IMPROVING INDONESIA'S FOREST AND LAND GOVERNANCE

Using a Delphi Approach to Identify Efficacious Interventions

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Acknowledgements

ABSTRACT

It is now recognized that addressing deforestation and forest and peatlands degradation and destruction in Indonesia requires improvements to land and forest governance. It is also accepted that further research is required into this large field of study and practice. In particular needs have been identified for better links between theory and practice, and between academic analysis and work in the field. To respond to this gap, this study investigates the underlying drivers of deforestation, and forest and peatlands degradation and destruction (herein called deforestation and peatlands degradation) with the intention of identifying interventions that will improve land and forest governance in Indonesia. Through a Delphi process, a panel of experts on forest and land governance identified three main drivers of deforestation and peatlands degradation. These were: (1) unclear land tenure and uncertain land classification (agreed by 88% of respondents); (2) business and political interests that influence policy-making and regulations (70% agreement) and (3) ineffective land use planning (53% agreement).

In response, the panel recommended three priority governance interventions relating to the following issues: (1) increasing the capacity of local communities to manage and monitor forests and natural resources (65% agreement); (2) gazetting forests to clarify land boundaries and determine which areas should be village, community and state forest zone (58% agreement); (3) integrating participatory maps into spatial plans to protect local communities and indigenous peoples' development needs (53% agreement). A research theme with the highest agreement was the following: action research involving the government, private sector and community (64% agreement).

This study finds that there is strong support for community level approaches to forest management. Securing community forest tenure through clarifying land claims and integrating local land tenure into spatial planning is a key step to achieving sustainable forest management. The concluding recommendations suggest that the most efficacious interventions to be taken by researchers, government, donors and civil society to improve Indonesia's forest and land governance processes include:
- Support community institutions;
- Accelerate forest gazettement using local community institutions to clarify community forest claims;
- Integrate participatory maps into spatial plans;
- Support local communities' ability to monitor forests;
- Conduct action research involving all stakeholders;
- Address financing of the forest and land sector;
- Engage political economy analysis.

INTRODUCTION

Indonesia has the highest rate of forest cover loss in the world, estimated at 840,000 ha annually for primary forest (Hansen 2013; Margono et al. 2014). This loss, as well as the loss of the current and potential benefits forests provide, is a consequence of a number of factors, attributed domestically to poor forest and land governance (Forest Watch Indonesia 2014). Weak forest and land governance results in many undesirable outcomes including illegal and unplanned forest conversion and degradation, unnecessary damage to sensitive landscapes such as peatlands and watersheds, increased risk of natural disasters such as floods, loss of state revenues through corruption and tax fraud, damage to biodiversity, loss of forest-dependent livelihoods, continuing poverty of small scale agriculturalists, land conflict, and other negative social and economic impacts (Environmental Investigation Agency 2012; World Bank 2009). It is also recognized that activities associated with land use, land use change and forestry (LULUCF), are responsible for a large portion of Indonesia's greenhouse gas emissions, which are the third highest in the world (World Resources Institute 2012). In 2009, Indonesia's then President Yudhoyono announced ambitious targets for reducing greenhouse gas emissions by 26% by 2020, and various institutions and policies have been built to achieve those targets. If these targets are to be met, significant reductions will need to occur in the LULUCF sector, and improvements to forest and land governance are therefore called for.

Indonesia's current forest and land governance[1] systems allocate various responsibilities to district, provincial and national governments. These include aspects of spatial planning, allocating licenses for land concessions (such as for logging and mining activities, and oil palm and timber plantations), environmental safeguards, and budgets for environmental management. Compliance with existing regulations and procedures is, however, in many cases low, and law enforcement is weak. Common explanations for poor governance include overlapping or unclear regulations, lack of technical capabilities and accurate maps, unclear land tenure, and lack of transparency and public participation. Devolution of forest governance responsibilities as part of decentralization has not taken place in its ideal form (Tacconi 2007), due in part to the increased responsibilities placed on local agencies without corresponding increases in equipment, professional training, and enforcement budgets and capabilities (Andresson 2006). Other pressures arise from the increased decision-making powers devolved to local government that inadvertently increased land and forest clearing by providing greater authority to local officials to extract timber and concession land without regard for sustainable rates of extraction (Casson & Obidzinski 2002).

Poor governance allows illegal activities to occur. In the land use sector these include corruption, timber theft, illegal occupation of forest land, and unlawful commerce such as laundering of proceeds from illegal logging (FAO 2004; Kishor & Rosenbaum 2003). As a result, Indonesia's forest sector is failing to deliver its potential development benefits, due to loss of income, employment opportunities, government revenues such as royalties and taxes, and other local and global environmental services (World Bank 2009). Alongside the loss of revenues, poor forest and land governance can mean that communities negatively affected by land use change are not adequately compensated, and environmental functions are not replaced or rehabilitated. Illegal forest activities also undermine legitimate forest enterprises by subjecting them to unfair competition from under priced products and by discouraging socially and environmentally responsible long-term investments (World Bank 2009; Castren & Pillai 2011). Further, corruption can erode governance institutions, and reduces the rule of

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[1] Forest and land governance in the present study refers to the processes, mechanisms, rules and institutions for deciding how land and forests are managed. Governance mechanisms can be top-down, government-led formal laws, policies, or programs instituted to regulate forest and land use, or bottom-up approaches, such as community-administered decision-making bodies or informal monitoring schemes that determine how forests, land and natural resources are utilized. These processes involve, but are not limited to, government and can include actors from local communities, customary (*adat*) groups, non-government organizations, and the private sector.

law more generally, making space for other crimes to persist through a 'corruption contagion effect' (World Bank 2009; Castren & Pillai 2011). This has implications for all sectors of Indonesia's economy. Without good governance the detrimental impacts of land based and extractive industries will outweigh the economic or social benefits they potentially offer.

There is strong evidence to suggest that good governance is a prerequisite to the success of efforts to achieve good environmental results, in particular conservation or sustainable management of forests (Kanawski, McDermott & Cashore 2011; Pilot Environmental Index 2006). Sustainable forest management encompasses protection of primary forests and peatlands, appropriate allocation of lands (forested or not) for various economic activities, and minimizing of damage to the environment (such as by using already degraded land for sustainable high-yield plantations). Alongside environmental benefits, sustainable forest and land management offers development benefits that include the promotion of sustainable livelihoods, which corresponds closely to poverty reduction. Sustainable land and forest management is difficult to achieve without good governance (Brown et al. 2002; Monditoka 2011).

Based closely on the definition provided by the World Bank (2008), good forest and land governance is characterized by policy-making that is based on transparent and predictable processes; competent officials and other public administrators performing their roles with accountability for their actions; enforcement of vital legal elements such as property rights; and civil society participation. Participation and active engagement of stakeholders from all sectors – government, civil society and the private sector – is recognized as being fundamental for decision-making related to managing forest and land services and natural resources (Lemnos & Agrawal 2006; World Bank 2009). Improving governance in forestry is considered to bring gains to governance more broadly and forestry is therefore considered to be a valuable entry point for broader governance reform (Brown et al. 2002).

It is important to note that the assumption that improved forest and land governance is synonymous with reduced deforestation has been challenged (Tacconi 2011). Trade-offs between local, national and global benefits from forests may result, for example, in a state choosing to clear its forests rather than conserve them. 'A state which has good governance may choose to deforest certain areas if this decision yields national economic benefits greater than its costs, other things being equal' (Tacconi 2011:234). It is also important to note that improving governance is not the only pathway to improved forest management. Other approaches, including improving technical capacity, the adequacy and quality of the resource base, investment finance, and access to markets, all have an impact (Castren & Pillai 2011).

A World Bank study found that there is a gap between theory and practice on forest governance. The study suggested that academic research has not merged well with findings from the field, so that practical approaches are not being applied. 'The academic literature on good governance and its application to the management of forest resources mostly covers conceptualization of the issue, research on incentives, and the political economy of natural resource management. On the other hand, field activities supported by international organizations, development banks, and NGOs have tended to focus on verification of legality in timber trade and the monitoring and control of forest crime' (World Bank 2009:5). The present study aims to respond to this gap by identifying key priorities, targets and reforms (interventions) useful to everyone working on forest governance in Indonesia.

The paper next describes the Delphi survey method used to identify majority agreement regarding the opinions of a panel of experts from academia, the non-government sector, media and the private sector concerning the interventions they consider most likely to contribute to good forest and land governance in Indonesia. In recognizing the connection between poor governance and deforestation and the foundational role good governance plays in contributing to sustainable forest management, this study aims to identify the activities and

industries (called direct drivers) and the underlying factors (indirect drivers) that work to cause deforestation and forest and land degradation in Indonesia. The paper continues to identify the governance interventions that could most efficaciously achieve good forest and land governance and determine the most potentially useful research directions and approaches. In this paper, governance interventions refer to efforts to improve Indonesia's existing system of forest and land governance by modifying existing governance procedures, mechanisms or institutions, or by creating new ones. Such interventions may be carried out by government, donors, researchers, civil society or the private sector.

METHODS

The Delphi method used in this study is a recognized social and policy research technique for assisting group decision-making processes in various areas, and is used to generate consensus between experts tackling complex problems (Dalkey & Helmer 1963). Using a controlled feedback approach, the method involves repeated surveys that allow panelists to anonymously consider and revise their views after reflecting on feedback reports summarizing the views of other panelists. This reduces group conformity biases and allows for richer insight into key issues (Lindstone & Turoff 1975). New ideas may emerge based on the consensus reached, founded on the knowledge pooled from panelists' expertise. Studies have consistently shown that for questions requiring expert judgment, the average of individual responses is inferior to the averages produced by group decision processes (Okoli & Pawlowski 2004). The Delphi method is beneficial as it allows the representation of views of a research group larger than is suitable for a focus group discussion or interview, and ensures that all views are actively engaged.

The main purpose of this Delphi study was to iterate the survey and feedback process to achieve a consensus (as with Nworie 2011) which in this present study is described as majority agreement. While it is clear that majority agreement is achieved when a predetermined percentage of participants come to agree on issues being examined, there is no standard threshold for determining this percentage. The threshold for majority agreement varies in the Delphi literature, from 51 per cent to 80 per cent agreement (Keeney, McKenna & Hasson 2011: 46). In the present study, responses that scored nine – 53% of the respondents – or more were considered to have majority agreement. Responses that received lower rankings will also be discussed as they constitute valuable contributions.

The first phase of the research involved the recruitment of a panel of experts in the field of forest and land governance in Indonesia. A suitable expert is defined in the literature as someone who 'possesses the relevant knowledge and experience and whose opinions are respected by the fellow workers in their field' (De Villiers 2005: 640). The following criteria for participation were used to define an expert for participation in this study: (1) at least three years of experience in LULUCF research; (2) a reputation established through publications or presentations related to LULUCF; (3) experience in field or advocacy work related to LULUCF; or (4) to have excellent knowledge of forest and or land governance issues in Indonesia and the types of governance interventions that might address deforestation and land destruction issues. Experts were identified through literature searches for publications, recommendations from institutions, and through the recommendations of other experts known as 'daisy chaining' (Okoli & Pawlowski 2004).

While the literature varies on best panel sizes – from four to hundreds – most Delphi studies use panels of 15 to 35 people (Okoli & Pawlowski 2004: 19). Considering that the literature review conducted by De Villiers (2005) suggests that a panel size beyond 30 has rarely improved results, 65 panelists were invited to participate in this study's panel, anticipating an acceptance rate of between 35 to 75 percent. Panelists were selected from research organizations, universities, advocacy groups, and the private sector to represent a range of perspectives. Panelists were invited by electronic mail, with a letter detailing the project, its

objectives, the number of rounds to be included (representing the time commitment anticipated), the promise of anonymity and the professional development benefit of involvement in a Delphi study on LULUCF, which included the opportunity to discuss one's opinion with a panel of peer experts.

In due course, 21 experts active in research, advocacy, policy and technical advice and reporting on forest and land governance, with an average of 12.3 years of experience agreed to participate as panel members. A subsequent second round of analysis involved a total of 17 participants, 15 of whom had participated in the first round and an additional two experts who agreed to participate in the study but were not available in the first round. As majority agreement emerged relatively quickly the Delphi was concluded at the second round.

Once panelists had been recruited, they were sent an initial open-ended questionnaire survey as recommended by Hsu and Sanford (2007), administered by Surveymonkey. This involved panelists being asked to respond to three background questions, and seven open-ended questions. Specifically, panelists were asked to identify:

- major activities or industries that directly cause deforestation, forest degradation and destruction of peatlands in Indonesia;
- underlying (or indirect) factors that enable activities or industries to have an impact;
- interventions most likely to achieve good governance of forest and land in Indonesia; and
- the direction of further research required to understand forest and land governance issues.

Initial questionnaire survey questions were devised based on a literature review. Research was conducted using available information regarding governance interventions to address forest loss and deforestation. An academic journal database search, through Discovery EBSCO, identified limited literature related to forest governance, using the search terms 'forest* governance' and 'LULUCF governance'. Development of the first round questionnaire involved dividing the recommendations from the literature into sections based on common forest governance themes from which questions regarding governance interventions were prioritized.

The questionnaire responses received from the first survey round were arranged into 'thematic units' (Ryan & Bernard 2000: 780) in accordance with the forest governance themes used by the World Resources Institute's Governance of Forests Initiative indicator framework (2009). These are: (1) forest and land tenure, (2) forest and land use planning, (3) forest and land management, and (4) revenues and economic incentives. Qualitative analysis of the data involved open coding, where similar responses were arranged into thematic units in order to identify similar responses and eliminate redundancies. Based on the summarized responses, a second survey questionnaire was then developed that presented the major themes from the first survey and panelists were asked to priority rank the statements that were summarized from survey one.

With the first survey round identifying 22 major activities or industries that cause deforestation and peatlands degradation, in the second round panelists were asked to select up to five to focus on to address the issues most efficaciously. Similarly, with panellists identifying 38 indirect drivers (called enabling factors) that are most strongly attributed to activities and industries that cause deforestation and peatlands degradation, in the second round they were asked to select up to three enabling factors per thematic unit, according to how strongly they felt they were attributed to activities and industries that cause deforestation and peatlands degradation. There was an average of 9.5 enabling factors within each of the four thematic units.

Likewise, interventions to improve forest and land governance identified in the first survey round were summarized into statements in the second round, and were arranged according to their relevance with the four thematic units and panelists were asked to select up to five interventions per thematic unit, according to how likely they were to improve forest and land governance. There was an average of 19.5 statements relating to specific interventions within each of the four thematic units.

Regarding the research needs of the domain, in the first survey round panelists were asked to identify research topics and approaches that would help to better understand forest and land governance issues in Indonesia. Again these responses were arranged into the thematic units used with the causes, enabling factors and interventions, with the exception that the thematic units of 'forest and land tenure' and 'forest and land use planning' were grouped as one due to the small number of statements corresponding to both these units. Finally, in the second survey round panelists were asked to select up to three research topics and approaches for each of the three thematic units. There was an average of 9 statements under each of the three thematic units.

Following these steps, a summary report was produced, summarizing the findings from the first and second rounds and identifying where majority agreement was reached for each statement. This was circulated to all participants to provide panelists with feedback and to solicit any further comment.

RESULTS AND DISCUSSION

As described above, respondents were first asked to identify what they considered to be the most important activities and industries to focus on to address deforestation and peatlands degradation. Respondents then were asked to identify indirect factors (called *enabling factors*) that enable activities and industries to cause deforestation and peatlands degradation. The approach of initially identifying the causal factors was used to produce an agreement on the cause of the problems (the drivers), so that the diagnosis and treatment (government interventions) could follow in a logical theoretical progression.

In line with the distinctions set out in the literature, panelists in this study were asked to consider what they considered to be the most important activities and industries to focus on to address deforestation and peatlands degradation. The second survey round presented a summary of nine themes for which the major activities or industries that cause deforestation and peatlands degradation were grouped.

Defining deforestation and determining its drivers
Deforestation in this study takes the definition used by Margono (2014) as 'the clearing of natural forest by non-forest-related land uses' (2014: 1). Forest degradation denotes thinning of the canopy and loss of carbon in remaining forests, where damage is not associated with a change in land use and where, if not hindered, the forest is expected to regrow (Hosonuma 2012). Based on the definition set out by Bai et al. (2008), peatlands degradation is defined as the long-term loss of ecosystem functions and productivity caused by disturbances from which peatlands cannot rehabilitate from unassisted.

Identifying the drivers of deforestation and peatlands degradation is challenging. Difficulties include limitations in understanding the way in which drivers interact, as some activities that cause initial forest disturbance are compounded by other, subsequent activities. In some cases, multiple proximate drivers work in combination, such as logging forests for timber followed by use of cleared land for agricultural purposes (Honosuma et al. 2012). In response to this, literature on the causes of deforestation and forest degradation has drawn a distinction between proximate (or direct) and underlying (or indirect) drivers. Direct drivers of deforestation and forest degradation are caused by human activities that directly affect the

loss of forests. Direct drivers can be both planned and unplanned activities that cause a forest area to be reallocated or its function to be changed for non-forestry purposes such as estate crops with the consequence that the area can no longer be categorized as forest area or forest (Indrarto 2012). Indirect drivers, or enabling factors, are the socio-economic circumstances and policies that form the indirect causes of deforestation (Romin et al. 2013).

Two further important distinctions can be made between planned (government or community sanctioned changes to a forest area conducted in accordance with the law) and unplanned or illegal forest conversion and land use activities, and between deforestation and degradation driven by causes originating within the forest sector itself (so called 'intra-sectoral factors') and activities driven by causes originating from other sectors ('extra-sectoral factors') (Contreras-Hermosilla 2000). This definition takes into consideration causes outside of the forest sector itself, such as market demand for agriculture plantation products.

Direct drivers of deforestation
When panelists were asked select up to five activities or industries to focus on to address deforestation and peatlands degradation, a majority agreement emerged around two major activities and industries: large-scale palm oil plantations owned by private companies received 82% of votes, and industrial timber plantations (HTI) received 58% of votes. There was also some agreement around coal mining (41%), and the influence of actors who benefit financially (35%).

These findings align closely with the existing literature. Recent research by Greenpeace (2013) indicates that conversion to oil palm was the single largest driver of deforestation in Indonesia from 2009-2011, accounting for about a quarter of Indonesia's forest loss. According to Koh & Wilcove (2008), 56% of the oil palm plantations in Indonesia have replaced forests, and Romijn et al. (2013) identify the provinces of North Sumatra, Riau and Jambi and along the south-western borders of Kalimantan as most significantly affected. Much literature also cites extensive logging – both legal and illegal – as a major cause of forest degradation (Hapsari 2011; Hosonuma et al. 2012). A recent report analyzing the contributions of land based industries on forest loss in Indonesia found that fiber and logging concessions accounted for the largest forest loss (Abood et al. 2014). A study by Hapsari (2012) determined that illegal logging has a greater impact on forests than legal logging. In relation to coal mining, many mining operations are established in conservation areas or protection forests, due to the rich mineral ores found in those areas (Indrarto 2012). According to recent media (The Age 7 September 2012), Indonesia is already the world's largest exporter of thermal coal used by power stations and its coal output has been increasing at a rate of 20% a year since 2000.

The statement that actors who benefit financially play a role in causing deforestation and peatlands degradation, received 35% agreement. Literature on forest governance suggests that vested interests affect forest and land governance in a number of ways, such as by profiting from the expansion of oil palm and industrial plantations for pulp and paper (Hunt 2010).

Indirect drivers of deforestation – enabling factors and governance interventions
The results of panelists' responses identifying the indirect factors (called enabling factors) they considered to be most strongly attributed to activities and industries that cause deforestation and peatlands degradation are discussed below in relation to the four thematic units that they were initially analysed under: forest and land tenure, forest and land use planning, forest and land management, and revenues and economic incentives. The relevant governance interventions identified by the panelists as most likely to improve forest and land governance issues are presented corresponding to their most relevant enabling factor.

Enabling factors related to forest and land tenure and planning and corresponding governance interventions

Two enabling factors related to forest and land use tenure were most strongly attributed to activities and industries that cause deforestation and peatlands degradation: unclear land tenure and land classification (88%), and overlapping licenses for forest and land (58%). Three interrelated enabling factors related to land use planning also had a clear majority agreement: weakly regulated land allocation due to land use plans that are not adhered to (76%), poor spatial planning (53%), and ineffective land use planning (53%). There was 35% agreement regarding the statement that 'public control (both CSOs and media) is still weak'.

Of all the enabling factors identified, *unclear land tenure and land classification* had the highest agreement by respondents in this study (88%). Unclear forest and land classification negatively impacts communities that reside within areas that are zoned as state forest (*kawasan hutan*).[2] There is a relationship between tenure security and sustainable management approaches. This is summarised in the statement of one respondent: 'When local communities perceive they will lose access to local resources… traditional land use controls are often ignored, and smallholders' clearing and land grabbing often exacerbates the corporate and government ones.'[3] This majority agreement is reflected in the literature which identifies that unsecure property rights and land tenure is considered to be a contributor to deforestation, as this results in a lack of regulation and subjects forests to predatory use. Conversely, when property rights are secure, local communities or other stakeholders are more likely to manage forests sustainably (Agrawal & Ostrom 2001; Contreras-Hermosilla & Fay 2005). Providing forest communities with secure forest tenure therefore becomes a necessary condition for enhancing their participation in forest protection (Safitri 2010). Consequently, an intervention identified to respond to this issue was the *revision of land tenure laws and property rights to integrate adat (customary) and local community forest and land management systems in Indonesian law* (with 41% agreement).

Another related intervention that gained 58% agreement was to *gazette forests to clarify land boundaries*, and to *decide which forests should be village, community and government forest zone*. Gazettement is the first step for defining the status of an area of forest zone, to clarify all rights that are claimed over any one piece of forest zone (Contreras-Hermosilla & Fay 2005). Article 15 of the 1999 Forestry Law states that an area is legally state forest only once 'gazettement' (*pengukuhan*) has occurred.[4] As gazettement clarifies the legal status of forests, it is considered to be a critical step for improving district and provincial land-use planning and forest management.

Related to the issue of forest use, 53% of respondents identified that *ineffective land use planning is an underlying factor that drives deforestation and peatlands degradation*. As spatial planning is a central feature of forest and land use planning in Indonesia, weaknesses identified with spatial planning processes were considered to be central to ineffective land use planning. A similar statement, also with 53% agreement, is that *poor spatial planning processes* are an underlying enabling factor. Spatial planning is a government land use planning instrument to define where land-based activities can take place. Spatial plans, at least in theory, form the basis for design and control of land-based concessions, including timber and oil palm plantations. Indonesia's spatial planning system has three levels of spatial plans – national, provincial and district – and spatial plans made by all tiers of government are required to conform to one another, in accordance with Law no. 32 of 2004 on Decentralisation.

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[2] The legal term state forest area (*Kawasan Hutan*) is defined as 'a certain area that is designated and/or stipulated by government to be retained as forest'.

[3] Note that the Constitutional Courts decision no 35/2012, which changed the wording of the 1999 Forest Law so that indigenous peoples' customary forests should not be classified as *kawasan hutan*.

[4] Gazettement involves a number of steps, the first being designation (*penunjukan kawasan hutan*) of the area of state forest and the legal claims to the area. This step provides a foundation for deciding what types of forest use can occur and where. Designation is not legal assurance that these areas are free from peoples' claims (Safitri 2010). The next step is demarcating the forest boundaries (*penataan batas*), followed by mapping the state forest (*pemetan*) and finally officially enacting (*penetapan*) the state forest areas by the Forestry Minister.

Spatial planning is frequently compromised by factors that include: centralised sector-based planning; inaccurate and inconsistent maps produced under various spatial planning policies; a lack of information about existing forest and land characteristics; poor coordination of the Ministry of Forestry with other ministries; poor coordination among district, provincial and central bodies, or competition between different government agencies seeking to maximise jurisdictional control over resources and opportunities to capture rent (McCarthy 2009); vested political and business interests; central government policies that take precedence over existing plans; a lack of local government capacity or will; a lack of financial resources; weak stakeholder input; or simply the unavailability of the spatial plans (Wollenberg 2009). Weaknesses with spatial planning processes results in inappropriate land use decisions, for example by allocating old growth forests to be cleared for palm plantations or timber harvesting while degraded land is set aside for conservation purposes. Inaccurate and inaccessible spatial plans can indicate that land is available for plantations where in reality this is not the case.

A governance intervention that responds to the issue of poorly implemented spatial plans, including inaccurate and inconsistent maps, is to *make accurate spatial information publicly available* (agreed by 41% of respondents). Up-to-date, technically sound and legally accurate spatial data, including license and permit data is an important foundation for the spatial planning process (Austin, Sheppard & Stolle 2012).

Integrating participatory maps into spatial plans to protect local communities and indigenous peoples' development needs was another governance intervention agreed to by 53% of respondents. Participatory, or community mapping is a process in which *adat* and local communities identify areas they consider their lands. Participatory maps function as documentation of the land tenure claims by *adat* and local communities, to ensure land use decisions including spatial planning are legal and accurate (Brockhaus et al. 2012). This is important to the spatial mapping process as formal maps frequently do not consider *adat* and village boundaries, resulting in community land being allocated for plantation or mining permits without acknowledging community tenure.

A further significant enabling factor, agreed with by 75% of respondents, is that *weakly regulated land allocation is due to land use plans that are not adhered to*. Factors undermining the land use planning process have been presented above. Problems include inaccurate maps that result in poorly developed, inaccurate spatial plans that are then difficult to adhere to, and levels of spatial plans that do not align with one another – such as district spatial plans that are different from provincial and national level spatial plans. Spatial plans are often not adhered to, resulting in inappropriate and weakly regulated land allocations.

Another enabling factor with majority agreement was *overlapping licenses for forest and land use* (58%). Poor governance processes were identified to result in different licenses being allocated for the same land area. This occurs when one or more local and central authorities issue licenses for an area of land that conflicts or overlaps with an existing land title. There are a number of reasons for this. Decentralisation devolved authority to local governments to issue land use regulations. Local regulations are not however always aligned with national regulations. Another complication is that different land use types can have different, and often conflicting, regulations and license obligations. Inaccurate or conflicting maps is another causal factor. Land use planning processes rely on complete and accurate maps to provide information about actual forest conditions, including forest cover, land type and tenure boundaries. Yet a lack of coordination across horizontal and vertical levels of government, unclear forest and land allocations (KPK 2010), and a lack of clarity around land tenure including for recognizing *adat* tenure (McCarthy 2009) is resulting in inaccurate maps. The implications of overlapping licenses for land activities are, in some regions, resulting in more

than the total area of land being allocated for industry activities, leaving no land for community use.

Interventions to respond to these issues include *creating transparency in the allocation of land and forest use permits by making land permit data publicly available* (47%). Transparency in the issuing of permits will ensure that information on permits for logging, mining, palm oil expansion and other forest uses is publicly available, reducing instances of overlapping permits. A lack of transparency in the permit process contributes to rent-seeking behavior – the process of gaining various economic benefits through political systems, as defined by Ascher and Healy (1990). It describes the way in which powerful actors and elites secure and maintain their control over access to and benefits received from the exploitation of natural resources, a powerful driver of conversion of forest and land for land based industries.

Weaknesses with public control and influence in forest and land governance was also considered to be an issue: *public control (both Civil Society Organisations (CSOs) and media) is still weak* (35%). Weaknesses in CSOs include a lack of capacity in lobbying and negotiation. Considerable challenges face Indonesia's civil society, including limited resources, weaknesses with accountability and transparency, issues with internal corruption, and an inability to communicate with the private sector (Ibrahim 2006). A UNDP forest governance study found civil society actors are weakest at the district level, and some districts entirely lack NGOs or academics working on forest governance issues (UNDP REDD+ 2013). Environmental CSOs (also called environmental advocacy actors) have two major shortcomings. First, they have limited activities oriented towards monitoring forest and land governance, due both to limited funding available and the complexity of issues and instruments that must be employed to conduct monitoring. Second, very few concentrate their efforts on advocating for the eradication of corruption in the forestry sector, such as by concentrating on state losses through improper licensing or bribery in the administration of licences (UNDP REDD+ 2013). To respond to these weaknesses, an intervention that gained majority agreement (65%) was addressing the weak capacity of local communities to manage and monitor forests and natural resources.

Media coverage in Indonesia of environmental issues – including those related to deforestation – is quite low. A development assessment for a World Bank project (INFORM 2005) found that media coverage of forest loss issues is low, and that journalist capacity for and understanding of forest related issues for effective coverage is lacking in Indonesia. A case study on the reporting of forest and land use issues (described in the report as REDD+ issues) found similarly that poor media coverage of environmental issues is potentially due to a lack of capacity and skills to analyse and then communicate these news issues (UNDP REDD+ 2013). As a result, while there have been some increases in news reports on REDD+ issues in the media, the number of journalists and media outlets reporting on REDD+ issues is still very limited (UNDP REDD+ 2013).

Enabling factors related to forest and land management and corresponding governance interventions
There was some agreement from respondents that *laws that are contradictory* (41%), and, relatedly or consequently, *laws that are not implemented* (35%). There is some literature that identifies the links between contradictory laws and forest loss. Indonesia has over 2,000 pieces of legislation, regulations and norms concerning land, some of which conflict or are not clear how they are mutually implementable. Legislation introduced to support Indonesia's decentralisation created ambiguity over rights and ways to control forest resources. For example, the Forestry Law requires rural districts to implement sustainable forest management practices, while the Law on Regional Governance requires districts to use resources to generate as much revenue as possible to finance development programs, encouraging short term gains and accelerated exploitation of forest resources (Contreras-Hermosilla & Fay 2005). The Presidential Regulation No. 41 of 2004 allows mining

operations in several protected forests, thereby contributing further uncertainty in the forest sector.

Regional autonomy laws are contradictory and unclear, undermining coordination amongst forestry departments at various levels and causing legal uncertainty over political jurisdictions for controlling and managing natural resource usage (Kishort & Damania 2007). District and provincial governments have used this lack of legal clarity to their advantage to issue regulations and allocate land concessions. Many of the local regulations issued by district governments to regulate timber production within their jurisdictions directly contradicts national regulations issued by the Ministry of Forestry, thereby appearing to authorise practices that the central government considers to be illegal. Legal confusion is allowing for corruption and abuse of environmental regulations. An estimated $4 billion is generated through illegal activities in Indonesia's forest sector, out of the control of fiscal authorities (Kishort & Damania 2007:3). Respondents emphasised (41% agreement) the need to clarify the inconsistencies in the interpretation and implementation of laws.

Respondents identified that *judicial corruption contributes to weak law enforcement* (41% agreement). Judicial corruption is evident in many cases in Indonesia, where attempts to pursue cases of illegal logging and burning against notorious individuals and companies have failed to result in successful prosecutions (Smith et al 2007). The Anti-Judicial Mafia Task Force (2010) has identified various *modi operandi* in law enforcement processes, which begin when a breach of the law has been identified (through bribes and personal relationships with the 'backing' of law enforcement authorities) and continue through every stage of the justice process (KPK 2010). The judiciary is perceived as one of the most corrupt institutions in Indonesia according to a 2011 study by Transparency International. Similarly, a 2012 study by the Global Corruption Barometer reported that 52% of Indonesians surveyed perceive the judiciary as corrupt. According to a study in the U4 Expert Answer (Martini 2012), the judiciary is perceived as being highly influenced by government officials and local elites. An ineffective legal and judicial system may hamper efforts to make the government more transparent and accountable to its citizens, and encourage corrupt behaviour. A serious problem identified in the judicial system is the disappearance of court records and the preferential treatment towards government and parliament members and/or their family members. Corruption in the judiciary undermines the important role of the judiciary in enforcing rule of law, reinforcing weak responses to corrupt practices.

There was some agreement (41%) around the intervention to *enforce rules and legislation firmly, transparently and consistently*. Due to their central role in controlling the *kawasan hutan*, district and provincial forest services play an important role in enforcing forest policy (Burgess et al 2012). Yet a number of problems limit the ability of district forest agencies to enforce forest policy and laws in their jurisdictions, including budgets and capacities that do not match responsibilities. Forest agencies have a challenging task of managing the conflicting objectives of conserving global assets of value and generating resource rents. Government forest officials work for low salaries, yet are responsible for protecting a resource with high commercial value. Rents resulting from depleting forests remain high and there are strong incentives to subvert regulations and pay bribes to capture a greater share of the resource (Kishor & Damania 2007). Respondents identified the intervention of *providing incentives for forest agencies and regional governments to demonstrate good performance, including promoting community forest management* (41% agreement). Incentives can help ensure that staff are adequately motivated through a clearly defined system of rewards and sanctions to implement tasks for which they are responsible.

Other challenges to enforcing rules and legislation is a lack of clarity in the control of *kawasan hutan*, which may be exploited by district heads who allow logging to take place outside official concessions (Barr et al 2006), to facilitate the creation of new oil palm plantations inside national forest areas, and to sanction the transport and processing of

illegally harvested logs (Casson 2001; Burgess et al 2012). Local governments rarely, if ever, enforce community agreements with companies, with the result that communities depend on self-enforcement rather than on the state to enforce their property rights (Palmer 2006). Relatedly, respondents also identified a corresponding intervention (35% agreement) to *develop structures that help to ensure accountability* (e.g. judiciary, corruption bodies, external observers such as the media).

Enabling factors related to revenues and economic incentives and corresponding governance interventions
The third category of enabling factors relate to revenues and economic incentives. These are most strongly attributed to activities and industries that cause deforestation and peatlands degradation. There was majority agreement around the enabling factors related to *vested interests, business and political interests that heavily influence policy-making and regulations* (70%). Enabling factors that had lower agreement were *corruption* (35%); and *policies directly and indirectly support and even subsidize commercial activities that lead to land clearing (especially logging and the expansion of palm oil plantations)* (35%); as well as *policies prioritize short-term economic growth and state income over long-term sustainability and sustainable land use decisions* (35%).

There was a majority agreement that *business and political interests heavily influence policy-making and regulations* (70%). This finding corresponds closely with an emerging body of literature that argues that Indonesia's decentralisation has not changed the entrenched vested interests that affect forest and land governance. Respondents in this study identified that there are a number of invested interests that work in a number of ways, both direct and indirect, to affect forest and land cover change. As one respondent commented: 'there are a wider range of actors that also benefit from deforestation albeit at a distance, including those who benefit from investments in these activities or money from revenue or kickbacks or other favors from granting access to permits or not enforcing the law'.

Decentralization reforms have empowered local officials to gain revenue from allocating permits for land-based activities. Another respondent commented: 'In decentralization, the push for regional revenues from these newly cleared lands and establishment of new plantations (or mines, etc) is especially pernicious, since the regional officials now responsible for enforcing restrictions on land clearing benefit from deforestation, peat drainage, and land clearing, both through support for their official regional programs and revenue they produce, and unofficially and in many cases illegally, through kickbacks and personal business interests'. At the district level, district governments earn the highest amount of revenues from oil palm plantations in natural forests, and have interests in expanding oil palm plantations in their localities (Irawan, Tacconi & Ring 2013). Local governments have more influence on decision-making in relation to palm oil plantations than they do over commercial logging and timber plantations.

Respondents (35%) identified that 'policies directly and indirectly supporting and even subsidizing commercial activities that lead to land clearing (especially logging and the expansion of palm oil plantations)' are significant enabling factors most strongly attributed to activities and industries that cause deforestation and peatlands degradation. Indonesia's government has fostered an investment environment that favours foreign commercial enterprises, and encouraged an export market for crude palm oil that fluctuates with the international market. These factors have resulted in a boom in palm oil production, which increased at 17.4% per annum between 2000 and 2009 (US Department of Agriculture 2009). The government has also provided subsidy programs to encourage smallholder farmers who now account for 44% of the total oil palm area in Indonesia, second only to private commercial estates (US Department of Agriculture 2009).

Research to improve forest and land governance

This study also included questions related to research, acknowledging that further research is required to improve forest and land governance. Research is important both to build on the body of knowledge that exists concerning the causes and drivers of deforestation and land degradation and to share knowledge of what has worked to achieve reform in land governance. This study therefore also evaluated research topics and approaches that may enable better understanding of forest and land governance issues in Indonesia. Many panelists identified action research to be a potentially beneficial research technique. With action research defined as 'a disciplined process of inquiry conducted by and for those taking the action' (Sagor 2000), *Conduct action research involving the government, private sector and community* gained 64% agreement.

There was also agreement on the benefits of establishing *partnerships between scientific institutions and local NGOs to utilize research findings* (41% agreement). These relationships can be mutually beneficial: local NGOs may have access to information that scientific and research institutions need to conduct their research, and local NGOs may benefit from evidence-based advocacy and programming.

Another research approach methodology identified as important is *political economy, particularly to expose the real political economy of land use allocations* (58% agreement). This methodology scrutinizes the interests and influences of different stakeholders and how power is exercised in forest and land use decisions and distributing natural resources. Relatedly, there was agreement around the need to *examine more deeply political financing in the forestry sector, including intervention and involvement of political parties in business and forest crimes* (58%). Political economy studies have documented the influence of political parties in business and forest crimes. Burgess et al (2011) identified the relationship between deforestation and regional and local elections, described as 'political logging cycles'. Forests become a source of vote buying and clientelism, used to repay debts and favours incurred by political parties or individual candidates in the lead up to the elections, and to finance political parties. Understanding the costs accrued by political candidates, and the financial relationships built to manage the debts incurred, will help to inform understandings of actors influencing decisions related to forest and land use. Financial accountability mechanisms keep in check the increased control over forests local governments have post-decentralization, to ensure that decisions related to forest and land use are in the public's best interests (Eckardt 2008).

Understanding financing of forest crimes also requires investigating financial flows from its source to the destination of profits. Powerful actors are able to by-pass formal procedures by making payments to monitors or leveraging political connections to avoid law enforcement (EIA/Telapak 2007). A 'follow the money' approach has been suggested to reach higher-level political and economic actors who are often the destination of illegal profits. Investigating these actors is however difficult and complex, requiring technical skills to trace transactions across international jurisdictions (Joy 2010).

Further agreement was determined regarding the benefit of studying the *needs and assistance required by regions to implement tools and policies for improving forest and land governance* (58%). Understanding the specific needs of regional governments, communities and other forest stakeholders can help to achieve more responsive and strategic governance interventions, which are more likely to succeed in contributing to good forest and land governance.

There was also significant agreement regarding *research on improved institutional arrangements, and landscape management approaches that break through 'sectoral fences'* (47%). Institutional arrangements encompass many mechanisms for forest management, including community forest management schemes such as village and community forest management, private plantations and state managed forests through forest management units

(KPH). Some respondents thought there were benefits to studying *forest and land governance (including agro-forestry) by indigenous communities* (35%). Forest and land governance by indigenous communities can include practices institutionalized in traditional or *adat* law.

There was some agreement (35%) related to *find entry-points in supply chains to encourage improvements to forest and land governance*. Improving land use practices, including forestry, plantation and mining practices requires a good understanding of an entire supply chain. Identifying key entry points in supply chains can include the verification stage at the commodity's point of origin (for timber this is the point where the product is cut), or the compliance with laws and regulations for processing or industrial operations.

Respondents emphasized the need to supplement research with advocacy or other activities oriented at achieving policy reform. One respondent suggested that: 'It is unlikely that research on its own can change a great deal'. Bridging communication between researchers and policy makers, civil society and the private sector is important to ensure that research informs governance interventions. This involves enabling access to research and communicating research recommendations to the appropriate actors.

Another respondent expanded on the limitations of research, pointing out that much is already understood about forest and land governance: 'The general outline of the system [of forest and land governance] is well researched. It remains debatable whether it is a question of knowledge or whether it is really a political and economic question. As most of the obstacles are economic, research will only make a limited difference. However NGO and other research that reveals the issues in particular contexts can expose and provide up-to-date analysis that can help to address limitations to reform.' Another respondent highlighted the need for continuity and further exploration in research: 'The research that has already been conducted is quite good, what is left is to deepen the scope of research'. Deepening the scope of research already conducted involves updating and expanding on research results that have been identified as having significant potential to improve key aspects of forest and land governance.

CONCLUSION

To respond to the gap between theory and practice in the field of forest and land governance, a panel of experts was assembled to determine what degree of agreement could be reached on the drivers of deforestation, forest loss and forest and land degradation in Indonesia, and correspondingly, to identify interventions to improve land and forest governance. Using a Delphi method, these experts reached majority agreement about two major industries to focus on: large scale palm oil plantations owned by private companies (82%), and industrial timber plantations (HTI) (58%). The expert panel also identified indirect causes of deforestation and forest and land degradation (called enabling factors), particularly relating to poor governance around land use planning. These included: *a lack of clarity around land tenure and land classification* (88%); *poor land use planning practices and weak adherence to spatial plans* (76%); *overlapping licenses for forest and land use* (58%). *Business and political interests that heavily influence policy-making and regulations* was also a factor that gained significant agreement (70%).

The expert panel identified three interventions most likely to improve forest and land governance in Indonesia. These were:
1. Identification of strengths and weaknesses of community institutions, and develop strategies to improve their performance (65%).
2. Gazetting of forests to clarify land boundaries, and to decide which forests should be village, community and government forest zone (58%).
3. Integration of participatory maps into spatial plans, to protect local communities and indigenous peoples' development needs (53%).

The interventions that gained the greatest agreement emphasized community engagement in forest governance mechanisms. Respondents supported community engagement in forest management, including in decision-making bodies for managing forests. Integrating community maps in spatial planning decisions was seen as an important means to ensure that local and indigenous communities development needs are protected. The intervention of gazetting of forests to provide clarity around land boundaries also offers benefits of securing land tenure for local and indigenous communities. These findings indicate that a community approach to forest management institutions may be of benefit for forest governance.

Finally, the expert panel reached majority agreement on four research themes to better understand forest and land governance:
1. Action research involving the government, private sector and community (64%).
2. Study of the needs and assistance required by regions to implement tools and policies for improving forest and land governance (58%).
3. Deeper examination of political financing in the forestry sector (58%).
4. Exposing the real political economy of land use allocations using political economy methodology (58%).

Majority agreement around action research emphasized the value placed on collaborative research approaches. Research that responds to the needs of regions was considered to be important. The influence of business and political interests received a high level of agreement as enabling factors that deserve to be researched more deeply. Panelists identified a need to expose these relationships through political economy studies. The limitations of research were identified by a number of respondents, with many commenting that research is insufficient as a tool alone but can help to inform and strengthen governance approaches.

RECOMMENDATIONS

Based on this study's findings, recommendations for conducting interventions to respond to forest and land governance are discussed below. They are based on the three interventions and the four research themes that achieved the strongest majority agreement. Forest governance-oriented NGOs, donor organizations and research bodies could benefit from considering these priorities in developing programs and policies to support improved forest and land governance in Indonesia.

Support community institutions. Governments, donors and civil society should undertake capacity building for community institutions, and support their engagement in bodies established to facilitate forest and land management. These community institutions should be integrated into local level forest and land management bodies such as community or village decision-making bodies, and at higher levels such as forest management units (KPH) and other responsible government agencies.

Accelerate forest gazettement using local community institutions to clarify community forest claims. The Constitutional Court ruling No. 35/2012, which ruled that indigenous people's customary forests should not be state forest areas (*kawasan hutan*), created opportunities to recognise indigenous and local communities' rights over forests. Forest gazettement is one of the crucial first steps in recognising tenure over forests. Community maps are an important part of this process, to identify and clarify land tenure claims. Community institutions can support mapping and other approaches to document forest claims. Government, researchers, donors and civil society can partner with community institutions to support documentation of community forest claims to inform the forest gazettement process. Government should ensure that community forest claims are protected in legislation recognizing communities' forest tenure, which studies have demonstrated lead to sustainable forest management.

Integrate participatory maps into spatial plans. Participatory maps produced for forest gazettement can also be used as a basis for spatial planning decisions, to ensure that spatial planning maps consider customary (*adat*) and community land claims. Action research is a useful approach to use in participatory mapping, as it allows agency and ownership over the process and the end results. Donors, researchers and civil society should provide training and technical assistance to support participatory mapping of community forest claims. Researchers should provide technical assistance to governments to integrate participatory maps into spatial plans.

Support local communities' ability to monitor forests. A number of technologies can be used by local communities to conduct forest monitoring. For communities with ICT technology access and skills, online platforms and tools are available for monitoring forest cover, and reporting violations of forest use, forest fires and changes to forest cover. For communities without internet capacity, SMS platforms, phone trees and radio technologies are simple innovations that can support monitoring and reporting of violations. Unmanned Aerial Vehicles offer a low cost way to monitor areas of forests to identify forest cover conditions, track wildlife and monitor plantation and mining concessions to check for adherence to legal requirements and obligations. Governments, donors and civil society should provide training and technical assistance to communities to enable use of appropriate monitoring innovations, as well as capacity building to support communities to respond to injustices and violations identified through monitoring. Civil society should help local communities to use social media, including Facebook and Twitter, to link with concerned urban citizens to build support for forest protection and community rights, and push for demand for legal sanction of large-scale violations.

Conduct action research involving all stakeholders. Resolving long standing conflicts over land use, and ensuring that land use allocations support low carbon economic growth and local community prosperity, requires active participation from the government, private sector and community. Researchers and donors should consider action research and related participatory methods that allow for ownership of not just the outcomes, but the direction of research conducted related to forest and land governance. Action research is a tool useful for conducting community mapping exercises, and for land use decision-making processes that allow for participation of affected stakeholders, including *adat* communities and women, groups that are frequently marginalised from decision-making processes despite being most likely to be affected by the outcomes. This research method is also a useful technique to support needs analysis for regions to identify tools and policies to improve forest and land governance.

Address financing of the forest and land sector. Donors and civil society need to consider the underlying patron-client relationships that hinder effectiveness of technical interventions. The private sector should work with government and civil society to ensure that investments consider community forest rights, are consistent with local, national and international laws and standards, and that land allocations are only made after free, prior and informed consent of affected communities. Civil society should continue to ensure the accountability of political leaders and public officials, including by using media and monitoring decisions, and donors should support increased civil society accountability and participation in governance. Researchers, donors and civil society should use a 'follow the money' approach (as developed by CIFOR's Integrated Law Enforcement Approach)[5] to identify illegal or unsustainable practices by the banking and financing sectors. This approach requires technical skills, large networks and funds to follow money trails and pursue prosecution cases in foreign jurisdictions. Civil society should support preventative initiatives, including whistle blowers and monitoring to stop illegal forest use at its early funding stages.

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[5] CIFOR's Integrated Law Enforcement Approach, 2009, see http://www.cifor.org/ilea/_ref/instruments/index.htm

Engage political economy analysis. Financial and technological assistance alone are insufficient to promote good forest and land governance. Researchers, donors and civil society should use political economy analysis to understand the political and economic processes that influence decision-making related to forest and land use. Researchers can help to identify the stakeholders that are directly and indirectly involved or affected by forest and land governance issues, and to unpack the power dynamics that allow these relationships to reinforce poor governance practices, and interfere with the potential drivers of change that can support good governance reforms. Donors should use political economy analyses to inform their program designs in order to ensure that governance interventions consider the constraints and opportunities at work in Indonesia's forest and land governance sector.

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