in other contexts.

Collective tenure issues are discussed in Section 1.6.2 since there is much overlap with tenure insecurity associated with collectively held lands and collective rights recognition reforms.

1.6.2 Mechanisms for enhancing access and ensuring accountability in reform implementation

PIM5-supported researchers have investigated community forest/rangeland reform in depth, with detailed studies in Peru, Uganda, Indonesia, Guatemala, Nepal, Tanzania and Ethiopia, among others. The work in Peru, which is led by researchers based at CIFOR, is particularly instructive as it looks at the native community titling question from a number of angles, providing a very 'thick description' of how that process has unfolded, the variability in its impacts, and the

reasons why reform implementation has been so slow. The research on pastoralists' tenure issues in East Africa, which has been done in collaboration with ILRI researchers, is equally rich albeit less well documented. Documenting that work in journal articles and policy briefs would make it easier for researchers and practitioners to find. PIM5 has also invested in research in Guatemala for many years, with research focused on identifying pathways by which community forest enterprises (CFEs) can become financially viable, and documenting the benefits that CFEs provide to individuals, households and communities. However, the work is, as yet, not well documented. It is hoped that more publications on the results of the 5Capitals-G work will be forthcoming. The PPA workshops have yielded insights on sources of tenure insecurity for multiple contexts, as well as a set of scenarios and action plans for each workshop. A comparative analysis of the PPA workshop results would be useful, as would follow-up work to see if the action plans have been implemented.

The Promise of the Commons initiative in India has potential to yield invaluable insights on how to design and implement scaling research for landscape governance. It also serves as a model for the type of collaborative, integrated and transformative research projects that are likely to fit the direction in which the CGIAR system is moving. Likewise, the rangeland projects in Tunisia and East Africa are moving toward closer integration of social and ecological research and engagement approaches. Documenting how such collaborations work using ethnographic methods could yield valuable lessons for how to strengthen the existing collaborative endeavors, and for designing similar projects in other regions.

Work by PIM5-supported scientists on community forest investment in Nepal, Guatemala, Mexico and Namibia indicates that CFEs in all four countries function as social enterprises since most provide benefits to community members in the form of income earning opportunities. CFEs associated directly with community forest user groups also make investments in community infrastructure, such as schools, clinics and roads, filling a role that more typically rests in the public sector. Two promising avenues for further research that can support CFEs are: (1) applying the 5Capitals-G framework in other countries where PIM5 provides support; and (2) testing Gynch et al.'s (2020) framework on investment readiness, as a tool for

CFEs to locate where they are along the investment readiness pathway and identify the strategies that are likely to enable them to shift further along the path toward self-financing or become sufficiently profitable to attract private sector investment.

1.6.3 Including multiple perspectives in landscape governance

Working in collaboration with a diversity of partners, PIM5 researchers have developed a sizeable portfolio of research-engagement and learning-engagement processes; these have been designed to achieve reforms in law and practices that support achievement of the United Nations Sustainable Development Goals, as well as to monitor and evaluate the outcomes of reforms for accountability and adaptive learning purposes. Additionally, most PIM5-supported activities mainstream inclusivity into their everyday work through: (1) disaggregating data to capture the perspectives of multiple users; (2) using participatory research strategies; and (3) hosting workshops at multiple governance levels (e.g. community, subnational, national, international) that foster dialogue about how research findings inform policy reform and reform implementation.

The MSPs in PIM5's portfolio differ greatly in the timeframes over which they take place, ranging from one or two days (e.g. collective action games) to months and years (e.g. CoRe, PRM). The processes are situated on a continuum ranging from less technical (e.g. CoRe) to extremely technical (e.g. BBNA). However, all require good facilitation, coordination and analytical skills to function effectively, which means that even those that don't rely on complex technology still need highly skilled people to do some core tasks. PIM5 scientists recognize this, hence the reason for the investments they have made in training NES and PPA facilitators, and the high priority placed on producing practitioner-oriented manuals, guidance notes and handbooks. The emphasis on training and production of practitioner-oriented manuals warrants continued investment.

CoRe and PRM factor in the need to develop networks that cross governance scales; as well as build broader public awareness and change beliefs and social norms. Although these can also happen within the other MSPs, they aren't built into their fabric and thus are less likely to occur. With the exception of CoRe, which likely bears some

resemblance to dialogue forums that already exist in the study sites, all of the MSPs are structured in ways that are unlikely to be familiar to many community members, community authorities or local-level government officials. This raises the question of how sustainable they will be in the long run as external funding dries up, and if national-level governments don't invest in supporting them. Research that tracks the evolution of a sample of MSPs and how they overcome (or don't) the challenges they encounter would yield data that could inform strategies for supporting MSPs at different points in their lifecycles.

1.6.4 The importance of political economy for understanding governance dynamics

The political economy studies completed by PIM5-supported researchers pinpoint key barriers to and potential points of leverage for ensuring governance reform and its implementation. Similar analyses for PIM5-supported research for other countries in which PIM5 is supporting projects would be a useful addition to this set of studies. Suhardiman et al.'s (2019c) argument that land-use planning is a political process rather than merely a technical exercise is particularly important, given the pressure placed on so many countries by donor organizations to institutionalize land-use planning at all levels of governance. The political nature of land-use planning is evident in other PIM5 research projects. In an exploratory project in Madagascar, Ranjatson et al. (2019) found that commune leaders were using commune-level land-use plans as a tool for asserting claims over land that was formerly clearly in the public forest domain and administered by the national forestry agency, but which, with the enactment of land reforms in 2005, moved statutorily into a gray area.

Suhardiman et al.'s (2019c) analysis of land-use planning in Laos is helpful also in that it illustrates how smallholders are not just acted upon by land-use plans formulated without their input, but also take action to resist, passively and actively, those aspects of the plans that don't fit with the realities on the ground. Similarly, the project in Madagascar found that community members in one commune were seeking to regain control over commons that had been illegally privatized by codifying those land uses into their commune's land-use plan.

Investment in exploring the strategies that community members use to resist or push back against the state's efforts to exert control through land-use planning

is warranted in order to identify which strategies are most effective, and how those that are less effective could be improved upon. A related topic that warrants further research using a political economy lens is the way in which decentralized, deconcentrated and national administrative units and political structures articulate with each other, and how the nature of those articulations impacts reform implementation and communities. Toward that end, it would be useful to integrate political economy analyses more tightly with reform implementation research, given that both place a strong emphasis on understanding power dynamics and the impacts of social structures on the options for influencing policy, as well as on the impacts on implementation.

1.6.5 Tools and indicators

PIM5-supported researchers have developed, refined or adapted a number of tools that have promise for guiding future research and practice, with some of the tools, notably the

MSP approaches, already being applied in multiple contexts. A next step for the conceptual frameworks is to work toward applying them more broadly to PIM5-supported projects. For example, Shelton et al.'s (2018) social learning framework has potential to provide data that would be helpful for evaluating whether engagement in the participatory processes used in PIM5-supported projects leads to social learning and, equally important, changes in norms and behavior on the part of individuals, groups and societies. Other frameworks that could be applied elsewhere include the 5Capitals-G, the CFE investment readiness, and the CFE enabling environment assessment frameworks. In the same vein, it would be useful to follow up on whether the Monitoring and Evaluation of Land in Africa (MELA) framework has been applied, and if so, to document what the outcomes have been and what modifications are recommended, either in the framework or the manner in which it is being implemented (or not).

2 PIM5 research findings and Theory of Change

2.1 Overview: Theory of Change and synopsis of PIM5 Phase 2 work

During Phase 2, Flagship 5 (Governance of Natural Resources) seeks to accomplish three objectives:

1. Identify actions that can strengthen the tenure rights of poor and marginalized people, particularly women and communities
2. Improve the governance of natural resources
3. Enhance constructive interaction of resource users within shared landscapes

To facilitate the achievement of these objectives, the Flagship has divided the work into two clusters. Cluster 5.1 focuses on applied research/engagement aimed at enhancing tenure security, while Cluster 5.2 investigates approaches for governing shared landscapes. Work done under **Cluster 5.1 examines mechanisms to enhance rights to resources in different contexts.** It also investigates how differently allocated and protected rights contribute to productivity, livelihoods, equity, ecosystem services and sustainable use of biological diversity.

Activities in Cluster 5.2 focus on developing institutional solutions for challenges related to disparate interests of parties with overlapping rights and claims to resources. Cluster 5.2's work assumes that better management of resources and avoidance of conflicts in shared landscapes will lead to enhancement of ecosystem services and increased investments by governments, the private sector and producers in those landscapes. For both clusters, issues of gender equity specifically, and of social inclusion of vulnerable populations (e.g. youth, pastoralists, indigenous peoples) more generally, are central concerns.

Work in both clusters is guided by a Theory of Change that begins with the premise that the Flagship will produce three types of outputs:
- Innovative and improved tenure research methods
- Analyses of how tenure and governance mechanisms affect social, economic and ecological outcomes
- Options for communities and individuals to improve tenure security and governance

The Theory of Change assumes that making these outputs available to a variety of actors will lead to policy and institutional reforms that will increase resource tenure security, and result in more productive and equitably managed shared landscapes. By having access to these outputs and, in many cases, through participating in co-developing them, PIM5's partner organizations and members of the communities in which PIM5 researchers work will improve their capacity to design and implement applied research on tenure and governance themselves. These short-term impacts will lead to changes in the socio-ecological conditions in the areas where PIM5 researchers work. Over time these changes will result in increased resource productivity, greater equity and social inclusion, an improved enabling environment for sustainable and equitable resource use, and an increase in the availability of ecosystem goods and services. In brief, the chain of events envisioned by the Theory of Change can be summed up as follows: (1) research outputs influence (2) change agents leading to (3) PIM5-specific outcomes and (4) sub intermediate development outcomes (sub-IDO), and eventually to (5) intermediate development outcomes (IDO). The subsequent sections in this report describe PIM5's performance to-date with respect to its Theory of Change. Due to substantial overlap across the different levels of outcomes, they are discussed as a group.

2.2 Outputs[12] (Methods, Analyses, Options)

Section 1 describes in detail the variety of outputs of PIM5 research and research-engagement activities. The discussion here is therefore limited to a broad-brush overview of the extent to which PIM5 Phase 2 research has resulted in the three types of outputs identified in the Theory of Change (i.e. methods, analyses and options for improving tenure security). It is important to emphasize that virtually all outputs were co-developed with partnering organizations, including other CGIAR Research Programs, in-country research organizations, government agencies, donor organizations, NGOs/CSOs, and community authorities and members. Additionally, many of the outputs are results of work that was initiated in Phase 1 or earlier.

2.2.1 Innovative and improved methods for tenure research

Methods developed or adapted by PIM5 researchers during Phase 2 include: (1) multiple conceptual frameworks aimed at measuring or enhancing progress toward improved tenure security and governance; (2) a monitoring and evaluation framework for land governance; and (3) several multistakeholder engagement approaches focused on joint learning for policy reform, reform implementation, and land-use planning. The multistakeholder engagement approaches are action-oriented and also offer venues for communities and individuals to improve tenure security and governance. Consequently, they are described in the sub-section on options for tenure security enhancement.

Of the six conceptual frameworks covered in Section 1 of this report, two are gender-related, with one focused on identifying points where policy changes are needed to strengthen women's rights (e.g. Meinzen-Dick et al. 2019) and the other, 5Capitals-G (Stoian and Rodas 2018), aimed at assessing gender differences in asset endowments linked to community forest enterprise operations. PIM5 researchers piloted the 5Capitals-G framework in Guatemala during

Phase 2. Two frameworks related to understanding conditions conducive to successful community forest enterprises more generally were also developed: one framework assesses where CFEs are located along the investment readiness pathway (e.g. Gynch et al. 2020), and the other identifies intervention points for improving the likelihood of CFE success (Sharma et al. 2020). A rights actualization model (McLain et al. 2018a) was created to support better integration of tenure and governance considerations into forest landscape restoration assessments, and was subsequently used to inform field research on tenure and forest landscape restoration in Madagascar. The sixth framework (Shelton et al. 2018) is a tool for measuring whether learning takes place in participatory resource decision-making processes and could be applied to the multistakeholder processes developed or adapted by PIM5 researchers. Another valuable addition to the PIM5 tenure research toolbox is a modified version of the World Bank's Land Governance Assessment Framework that is being used to monitor progress on land governance in Africa (Ghebru 2017). In brief, these tools support research on a variety of topics related to tenure security and governance, including women's land rights, gender differences in benefits from forest product value chains, community forest enterprise development, tenure and forest landscape restoration, social learning and land governance.

2.2.2 Impacts of tenure insecurity on social, economic and ecological outcomes

PIM5 researchers have explored a variety of ways in which tenure insecurity on individually or household held parcels affects youth migration patterns in Ethiopia; links between tenancy and poverty in Ethiopia; childhood nutrition in the Kyrgyz Republic; women's social position in Nepal; women's socio-economic assets and forest concessions in Guatemala; and women's empowerment and agricultural productivity in developing countries. On community or collectively held lands, PIM5 researchers have examined the impacts of community forest rights recognition on women in Peru, Indonesia and Uganda, including impacts on livelihoods, food security and participation in resource management and decision making. Other analyses have examined the role that CFEs have played in fostering community investment in public infrastructure (like roads, schools and education)

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12 A fourth output, hosting a community of practice and resource center on tenure security and shared landscapes, was initially included but later omitted from the outputs included in the Theory of Change.

in Guatemala, Nepal, Namibia and Mexico. Still others have explored the power dynamics and subsequent impacts on tenure security in Laos, Myanmar and Colombia.

As the above examples indicate, the Flagship has provided extensive coverage of the social and economic outcomes of tenure and governance mechanisms in a variety of geographic settings. However, research that explores the links between tenure and governance mechanisms and ecological outcomes is much more limited. Those studies which do look at ecological impacts tend to rely on people's perceptions of changes in ecological conditions, rather than on measures of ecological parameters. Exceptions include Flintan et al.'s (2019) assessment of Participatory Rangeland Management (PRM) in Ethiopia, which included the use of satellite imagery to measure changes in rangeland conditions, and McLain et al.'s (2018b) realist review of the ecological outcomes of marine protected areas, which incorporated only studies with quantitative measures of ecological change.

2.2.3 Options to improve tenure security and governance

PIM5 researchers have devoted considerable effort to developing and testing multistakeholder processes that encourage joint learning and collective action. Processes developed or expanded during Phase 2 include the CoRe approach, participatory planning processes (JVLUP in Tanzania, PRM in Ethiopia), scenario building processes (Bayesian Belief Network Analysis and Participatory Prospective Analysis), and collective action games. The strength of the CoRe approach is that it provides a venue where diverse stakeholders can come together and through facilitated dialogue, jointly work out disagreements, identify how their interests align, and develop strategies for accomplishing mutually agreed upon goals for policy reform. The participatory planning processes (JVLUP, PRM) also bring together a diverse group of stakeholders but are focused on land-use planning rather than on conflict resolution. Facilitated dialogue, although useful as a tool, is less central to achieving stakeholders' goals.

Bayesian Belief Network Analysis (BBNA) and Participatory Prospective Analysis (PPA) bring stakeholders together to develop scenarios of desired futures. The data produced through these processes is then either used to develop action plans (PPA) or to inform policy development (BBNA). Both BBNA and PPA, as well as collective action games, are structured so that they yield research data as well as engage participants in dialogue and problem solving. The collaborative governance and participatory planning processes are less likely to yield research data, although they could potentially be structured to do so. The CoRe approach and PPA processes are useful for identifying needed policy and institutional reforms, as well as pathways for achieving them. They also are valuable tools for identifying barriers to reform implementation and avenues for overcoming them.

Transformational large-scale research-action partnerships, as exemplified in the PRM work in East Africa and in the recently-initiated Promise of the Commons initiative in India, are another promising option for improving tenure security and governance that has emerged from PIM5's Phase 2 activities. Both of these initiatives seek to integrate social and biophysical research and may provide useful models for how tenure and governance work can remain relevant as the CGIAR system transforms into One CGIAR.

2.3 Infusion of research among change agents

A key objective of PIM5 supported projects is to ensure that change agents working across a variety of sectors and at multiple levels of governance are aware of, have a sense of ownership over, and make use of research outputs. Project outcome descriptions, as well as project reports and journal articles, indicate that PIM5 researchers have been successful at infusing their findings widely among governments, donor organizations, NGOs/civil society/communities and other researchers. This is due in part to the long-established working relationships many PIM5 scientists have with in-country partners, which enable them to infuse their research findings into social networks that extend into multiple sectors and scales of governance. The infusion of research findings or benefits from research engagement among change agents is further enhanced by PIM5 scientists' emphasis on using participatory and collaborative methods.

PIM5 scientists inform other scientists of their work through a variety of avenues, including numerous webinars, professional conferences

and workshops, technical reports and peer review journals. The extent to which other scientists use PIM5 research findings, however, is unclear. One common measure of uptake of research findings among scientists is the number of times a journal article describing those findings is cited. However, given that none of the PIM5 Phase 2 journal articles were published before 2017, and the majority were published in 2019, it is too soon to see citations appearing in great numbers in other scientific publications. Likewise, it is too soon to expect to see articles published for studies that have applied the conceptual frameworks or adopted the research-engagement tools developed or refined during Phase 2. Journal citation statistics also do not capture the many other ways, such as conferences, workshops and webinars, in which scientists learn about research results and report on conceptual frameworks or research approaches that inform their own research.

Nonetheless, there is evidence of strong interest among scientists in PIM5 research. In 2018, Science[13] published a set of essays critiquing Garret Hardin's "tragedy of the commons" argument (Boyd et al. 2018), including an essay by PIM5 scientist and co-leader, Ruth Meinzen-Dick (2018), describing her research team's experiences with using collective action games. Additionally, Meinzen-Dick received the 2019 Elinor Ostrom Award on Collective Governance of the Commons, an award which recognizes the work of practitioners and scholars involved in the field of the commons. PIM5 researchers have had articles published in a variety of widely-read and respected journals including Land Use Policy, World Development, Forest Policy and Economics, Ecology and Society, American Journal of Agricultural Economics, and Agricultural Systems, among others. PIM5 research was showcased at the 2017, 2018 and 2019 World Bank Land and Poverty conferences, the premiere venue globally for reaching both scientists and development practitioners who work in the field of land governance. PIM5 scientists hosted interactive sessions on tenure and governance issues at the Global Landscape Forum in 2017, 2018 and 2019, a venue that brings together scientists and practitioners from around the world who work on landscape restoration issues.

Infusing PIM5 research findings among private sector actors, however, has proved far more challenging. Absent in the Flagship's narratives describing project outcomes and outputs are descriptions of how private sector individuals or firms (other than community enterprises) have used results or benefited from PIM5 activities. It is unclear whether the absence of the private sector in these narratives signals a real gap, or whether it reflects lack of attention on the part of researchers to documenting use of their findings by the private sector. However, discussions at Flagship 5's meeting in March 2020, suggest that researchers' connections with the private sector, particularly large firms or industry associations, are much less strong than with other actors. Given the strong role that private sector actors play in the politics and economics of land and natural resource governance in the countries where PIM5 operates, it is worth investigating how to engage private sector actors in PIM5 activities in ways that will enhance, rather than undermine, less powerful actors' tenure security and participation in governance. Engagement of the private sector will likely become increasingly important as community forest enterprises mature, and the need for private sector investment expands (Gynch et al. 2020).

One aspect of the change agent component of the Theory of Change that needs to be refined in light of the past three years of work, is the 'Governments use results to improve natural resource policies and institutions' indicator. PIM5 research shows that implementation of tenure and governance reforms is contingent on buy-in from multiple levels of government, and that local-level governments are especially critical actors at the implementation stage. Indeed, many PIM5 projects are already structured to contribute to knowledge building and behavioral change at multiple scales of government, precisely for this reason. It would be useful to make this explicit in the Theory of Change, by modifying the indicator to "Governments at multiple scales (national, regional, local) use results to improve natural resource policies and institutions".

2.4 Outcomes

Flagship 5 researchers identified three overarching outcomes that they wished to achieve by 2022. The review that follows, of PIM5 achievements over the past three years, indicates that the Flagship is well on its way to achieving all three

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13   Journal published by the American Association for the Advancement of Science.

outcomes. Many of the activities, such as the work on National Engagement Strategies, community forest concessions in Guatemala, the Promise for the Commons Initiative in India, and JVLUP in Tanzania address multiple outcomes, but for brevity's sake are described under only one of the outcomes.

2.4.1 PIM5 Outcome 1 for 2022

Evidence informs natural resource governance and tenure policy processes and/or implementation in 12 countries.

At the global level, CoRe teamed up with the International Land Coalition to strengthen ILC's National Engagement Strategies initiative, which currently supports NES networks in 29 countries. Through workshops and development of a series of best practice guides, CoRe has provided national facilitators with the skills they need to convene and sustain multistakeholder platforms that can advocate effectively for land-related policy reforms and reform implementation. The project has built the capacity of NES facilitators in 22 countries to identify desired policy reforms and levers for policy change. Additionally, participation in the workshops has enabled NES network facilitators to strengthen their ties with other NES participants, enhancing cross-country information exchange and peer-to-peer learning.

At the national level, PIM5 researchers have developed evidence that has informed policy reforms or processes in 17 countries (13 in Africa, 2 in Latin America and 2 in Asia) (see Table 6). Policy domains targeted include land governance, rangeland policy, community forest reform implementation, forest landscape restoration and land-use policy.

Land governance: During Phase 2, PIM researchers have collaborated with the African Land Policy Centre to develop a monitoring and evaluation framework to assess land governance in Africa (MELA). Eleven countries are piloting the framework, which will allow participating countries to track the progress made under the African Union's Declaration on Land Governance in Africa, including ensuring that women and other vulnerable groups have land rights. PIM researchers built institutional capacity in each participating country by convening a working group, composed of representatives from government ministries,

Table 6. Countries where PIM5 evidence has informed policy or reform implementation

Africa	
*Côte d'Ivoire	Mozambique
*Democratic Republic of Congo	*Nigeria
*Ethiopia	*Rwanda
*Kenya	*Tanzania
*Madagascar	Tunisia
*Malawi	*Uganda
	*Zambia
Latin America	
Guatemala	
Peru	
Asia	
Nepal	
Indonesia	
Vietnam	

Note:
* Participant in Monitoring and Evaluation of Land in Africa (MELA) framework project

civil society organizations and universities, to tailor the monitoring and evaluation indicators to each country's specific context. Through participating in the project, working group members have acquired the knowledge and skills needed to carry out data collection that will hold the national governments involved accountable for keeping their African Union land governance equity commitments.

Rangeland policy[14]

Woreda land-use planning (Ethiopia): In Ethiopia, PIM5 supported a collaboration between ILRI scientists and the Ministry of Agriculture that resulted in the development of a two-volume Woreda Land Use Planning manual, aimed at institutionalizing participatory rangeland management in local-level government land-use planning. Although previous experiences with PRM in Ethiopia have been positive overall, their long-term sustainability was in question as long as they remained project-based and independent of local government control. The WLUP process was designed to address this shortcoming. The manual was launched in September 2019 by the head of the Rural Land Administration and

14   PIM5 activities have also contributed to policy reforms for rangelands in Tanzania. These activities are described under Outcome 3, Enhancing Tenure Security.

Use Directorate, Ministry of Agriculture, who "encouraged woreda and regional government land experts to apply the approach across the country's agro-pastoral areas" (Kimani 2019).

Pastoral Code revisions (Tunisia): In 2017, PIM5 supported a workshop co-organized by the Institut des Région Arides de Médenine (IRA-Médenine) and ICARDA to address degradation of Tunisia's 4.4 million ha of rangelands. Subsequently, ICARDA has worked with the General Directorate of Forestry to draft a new pastoral code that will facilitate a more sustainable governance regime, while enhancing pastoralist livelihoods. The ICARDA-IRA-Médenine research team organized a series of participatory Bayesian Belief Network Analysis sessions to collect data for use in designing the new rangeland code. National-level decision makers have approved the draft code, which the National Assembly is expected to adopt.

Community forest reform implementation (Guatemala and Peru)

Community forest concessions[15] **(Guatemala):** In 2017, Bioversity International and CIFOR, in close collaboration with the Association of Forest Communities in Petén (ACOFOP), organized a research workshop and stakeholder meetings in Petén, Guatemala to take stock of the evidence regarding the socio-ecological benefits of community forest concessions, as well as identify areas for further research and define next steps in the concession process, with ACOFOP and Consejo Nacional de Áreas Protegidas (CONAP) as key stakeholders. Data about nine active community concessions and three cancelled/suspended concessions provides a strong evidence base to support the communities' claim for concession renewal. This, in turn, will provide the basis for continued conservation of forest resources and biodiversity in more than 350,000 ha of tropical forest and sustained generation of livelihood benefits for the more than 10,000 people who depend directly or indirectly on the concessions.

University-level forestry curriculum changes (Peru): PIM5 and the Forestry Department of the National Agrarian University La Molina in

Peru partnered on a study of land and forest tenure security of indigenous communities. The outcomes included increased knowledge and greater research capacity of university staff on tenure, gender and indigenous issues. Another important outcome was a change in the Forest Engineer curriculum to include a mandatory social science concentration. The Forestry Department organized a three-day international congress in Lima, in collaboration with CIFOR in June 2018. A lead university researcher reported that participating had led her to change her teaching and add a new course on ethnoecology. Integrating such training into university-level forestry curriculum will have positive long-term consequences for improved land management, as it fills a knowledge and skills gap that has been documented by PIM5 researchers as posing a barrier to native titling reform implementation. Another outcome of the study was that more than 500 community members participated in trainings on tenure rights, and each of the 22 villages participating in the study received a book summarizing the findings from their community. This helps fill a gap in community-level awareness of their tenure rights.

Landscape restoration (Madagascar and Ethiopia)

PIM5 collaborated with CIFOR on exploratory research looking at the tenure constraints to widespread adoption of forest landscape restoration (FLR) practices. Findings from a literature review on FLR and tenure were presented at a workshop co-hosted by GIZ, the German development agency, and CIFOR in Bonn in 2017. Based on the discussions that took place at the workshop, GIZ provided funding for tenure research linked to FLR projects in Madagascar and Ethiopia in 2018–2019.

Informing a tenure-strengthening FLR project (Madagascar): Researchers from CIFOR and the University of Antananarivo's forestry school documented a range of locally-based tenure practices in northwestern Madagascar. These local practices exist in parallel with, but are far more widely used than, the centralized state's titling system and the commune-level land certification system. The study's findings have informed GIZ-Madagascar's efforts to strengthen the focus of its forest landscape

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15   Also addresses Outcome 3, Enhancing Tenure Security.

restoration and tenure program, so as to enhance tenure security for collectively held lands and resources. It appears likely that GIZ will invest in furthering the research in Madagascar and extending it to include Cameroon, with a three-year comparative research project for the two countries scheduled to begin in 2021.

Informing community forest law implementation (Ethiopia): In Ethiopia, CIFOR scientists collaborated with GIZ-Ethiopia in an exploratory study (McLain et al. 2019a) to identify what is needed to implement the country's 2018 Forest Law, which authorizes the creation of community forests. Case studies in three regional states identified enabling factors that can facilitate implementation of the new law. The findings and recommendations of the assessment were reported at two national-level workshops, where national and regional stakeholders expressed an interest in further dialogue at the regional level for policy uptake and institutional reform.

***Land-use policy (Myanmar and Laos)*:** In Myanmar, PIM5-supported research has informed institutional arrangements for implementing the country's National Land-Use Policy. A key feature has been the project's emphasis on the need to involve both state government and the ethnic armed organizations in policy discussions. In Laos, findings from a study of the role of local institutions in land-use planning have informed The Agro Biodiversity Initiative's efforts to support village-level land-use planning.

2.4.2 PIM5 Outcome 2 for 2022

Improved landscape-level governance arrangements are implemented in six countries with more productive and equitable management in at least two.

PIM5 activities contributed to the implementation of improved landscape-level governance through the development of conflict management tools for a university-level forestry curriculum (Indonesia), self-monitoring multistakeholder process (MSP) governance tools (Peru, Indonesia, Ethiopia), a multistakeholder dialogue tool for cross-border landscape management (Kenya and Somalia), and collective action games (India). PIM5 activities also contributed to the strengthening

of multistakeholder processes, such as the NES network and Woreda Land-Use Planning (both described under Outcome 1) and Joint Village Land-Use Planning and the Promise of the Commons initiative (both described under Outcome 3).

Forest tenure conflict resolution (Indonesia): With PIM5 support, ICRAF and NGO partners developed a conflict mapping tool designed to help resolve forest land tenure conflicts. Forestry school instructors were trained in the use of the tool, which can be used for teaching as well as conflict resolution. Four analytical approaches, including Rapid Land Tenure Assessment, Disputants Style Analysis, gender analysis for management of forest resources, and documentation of data conflicts, have been formally adopted into Indonesia's Centre of Forestry Education and Training curriculum.

Multistakeholder governance (Peru, Indonesia, Ethiopia): A CIFOR study of multistakeholder processes (MSPs) used in landscape management documented actions for improving MSP governance in Peru, Indonesia and Ethiopia. The study resulted in the development of a self-monitoring tool for improved MSP governance in Indonesia and Peru. The tool has a strong equity element, including a component for working with rural women on gender indicators.

Cross-border integrated landscape management (Kenya and Somalia): A multistakeholder dialogue tool was developed to provide a platform for exchange of information between stakeholders previously in conflict with each other, in order to conserve biodiversity resources in the Tana-Kipini-Badana bushland and seascapes of Kenya and Somalia (Koech et al. 2017). The dialogue enabled donors to identify biodiversity hotspots for scaling up the approach in Kenya and Uganda, and an action plan has been developed for creating a cross-border biodiversity conservation network in Kenya and Somalia.

Collective action games to strengthen resource governance (India): IFPRI, ICRAF and partners tested whether experimental games can contribute to improved governance of shared resources in India. Subsequently, the

Foundation for Ecological Security began using the games as a tool for joint learning within larger program interventions. The games appear to have an impact on behavior, with some farmers changing their water-use patterns after participating in the game. FES is now exploring avenues for using the games as an integral part of their interventions to facilitate better governance of scarce and complex resources.

2.4.3 PIM5 Outcome 3 for 2022

Tenure security is improved for beneficiaries in six countries, with detailed documentation for two countries explaining the project's contribution to this outcome.

During Phase 2, PIM5 activities that have helped improve tenure security have focused primarily on enhancing the tenure security of commons. The three examples provided below are illustrative of PIM5's work in rangelands (Tanzania), mixed rangeland and forest ecosystems (India) and tropical forests (Uganda). Action-research on forest concessions in Guatemala (described under Outcome 1, Informing Policy Reform) has also contributed to improving tenure security.

Joint Village Land-Use Planning (Tanzania): In Tanzania, PIM5 has provided support to researchers working with the Sustainable Rangeland Management Project, which ILRI is co-implementing with the Ministry of Livestock and Fisheries. Joint Village Land-Use Planning is an innovative planning process that leads to the issuance of certificates of customary rights of occupancy for groups rather than individuals. It takes an inclusive approach that promotes the participation of women as well as men, and younger as well as older community members. By 2017, 12,187 ha had been set aside for shared grazing, reducing conflicts over rangeland resources and benefitting more than 3000 pastoralists/agropastoralists. A parallel process in other villages resulted in a similar agreement in 2018 that covered more than 90,000 ha (PIM 2018). The Tanzanian government has adopted the approach, which is now included in the country's National Land-Use Planning Commission (NLUPC) Guidelines. The project has also helped strengthen the NLPUC's database on Village Land-Use Plans, grazing areas and livestock routes, and has enhanced district-level land-use planning, conflict management and data analysis capacity through trainings, learning visits, study tours and meetings. These efforts have an important equity component in that the project strengthens land rights for pastoralists, who are generally from marginal ethnic groups.

Promise of the Commons initiative[16] (India): In 2018, PIM5, WLE and FTA entered into a partnership to work jointly on landscape-level approaches that take advantage of PIM5's expertise in governance, with WLE and FTA's expertise in biophysical interventions. Subsequent to planning workshops held in late 2018, PIM, WLE and FTA initiated the Promise of Commons initiative which seeks to identify ways for expanding the area of common property restored or enhanced in India from 5 million to 20 million acres over five years. To implement the initiative. IFPRI and CIFOR signed Memorandum of Understandings with the Foundation for Ecological Security, an NGO operating in India, to provide support for strengthening tenure and policy for managing the commons. As described in Box 1 (Section 1.3), this partnership has already enabled communities in one district to complete applications for conversion to revenue status and in a second district, the partnership has assisted communities in completing applications for having their forest rights recognized.

Water Towers (Uganda and Kenya): The Water Towers project in Uganda and Kenya supported community involvement in boundary tree plantings for a Ugandan national park on Mount Elgon through facilitating negotiations of a three-way Memorandum of Understanding between the Uganda Wildlife Authority (UWA), communities and a project partner. The negotiations helped resolve a conflict between the communities and UWA over the forest boundary, and ultimately the 2.5 km boundary was planted with trees as a way to clearly demarcate it.

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16   Also addresses Outcome 1, Informing Policy Reforms and Outcome 2, Improving Landscape Governance Arrangements.

2.4.4 Progress toward Flagship 5 – specific outcomes in the Theory of Change

In terms of meeting the Theory of Change (ToC)'s Flagship 5 specific objectives, the three outcomes described earlier in this section, together with the research findings described in Section 1, lead to the following conclusions:

- PIM5 activities from 2017 to 2019 have clearly contributed to policy processes and informed reform implementation efforts.
- PIM5 activities during that same period have clearly contributed to the capacity of various social actors to undertake tenure and governance work. However, a more robust summary of PIM5's contribution in this respect would be greatly aided if PIM5 researchers conducted and reported systematically the results of pre- and post-tests of trainings, peer-to-peer exchanges and other capacity-building activities, and undertook follow-up post-tests to find out whether trainees/participants have been able to put what they've learned into practice.
- The evidence also suggests that PIM5 activities have helped to put into place mechanisms for enhancing tenure security (i.e. typically linked to policy reform processes). However, without impact evaluations it is difficult to determine whether such mechanisms actually have enhanced tenure security, and if so, for whom. It is also challenging to measure those impacts that are tied specifically to PIM5 activities, since much of the Flagship's work is embedded in larger projects, with other components that may also have contributed to tenure security enhancement.
- It is much less clear whether and how much PIM5 has contributed to more productive and equitable management of shared landscapes, primarily because few of the projects document changes in ecological conditions or resource productivity that could be attributed to the policy processes, capacity building activities, or tenure security enhancing mechanisms supported through PIM5 research or research-engagement activities.

2.4.5 Progress toward the sub-Intermediate Development Outcomes

Flagship 5's Theory of Change posits that the four PIM5-specific outcomes will lead to six sub-Intermediate Development Outcomes. Table 7 provides illustrative examples for how PIM5 activities contribute to each of the four outcomes.

2.4.6 From outputs to Intermediate Development Outcomes

Demonstrating links between PIM5 outputs and the ToC's five IDOs is challenging, given that the relationships are indirect and that most activities are embedded in larger projects. Nonetheless, based on the research findings, the outcomes described in this section and the examples listed in Table 7, it is reasonable to conclude that PIM5 activities are contributing significantly toward achievement of the following three IDOs:

- Enabling environment improved
- National partners and beneficiaries enabled
- Equity and inclusion achieved

However, as with the PIM5-specific outcomes, the extent to which PIM5's activities are contributing to increased productivity and enhanced benefits from ecosystem goods and services is much less clear. Clarifying those relationships will require building in mechanisms for evaluating changes in ecological conditions or resource productivity that can reasonably be linked to the improvements in enabling conditions and capacity building. Some Flagship activities are already moving in that direction (i.e. Participatory Rangeland Management, Promise of the Commons), and could serve as models for future interdisciplinary work.

2.5 Key lessons learned and challenges to overcome

Over the course of the past three years, PIM5 researchers have identified a number of key lessons learned regarding how to structure research and research engagement processes that yield scientifically credible results, while contributing to the capacity of multiple types of partners to advocate for and/or implement policy reforms that increase or strengthen local community members' access to productive resources and decision-making opportunities. At the same time, they have also encountered challenges that negatively impact the prospects of going to scale with, or

Table 7. PIM5's contributions to sub-Intermediate Development Outcomes (sub-IDOs)

Sub-IDO	Illustrative examples of how PIM5 is contributing toward sub-IDOs
Increased access to productive assets	• PIM5-ILRI assistance related to Joint Village Land-Use Planning (Tanzania) and Participatory Rangeland Management (Ethiopia) has contributed toward improvement of women pastoralists' access to rangeland resources. • PIM5-CoRe activities in lake ecosystems have contributed to reductions in conflict and enhanced access of small-scale fishers to lake fisheries in Cambodia, Uganda and Zambia.
Gender equitable control of productive assets and resources	PIM5 research has contributed toward moving further in the direction of gender equity through: • Incorporation of indicators regarding women's tenure security in national land governance monitoring evaluation systems in Africa • Research on impacts of community forest reforms on women in Indonesia, Peru and Uganda that has identified the need for explicitly identifying women as subjects of reforms in regulations and guidelines • Working with the Ethiopian government to develop a Woreda Land-Use Planning Manual, with explicit guidance on how to implement gender-inclusive planning and development of a self-monitoring gender assessment for MSPs in Indonesia and Peru.
Conducive agricultural policy environment	• PIM5-ICARDA collaboration has contributed to data critical for the design of a pastoral code in Tunisia that is more conducive to rangeland management that takes into consideration both ecological sustainability and livelihoods. • PIM-ILRI collaboration in East Africa has led to the institutionalization of participatory rangeland management into Woreda Land-Use Planning in agropastoral zones in Ethiopia.
More productive and equitable management of natural resources	• PIM5-Bioversity collaboration in Guatemala is providing the data needed to advocate for renewal of the community forest concessions when they expire in 2020. • PIM5-CIFOR's implementation of Participatory Prospective Analysis (PPA) with community forest stakeholders in Uganda, Kenya, Indonesia, Peru and Nepal has promise for improving implementation of community forest reforms so that they are both more sustainable and more equitable.
Enhanced individual capacity in partner research organizations through training and exchange	• PIM5-CoRe-ILC partnership has enhanced National Engagement Strategies (NES) facilitators' capacity to identify pathways for more effective policy reform advocacy. • PIM5-CIFOR partnership with the Forestry Department of the National Agrarian University La Molina in Peru has enhanced university staff's knowledge of and capacity to do research on gender and indigenous communities' tenure issues, as well as resulting in the institutionalization of a social science concentration in the forestry program.
Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	• A collaboration between PIM5, FTA and WLE, in partnership with FES, an NGO in India, has enabled FES to expand its capacity to implement an innovative program aimed at scaling landscape restoration activities from 5 to 20 million acres in five years. • A partnership between PIM5 and ILC documented the benefits of the Women's Rights and Leadership Forums supported by the Pastoral Women's Council, Ujamaa Community Resource Team and Maliasili Initiatives. Lessons learned will benefit other projects, such as the Sustainable Rangeland Management Project that also operates in northern Tanzania.

institutionalizing, pilot projects in ways that will increase the likelihood of achieving desired outcomes. This section provides an overview of both lessons learned and challenges that will need to be overcome if the full potential of PIM5's contributions to reducing poverty and supporting sustainable and equitable resource management is to be achieved.

2.5.1 Lessons learned

1. Partnerships are the keys to uptake

PIM5's most substantial achievements have come about through long-term, sustained partnerships with governments, civil society, NGOs and donors. Such partnerships are critical, because changes in tenure security take time to achieve. Reform implementation that enhances tenure security requires:
- Building awareness of the importance of tenure and governance
- Building trust among partners
- Building the capacity of partners so that they are better able to adopt or adapt the tools developed through our work.

2. Engaging with the private sector

Engaging with a more diverse set of actors has provided valuable understanding of priorities and the local insights of communities. However, a gap remains in PIM5's interactions with the private sector. Engaging with the private sector will become increasingly important as the number of community forest enterprises increases and they begin to look for sources of capital to finance the development of value-added products.

3. Partnering with social network brokers, like the International Land Coalition, is invaluable

Strengthening PIM5's connections with organizations that function as social network brokers has had the following benefits:
- Enabled PIM5 to connect with a much broader set of civil society actors than would otherwise have been possible
- Enabled civil society actors to connect with each other, creating opportunities for social learning, and potentially, behavioral change
- Provided a channel for learning what the priority issues are in various countries

- Increased the likelihood that PIM5 research will be applied because of the links that social network brokers have with governments.

4. Incorporating training into long-term collaborations increases the likelihood that reform uptake will occur and that the reforms will result in improved tenure or governance of natural resources

5. Consultation and dialogue with partners in advance of research activities helps ensure that research questions address the priority questions of partners
- Early consultations often reveal different understandings between researchers and partners of how change occurs, what changes are needed, and where the leverage points are for achieving policy reforms that will be implemented.

6. Continuous interaction and communications with partners are important for achieving expected targets
- These interactions need to occur with colleagues at the CGIAR centers, as well as with NGOs and government organizations.
- Budgets permitting in-person visits with some regularity can facilitate communication and help build and strengthen the relationships of trust that are the foundation of successful long-term partnerships.
- Community-level visits are equally important to ensure that research meets the needs of community members.

2.5.2 Challenges to overcome

1. Short-term funding limits what we can accomplish
- Without multi-year contracts, PIM5 researchers must interrupt their work to seek additional funding.
- In some instances, additional funding does not materialize, forcing projects to end prematurely, creating ill-will and jeopardizing relationships of trust that have been carefully nurtured over time.
- This has negative consequences for both the research projects already underway, and future research projects.

2. Government partners are often not in alignment with the best interests of intended beneficiaries
- In many projects, research cannot move forward without government buy-in, but government partners are often wedded to existing policies and reluctant to push for change, limiting the scope for work that is truly innovative.

3. Landscape-level governance requires involving multiple kinds of stakeholders, which is not always easy to accomplish
- Engaging a diversity of stakeholders in research and action-research projects can be rewarding.

However, in landscape-scale projects, where there are often many stakeholders, tradeoffs may have to be made between inclusiveness and effectiveness, at least in the short term.

4. Claiming credit for wins without undermining local ownership of reforms
- It is important for PIM5 researchers to document the impact and contribution of PIM5, but often wins are the product of partnerships. It can be challenging to credit PIM5 publications and presentations without undermining local ownership of the reforms.

3 Moving forward within the context of One CGIAR

By the end of 2021, the CGIAR system will have achieved its transformation into 'One CGIAR', resulting in a more streamlined organization that is intended to be more effective at addressing "21st century challenges for food, land, and water systems to deliver wide access to healthy diets and decent employment within environmental limits" (CGIAR 2019). It is strategic for PIM5 to consider how it can situate itself in a position of strength as CGIAR transforms from a distributed network of centers each with their own mission, into an organization with a single mission and unified governance structure.

3.1 One CGIAR's mission and approach

One CGIAR's mission is "Ending hunger by 2030 – through science to transform food, land and water systems in a climate crisis" (CGIAR 2019). Its 2030 research strategy centers on five impact areas:
- Nutrition and food security
- Poverty reduction, livelihoods, jobs
- Gender equality, youth, social inclusion
- Climate adaptation and greenhouse gas reduction
- Environmental health and biodiversity

Key characteristics envisioned for One CGIAR include:
1. A more integrated research delivery system, with a focus on large integrative projects that are co-created with partners and result in benefits across impact areas.
2. An integrated, interdisciplinary and transformative approach to knowledge production and dissemination.
3. Use of science to foster changes in food, land and water systems that will enable the world's populations to become more resilient in the face of global climate change.

4. Reduction of polarization, and building connections between policy and science to facilitate the development of more productive and equitable global food systems.

A key difference between One CGIAR and the current system is that rather than funding a large number of projects that are only loosely connected, the new arrangement will provide much larger amounts of funding over longer time periods (three years rather than one) for integrated research that addresses multiple impact areas. Toward this end, research teams will be asked to propose four or five 'big lifts', which van Issjel (2020) describes as consisting of large-scale integrated projects that have:

> "… clear problem statements, purpose driven solutions, not buckets of fragmented projects, metrics for success, building on CGIAR's comparative advantage, transparency and clarity on the value for money, and…a stage-gated funnel to manage R4D as an innovation system that scales for success."

To be competitive in the One CGIAR world, PIM5 will need to convince other researchers, as well as funders, that its expertise in institutional analysis, and more specifically in tenure and governance, is critical to the success of 'big lift' projects that address multiple impact areas. The rest of this section reflects briefly on some areas where PIM5's experience is currently limited, but toward which PIM5 might consider shifting its attention, as well as those areas where PIM5 has a comparative advantage.

3.2 Pivoting toward climate adaptation and food security

Over the past three years, PIM5's activities have focused most strongly on three of the five new

impact areas, specifically poverty reduction, social inclusivity and environmental health/biodiversity. At this moment, however, PIM5 needs to give serious consideration as to how it can apply its expertise in institutional analysis to research and research-engagement related to nutrition/food security and climate adaptation/greenhouse gas reduction. Pivoting toward these impact areas is important for two reasons.

First, the System Reference Group (SRG) describes climate change as "today's pre-eminent global challenge and a unifying theme of an urgent food, land and water systems transformation", a clear signal that research related to climate change is likely to have the greatest chance of being funded over the next few years. PIM5's contribution to research directly related to climate change adaptation during Phase 2 consists of a handful of studies on payments for agrobiodiversity conservation (Muller et al. 2017), payments for ecosystem services (Falk et al. 2018) and community seedbanks (Porcuna Ferrer 2018). However, PIM5 researchers affiliated with CIFOR have a long history conducting applied research on tenure and governance issues related to REDD+. PIM5 can draw on CIFOR's experiences, as well as those of other partners, such as FTA and ILRI, to demonstrate expertise regarding tenure and governance issues relevant to climate adaptation. Indeed, one recent PIM5 project (McLain et al. 2017) drew on CIFOR's work on tenure and REDD+ to design a tenure diagnostic framework for use with forest landscape restoration assessments.

Second, the COVID19 pandemic has brought an even greater sense of urgency to the need to address food security, as developing countries scramble to adapt to a world in which both global and local food chains are threatened and where restrictions on mobility and business operations have deprived millions of people of income-earning opportunities. Chances are high that significant amounts of funding in the next few years will be tied to research related to COVID-19. It would therefore behoove PIM5 to brainstorm ideas for a research agenda that explores tenure and governance issues linked to the pandemic's impacts and the ways in which different stakeholders have responded. One logical area to examine given PIM5's extensive work on MSPs, is the extent to which existing MSPs have been able to pivot to deal with the pandemic and its aftermath, as well

as the types of support they need in order to pivot more effectively.

Although only a handful of PIM5 projects have been structured to explicitly explore tenure and governance issues that impact nutrition and food security (e.g. Hellin et al. 2018; Kosec and Shemyakina 2018), several PIM5 projects have addressed issues of nutrition and food security peripherally. These include multistakeholder processes aimed at improving the condition of fisheries (e.g. Ratner et al. 2017, 2018) and rangelands (Mwita et al. 2017; Flintan et al. 2019), and area enclosure approaches to fisheries conservation (McLain et al. 2018b). Recent work by Larson et al. (2019b) also identifies food security as a key concern that needs to be explicitly addressed in community forest reforms.

3.3 Leading with PIM5's core competencies

Core competencies that PIM5 can capitalize on to strengthen its position within One CGIAR include the following:
- PIM5 excels in **participatory research**, an area of expertise that will be particularly valuable if One CGIAR is serious about taking an integrated, interdisciplinary and transformative approach to knowledge production and dissemination and co-creating projects with partners.
- PIM5's **expertise with multistakeholder processes (MSPs)** is another valuable commodity. MSPs have emerged as important to collaborative governance in a variety of sectors, and PIM5 can reasonably make the argument that it has the capacity to do research that can provide data that will enable MSPs to function more effectively. Aside from enhancing inclusivity, which is a key goal for One CGIAR, PIM5's work on and with MSPs, such as those in the NES network, can also contribute toward achieving One CGIAR's goal of building connections between policy and science.
- PIM5's wealth of **knowledge about tenure systems, and particularly about when and how tenure rights serve as incentives (or disincentives) to investment in conservation practices**, is another asset in a context where scaling out of conservation practices over large areas is of paramount importance. This will be particularly important for initiatives such

as Forest Landscape Restoration, which One CGIAR is likely to support to achieve its goals with respect to climate adaptation.

- PIM5's **expertise in research on and support for collective action** is likely to be particularly important for climate adaptation programs, since some of the most difficult issues are linked to issues that require collective action around water. Many of the negative impacts of climate change are linked to water. In some contexts, climate changes will lead to the presence of too little water, in which case there are likely to be conflicts over access to water, and, therefore, a need for collective action to manage those conflicts. In other contexts, the challenge will be the presence of too much water, and collective action will be needed for flood protection or prevention. Collective action games, such as the water management games applied by PIM5 researchers in India, are likely to be very useful tools in efforts to manage water issues linked to climate change.

- PIM5's **experience with engaging in large-scale integrated, interdisciplinary and transformative initiatives**, such as the Promise of the Commons in India and rangeland restoration initiatives in Tunisia and East Africa, is another key asset given that these are precisely the types of projects that One CGIAR wishes to encourage over the next decade.

3.4 Final reflections

This synthesis has provided a detailed, yet still only partial, overview of the diversity of research and research-engagement work that PIM5 has supported over the past three years. Through this work, PIM5 has added substantively to the body of scientific knowledge about tenure and governance. At the same time, it has helped advance policy reforms that improve access and tenure security of land and natural resources, promoted more inclusive and equitable decision making, and supported more equitable and sustainable use of resources in Africa, Latin America and Asia. It has done so by building the capacity of and empowering a variety of actors, including government, donors, CSOs/NGOs, community authorities and community members, to engage in tenure and governance research and implementation on their own. This body of work, as well as the work that preceded it, has laid a solid foundation for designing and implementing the integrated, interdisciplinary and transformative research that One CGIAR has identified as necessary for achieving its mission of ending hunger by 2030.

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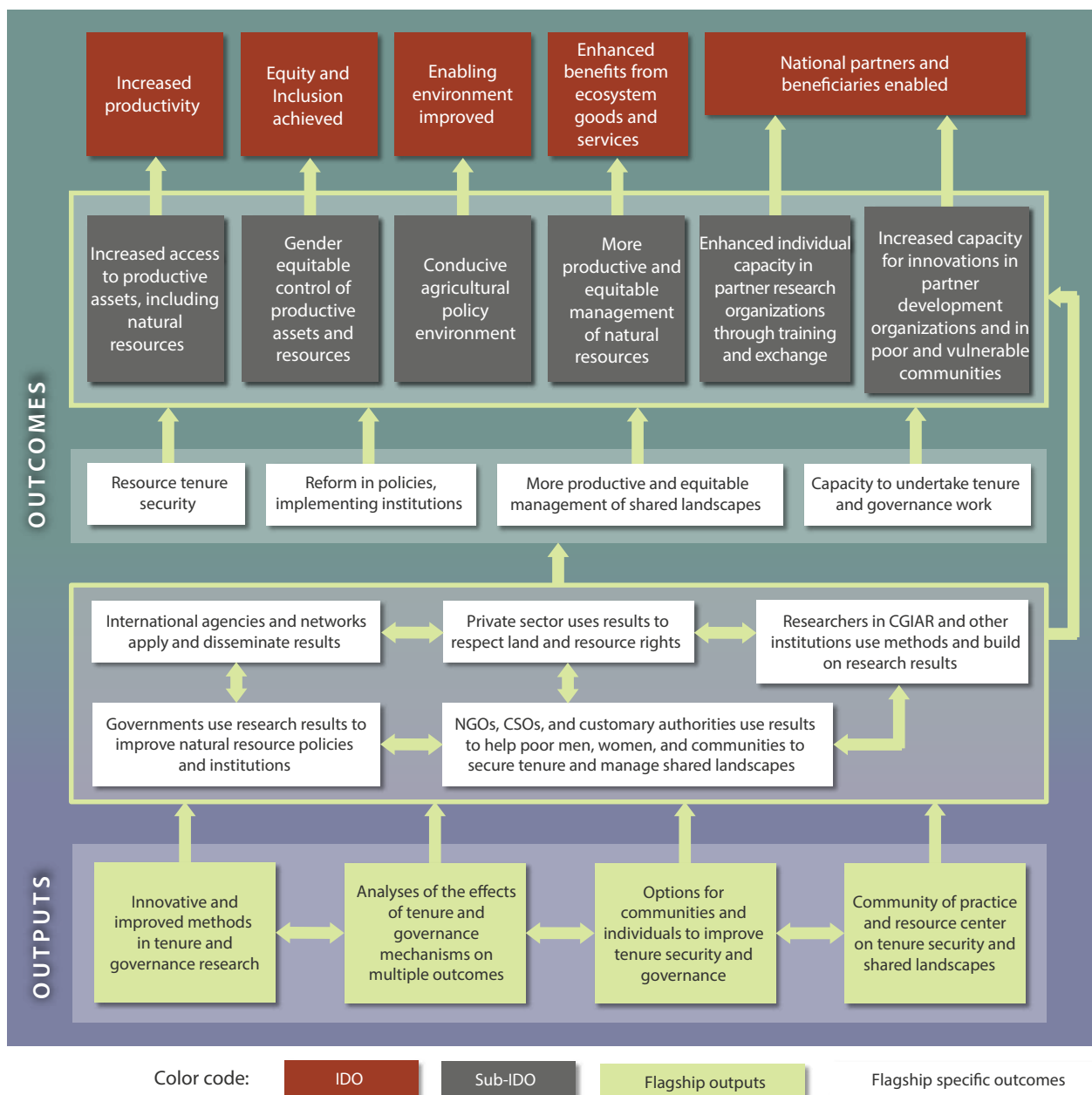
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Annex A. PIM5 Theory of Change

OUTCOMES

- Increased productivity (IDO)
- Equity and Inclusion achieved (IDO)
- Enabling environment improved (IDO)
- Enhanced benefits from ecosystem goods and services (IDO)
- National partners and beneficiaries enabled (IDO)

- Increased access to productive assets, including natural resources (Sub-IDO)
- Gender equitable control of productive assets and resources (Sub-IDO)
- Conducive agricultural policy environment (Sub-IDO)
- More productive and equitable management of natural resources (Sub-IDO)
- Enhanced individual capacity in partner research organizations through training and exchange (Sub-IDO)
- Increased capacity for innovations in partner development organizations and in poor and vulnerable communities (Sub-IDO)

- Resource tenure security
- Reform in policies, implementing institutions
- More productive and equitable management of shared landscapes
- Capacity to undertake tenure and governance work

- International agencies and networks apply and disseminate results
- Private sector uses results to respect land and resource rights
- Researchers in CGIAR and other institutions use methods and build on research results
- Governments use research results to improve natural resource policies and institutions
- NGOs, CSOs, and customary authorities use results to help poor men, women, and communities to secure tenure and manage shared landscapes

OUTPUTS

- Innovative and improved methods in tenure and governance research
- Analyses of the effects of tenure and governance mechanisms on multiple outcomes
- Options for communities and individuals to improve tenure security and governance
- Community of practice and resource center on tenure security and shared landscapes

Color code: IDO | Sub-IDO | Flagship outputs | Flagship specific outcomes

IDO = Intermediate Development Outcome.
Source: CGIAR (2016:146).

The International Food Policy Research Institute's Policy, Institutions and Markets' (PIM) Flagship 5 (PIM5), on the Governance of Natural Resources, addresses the policy and institutional foundations for improved management of natural resources, whether held in common or individually. Research in PIM5 investigates where and how tenure insecurity constrains productive and sustainable management of natural resources, and how community groups and individuals who use the same resources in different ways can govern them, with recognition of multiple claims and the preservation of ecosystem services. This synthesis of research findings and outcomes under the flagship, which primarily covers the period 2017-2019, aims to communicate the salience of the flagship's research to the development agendas of its current and prospective donors and other partners.

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