Coordinating forest tenure reform: Objectives, resources and relations in Indonesia, Kenya, Nepal, Peru, and Uganda

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ABSTRACT

As forest tenure reform is mainstreamed around the world, outcomes are increasingly determined by the institutions that are responsible for administering its operationalisation and translating policy into implementation. This global study examines state institutional contexts of tenure reform in Kenya, Uganda, Nepal, Indonesia, and Peru. Interviews were administered in 2016–2017 using a fixed questionnaire applied across all countries involving 26–32 respondents from state implementers of forest tenure reform in each country for a total of 145 respondents. Although our study engagement was tailored for specific country contexts, we identified generalisable forest tenure reform trends through comparative analysis. Findings situate the overall bridging role that state institutions play in forest tenure reform, which we describe as falling under three key overarching coordination functions, namely: coordination among implementers, coordination of objectives, and coordination of resources. These three categories provide insights not only for gauging the progress of a country's forest tenure reform, but also for evaluating how robust reforms have been, and where forest tenure reforms are headed in the future.

1. Introduction

It is estimated that more than 730 million hectares, or nearly 20% of the world's forests, are controlled or managed by local people under various schemes relating to land ownership, licensing, and management (Gilmour, 2016). Empowering local communities to forest land rights also continues to gain traction as part of a global movement to sustainably manage forest resources. There has been a significant increase in some form of legal rights to forest land documented in developing countries since 2002, showing that Indigenous peoples and local communities now have statutory rights over 28% of the developing world's forests (RRI, n.d.). Building on prior initiatives, many of these reforms continue to be implemented by governments, especially in the developing world (Aggarwal et al., 2021; Agrawal et al., 2008; Barrow et al.,

2016; de Janvry et al., 2014; Larson et al., 2010; Larson and Ribot, 2005, 2009). State government frameworks have undergone legal and institutional revisions to share or relinquish control over forests by granting tenure rights to communities living in and around forests, including Indigenous communities. The trends have been driven by the recognition that the state has been ineffective at managing natural resources at local levels due to limited financial capacity and/or prioritisation of natural resource management by national governments (Agrawal and Ostrom, 2001; Katon et al., 2001) At the same time, there has been an increase in well-organised claims for tenure rights recognition and democratisation of forest management (Barry et al., 2010; Katon et al., 2001). The institutional mechanisms promoted by forest tenure reforms range from land titling to Indigenous communities to granting of management or utilisation permits and might include co-management of

forest resources (Larson et al., 2010). Nevertheless, despite increased attention by governments to community rights, forest tenure remains weaker for community collectives than for companies and individual smallholders (Aggarwal et al., 2021).

A growing body of scientific work has attempted to describe and analyse the process of institutional change at the national level (Boone, 2003; Larson et al., 2010), its implementation at a landscape level (He et al., 2020; Myers et al., 2017; Notess et al., 2020), and the potentials and impacts of forest tenure reforms in addressing contemporary challenges such as deforestation and biodiversity decline, rural poverty, and climate change (Barrow et al., 2016; Duchelle et al., 2014; Larson, 2011; Xie et al., 2016). The subjects of forest tenure reform and forest land claims include customary communities, collectives, and local forest users, but are sometimes driven by broader interests in conservation, rural development, climate mitigation and private-sector investments in forest areas. While underlining their critical roles in forest resource management, in many cases tenure reforms do not necessarily facilitate substantive changes nor produce its intended objectives, and even put some local groups rights at risk (Fisher and van der Muur, 2020; Jayne et al., 2016; Larson and Dahal, 2012; Myers et al., 2017). Several studies highlight governance-related challenges in complex social, political and legal settings (Cronkleton et al., 2012; Myers et al., 2018; Sahide et al., 2016). For example, questions have arisen around the extent to which forest management rights disqualify Indigenous communities from asserting their customary ownership claims, and the ways they privilege some forms of customary claims over others (Myers et al., 2017; van der Muur et al., 2019).

Emphasis has been on changes in regulatory frameworks, but less so on the large gaps between law and practice emerging during implementation and the enabling and disabling factors that affect forest tenure reform processes (Notess et al., 2020). Recent research on multi-level governance has begun to shed light on many of these factors, showing that regardless of policies and regulations, there are many factors that affect translation to implementation (Sanders et al., 2019), and coordination is often identified as a key factor (Ravikumar et al., 2018).

In this article, we focus on forest tenure policy reforms from an institutional perspective among those that are responsible for carrying out these policies. As national and local governments craft and implement policies, the way they coordinate implementation provides a unique organising framework for understanding forest tenure reform developments. Our understanding of coordination is framed within the notions of governance, which we consider as the ways in which decisions are made and who is involved in these processes in what ways (Emerson et al., 2012; Larson and Petkova, 2011). Within this framing, coordination includes the social and power relations involved not only in the hierarchy of command, but also market exchanges and self-organisation of a range of actors (Jessop, 1999; Larson et al., 2018). We focus on coordination because it highlights the conduits of, and barriers to, collaborative governance (see Emerson et al., 2012), which elucidates some of the ways that forest tenure reform may or may not result in desirable outcomes.

We associate the governing processes of reforms with the overall notion of coordination (see also Ravikumar et al., 2018). Kanowski et al. (2011) highlight the relevance of cooperation and coordination among different forest stakeholders in implementing reforms at national and subnational levels. Several studies indicate challenges related to coordination and even competing policy objectives across and among governance levels from the national to the subnational, across sectors, and across bureaucratic agencies involved (including non-state actors) that hinder the implementation of programs relating to tenure reforms (Larson, 2011; Rahayu et al., 2020). While there are many calls among policy-makers and practitioners for increased coordination among multi-level governance actors, coordination itself is no guarantee of effective implementation (Ravikumar et al., 2018). There are many reasons for this, some of which will be further explored in this article.

Taylor (2010) suggests that what may look like governance coordination can be coerced, or at least conducted out of a sense of obligation. The responsibility of the coordination of multiple actors often falls to national governments or multinational institutions, resulting in complex and administratively heavy networks of implementers that can slow or inhibit effective implementation (Lambin et al., 2014). Nevertheless, the perspective of this coordinating role provides a critical component toward emerging insights in the overall processes, effectiveness, and barriers by which forest tenure reform is implemented.

We examine what coordination really means in the context of forest tenure reform overseen through state policies in different contexts. In this paper, we elucidate the ways in which forest tenure reform policies and coordination are perceived, understood, and implemented by the government agencies at national and subnational levels. Focusing on the perspectives of bureaucrats implementing forest tenure reform our research fills a gap in the literature by that tends to lean toward research of forest tenure reform from the perspectives of forest users, policies or outcomes rather than the policy implementers themselves (Aggarwal et al., 2021; Katila et al., 2020; Liswanti et al., 2019; Siscawati, 2020; Siscawati et al., 2017). We therefore position this study as complementary to the existing body of literature.

We compare cases from Indonesia, Kenya, Nepal, Peru, and Uganda. These five countries have implemented forest tenure reforms that emphasise a shift toward greater rights and responsibilities over forest and land resources to lower levels of governance including subnational actors and local communities. We focus on the key personnel in government agencies assigned the formal authority to translate policy and the state-sanctioned role of facilitating the implementation of forest tenure reform. We analyse data related to (1) stated and perceived objectives of forest tenure reform, (2) the overall profile of implementers of this reform, (3) their perceptions of how effective reforms have been so far, (4) confidence of the success of reforms in the future, (5) challenges to implementation of reforms, and (6) the extent to which implementing agencies coordinate with one another in the traditional understanding of coordination.

1.1. Understandings of forest tenure reform

In this paper, we engage specifically on issues of forest tenure as opposed to broader definitions or policy engagements about land tenure or agrarian reforms, even though questions of tenure reform are interlinked in origin and have their own regional and country-specific contexts (Liu et al., 2016 on China; Pacheco et al., 2012 on Latin America; see Peters, 2009 on Africa; Poffenberger, 2006 on SE Asia; and country-specific contexts below). By forest tenure and its associated reforms, we specifically refer to recent changes whereby rights and responsibilities over forests are conferred by the state to locally-rooted collective institutions; these reforms do not specify land as a commodity to be bought and sold, and forests are expected to remain standing, under collective governance approaches (Barry et al., 2010).

Forest tenure reform gained momentum as a response to the dispossessory effects of state and corporate enclosures of land, particularly in the form of large scale initiatives to delineate and define lands as forests (Peluso and Vandergeest, 2001). Premised upon state sovereignty for purposes of development or conservation, forests were formally established on the basis of surveys that justified land enclosures for logging or other forms of extraction, plantation cultivation, national parks and biodiversity reserves, or more recently, as sites of climate mitigation (Larson et al., 2010; Myers et al., 2021). These enclosures were legitimised by notions of scientific forestry, providing state institutions a basis for centralising management of land and resource management in what they considered more technical and efficient means (Scott, 1998). Although the expansion of state forestry schemes have driven economic development for governments, critiques also point to benefits accruing overwhelmingly to elites (Larson and Ribot, 2007). In addition, continued extension of state authority into forests

highlights polycentric forms of governance, raising the importance of coordination between local users, subnational resource management institutions, and national levels of government. This also shapes new dimensions of livelihoods and conservation, establishing new ideas for co-management (Schlager and Ostrom, 1992). Over time, there is growing acceptance among governments to confer formal roles and recognition of local communities in state-controlled forests, shaped through ideas of development and nature conservation (Maryudi et al., 2012).

From a legal and institutional perspective, forest tenure reform should be viewed differently in varying contexts. Larson (2011) suggests that forest tenure reform must be understood in terms of (1) statutory reform, (2) implementation processes, and (3) access to benefits. Within each of these framings, there is significant variation. Statutory reform, for example, can be understood as anything from usage rights on specific natural resources (eg. decriminalising customary usage of certain forest products) to land titling (Larson, 2011). More specifically, Monterroso et al. (2019b) characterised reforms in Indonesia, Peru and Uganda according to (1) who received rights (2) which rights were conferred and for what length of time, (3) for what purpose rights were recognised, (4) what forest users did to acquire/exercise the rights, and (5) which laws granted the rights. Nevertheless, it is important to point out that forest tenure reform is overwhelmingly under the auspices of the state, leading some to call for community-led reforms "from the bottom" (Sahide et al., 2020; Sikor and Müller, 2009). While there is evidence in Peru and Indonesia of Indigenous rights groups catalysing reforms, the action of reform remains with the state and however it decides to engage non-state actors (Herawati et al., 2019; Monterroso et al., 2017). This is why this research specifically examines governance dimensions from perspectives within state institutions as a way to deepen our overall understanding of how state actors coordinate reforms.

In many ways governance is an act of coordination. The most obvious form of coordination is different actors working together toward a common goal and/or to minimise negative trade-offs either among state agencies (horizontal) or among levels of state and/or non-state actors (Peters, 2018). This notion of coordination elicits visions of meetings, negotiations, and agreements (see Metcalfe, 1994). But there are many other dimensions to coordination. Despite the most productive meetings and best laid plans, without budgetary support, coordination is limited. Lack of support from the national to subnational levels signals a lack of fiscal coordination. Another type of coordination is the coordination of intent. If forest tenure reform means different things to different implementers (which it inevitably does), there is a lack of coordination around intent. Similarly, if implementers believe forest tenure reform to be something for which there is no legal basis, there is a lack of coordination pertaining to the laws and understandings of implementers. Furthermore, if forest tenure is understood as having social and rural development objectives, yet the expertise of implementers is in technical forestry, there is a lack of coordination of knowledge. In this article, we consider these perspectives of coordination in an overall attempt to understand coordination of forest tenure reform. We start by presenting our methods, then provide an overview of forest tenure reform in Indonesia, Kenya, Nepal, Peru, and Uganda. We then share our findings on coordination, collating the results across a broader discussion section, concluding with a set of implications for what our discoveries about coordination might entail.

2. Methods

Assessing the effectiveness of policy implementation can be done through two approaches, namely top-down and bottom-up approaches. The top-down approach argues that policy designers are central actors who focus on factors that can be manipulated at the central level. Bottom-up approaches focus on the target groups and implementers since policy formulation is carried out at the local level (Matland, 1995). Each of these approaches have their strengths and weaknesses. For

instance, the main weaknesses of a top-down approach is that it does not take into account local actors. This study is anchored in a bottom-up approach in the sense that it focuses on factors that hinder implementation from a perspective of implementers of reforms. Specifically, the study uses a bureaucratic model that aims to ascertain social realities and interrogate the influence of front-line staff members in policy implementation (see Khan and Khandaker, 2016). Gornitzka et al. (2005) outlined critical factors that influence successful policy implementation to include standards and objectives, policy resources, interorganisational communication and enforcement activities, characteristics of implementing agencies, economic, social and political conditions and disposition of implementers, which were incorporated into the design of the data collection instrument.

Interviews followed a fixed questionnaire and were recorded for accuracy confirmation, and emphasised the clarification of open-ended questions. Interviews typically spanned two to four hours for each respondent and were conducted after verbal informed consent was obtained from the respondents.

2.1. Site selection

This study was part of a larger global comparative study on forest tenure reform in countries with ongoing initiatives in Africa, Asia, and Latin America (Barry et al., 2010). Subnational sites were selected based on the location of active tenure reform implementation, considering the most important types of reform by country and some considerations for regional diversity. The countries selected for this article included only those where interviews with state agencies implementing tenure reforms were able to be carried out (See Table 1). Colombia was selected in the research design, but due to the peace process and significant reforms of national institutions, it was not possible to conduct interviews at that time. The Democratic Republic of Congo was originally selected, but it was replaced by Kenya primarily for security reasons at the time of the study.

Country legal studies formed the basis of respondent selection. These studies summarised the regulations in each country, highlighting the institutional frameworks and steps for implementation of forest tenure reform and identified the key agencies in reform implementation. Respondent selection was purposive. Implementation procedures were reviewed in order to identify the main implementing agencies and then detailed a step by step process. Individuals were then selected based on their role and functions in the implementation process, with the aim to cover one implementer for each step.

2.2. Data analysis

The survey was designed for Open Data Kit and deployed for data collection through the ONA platform, a set of software packages for survey-based data collection. The interviews were conducted between July and December 2016, interviewing about 30 respondents in each of the four countries (Indonesia, Uganda, Peru and Nepal). Kenya was added as the fifth country between June and August 2017. Table 2, below, shows the number of respondents in each country at national and subnational levels.

The survey inquired about multiple reforms or laws implemented in

Table 1
Data collection sites.

Country	National level	Subnational level
Indonesia	Jakarta	Maluku Province, Lampung province, South Sulawesi (Bulukumba District)
Kenya	Nairobi	Narok, Nakuru, Kilifi and Nyeri Counties
Nepal	Kathmandu	Hariyokharka Pokhara, Nawalparasi Kapilbastu
Uganda	Kampala	Lamwo, Kitgum, Kibaale, Masindi
Peru	Lima	Madre de Dios, Loreto

Table 2
Summary of number of respondents by country and jurisdictional level.

	National	Sub-national	Total
Indonesia	10	18	28
Kenya	4	22	26
Nepal	9	20	29
Peru	13	19	32
Uganda	9	21	30
Total	**45**	**100**	**145**

each country related to forest tenure reform, including laws around land tenure/agrarian reform, regional autonomy/decentralisation, etc. While it targeted key individuals responsible for implementing a specific law, the individuals were also asked for their views on other laws relevant to the respondent to the extent that they are involved in the implementation of their primary reform or law.

Once the surveys were complete, data were downloaded from the ONA server for analysis. The data from the ONA server was preprocessed in R using the ONA R package. The package works through a function called replaceAllNamesWithLabels, and it was possible to replace database names with meaningful labels for analysis and interpretation. The csv-formatted data was then imported into SPSS software where all the value labels for all the pre-coded survey questions were defined. Further processing was conducted in Google Sheets using pivot tables and formulae to assign ranking values and add compile responses using the project codebook. Data coding was conducted for open ended questions and closed-ended questions. The closed-ended variables that had too many questions were re-coded into broader groups.

This article analysed six of the 51 questions from the full survey that

most aptly addressed an expanded understanding of coordination. These questions map the six areas of investigation listed in the introduction and are elaborated again in our findings, which open the definition of coordination to more than coordination among people (e.g. meetings, coding on common policies), to include coordination of objectives and of resources applied to meeting those objectives.

The next section of this paper provides detailed country context. We then place the survey findings in the context of each country. Finally, we refer back to the literature to take a deeper look at the relationship between the findings and the context of each country and categorise emerging trends.

3. Country contexts

The following text provides some high-level context for each country in the study. The framework for the table was adapted from an overall theoretical heuristic for understanding decentralisation of natural resources that highlights actors, powers, and accountability (both upwards and downwards) as the key features for analysing overall meaningful policy engagement on the role, rights, and responsibilities governing a resource (Larson and Ribot, 2005). Furthermore, additional features from each of the policy contexts were also laid out below in the form of tenure regimes, the overarching policy framework, and the overall objectives of reform (See Table 3).

3.1. Indonesia

The legal frameworks for forest administration in Indonesia follow the systems laid out during the colonial era, which centred on the

Table 3
Forest tenure reform profiles of sampled countries.

	Indonesia	Kenya	Nepal	Peru	Uganda
Actors controlling reform	Ministry of Environment and Forestry	Kenya Forestry Service	Ministry of Forests and Environment	Ministry of Agriculture and Irrigation	Ministry of Water and Environment, National Forestry Authority
Actors influencing reform	Coordinating Ministry of Economic Affairs, local governments, civil society, Multi Stakeholder forums, Indigenous rights groups, international donors and NGOs	Local governments, civil society, Indigenous rights groups	Federation of Community Forestry Users; local governments have less involvement after 2015	Central land registry, regional governments, National Forest Service Office, Ministry of Culture and NGOs	District Forestry Service; Forest Sector Support Department, private investors
Powers influencing reform	National social forestry laws and targets; Indigenous rights movement	National social forestry laws and targets	National social forestry laws and targets; sub-national governments	National social forestry laws and targets; Indigenous rights movement	National forestry laws; Sawlog grant scheme
Tenure regimes	State-owned land designated to be used by communities (social forestry user rights); State owned land to be used by companies; Community-owned land (customary ownership) with limited usage rights.	State-owned land to be used by Companies and communities; Community and individual-owned land with limited usage rights.	State-owned land designated to be used by communities (social forestry user rights)	Community-owned land (customary ownership) with limited usage rights.	State-owned land designated to be used by communities (social forestry user rights); State owned land to be used by companies; Community-owned land with limited usage rights. Non-forest area private ownership.
Key contemporary forest tenure reforms	1945 Constitution; 1992 Regulation on Planning;1998 Regulation on Local Autonomy; 2011/12 Constitutional Court rulings on customary forest rights; 2016 Regulation on Social Forestry	2010 Constitution; 2016 Community Land Act	1993 Forest Act; Forest Regulations 1995; 1999 Local Governance Act; 2015 Forest Policy	Indigenous collective rights to land (started with the agrarian reform in 1975-reformed in 1978); Forest Law (approved in 2011 and in effect since 2015) allows communities to apply for forest permits and authorisations.	2001 Forest Policy; 2002 National Forest Plan; the 2003 National Forestry and Tree Planting Act
Objectives of reform	Conflict resolution, tenure security, livelihood development, customary rights, conservation	Livelihood development, tenure security, conservation partnerships,	Local forest products needs, poverty reduction, conflict resolution, conservation partnerships	Livelihood development of communities in the Amazon, customary rights	Livelihood development

Framework adapted from Larson and Ribot (2005), Agrawal and Ribot (1999), and Monterroso et al. (2019b). **Sources:** Herawati et al. (2019), Liswanti et al. (2019), Fisher et al. (2019), Monterroso et al. (2019), Nsita et al. (2020), Mwangi (2020), Banjade et al. (2017), Barrow et al. (2016) Mogoi et al. (2012), Purdon et al. (2014), Gautam et al. (2017), Yasmi et al. (2016).

demarcation of 'unowned' forests as state forest zones, delineating their clear separation from private properties, with vested exclusive control of forest resources in the central government (Peluso, 1992; Peluso and Vandergeest, 2001). Since the 1980s, about 124 million ha or approximately two thirds of the country's land territory, including areas that have been controlled by customary rules, have been claimed as forest zones (Siscawati et al., 2017). For decades, forests remained under the property of the national state, controlling and regulating the allocation, uses, and management of forests (Myers et al., 2017). Customary tenure rights had been treated as weak rights limited to usufruct (Colchester, 2002).

Since the end of the 1970s, there have been several policies aimed at decentralising forest authorities to local government levels (Ardiansyah et al., 2015; Barr et al., 2006; Sahide et al., 2016). The decentralisation policy was reversed centralising from district to the provincial level in 2014, but the tensions between national and subnational governments continue (Fatem et al., 2018). In addition, forest land allocation is being tempered by long-standing coordination problems among sectoral institutions at the central government level, specifically between the forest and agrarian ministries (Afiff and Rachman, 2019; Brockhaus et al., 2012). Since the 1970s, several iterations of 'social forestry' have been implemented to pacify demands by local users to have greater influence over forest management and ability to benefit from forest resources (Fisher et al., 2019). It was only in 2012, that the Constitutional Court decided that customary forests are no longer categorised as state forests, rejuvenating hopes of customary claimants. This also enthused Indigenous peoples' activists to work with responsive government officials to create the customary forest scheme (Afiff and Rachman, 2019). However, the Ministry of Environment and Forestry has aggressively conducted state forest gazettement following the decision, limiting chances of granting customary forest rights (Myers et al., 2017). By 2018, nearly 73% of the 94 million ha forest estate had been gazetted (Kementerian Lingkungan Hidup dan Kehutanan, 2018). Community forestry in Indonesia continues in the direction of permit-based 'social forestry' schemes that aim to clarify tenurial certainty (at least in the short term) and comes into frequent conflict with local understandings of forest tenure (Gellert and Andiko, 2015). Official 2020 data shows 4.38 million hectares under social forestry schemes in 2018, about 13% of which was customary forest (Kementerian Lingkungan Hidup dan Kehutanan, n.d.). These figures show that social forestry permits fell short of the initial pledge of 12.7 million hectares targeted for 2020 (Susanto, 2020). The stated aims of forest tenure reform are to (a) "conserve forests and restore degraded forests", (b) "to improve community livelihoods and ensure benefits are equitably distributed" and (c) "secure the rights of local, forest-adjacent or forest-dwelling communities" (Herawati et al., 2019). Rahayu et al. (2020) point out coordination challenges among multiple government institutions with different policy priorities that hinder implementation of social forestry programs and others highlight budgetary, coordination and human resource constraints as well as unresolved land conflicts (Herawati et al., 2019; Liswanti et al., 2019). At the site level, the government's forest management units often block local initiatives (Sahide et al., 2018), and access to benefits from forest resources remains a challenge even after the laws have been changed (Budi et al., 2021).

3.2. Kenya

The colonial Forestry Department created in 1902 managed and controlled all forests in Kenya with policies focusing on conservation, alienating most prior existing claims and community-managed forests (Ogada, 2012). Forest control by the Forest Department continued through early independence. Although the broader process of decentralisation of government started with the District Focus for Rural Development system in 1983, powers of subnational levels of government remained extremely limited until the introduction of the New Forest Act in 2005 (Coleman and Fleiscman, 2012; Mogoi et al., 2012).

However, the New Forest Act has struggled to successfully decentralise forest rights to local people. To some extent, it has transferred responsibility to subnational levels of government (Mogoi et al., 2012). A community forest association may apply for permission to participate in forest management, but the rights granted are limited. Participatory forest management in Kenya bestowed no real decision-making powers to community forest associations over important forest resources such as timber and firewood, and even introduced additional burdens on local communities (Mutune et al., 2017; Thygesen et al., 2016).

Kenya enacted a new Constitution in 2010, in which land issues and reform constitute an important feature due to the recognition that land tenure in rural areas had been ineffective, often leading to dispossession of land and forest users driven by commercial interests (Manji, 2006; Thygesen et al., 2016). The new Constitution stipulates three main land classifications: private, public and community land (trust land), with public land managed under the National Land Commission established in 2012 (Bassett, 2020). In 2016, the government of Kenya further passed the Community Land Act as the framework for identification and registration of customary holdings, which offers tenure security for forest communities (Kibugi and Mwangi, 2020). However, the government has been reluctant to surrender lands to communities by defining these as public, not community property and the Kenya Forestry Service retains tight control over their permissible activities on forest lands (Mogoi et al., 2012). Further, the most recent land laws pertain to "visibly occupied land" (i.e. farms and residential areas) and exclude forest lands (Wily, 2018, p. 6), leaving claims of Indigenous communities over customary lands in a tenuous position, especially when public forest lands are claimed by customary communities (Kibugi and Mwangi, 2020).

3.3. Nepal

Nepal has become an example of decentralised forest governance due to its community forest program implemented since the late 1970s. Through the program, the government initially handed over forests to local governments and regulated benefit-sharing from forests between them (Ribot et al., 2006). Forest decentralisation later emphasised the handing over of forests to local communities, promoting the formation of community forest user groups as the forest right holders (Acharya, 2002; Basnyat et al., 2018). The government implements various policies and programmes to promote the strengthening of forest tenure rights for forest-dependent people at different levels. Nevertheless, a recentralisation policy was enacted in 2015 through a revised federal governance structure under a new constitution, which was applied after the data were collected for this study (see Kumar and Zafarullah, 2020).

Despite the change, implementation of community forestry in Nepal has also been tempered by coordination problems among government institutions. At the lower governance administrative levels, monitoring or evaluation is generally lacking (Sombai et al., 2018). Communities are also constrained with numerous technical and bureaucratic requirements and restrictions (Baral et al., 2018; Basnyat, 2020; Toft et al., 2015). The 'scientific requirements' for community forestry practises are also said to serve the recentralisation policy (Basnyat et al., 2018). Trends of recentralisation have become salient following the government decisions to embrace REDD+ initiatives. Neither government policy documents nor the ongoing REDD+ project activities have put tenure reform on the priority action agenda (Dunlop and Corbera, 2016). In addition, REDD+ implementation at the local level lacks cross-scale communication (Satyal et al., 2020). REDD+ related programs are designed by government agencies and influential civil society groups (Satyal et al., 2019), and shift the control over forests from local to external actors (Khatri et al., 2018). They place numerous restrictions on forest uses by local communities (Devkota, 2020; Kane et al., 2018) and the livelihoods benefits to local people have been limited (Aggarwal et al., 2021).

3.4. Peru

Forests cover over half of Peru's territory, mostly located in the Amazon region occupied by approximately 300,000 Indigenous persons categorised in more than 50 ethnic groups since before the creation of the Peruvian state. Following independence, the government declared forests as state property in the first forest law of 1975. Therefore, titling for Indigenous communities is treated differently on agricultural and forest lands.

In 1974, with the enactment of Law 20653, the Peruvian government began a process of recognition and protection of collective property rights for Indigenous Amazonian peoples, formally referred to as 'native communities'. A 1978 modification (law 22175) spurred several subsequent reforms in legislation that undermined those rights (Monterroso et al., 2017). In the following three decades, the government re-stressed the formalisation of individual property rights. By 2017, Peru had formalised property rights for over 1200 Indigenous communities in the Amazon, covering more than 11 million ha or approximately 17% of the country's forest area. The process of formalising Indigenous rights has been characterised by complex legal frameworks and protracted conflicts among competing interests of multiple government institutions at different levels responsible for recognising, demarcating and titling communities (see also CIFOR, n.d. for a detailed account of the 22 steps indigenous communities must take to obtain land titles; Monterroso et al., 2017). These overlaps make it difficult for communities to comply with procedures and to understand which institutions were responsible for the recognition of land and forest rights. In addition, the titling process is long, complicated, and expensive. Indigenous people usually cannot afford these costs, and until recently, the state has remained reluctant to release funding support to communities in titling their lands (Monterroso and Larson, 2018a).

The decentralisation law was passed in 2002. The transfer of land title powers to the regional governments took several years and was completed in 2009. Forest permits are a separate process that is ongoing, but the demarcated area in land titles include the forest areas. Since 2009, decentralisation policies continued to progress, and subnational governments gained responsibility for recognising and titling native communities (Monterroso and Larson, 2018b). This period is characterised by a renewed interest in Indigenous rights in the Amazon, which gained additional momentum as part of climate change discussions and negotiations, and brought collective rights issues back into the policy arena (Monterroso and Larson, 2018a). Advocates for Indigenous rights have been able to promote changes in the institutional framework to improve implementation practices for property rights recognition. Nevertheless, the transfer of responsibilities to these subnational authorities was slow and confusing; and lacked the necessary financial and human resources to ensure implementation. The lack of a unified land registry exacerbated these problems (Monterroso and Larson, 2018a). However, recent developments linking rainforest tenure reforms to climate change have injected new energy (and funds) into reforms. Since 2014 at least 10 projects include outcomes linked to the formalisation of Indigenous communities (Monterroso and Larson, 2018a).

3.5. Uganda

Uganda is administered under a decentralised system, in which the local governments (district and the subcounty) assume a lot of the responsibilities formerly undertaken by the central government ministries. With the Forest Act in 1993, Uganda began a new round of governance reforms that devolved ownership and management of central forest reserves to local governments. However, the government recentralised forests in 1995 under the central government premise that local governments and community organisations lacked capacity to implement decentralised forest management, citing overexploitation of forests (Banana et al., 2018; Coleman and Fleiscman, 2012; Turyahabwe et al., 2006).

In 1999, the government began tenure reform processes (the so-called 'Forest Sector Umbrella Programme'), which resulted in a new national forest policy in 2001, a national forest plan in 2002, and the National Forestry and Tree Planting Act in 2003 (Purdet et al., 2014). One of the greatest influencers on forest policy and tenure reform has been the Sawlog Grant Scheme in which the private sector is encouraged to develop the country's forest reserves, which shores up the National Forest Authority's mandate to generate its own operational funds (Purdon et al., 2014). These reforms encouraged the participation of adjacent forest communities in the management of forestry resources in the country through collaborative forest management arrangements. They also enabled registration of community forests, forests on customary land, and forests on private land as part of the permanent forest estate of the country. The decentralisation process in Uganda had already established minimal property rights for forest user groups, although property rights were not clearly defined (Coleman and Fleiscman, 2012). Subnational governments have some autonomy over forest reserves within their jurisdiction but this amounts to only 5000 ha of forests nation-wide (Purdon et al., 2014). The implementation of reforms was also characterised by inadequate dialogue and mistrust across key stakeholders, including among local governments, other local actors, and national forestry officials (Mbeche, 2017 for a similar account in REDD+ processes; Turyahabwe et al., 2006). The subnational forest services were not fully operationalised. Goals and objectives passed by the subcounty and district councils have often not been enacted into law as stipulated in the national forestry law (Turyahabwe et al., 2006). While women's rights have been been mainstreamed in forest policy, they have not been effectively operationalised (Mukasa et al., 2016; Nsita et al., 2020).

4. Findings

In order to interrogate how types of forest tenure reform (guided by extents of decentralisation) affect, and are affected by coordination, we examine the responses to several questions in our survey of bureaucrats involved in the implementation of reforms. We discuss findings related to the respondents' perspectives on the objectives of reform, the effectiveness of reform, confidence that reform objectives will be achieved, challenges to the implementation of reform, and effectiveness of coordination among reform stakeholders. Finally, we examine implementers' education backgrounds along with these data. We provide tabular data to match the figures in the Annex.

4.1. Objectives of tenure reform

We asked respondents what they understood to be the main objectives of forest tenure reform in their respective countries [Q8]. Respondents could choose all that applied from eight responses and add others if they wished. Results are shown in Fig. 1, below. Overall, the dominant objectives were supporting community access, use and management of forest land (66% of respondents), conserving forests including restoring degraded forests (62%), securing tenure rights of communities (53%), and improving community livelihoods and ensuring that benefits from forest resources are equitably distributed among communities and other actors (47%). Across all countries, recognising existing practices on the ground was least identified with, with an average of 9%, and a high of 25% in Kenya at national levels, and Uganda of 19% at subnational levels. Increasing private sector investment was also identified in less than a quarter of the countries except in Kenya, Uganda, and Nepal at the national levels (50, 44 and 33% respectively). This finding is consistent with Wong et al. (2020) showing that the private sector was active in changing land uses and global initiatives to influence land-use change, but generally absent from reform processes in an official capacity.

However, as Fig. 1 shows, there are significant variances among countries and between levels of governance. In Indonesia, national and

Fig. 1. The main objectives of tenure reform ($N = 456$ from 145 respondents).

subnational levels are aligned with one another except for improving community livelihoods, which achieved weighted rankings of 70% of national and 33% at the subnational level. Indonesian respondents reported no recognition of existing practices on the ground and only 6% of subnational rankings showed recognising and strengthening rights of special groups such as women and Indigenous peoples. These perceptions generally mirror the Indonesian forest tenure reform policies that prioritise livelihood improvement and forest access (see Herawati et al., 2019), noting that there is political resistance to formally recognising indigeneity in Indonesia (Henley and Davidson, 2008).

In Kenya, variances were most pronounced on the objective of conserving forests, with 25% of national and 82% of subnational rankings. There were also differences concerning private sector investment in forestry, ranked as 50% of national and 14% of subnational rankings. Kenya had the highest ranking, suggesting the objective of recognising and strengthening rights of special groups such as women and Indigenous peoples were at 75% at the national level, and 54% of subnational rankings. No other country showed more than half of ranking values at national or subnational levels identifying this objective.

Respondents in Nepal show a close alignment between national and subnational respondents. This is likely due to the highly decentralised governance structure at the time the data were collected.

In Peru, there were misalignments concerning supporting community access, use and management of forest lands which captured 31% of national rankings and 63% of subnational rankings. Conversely, 77% of national respondent rankings suggested securing tenure rights of communities to be the main priority, compared with 37% of subnational responses. Peru was the only country in which less than half of the national responses identified supporting community access, use and management of forest lands as an objective. Peru, consistent with its policies, did not identify strongly with conservation objectives (23% national and 5% subnational).

Uganda showed significant variation between national and subnational levels on two objectives: supporting community access, use and management of forest lands (56% national and 14% subnational) and improving community livelihoods and ensuring that benefits from forest resources are equitably distributed among communities and other actors (100% national and 38% subnational). Uganda was also the only country with a small ranking value (14%) identifying support for community access, use and management of forest lands at the subnational level. Uganda also had an unusually high level of other responses, with 81% of sub-national rankings adding other objectives, most of which were about reducing conflict among forest users and ensuring the legality of forest use and timber harvesting. As Nsita et al. (2020) show, forest tenure reform policies favour conservation rather than securing community rights. Our data confirm this overall trend in Uganda, however national-level respondents identified livelihoods as the highest objective, and more than a quarter of sub-national respondents also identified it as important.

We also note that because one survey question combined Indigenous people and women, the data do not reveal whether or not implementers recognise the rights of women in forest tenure reform (this is a similar omission in other datasets e.g. Yasmi et al., 2016 in which indigenous and women's rights are bundled together when they can be juxtaposed). Meanwhile, only Nepal's and Uganda's forest tenure reform policies make special provisions for women and minorities, while some, like Indonesia and Peru, make provisions for Indigenous people (see Wagle et al., 2017). There is sufficient research to show that customary governance structures can exclude women from decision-making in some societies (Daley and Englert, 2010; Siscawati, 2020).

4.2. Educational backgrounds of respondents in relevant bureaucratic positions

The dataset on education background provides key situational information on the educational disciplines of implementers of forest tenure reform, which we argue shapes, or is shaped by institutional priorities. Overall, respondents reported a diverse range of educational backgrounds with primary and secondary disciplines as shown in Fig. 2 (145 respondents with 169 reports of primary or secondary disciplines). Unsurprisingly, a large proportion (65%) of the respondents had degrees in forestry, environmental sciences or natural resource management. Indonesia, Peru and Uganda were slightly more diverse than Kenya and Nepal, especially at subnational levels. Notably, across the board, not many respondents had degrees in social sciences or development (6.5%), while almost 12% had degrees in business or management. The data do not tell us whether the number of implementers with business and marketing degrees is a cause or effect of a preference in the implementation in reforms to have strategic, business, or management plans remains. However, this educational background is fitting for the ways that reforms are implemented on a technocratic basis. Conversely, backgrounds that would inform objectives of reform related to community access, tenure rights, and livelihoods were underrepresented among respondents. Degrees in social sciences and law were held by only a small proportion of respondents. In all countries, the proportions of respondents with an educational background in forestry was higher at subnational levels than national levels, and in all countries but Peru, there was more diversity of educational background at the subnational level than at the national level.

4.3. Effectiveness of tenure reform

We asked bureaucrats how well they think the reforms are being implemented [Q41]. Results are shown in Fig. 3, below. Respondents rated the efficacy of reform implementation from a range of 1 (not implemented) to 4 (implementation proceeding well). Only Nepal indicated that 'many parts' of reform had been implemented and the rest were implemented well, with just three respondents suggesting partial implementation. Half of the Kenyan respondents at the national level also reported that implementation was going well. In the other countries, however, fewer than a quarter of respondents suggested that reforms have been implemented well.

In Indonesia, Kenya and Nepal, national-level respondents were more favourable than subnational respondents. In Indonesia, for example, 40% ($n = 4$) of national-level respondents reported that reforms were progressing well or had been mostly implemented, while 17% of subnational level respondents reported the same. Some of the differences in perception between national and subnational levels may relate to the indicators of success. In Peru and Indonesia, for example, effectiveness is measured in terms of numbers of titles and hectares formalised. These formal targets are the privy of the national government whereas the subnational implementers experience more qualitative effects of the reforms. In countries where targets are less well defined, such as Uganda and Kenya, we observe that sub-national respondents were more optimistic.

4.4. Confidence in the achievement of major reform objectives

Respondents were asked whether or not the objectives they identified previously could be met. They were overwhelmingly supportive that most of the major objectives of reform could be met at both national and subnational levels as shown in Fig. 4. Questions and responses were as follows, noting that questions of achievability were asked based on the objective already identified by the respondent:

(a) Is "support community access, use, and management of forest lands" achievable? ($N = 97$),

(b) Is "Securing tenure right of communities" achievable? ($N = 77$),

(c) Is "Recognise and strengthen rights of special groups such as women and Indigenous people" achievable? ($N = 35$), and

(d) Is "Recognise customary authority" achievable? ($N = 17$).

(e) Is "Conserve forests including restoring degraded forests" achievable? ($N = 90$)

(f) Is "Increase private sector investment in forestry" achievable? ($N = 23$)

(g) Is "Improve community livelihoods and ensure that benefits from forest resources are equitably distributed among communities and other actors" achievable? ($N = 69$)
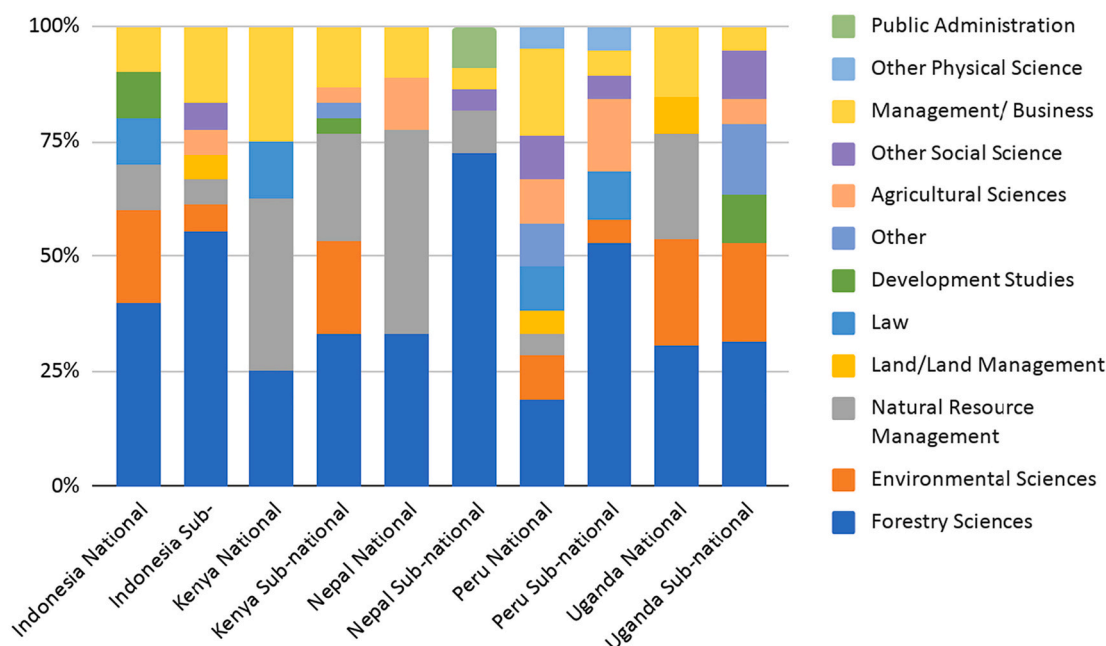

Fig. 2. Respondents by educational discipline as primary or secondary subject ($N = 169$ from 145 respondents).
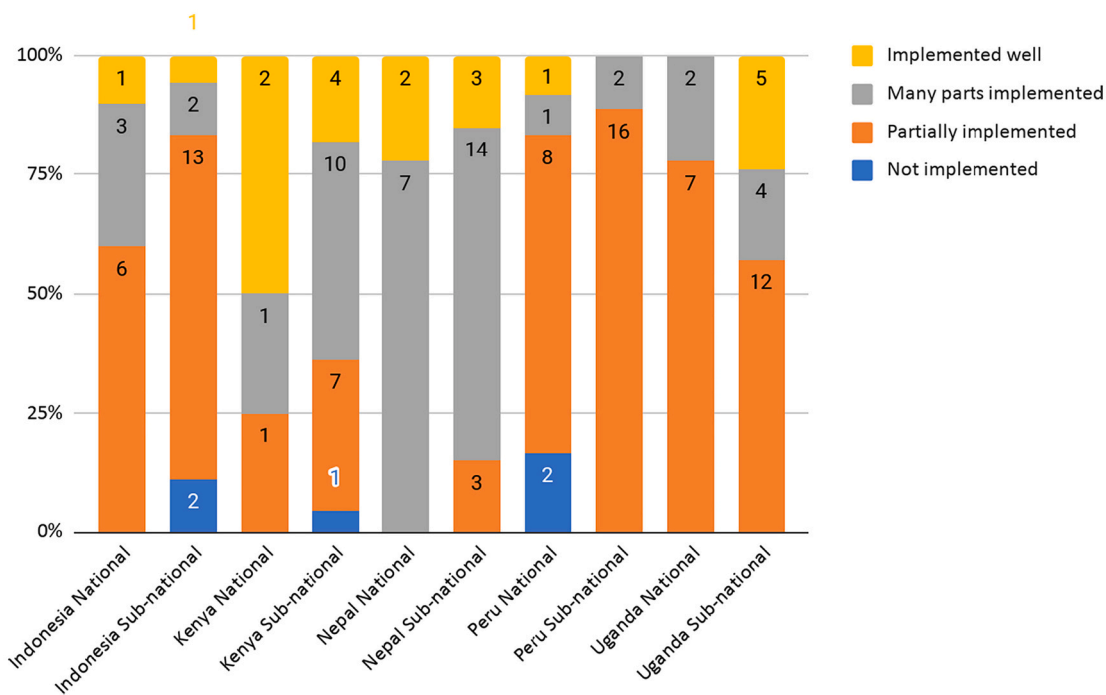
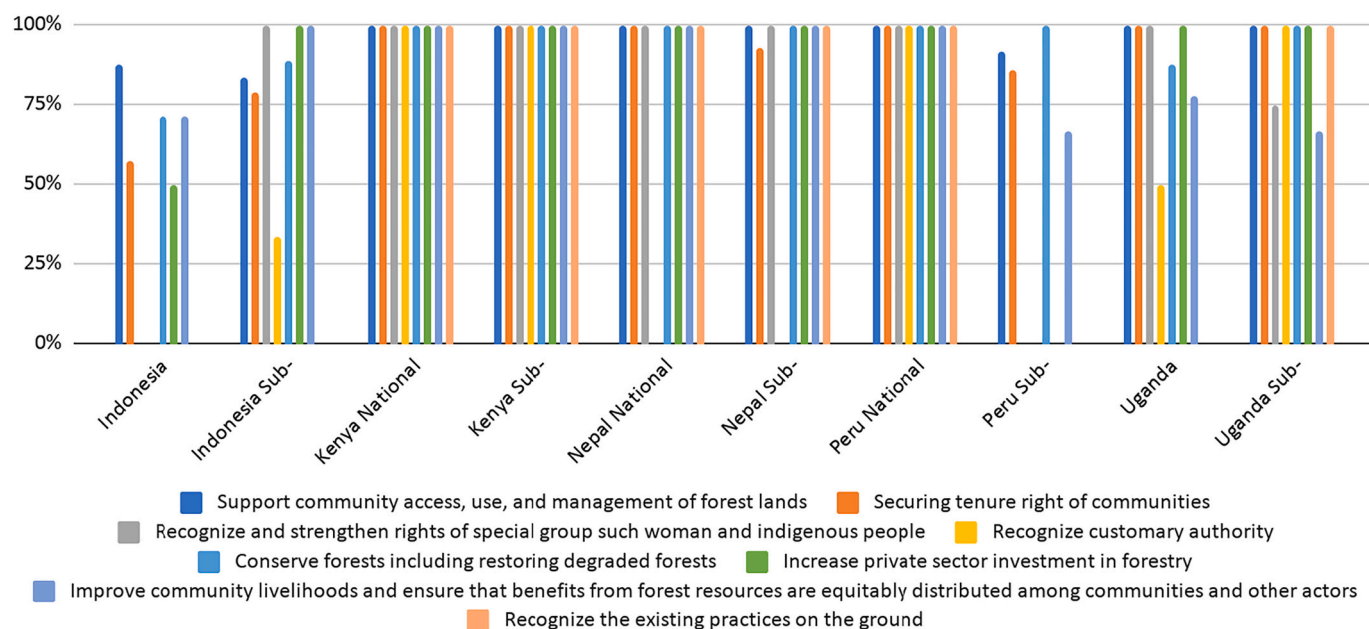**Fig. 3.** Efficacy of reform implementation (*N* = 143).

Fig. 4. "Yes" responses to whether or not major forest tenure reform objectives can be achieved (*N* = 388 from 145 respondents).

(h) Is "Recognise the existing practices on the ground" achievable? (*N* = 12)

On objective (a), respondents were positive at all levels in all countries with 96% believing it was achievable. Indonesia was less optimistic at both national and subnational levels with 88 and 83%, respectively. On objective (b), 89% overall believed this objective was achievable. Similar to the first objective, Indonesia was most doubtful at both national and subnational levels at 57 and 78%, respectively. Indonesian forest reforms include a constitutional compulsion to acknowledge Indigenous land rights. This process has been mired in the verification of indigeneity however, in addition to large numbers of deep-seated land

conflicts among customary users, corporate land users, communities, and the state (Myers et al., 2017; van der Muur, 2018).

On objective (c), only one respondent (at the subnational level in Uganda) signalled that this objective was not achievable of the 35 respondents. On objective (d), there was considerable skepticism in all countries except Kenya. In Indonesia, only one (subnational) respondent indicated recognition of customary rights was achievable. In Kenya, all respondents felt it was achievable. In Nepal, all subnational respondents believed that this recognition was not possible. Peruvian national-level respondents felt it was achievable and half of the national Ugandan respondents thought it was achievable, as well as all subnational respondents. With only 17 respondents answering this question, more

diversity may appear in a larger group of respondents.

Objective (e) showed strong favour among national and subnational respondents alike, with all countries and levels indicating 100% that the objective was achievable except in Indonesia showing 72% agreement that it was achievable at national levels and 89 at subnational levels; and 88% of national level respondents in Uganda. Conservation is a legal objectives of reform in Kenya, Indonesia, and Nepal. Only 23 respondents in total suggested private sector investment was an objective (f) of forest tenure reform. Of those who did, only one in Indonesia and one in Peru said that it was not achievable.

Support for the achievability of improving livelihoods (g) was also high in all countries. In Indonesia, 71% of respondents said it was achievable at the national level, and in Uganda at national and subnational levels, 78 and 67%, respectively, believed this was achievable. All respondents in other countries thought this objective was achievable.

Only 12 respondents identified recognition of local practices as an objective (h), and of those who did, all believed that the objective was achievable.

4.5. Challenges in forest tenure reform

Respondents indicated the challenges they encountered in implementing forest tenure reform from a list of 18 options. Respondents could also reply 'other' and provide details. Respondents were then asked to choose the first, second, third and fourth most important challenges. The first-ranked challenge was assigned a value of 4, the second, 3, the third, 2 and the fourth 1. We then grouped the values into seven groups as shown in Fig. 5 below, representing the four top-ranked challenges. Overall, the highest-ranked challenges were related to misalignment of policies, procedures and government agencies (n =

302) and misalignments with and among communities (n = 202). Onerous processes causing time delays was reported as a major challenge in Peru and Uganda at both national and subnational levels, as well as in Kenya at the national level. Indonesia and Peru, both of which focus land tenure reforms on customary rights, reported more challenges with misalignment among communities than the other countries, especially at the national level. These challenges included conflicts with customary authorities, perceived lack of compliance to rules by communities, hostility in communities toward government officials, conflicts among communities, and poor communication with communities. Political interference was higher in Indonesia at subnational levels than national level due to two respondents identifying it at the first-ranked challenge, and one as a third-highest ranked challenge.

The exclusion of women and other vulnerable groups has ranked highly in Kenya and Nepal at both national and subnational levels.

4.6. Effectiveness of coordination among implementers

We also asked respondents about the overall effectiveness of coordination among implementing agencies tasked with overseeing forest tenure reform [Q35]. Fig. 6, below, shows their responses. In Indonesia, Kenya and Uganda, national-level respondents were more favourable to the effectiveness of coordination among reform implementers than their subnational counterparts. In Peru, the opposite was true, in which subnational respondents were more favourable than their national counterparts. In addition, while the question refers broadly to the reform process, responses should be understood in the context of the government agencies where respondents have specific roles in the operationalisation of the reform process. In this way, responses could be influenced by the extent to which respondents involved in the operationalisation of steps require different types of coordination to ensure
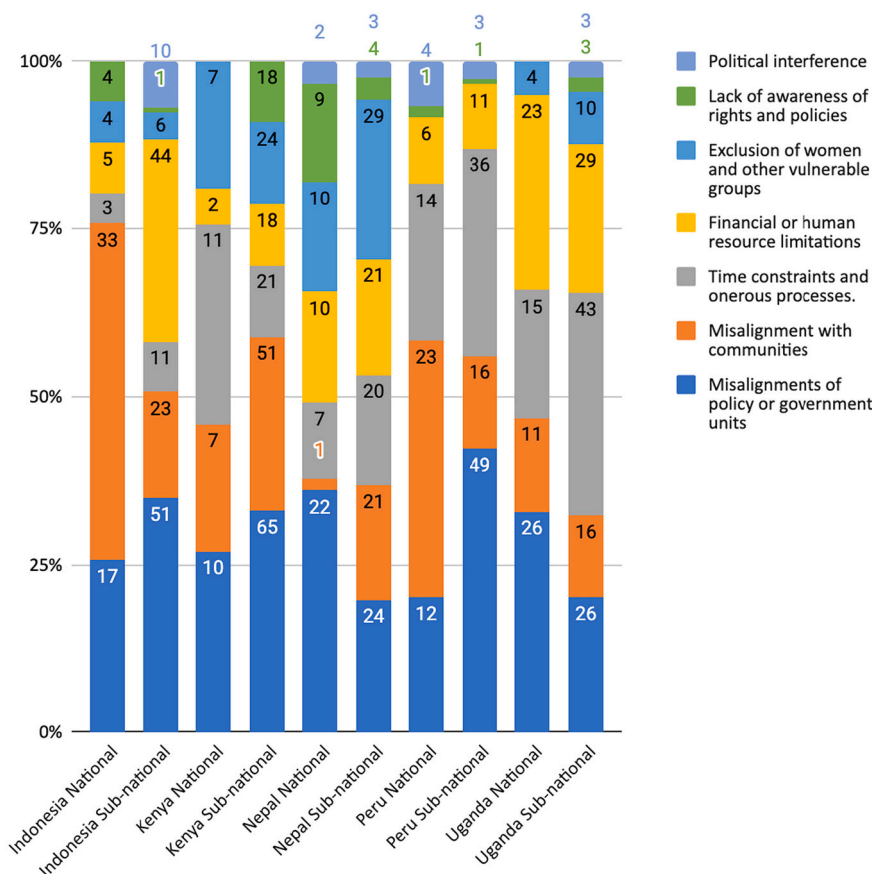

Fig. 5. Four top ranked (weighted) challenges for implementing forest tenure reform (showing weighted ranging for each response).
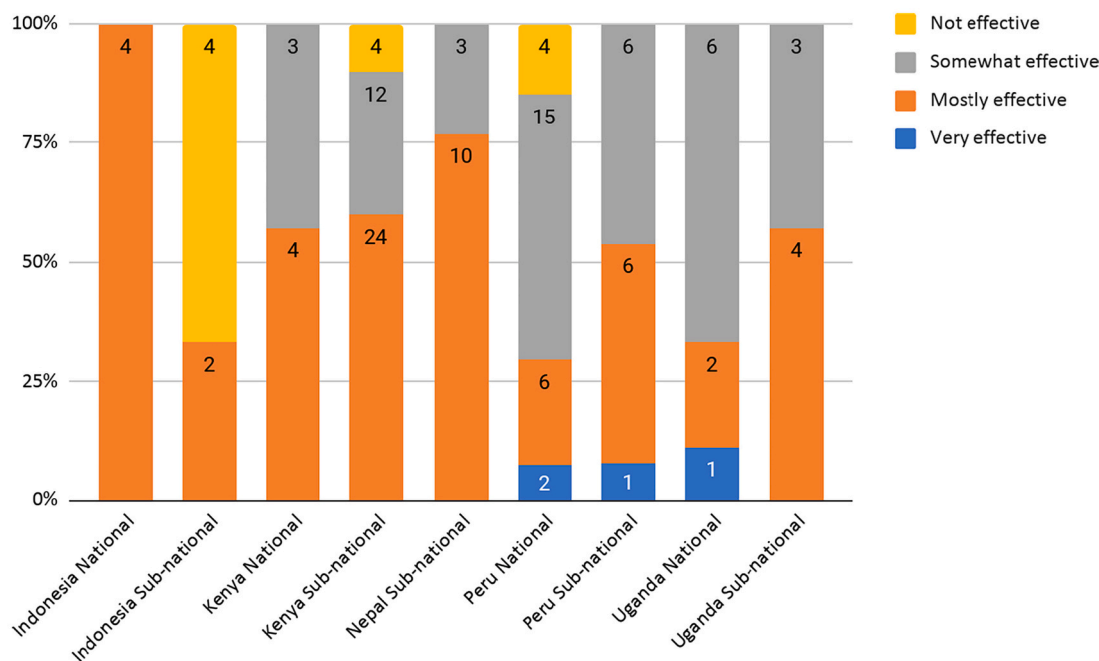
Fig. 6. Rating of effectiveness of coordination among implementing agencies (*N* = 126).

progress in the procedure. Explanations for this variation are addressed in the country level contexts presented above, which we will return to in the discussion section below.

One common trend among respondents related to the similarities with which they spoke of implementation reforms as processes that had not yet realised their potential. These comments focussed around nascent understandings of balancing and rebalancing responsibilities for implementation. For instance, a sub-national respondent in Indonesia commented that much of the coordination issues revolve around understanding the roles of various agencies involved. The central coordination role in Indonesia is assumed by the central government, but in Kenya, coordination is effectively organised by the UNDP under a subnational respondent. In Uganda, respondents at the national and subnational levels stated that civil society played a productive role in facilitating the coordination of implementing agencies.

The most-cited constraint to coordination provided in qualitative responses to this question was budget. For example, a national-level respondent in Uganda mentioned that budgets are small and they rush projects to meet deadlines, rarely following up with implementation after the collaborative forest management agreement was signed. In Indonesia, Kenya, and Peru respondents commented that there was an overall lack of commitment to reforms and a hesitation to sort out the messy conflicts among government policies and institutional mandates. Several respondents commented that due to technocratic constraints, reform processes were unable to benefit or engage local communities.

5. Discussion

Beginning from the context of five distinct country enabling environments, we drew from a comprehensive data-set engaging with key personnel in state agencies responsible for implementing forest tenure reforms at national and subnational levels. Several key takeaways were distinct to each country context but there were also several key features that highlight emergent dynamics between countries, pointing to key similarities and differences that we categorise under a set of three themes related to coordination, namely i) coordination among implementers, ii) coordination of objectives, and iii) coordination of resources.

5.1. Coordination among implementers

In this paper, we only analyse the perspective of bureaucrats at national and subnational levels, but there are also a range of actors involved in multi-level governance to be considered (Emerson et al., 2012). For example, in Uganda and Peru, civil society actors play a central role in enacting and driving reforms, and Indonesia's social forestry policies are rooted in social movement demands. We showed that there were significant differences among national and subnational actors on key issues on the objectives of land tenure reforms. Indeed, only Nepal showed strong alignment at national and subnational levels on the objectives of forest tenure reforms. Nepal also showed stronger alignment among national and subnational levels in their understandings of the main challenges of reform, suggesting a strong legacy of coordination among implementers. Further, subnational respondents in Nepal rated coordination higher than subnational actors in any other country.

During data collection, Nepal had been (at the time of data collection) the only significantly decentralised state with regard to forest governance. Most of the powers concerning forest governance in Nepal were exercised at sub-national levels, which stands in stark contrast to the other countries in this study. This suggests that when decisions about forest tenure reforms are made at national levels, at least in the early periods of reforms, a disconnect in the understandings about the objectives of reform and the alignment of its policies with subnational levels, who have a stronger role in the implementation of reforms on the ground. Nepal is lauded for its open inclusion of multiple stakeholders in its reform processes, with almost "40% of Nepal's population […] involved in managing a third of national forests through more than 22,000 locally formed forest user groups" (Banjade et al., 2020). This concerted engagement of multiple stakeholders may also serve to consolidate understandings among state implementers of the meanings and objectives of forest tenure reform, providing one possible explanation for these findings.

The other countries showed less optimism on coordination among implementers. In Kenya, for example, conservation as an objective of forest tenure reform received a 25% rating by national respondents and 82% by subnational respondents. While it is not a stated objective in the law, this shows that formal objectives of forest tenure reform have failed

to translate at local levels. But at both national and subnational levels in Kenya, more than half of all respondents reported that coordination is mostly effective. While this could be that implementers are not aware that they have differences of opinion about the objectives of reform, or perhaps the magnitude of the undertaking of reform is sufficient to shape perception of coordination favourably (see Li, 2007a).

Indeed one of the most significant challenges noted among respondents pointed to the procedural dimensions of implementing forest tenure reform. Although each of the country histories and contexts of reform are unique from one another, across the board all respondents consistently listed procedural dimensions (misalignments of objectives and understandings, financial) as their most difficult challenge (see Fig. 5). Such consistency clearly points to the highly political dimensions of decision-making authority and control over resources through the procedural aspects of forest tenure reform.

It is also worth noting that bureaucrats rated recognising local practices and customary authorities as among the lowest priorities for forest-tenure reform, suggesting an explicit lack of coordination with local communities despite the high level of attention paid to improving livelihoods and availing access to forest resources. This suggests that implementers' coordination on these issues is not *with* local forest users, but *for* them as target beneficiaries of state priorities and objectives. This highlights a shortcoming of this research that requires further examination for exploring coordination between formal state agencies and other key actors (see Sikor and Müller, 2009). Our study was focussed on forest tenure reform, however the challenges of coordination are likely to be amplified when considered with other types of land use policies which may have their own policy regimes.

5.2. Coordination of objectives: Legal and stated objectives by bureaucrats

Although global developments in forest sector reforms are reflected in the overall regulatory objectives of each of the countries in this study, the contexts and antecedents for reform in each country differed from one another. At all levels of government in all countries, the most frequently stated objective of forest tenure reforms was support for community access, use and management of forest lands. This is broadly consistent with the legal objectives of reform in every country. However, the second, third and fourth most stated objectives from our data concern conserving forests, including restoring degraded forests, securing tenure rights of communities, and improving community livelihoods to ensure that benefits from forest resources are equitably distributed among communities and other actors.

In Indonesia, forest tenure reforms are shaped by global attention on deforestation, land use change and conflict, as well as broad-based interest in support of land rights recognition for customary communities. The process has been centralised in the Ministry of Environment and Forestry, which plays an authoritative role in shaping sector reforms, thus defining the contours of how reforms are implemented. In Kenya, forest tenure reform is aimed at rural development, tenure security for local communities, and the development of conservation partnerships. Forest Tenure reforms have been highly centralised through the Kenya Forestry Service. Similarly, Uganda also places particular emphasis on conservation in ways that differ from the other country contexts. In Nepal, highly decentralised forest tenure reform supported objectives to develop local forest value chains, reduce poverty, and resolve conflict, but reforms did not explicitly aim to confer forest land rights nor recognise customary claims (see Table 3). In Peru, the main drivers of reform have been related to Indigenous rights recognition and rural development, with a strong push from large mobilisations by Indigenous organisations, although in practice the process has been largely driven by donors, coordinated between central and regional governments.

One of the unique trends in this study relates to the disconnect between policy drivers of forest tenure reform versus the overall translation of those policy objectives among the implementers. For example, although, Indigenous land rights or conservation may have provided considerable momentum for forest tenure reform in places like Indonesia and Peru, implementation considerations were quickly reshaped and translated into operational institutional goals (Gautier et al., 2013; Li, 2007b; Pacheco et al., 2008). This highlights the hesitation among bureaucratic actors to devolve rights or the overall perception that reforms are completed once the community deeds are titled, conferred certificates or permits of access to communities or groups, even in cases where the state retains certain functions related to forest management. Overall, the findings point to the drivers shaping forest tenure reform policies, what respondents said about their role in coordinating objectives, where such objectives aligned, and where there was a failure of coordination. In this light, several key areas are of note.

First, the overall objectives of reform shape and are shaped by the broader policy agenda, and in practice, operationalisation runs up against the institutional realities during implementation. In Indonesia, for example, the overall constitutional and policy drivers over customary land rights recognition transitioned to a greater emphasis on administering and expanding social forestry policies. Similarly, in Peru, mechanisms for recognising Indigenous land rights drove reforms, but implementers expressed reluctance for recognising Indigenous authority in community practices related to both land and forests. In addition, Uganda's forest tenure reform policies are driven by rural development interests, but implementers rate very low priority for recognising local authority or their existing practices. Across the board, respondents identified "recognising existing practices on the ground" or other features of Indigenous/customary authority as among their lowest priorities for forest tenure reform. Overall, bureaucratic authorities view forest tenure as a bureaucratic issue to solve rather than a process for recognising local authority.

Second, the data highlight differences over the perceptions of objectives between national and sub-national respondents. These are detailed in the findings (Fig. 1) and varied among country contexts. For example, Indonesia subnational respondents highlighted securing tenure rights and community access as their main objective, whereas national level respondents prioritised the broader importance of community access, conservation, and livelihoods support. Meanwhile in Kenya, subnational respondents viewed forest tenure reform less about securing tenure and much more about conservation, while national governments de-emphasised conservation. Without rehashing findings from each of the country contexts, these divergences and similarities across governing scales are supported and explained by the responses among each of the country contexts, reinforcing the importance of situating forest tenure reform within location-specific histories and institutions. These results also help to understand existing contradictions that hinder ongoing implementation.

Third, and equally revealing about the overall objectives of policy reform, are areas that respondent groups consistently de-emphasised. Although livelihoods were routinely noted as important, private sector engagement was largely underplayed, even though the private sector is often described as a fundamental solution in forest tenure reform (see also Wong et al., 2020). These highlight interesting differences on how reform objectives are understood at the community level, pointing out the diverse expectations at sites targeted for reform (Monterroso et al., 2019). At the local level, improving livelihoods is linked to the realisation of rights and the ability to benefit from rights acquired, pointing to the need to further explore the role of bureaucrats in reform processes, particularly aspects beyond the land/forest administration process. This also includes exploring the role bureaucrats should have in capacity development, convening or mediating conflict resolution initiatives, and overall access to extension services to sustain reform objectives in the long term. Similarly, recognition of existing local/community practices ranked low in all countries. Nepal and Uganda had specific provisions for women in forest tenure reform regulations while the others did not (see FAO and RECOFTC, 2015; Ministry of Water, Lands and Environment, 2001). That bureaucrats at national and subnational levels suggest securing customary land rights and women's rights as an objective when

it is not regulated is a point for further enquiry. In terms of customary or Indigenous land rights, in the case of Peru, despite the strong push from Indigenous mobilisation around rights, in practice the way policies were formalised did not correspond to the claims over territoriality and respect of governance systems, a concern that influences reforms on overlapping lands claimed by Indigenous groups (Monterroso et al., 2019a). In terms of recognition of women's rights, the fact that 75% of those involved in implementation processes are men in addition to the lack of educational backgrounds that include gender or intercultural training may also influence the predominance of a rather technocratic, land/forest administration perspective of the implementation process (Monterroso et al., 2019b).

5.3. Coordination of resources

Many of the overall objectives of reform have been implemented under the overall ideology of decentralisation. Especially in the case of Peru, and certainly applicable to the other country contexts, decentralisation triggered shifts in institutional responsibilities. However, these changes did not necessarily translate into significant budget increases or human resource allocations.

Financial and human resource challenges were ranked highly in all countries, signalling a lack of coordination between personnel and the objectives of reforms. Human resources were lacking in terms of available time, expertise to implement and support actions adequately, or the ability to allocate resources to these initiatives. Financial challenges are related both to the human resource issues and to other expenses required to implement reforms. Similar expressions of these challenges were expressed both at national and subnational levels, except in Indonesia in which subnational levels ranked financial challenges much higher than national levels. Though implementing significant decentralisation reforms to its overall governance structure, the Indonesia context for forest tenure reform is one of a high degree of centralisation of reforms, with subnational approvals of permits and plans required before the national government will consider approval (Sahide et al., 2020). This places much of the due diligence responsibilities at subnational levels in most countries (via the province since 2014); however, subnational governments often lack adequate funding and resources for effective implementation (Nasution, 2017). These challenges suggest an overall failure to align sufficient resources to the tasks at hand, largely having to do with social processes that seek to address issues of access to forest resources and land tenure, which can be time-consuming processes that are not easily rendered technical (see Li, 2011, 2007b; Myers et al., 2018). Onerous processes include, for example, elaborate steps in the verification of claims in Peru by different government offices (Monterroso and Larson, 2018a), complex confirmations of Indigenous claims that pre-date the formation of the nation in Indonesia (van der Muur, 2018). The complexity of the reform procedures, combined with limited human resources and finance, become important barriers to effective implementation of reforms.

The four most common objectives of forest tenure reform stated by respondents were supporting community access, use and management of forest land, conserving forests including restoring degraded forests, securing tenure rights of communities, and improving community livelihoods and ensuring that benefits from forest resources are equitably distributed among communities and other actors. Fulfilling these complex objectives might best be achieved with interdisciplinary teams that bring forward different dimensions of expertise to address these issues. Yet, of the key implementers with whom we spoke, 66% had credentials in Forestry Science, Environmental Sciences, Natural Resource Management, or Land/Land Management; and only 10% had qualifications in development, law or other social sciences. This suggests a mismatch among the stated aims of forest tenure reform and the qualifications of the people who are tasked with implementing them. While our study did not conduct a comprehensive survey of the qualifications of all implementer staff members, the key individuals with whom we spoke, most of

whom were in leadership positions in their respective jurisdictions, reflect this lack of coordination of human resource qualifications, capabilities, and aims of forest tenure reforms. This mismatch is evident in all countries at both national and subnational levels. In Peru, where forest reform regulations do not attempt to address conservation, but are aimed at rural development more broadly, implies that the individuals responsible for tenure reform have many of the technical backgrounds required for developing economically productive forests, but lack capabilities to address social dimensions inherent to the fulfillment of objectives of reforms. In Indonesia, where, like Peru, the legal objectives of reforms include securing tenure rights to customary users, there are few signals that bureaucrats charged with reform have backgrounds in the social sciences that could be used to better understand these claims and to address conflicts. In general, recognition of collective tenure rights and conservation remain issues of low priority in political agendas. Involving interdisciplinary teams, ensuring programs for enhancing capabilities of bureaucrats involved around issues of interculturality, gender equality and conflict resolution are important mechanisms to improve implementation.

6. Conclusions

In this article, we analysed coordination in forest tenure reform processes in a broader sense than is often found in the literature, specifically by focusing on the perspectives of actors responsible for enacting policies. We situated their views under a framing of governance by highlighting fundamental elements of coordination. In practice, coordination is also expressed in uncritical ways related to an idea of sharing without considering the more practical elements of its application. Therefore, while coordination certainly includes articulations among actors toward an ostensible set of shared objectives, it is also about how perspectives are aligned with regulations, and how resources are allocated. The main message of this article is that there are many sides to coordination, many of which are under analysed. By analysing some of the gaps in understanding coordination and looking at forest tenure reform, we highlight key obstacles to effective implementation of reforms that are not often analysed together in the literature and provide insight into some of the reasons for failures of forest tenure reforms to deliver on promises to people and forests. There is significant literature to suggest that more effective coordination is needed in order to improve forest and land-use governance, but what exactly coordination means, and its different dimensions, have often remained underexplored, leading some authors to conclude that coordination is not enough. While this may continue to be true, we argue for a broader understanding of coordination as one of the key components of making forest tenure reforms more effective, efficient and equitable.

As expressed at the outset as a limitation of this study, the empirical datasets only engage formal agency actors responsible for enacting the regulatory dimensions of reforms. Meanwhile, several of the forest tenure reforms in the country contexts presented herein are driven by discontent against the status quo, amidst social movements that seek to reshape institutions. This study was only conducted with bureaucrats involved in forest tenure reform, but if we were to apply this lens of coordination to broader multi-level governance actors, there may be greater opportunities for extending these notions of coordinating forest tenure reform going forward. For the targeted purposes of this study, we highlight similarities and differences among national and subnational bureaucrats' perspectives on forest tenure reform across country contexts and between national and subnational actors, and in many cases were able to trace differences to the governance structures of the reforms.

Overall, we suggest that coordination, understood in the broader sense, is especially weak in highly centralised governance structures in which policies are set at the national level and subnational actors are expected to implement policy. Although each of the country's histories and contexts of reform are unique from one another, across the board all

respondents consistently listed procedural dimensions (misalignments of objectives and understandings, financial) as their most difficult challenge. Such consistency among institutional perspectives clearly points to the highly political dimensions of decision-making authority and control over resources through the procedural aspects of forest tenure reform. These gaps are linked both to communication and technocratic challenges, as well as overall coordination among implementing institutions.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Appendix A. Tables for Figures.

Table for Fig. 1: The main objectives of tenure reform (N = 456 from 145 respondents).

	Indonesia		Kenya		Nepal		Peru		Uganda		**Total**
	N	SN	N	SN	N	SN	N	SN	N	SN	TOTAL
Support community access, use and management of forest lands	8	12	4	20	9	19	4	12	5	3	**96**
Conserve forests including restoring degraded forests	7	9	1	18	6	17	3	1	8	20	**90**
Secure tenure rights of communities	7	14	2	5	7	14	10	7	2	9	**77**
Improve community livelihoods and ensure that benefits from forest resources are equitably distributed among communities and other actors	7	6	3	13	5	13	1	3	9	8	**68**
Recognise and strengthen rights of special groups such women and Indigenous peoples	0	1	3	12	4	7	2	0	3	5	**37**
Other	0	2	0	3	0	2	3	6	3	17	**36**
Increase private sector investment in forestry	2	1	2	3	3	1	1	1	4	5	23
Recognise customary authority	1	3	1	4	0	1	1	0	2	4	17
Total	**32**	**48**	**17**	**79**	**35**	**77**	**27**	**30**	**36**	**75**	**456**

Table for Fig. 2: Respondents by educational discipline as primary or secondary subject (N = 169 from 145 respondents).

	Indonesia		Kenya		Nepal		Peru		Uganda		**Total**
	N	SN	N	SN	N	SN	N	SN	N	SN	
Forestry Sciences	4	10	2	10	3	16	4	10	4	6	**69**
Environmental Sciences	2	1		6			2	1	3	4	**19**
Natural Resource Management	1	1	3	7	4	2	1		3		**22**
Land/Land Management		1					1		1		**3**
Law	1		1				2	2			**6**
Development Studies	1			1						2	**4**
Other				1			2			3	**6**
Agricultural Sciences		1		1	1		2	3		1	**9**
Other Social Science		1				1	2	1		2	**7**
Management/ Business	1	3	2	4	1	1	4	1	2	1	**20**
Other Physical Science							1	1			**2**
Public Administration						2					**2**
Total	**10**	**18**	**8**	**30**	**9**	**22**	**21**	**19**	**13**	**19**	**169**

Table for Fig. 3: Efficacy of reform implementation (N = 143).

	Indonesia		Kenya		Nepal		Peru		Uganda		**Total**
	N	SN	N	SN	N	SN	N	SN	N	SN	
Not implemented		2		1			2				**5**
Partially implemented	6	13	1	7		3	8	16	7	12	**73**
Many parts implemented	3	2	1	10	7	14	1	2	2	4	**46**

(*continued*)

	Indonesia		Kenya		Nepal		Peru		Uganda		Total
	N	SN	N	SN	N	SN	N	SN	N	SN	
Implemented well	1	1	2	4	2	3	1			5	19
Total	10	18	4	22	9	20	12	18	9	21	143

Table for Fig. 4: "Yes" responses to whether or not major forest tenure reform objectives can be achieved (N = 388 from 145 respondents).

	Indonesia		Kenya		Nepal		Peru		Uganda		Total
	N	SN	N	SN	N	SN	N	SN	N	SN	
Support community access, use, and management of forest lands	7	10	4	20	9	19	5	11	5	3	93
Securing tenure right of communities	4	11	2	5	7	13	10	6	2	9	69
Recognise and strengthen rights of special group such woman and Indigenous people		1	3	12	4	7	1		3	3	34
Recognise customary authority		1	1	4			1		1	4	12
Conserve forests including restoring degraded forests	5	8	1	18	6	17	3	1	7	20	86
Increase private sector investment in forestry	1	1	2	3	3	1	1		4	5	21
Improve community livelihoods and ensure that benefits from forest resources are equitably distributed among communities and other actors	5	6	3	13	5	13	1	2	7	6	61
Recognise the existing practices on the ground			1	1	1	3	2			4	12
Total	22	38	17	76	35	73	24	20	29	54	388

Table for Fig. 5: Four top ranked (weighted) challenges for implementing forest tenure reform (showing weighted ranging for each response).

	Indonesia		Kenya		Nepal		Peru		Uganda		Total
	N	SN	N	SN	N	SN	N	SN	N	SN	
Misalignments of policy or government units	17	51	10	65	22	24	12	49	26	26	302
Misalignment with communities	33	23	7	51	1	21	23	16	11	16	202
Time constraints and onerous processes.	3	11	11	21	7	20	14	36	15	43	181
Financial or human resource limitations	5	44	2	18	10	21	6	11	23	29	169
Exclusion of women and other vulnerable groups	4	6	7	24	10	29			4	10	94
Lack of awareness of rights and policies	4	1		18	9	4	1	1		3	41
Political interference		10			2	3	4	3		3	25
Total	66	146	37	197	61	122	60	116	79	130	1014

Table for Fig. 6: Rating of effectiveness of coordination among implementing agencies (N = 126).

	Indonesia		Kenya		Nepal	Peru		Uganda		Total
	N	SN	N	SN	SN	N	SN	N	SN	
Very effective						2	1	1		4
Mostly effective	4	2	4	24	10	6	6	2	4	62
Somewhat effective			3	12	3	15	6	6	3	48
Not effective		4		4		4				12
Total	4	6	7	40	13	27	13	9	7	126

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