A call for a wider perspective on sustainable forestry: introduction to the Special Issue on The Social Impacts of Logging

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A call for a wider perspective on sustainable forestry: Introduction to the *Special Issue* on The Social Impacts of Logging

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HIGHLIGHTS

- The social impacts of logging in tropical forests are overwhelmingly negative and affect local and Indigenous people's livelihoods, their relationships with the forest and with each other.
- These impacts need to feature much more prominently in sustainable forest management policy, practice and assessment.
- This requires awareness of the broad and long-term nature of social impacts, which reach far beyond labour relations and the workplace, and far into the future.
- The gender inequities embedded in and reinforced by the logging sector require specific attention.
- Future empirical research must focus on the equitability of the design, workings and outcomes of social impact assessments, FPIC procedures, social auditing, benefit sharing and grievance mechanisms, particularly in certified logging operations.

SUMMARY

Global demand for timber is projected to grow and much of this timber will continue to be sourced from natural forests. As these forests, particularly in the tropics, tend to be inhabited by the world's most marginalized communities, the social impacts of logging require more attention within policy, practice and research. This Introduction to the Special Issue of *International Forestry Review* on *The Social Impacts of Logging* compiles evidence that the overwhelmingly negative social impacts of logging are systemic. As logging companies fail to fulfill their social obligations, and elite capture is common, the extent to which local communities benefit from logging operations is minimal, while long-term, harmful effects on livelihoods, social fabric and safety are severe. Logging operations reinforce and often exacerbate pre-existing inequities, particularly for women and Indigenous people. Weak governance, a lack of transparency and poor participation procedures partially explain this unfavourable situation. However, logging will only achieve better social outcomes if underlying power-imbalances are tackled.

Keywords: Sustainable forest management, benefit-sharing, equity, gender, social auditing

Un appel pour une perspective plus large sur la foresterie durable: Introduction au numéro spécial sur les impacts sociaux de l'exploitation du bois

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Il est projeté que la demande globale pour le bois d'ouvrage continue de croître, et le gros du bois va continuer à être obtenu dans les forêts naturelles. Comme ces forêts ont tendance à être habitées par certaines des communautés les plus marginalisés au monde, dans les tropiques en particulier, les impacts sociaux de l'exploitation du bois requièrent une attention plus grande, du point de vue des politiques, des pratiques et de la recherche. Cette Introduction au numéro spécial de l'International Forestry Review sur les impacts sociaux de l'exploitation du bois, rassemble les preuves que les impacts largement négatifs des opérations d'exploitation du bois sont systémiques. Alors que les compagnies d'exploitation du bois ne remplissent pas leurs obligations sociales, et que l'obtention par les élites est répandue, l'envergure des bénéfices récoltés par les communautés lors de l'exploitation du bois sont minimaux, alors que les effets négatifs à long-terme sur les revenus, la fabrique sociale et la sécurité sont sévères. Les exploitations du bois renforcent, et exacerbent même souvent les inégalités préexistantes, en particulier pour les femmes et les populations indigènes. Une gestion faible, le manque de transparence et des procédures de participation faibles expliquent en partie cette situation défavorable. Toutefois, l'exploitation du bois ne parviendra à de meilleurs résultats sociaux que si les inégalités sous-jacentes sont traitées.

Un llamado para una perspectiva más amplia de la silvicultura sostenible: Introducción al *Número Especial* sobre las Repercusiones Sociales de las Explotaciones Forestales

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Se prevé que la demanda mundial de madera aumente y que gran parte de esta madera siga procediendo de bosques naturales. Dado que estos bosques, sobre todo en los trópicos, suelen estar habitados por las comunidades más marginadas del mundo, las repercusiones sociales de las explotaciones forestales requieren más atención en la política, la práctica y la investigación. Esta Introducción al Número Especial de *International Forestry Review* sobre las *Repercusiones Sociales de las Explotaciones Forestales* recopila pruebas de que los impactos sociales de las explotaciones forestales, que son abrumadoramente negativos, son sistémicos. Debido a que las empresas madereras no cumplen con sus obligaciones sociales y la captura por la élite es lo habitual, el grado en que las comunidades locales se benefician de las operaciones madereras es mínimo, mientras que los efectos perjudiciales a largo plazo sobre los medios de vida, el tejido social y la seguridad son graves. Las operaciones de las explotaciones forestales refuerzan y, a menudo, exacerban la inequidad preexistente, especialmente para las mujeres y los Pueblos Indígenas. Las carencias en la gobernanza, la falta de transparencia y los deficientes procedimientos de participación explican en parte esta situación desfavorable. Sin embargo, las explotaciones forestales sólo lograrán mejores resultados sociales si se abordan los desequilibrios de poder subyacentes.

INTRODUCTION

As several major global crises coincide, the urgency for sustainable forest management is greater than ever. Both the climate- and biodiversity crises are getting increasingly close to a point of no-return (Armstrong McKay *et al.* 2022, IPBES 2022). Moreover, three years into the Covid-19 pandemic, it is clear that deforestation in the tropics has accelerated mainly as the result of relaxation of legal enforcement, and policy and market regulations (Brancalion *et al.* 2020, UCL 2021). The Russian invasion into Ukraine in February 2022 is likely adding further pressure on tropical forests, as it has resulted in a ban on timber imports from Russia by major timber importing countries (ITTO 2022, WWF 2022).

Sustainable forest management (SFM) is generally understood as the use of forests in a manner that ensures their long-term productivity and ecological integrity, thereby reconciling economic, environmental and social objectives (FAO 2016). Thus, the social aspects of forest management are integral to SFM. However, in the specific context of logging operations, they receive much less public and policy attention than the environmental aspects. Moreover, the social impacts of logging remain under-researched and poorly addressed (Cerutti *et al.* 2014, 2017).

This is despite the fact that most tropical timber continues to be sourced from natural forests that are inhabited, used or otherwise valued by people. About 20 per cent of the world's tropical forests (3.9 million km²) are currently subject to selective logging (IPBES 2022: 19). Although the number of people living around these logging operations is unknown, the extent to which these people are reliant on forests is high, and encompasses multiple dependencies, ranging from material to spiritual (Chao 2012, Fedele *et al.* 2021, IPBES 2022, Newton *et al.* 2016, 2020).

The close relationship between people's wellbeing and forests is by now well-established and receives considerable scholarly and policy attention. Key areas of interest within this highly interdisciplinary field are the importance of forests for livelihoods (Nerfa *et al.* 2020, Wunder *et al.* 2014), food and nutrition security (Angelsen *et al.* 2014, Arnold *et al.* 2011, FAO 2017, Ickowitz *et al.* 2014, Tata-Ngome *et al.* 2017), health (Colfer 2008, Karjalainen *et al.* 2009), spiritual well-being and cultural integrity (Verschuuren and Brown 2019, Wyatt *et al.* 2021). Increasingly, gender is acknowledged as a crosscutting aspect of the role that forests play in human well-being (Colfer *et al.* 2018, Mai *et al.* 2011, Mwangi and Mai 2011, Sunderland *et al.* 2014).

What is lacking, however, is specific and comparative scientific scholarship and policy attention for these intersecting aspects of human well-being in relation to logging operations. Here, we define these as the commercial and industrial extraction of timber by specialized felling companies, which may be either locally, nationally or internationally owned. Logging operations may last from only a couple of months to several decades, depending on their size, the type of forest and arrangements with formal owners of the forest land on which they take place. Very often this is the State, but forest land may also be the collective property of customary owners, or individually owned.

Global demand for tropical timber continues to be high and is projected to grow further (IPBES 2022). This demand is driven by population growth, increasing wealth levels especially among middle classes in the developing world, and an increased interest in wood as low-emission construction material (Goubran *et al.* 2020, Nambiar 2019, 2021, Ramage *et al.* 2017). Globally, wild tree species currently provide two thirds of industrial roundwood (IPBES 2022: 12). Although industrial and small-holder plantation forests play a growing role (Kambugu *et al.* this volume, McEwan *et al.* 2020, Nambiar 2021), the projected increase in timber demand will not be matched by plantation wood (IPBES 2022: 21).

Natural forests therefore remain important for large-scale timber extraction in the foreseeable future, despite the reported negative long-term environmental impacts (Petrokovsky *et al.* 2015). An estimated 12 per cent of wild tree species are presently threatened by unsustainable logging (IPBES 2022: 16) and tropical forests in the Philippines, East-Malaysia, Indonesia and Thailand have been heavily affected, and in

some cases depleted, by earlier logging boom and bust cycles (Contreras 2003, Gillis 1988, Kummer 1992, Ross 2001).

The logging frontier thus continues to shift to increasingly remote regions and locations. These include notorious 'deforestation fronts' such as the Peruvian and Brazilian Amazon, Central Africa, Sumatra and Borneo (WWF 2021), but increasingly also less well-known frontiers such as Papua New Guinea (Mousseau and Lau 2015) and Solomon Islands (Global Witness 2018, Minter and van der Ploeg, this volume).

Why Social Impacts?

Given the continuation of industrial logging in human-inhabited forests across the tropics, improving our understanding of its social impacts is critical. However, the empirical literature on the social impacts of logging remains scant and fragmented, even though the available scholarship on the subject has since long pointed to its importance (Counsell *et al.* 2007, Davis 1977, Laurance *et al.* 2012, Nambiar 2019, Roberts 2019, Sponsel *et al*. 1996, Watson 1996, Wilkie 1996), as have outcries by NGOs and investigative journalists regarding logging-related injustices.[1]

Timber certification schemes represent current best practices for socially responsible forestry, but 87% of certified forests are located in temperate and boreal regions, while only a small share of logging operations in the tropics presently fall under such schemes (Xu and Lu 2021: 108). Moreover, there still is little evidence available to assess the results of these efforts (Burivalova *et al.* 2017, Cerutti *et al.* 2017, Defo *et al.* 2013, Ehrenberg-Azcárate and Peña-Claros 2020, IPBES 2022, Naito and Ishikawa 2020), and very few empirical studies focus on the social outcomes of certified logging (e.g. Frey *et al.* 2022, Kalonga and Kulindwa 2017, Leite *et al.* 2017, Tsanga *et al.* 2014).

Doing justice to the wide range and reach of social impacts requires keeping an equally wide perspective on what they might entail. We therefore follow VanClay (2003) and VanClay *et al.* (2015) and define social impacts very broadly, namely as any issues associated with a planned intervention (in our case logging operations) that affect or concern people. Social impacts may be experienced at the level of individuals, households, larger social groups, in the workplace, community or society at large. They may be cognitively or physically experienced; they may be positive or negative; and they may be direct, indirect, or even unintended.

The often intangible, yet dominant presence of social impacts even well before anything is physically happening is well-captured by VanClay (2020: 127): '*Unlike biophysical impacts which arguably happen only when construction starts, social impacts happen the moment there are rumours about a potential project. Anxiety is created, and speculation and opportunism occur, creating social impacts. These impacts happen whether or not the project proceeds. People's fears, even if ill-founded, also create social impacts. […] This gives rise to the adage that perception is reality, and that perceived impacts are real social impacts*.'

Knowing and documenting what happens on the forest floor before, during and after logging operations is especially pertinent because they often take place in socio-economically precarious contexts. First, tropical forests represent some of the world's poorest areas (Counsell *et al.* 2007, Jagger *et al.* 2022, McDermott and Schreckenberg 2009). Fungo *et al.* (this volume) show, for instance, that levels of food insecurity in and around logging concessions in four Central African countries are extremely high. While logging operations are generally promoted as a way to not only boost national income, but also alleviate poverty at the local scale, the question of whether this actually happens is a critical one (Defo, this volume).

Second, and relatedly, many logging concessions are inhabited by populations that belong to the respective countries' most politically and socially marginalized groups, and often include Indigenous communities (Chao 2012, Chomitz *et al.* 2007, and see Mei, this volume). These communities tend to be poorly informed on the social obligations that logging companies and forestry authorities owe them (Young and Nkuintchua, this volume) and they are ill-equipped to effectively negotiate for fair benefits.

Third, the logging industry is highly masculine, which raises multiple issues with respect to gender relations and gender equity, both in relation to logging employment, health, safety and the wider gendered impacts of logging operations on local communities, including prostitution, alcohol and other substance abuse (Macdonald 2018, Minter 2021a, b).

Fourth, tropical logging frontiers generally represent areas with weak government presence in general and poor justice delivery in particular. This creates situations of *de facto* lawlessness, where logging operations often take place practically without oversight (Allen *et al.* 2013, Bennett 2002, World Bank 2017). This also means that our understanding of how the burdens and benefits of industrial logging are locally distributed is particularly limited.

Fifth, logging frontiers represent meeting points of very different economic systems, cultures and worldviews, and logging operations accelerate socio-economic and environmental change (Moran 1988, Persoon and Cleuren 2002), for which local communities are generally unprepared. The pace and scope of this change often result in social and cultural fragmentation, conflict and heightened local inequality (Defo, this volume, Minter and van der Ploeg, this volume).

Approach

The idea for compiling this *Special Issue* of the *International Forestry Review* arose during the 2018 FLARE[2] Annual Meeting in Copenhagen, after which the three co-editors each set

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[1] Examples of these include NGOs like Amnesty International, Forest Peoples Programme and SAVE Rivers; and news reports by Mongabay; BBC, and The Guardian.
[2] Forests, Livelihoods, Assessment, Research, and Engagement.

out to use their own research and networks to contribute and solicit papers. This turned out to be a challenge. While many researchers in forestry have come across the social impacts of logging as part of their work, and can relate to their importance, they are rarely the object of specific study. This underscores both the lack of and thus the need for empirical work on the subject.

The result is a modest, but rich and interdisciplinary collection of papers, which despite their diversity, shed light on the multiple social impacts of logging. The eight contributions[3] cover cases from Africa (Ghana, Liberia, Cameroon, DR Congo, Republic of Congo, Gabon and Uganda), South America (Brazil), Southeast Asia (Indonesia) and the Pacific (Solomon Islands). All focus on logging in natural forests, thus excluding the commercial felling of plantation forests. This is because we are especially interested in the impacts of logging operations on people whose livelihoods and well-being directly or indirectly depend on natural forests.

Two papers take a legal and policy approach, comparing frameworks globally (Mei) or regionally (Young and Nkuintchua). One paper takes a nutritional perspective, comparing food frequency data from six logging concessions in three Central African countries (Fungo *et al.*). A further two papers specifically look at the position of smallholders in the logging sector (Cromberg *et al.*, Kambugu *et al.*), while three other papers are in-depth case studies of the broad social impacts on people living in and around industrial logging concessions in one particular country (Defo, Minter and van der Ploeg, Persoon and Wardani). The latter brings a long-term ethnographic perspective to the discussion on social impacts of logging, spanning several decades.

A number of methodological challenges are inherent to studying social impacts. First, as Persoon and Wardani (this volume) point out, many social impacts of logging occur as the long-term result of the accumulation of earlier impacts. For instance, the construction of logging roads facilitates not only timber felling, but also the influx of poor, landless farmers who settle along these roads and convert logged forests into farmland. Over time, these new agricultural enclaves expand further into the remaining forests, where they compete over increasingly scarce land and resources with forest-dwelling communities already living there (Kummer 1992, Kummer and Turner 1994, Minter 2010, Rai 1981, van den Top 2003, Wardani 2022).

Second, and related to the cumulative nature of social impacts, is the issue of attribution (Clark *et al.* 2004). What, in the chain of events set in motion by a single logging operation, can with certainty be attributed to this logging operation? There usually is no possibility for a counterfactual analysis, a comparison of what has actually happened with what would have happened without the intervention (White 2006: 3). Moreover, reliable baseline data on the demography and socio-economic conditions of people living around logging operations are rare. Even if they are available, no agreed scientific approach to attribution and causality exists in impact measurement (Romero *et al.* 2017).

However, as several papers in this *Special Issue* demonstrate, qualitative methodologies, combined with long-term presence in the field and on-site observations methods can help addressing the problem of attribution. In-depth interviews bring to light intimate local knowledge and insights of how and why change unfolds. The technique of probing (asking follow-up questions) allows people to articulate their own observations on and interpretations on the sequence of events, and how these do or do not mutually influence each other.

WHAT ARE THE SOCIAL IMPACTS OF LOGGING?

Below, we discuss three broad groups of social impacts of logging on local communities as they arise from this *Special Issue*. These are impacts on: 1) Local monetary economies and development, which includes a discussion of the extent to which local communities gain from logging in terms of money, jobs, in-kind contributions and wider economic spin-offs; 2) People-forest relations, including both subsistence and cultural-spiritual dependencies on forests; and 3) Social relations, and specifically inequalities and conflict.

Local monetary economies and development

The logging sector is commonly presented as a major contributor to national and local economies and development through revenues, job generation and the provision of road infrastructure and other basic services (Counsell 2007, Defo, this volume, Laurance *et al.* 2012). However, especially in relation to the sector's economic contributions at the local level, such claims are rarely accompanied by solid evidence. Various papers in this *Special Issue* highlight the discrepancy between the promise of such *potentially or perceived* positive social impacts and the extent to which these actually materialize for local communities living with logging operations.

Money and jobs
The question of the extent to which logging revenues reach local communities is addressed in several papers. Young and Nkuintchua demonstrate that in four central African countries, logging companies are legally required to provide local communities with area- and volume-based payments, as well as monetary compensation for damage to local properties, usually agricultural crops. However, these payments, which tend to be initially collected by the State and then redistributed to local communities through local or traditional authorities, are prone to elite capture, resulting in millions of dollars not ending up with the rightful recipients.

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[3] This Special Issue was developed over three years. As such, some papers were completed in 2021 and 2022 and subsequently made available by the *International Forestry Review* prior to the publication of the complete Special Issue in 2023. Citations of these papers may appear in some publication as being published in either 2021 or 2022. However, while the content of those papers has not changed, the final version, including page numbers, should hereinafter be cited from this volume.

The paper by Defo details how this works in his case study of Ngoyla (Cameroon). He demonstrates how over a six-year period, the allocation of the Annual Forest Royalties (AFR), which constitutes 80% of Ngoyla's council budget, has failed to make a positive contribution to local development because community interests have been side-lined over those of local elites. Minter and van der Ploeg document similar outcomes for Solomon Islands, where local communities are legally entitled to receive logging royalties worth up to 15% of log export values. In practice, however, the exact amounts paid remain obscure, and are exclusively received and kept by a select male elite. Persoon and Wardani, too, describe how among the Indigenous Orang Rimba, in Jambi Province (Sumatra, Indonesia) throughout the decades-long history of logging, only a few men received incidental payments from the logging companies. For the nearby Mentawai Islands, Eindhoven (2019) has documented how logging operations have equally mainly benefited new local political elites.

Job creation is another main avenue through which logging operations potentially benefit local economies and individual households, but the extent to which this is the case is variable. Defo shows that in Ngoyla, 246 jobs were created, which made the logging sector the largest employer of the non-State formal sector of this subdivision, especially for young people. However, of these jobs, only 41% were taken by people from neighbouring villages and still fewer of these jobs benefited the Indigenous Baka. Although they form 18% of the local population, only 6% of the logging jobs were held by Baka and almost of all of these were temporary. Similarly, Persoon and Wardani, note that the Indigenous Orang Rimba were never structurally employed in the logging operations in Jambi. Instead, they were incidentally hired as tree pointers, forest guides or protectors of logging equipment, while Malay people, as well as Javanese and Balinese transmigrants were hired for the more structural and better paid jobs. In Solomon Islands, Minter and van der Ploeg note a sharp division between imported forestry professionals (mostly Malaysians, Filipinos and Indonesians) who perform the permanent, higher paid jobs in logging operation management and machine operation; and poorly paid, highly temporary jobs that are fulfilled by local men, and a handful of women.

The type of logging is of significant influence on the extent to which it generates jobs. Solomon Islands, for example, predominantly exports round logs, which requires relatively little in-country processing, and thus limited labour. This is exacerbated by the above-mentioned employment of expatriate labour by logging companies. At the other end of the spectrum, the papers reporting on the sector in Brazil (by Cromberg *et al.*) and Uganda (Kambugu *et al.*) focus on the informal timber sector, which is highly labour intensive throughout the value chain. In Uganda, actors involved in the upstream activities, are significantly dependent on the business for their livelihoods. Remarkably, however, even there, most labourers reportedly do not originate from the areas where the timber is harvested. As a result, except for money spent locally by incoming timber harvesters, the local population receives few monetary benefits from the informal timber sector.

In-kind contributions

Logging operations are also generally promoted as a means to generate local development through the provision of infrastructure (roads, ports, water systems) and basic services such as schools and clinics. Depending on the national context, logging companies may either be legally obliged to provide such in-kind contributions, or they are part of the 'license to operate' (Young and Nkuintchua, this volume, see also VanClay 2020, Wilkie 1996). Ultimately, they have to be negotiated for by local communities.

The most positive and tangible in-kind contribution to local people's lives documented in this *Special Issue* is the construction and maintenance by two logging companies of a ferry crossing the Dja River in Cameroon, reported by Defo. Otherwise, the delivery of in-kind contributions is highly disappointing and biased towards projects with high visibility but low relevance to local well-being (see also Tsanga *et al.* 2014).

Importantly, transparency is often lacking. In the four countries included in Young and Nkuintchua's review (Cameroon, Ghana, Liberia and Republic of Congo), there is no system in place to monitor the fulfilment of these obligatory contributions. This starts with the fact that the agreements in which they should be specified are not systematically attached to logging contracts, and are not publicly available. Likewise, in 14 logging concessions in Solomon Islands, logging companies promised to fulfil local communities' development aspirations, but these promises were rarely formalized and consequentially generally never or very poorly delivered (Minter and van der Ploeg, this volume, see also Laurance *et al.* 2012, VanClay 2020).

Shadow effect

Slee (2006) has argued that we can only assess the full economic impact of logging if we take into account the 'shadow-effect': the *indirect* impact of forestry on surrounding economic activity. A number of papers in this *Special Issue* indeed address the wider spin-offs of logging operations on local economies.

For Ngoyla (Cameroon), Defo reports an overall increase in economic activity and an improved standard of living for the people who benefited from the jobs that were created (see also Wilkie 1996). However, for the majority of local residents, poverty increased due to rising prices and deleterious environmental impacts on subsistence-based livelihoods. Moreover, education, health and drinking water facilities did not improve, and in some cases worsened. For instance, as a result of logging related immigration, pressure on school infrastructure and staff increased and classrooms became more crowded.

For Solomon Islands, Minter and van der Ploeg note that the most significant indirect economic impact is the small-scale logging and timber milling that arises in parallel to industrial logging operations. Local residents use the company infrastructure to access remote forest areas, and transport and sell timber, which generates substantial cash income, or is used for local construction. Another spin-off effect is the increase in marketing activity on log-ponds, where local

residents sell farm products and fish to incoming logging labourers and fellow local residents. However, as logging operations are always temporary, such benefits are short-lived (see also Wilkie 1996). Moreover, local shop keepers also face competition from the company-owned stores, who sell imported goods which they transport on in-coming logging ships.

Persoon and Wardani explicitly take indirect impacts into account, as they sketch the long-term, cumulative nature of the changes unfolding for the Orang Rimba as their hunting and gathering grounds were in various historical periods first opened up by roads, then logged, and eventually converted into industrial plantation areas. The smallholder rubber stands that some Orang Rimba groups have over time developed might indeed be seen as an economic spin-off of this process, but so can the impoverishment and famine that cost the lives of 15 Orang Rimba in 2015, whose forest was converted into a palm oil plantation (Wardani 2022).

Thus, while it is indeed important to take the shadow-effect into account in order to assess the full economic impact of logging operations on local communities, this *Special Issue* shows that in as far as positive contributions are concerned, this 'shadow' tends to be limited. Moreover, as will become clear below, it is a rather dark shadow too, particularly for those communities who depend heavily on forests both economically and culturally.

People-forest relationships: subsistence and spiritual values

While the monetary and in-kind contributions to local communities are one way of assessing the social impacts of logging, it is vital to also take into account how logging operations affect the multiple aspects of people-forest dependencies and relationships.

Subsistence

Fungo and colleagues, for instance, demonstrate the importance of wild forest foods for people living around logging concessions in Cameroon, DR Congo and Gabon. Based on data sets on food frequency, dietary diversity and forest food consumption collected among 720 female household heads from these three countries, they show that wild forest foods were key components of diets for the large majority of households, and especially so in DR Congo. At the same time, food insecurity was extremely high across the board, and again highest in DR Congo, where 100% of sampled households rate as 'severely food insecure'. Importantly, in both Cameroon and Gabon, food insecurity was significantly higher around concessions *without* a management plan, as compared to those *with* such a plan.

If logging operations are poorly managed, or ignore or even deny the presence of forest-dwelling peoples in and around concession areas, the consequences are detrimental. This has been the case, for instance, for Indigenous populations like the Baka in southern Cameroon as Defo reports, and the Orang Rimba in Sumatra, Indonesia (Persoon and Wardani, this volume, see also Wardani 2022). All of these groups subsist to a large extent on hunting, fishing, gathering

and small-scale agriculture, but in planning and implementing logging operations there has been little or no regard for basic livelihood needs. Even for FSC-certified forests in Cameroon, Cerutti *et al.* (2017) express concern that use restrictions pertaining to concession areas set aside for conservation purposes, may compromise local people's livelihoods.

In Solomon Islands, the exclusion of women from decision-making on logging operations results in the destruction of their most important subsistence base: mangrove forests. These fishing and shell-collection grounds are frequently clear-cut and converted into log-ponds. Also, upstream logging activities often causes run-off and in turn sedimentation of mangroves and shallow reefs. Over the years, this has contributed to a decrease in consumption of fish and shellfish, which is the most important source of animal protein. At the same time, the presence of company shops accelerates a shift in diets from home grown tubers to increased consumption of rice and instant noodles, and the replacement of fresh fish by canned fish (Minter and van der Ploeg, this volume).

In addition to food security, water security is an issue of importance in many logging concession areas. Fungo and colleagues (this volume) report a very high dependence on unprotected water sources around forest concessions: 75% in Cameroon and Gabon and 100% in DR Congo, where the presence of logging companies has failed to alleviate water insecurity. Defo (this volume) confirms this for Cameroon, where in fact he reports that during logging operations water facilities have in some cases worsened. The same is true in Solomon Islands, where the great majority of rural people rely on unprotected water sources, and where logging operations frequently damage or pollute these sources through oil spills and sedimentation. Given that collecting water is considered a female task, it is especially women who are burdened with finding alternative – and usually more remote – water sources (Minter and van der Ploeg, this volume).

But is not only the direct loss or damage to resources, or loss of access as a result of logging operations that is putting peoples' livelihoods and diets under pressure. Among the indirect results of logging often is an influx of poor, landless farmers who compete with Indigenous forest dwelling peoples over land as well as forest resources, including game and fish (Defo, this volume, Persoon and Wardani, this volume, Sponsel *et al.* 1996). The sharply increasing demand for wild game by these populations and by incoming company workers regularly results in overexploitation, even though in the short run local and Indigenous hunters may also earn from it (Wilkie 1996). For instance, a logging operation in the eastern Solomon Islands resulted in the decimation of one island's wild pig population, because foreign loggers brought hunting rifles (Minter *et al.* 2018). Similar local impacts on wildlife as a result of increased hunting pressure have been documented for the Philippines, where the Indigenous Batak and Agta saw their hunting and fishing success decline sharply as logging operations gained in intensity from the 1970s onwards, and frontier populations grew rapidly (Eder 1987, 1996, Headland 1986, Minter 2010, Persoon and van der Ploeg 2003). The impacts on forest-dwelling peoples' subsistence are particularly destructive where logging operations are accompanied

by government-encouraged transmigration and road building schemes, of which the Brazilian Amazon probably represents the most extreme example (Davis 1977, Moran 1996).

Spiritual relations
No matter how vitally important these material and everyday dependencies of people on forests, as Wyatt *et al.* (2021: 10) point out, *"[…] forest landscapes are much more than […] a source of raw materials or wood fiber. Instead, it is the relationships between people and their forests that are critical, often expressed in ways and language that are unfamiliar to researchers or managers."* The social, cultural and spiritual relations that people have with these forests are multiple, and they often include, but are not limited to, the forest as knowledge base; as a space to perform important cultural rites; and as the home of the ancestors and other spiritual beings with whom positive relations must be maintained (Flexner *et al.* 2019, Hagen *et al.* 2017, Minter 2010, Twinamatsiku *et al.* 2019). In their most tangible form, these relations are embodied in specific locations or resources, such as honey trees (for the Orang Rimba in Indonesia, Wardani 2022), ancestor worshipping sites, burial grounds, birthing caves or otherwise sacred forest areas. Despite attempts by forest dwelling peoples to have such sites excluded from logging operations, they are often trespassed nonetheless, which in turn tends to give rise to local unrest and resentment (see also Takeuchi *et al.* 2020, VanClay 2020).

Social relations

Of all the different social impacts of logging, those that concern local social relations are the least documented. This is not because they do not occur, but because they are the most difficult to capture in existing social impact assessment protocols and because the professionals conducting these assessments are rarely trained to identify and document them. However, logging operations tend to come with severe disruptive impacts on local communities, which often outlast the operations themselves. A main reason for this is that the commodification of land and other natural resources completely rearranges not only how people relate to these resources, but also how they relate to each other. Several papers provide further evidence of how logging operations reinforce or heighten social inequalities, and sometimes introduce new ones (Defo, Persoon and Wardani, Minter and van der Ploeg, this volume).

Competition over land
One way in which inequalities are heightened or introduced is through increased competition over land. Defo demonstrates how this leads to the further marginalization of already vulnerable Indigenous groups in Cameroon, where incoming logging employees suddenly come to compete with local communities over the lease of cocoa plantations. This especially affects the Indigenous and highly impoverished Baka who rent out their cocoa plantations at low prices, in order to then become workers themselves in these same plantations receiving payments consisting of alcohol, cigarettes, old clothes

or minor cash payments. Defo concludes that industrial logging has accentuated the practice of quasi-enslavement of the Baka by other ethnic groups. Similar links between logging-induced deforestation and the deculturation, impoverishment and subordination of hunter-gatherers into an underclass of landless peasants have been described for the Philippine Agta (Early and Headland 1998, Headland 1986) and Batak (Eder 1987).

Another type of competition over land arises in situations where land is the collective property of customary owners. In the case of Solomon Islands (Minter and van der Ploeg, this volume), previously relatively fluid notions of landownership have to become formalized and fixed as land and forests suddenly take on monetary value. However, as Tulius (2017) notes for the Mentawai Islands, collective land ownership is among the most complex institutions. Formalization of collective land ownership thus almost invariably leads to contestation.

For this reason, while the legal recognition of collective land rights to customary landowners is an important prerequisite for equitable forest management and benefit sharing (Mei, this volume), we would like to caution against the implicit assumption that collective land ownership is synonymous to collective benefit sharing. Even where collective land ownership is fully legally recognized, forestry can still have highly inequitable socio-economic outcomes (see also Roberts 2019 for Papua New Guinea). Very similar observations have been made for benefit sharing from mining royalties in situations of collective landownership (see Macintyre 2007, Minter *et al.* 2012, Laurance *et al.* 2012).

Elite capture
These new notions and values of land ownership in turn create new 'haves' and 'have nots', as those who successfully (though not necessarily legitimately) claim formal land ownership have access to both decision-making power as well as to the monetary benefits associated with logging operations. This often results in elite capture along lines of gender, ethnicity, age and political loyalty. As Young and Nkuintchua state (this volume) *"Their complexity renders social obligation systems open to abuse at many levels, and 'local recipients' rarely means communities themselves. Their intent might be to decentralise power but this often allows local elites – council members, government officials, traditional authorities – to stand in the way of the community members most affected by logging operations and capture most benefits."*

In addition to being part of the broader trend of decentralization in forestry (Frey *et al.* 2022), the rechannelling of forestry benefits through sub-national and sometimes customary authorities also relates to efforts to move away from situations where logging companies function as a 'State within a State' (Singer 2008). This is at least the case in Central African countries, where companies were expected to directly support the development of local communities by providing both cash and in-kind benefits (Cerutti *et al.* 2017: 60). This model has been criticized for being undemocratic and for lacking transparency; for its focus on short-term visibility rather than

lasting development impact; and for compromising governments' sovereignty (Singer 2008: 175).

By instead demanding that logging companies pay fees to local government or customary institutions, the responsibility for poverty reduction and development of local communities comes to rest with those institutions. However, when, as a result of elite or State capture, such benefits are not forthcoming, *"[…] people continue to turn to the companies for financial and in-kind support"* (Cerutti *et al.* 2017: 60). Indeed, this is exactly what we see happening in several contexts described in the papers, often with highly disappointing outcomes.

Gender inequities

Another type of structural inequality that often predates, but is exacerbated by, logging operations are gender inequalities. As noted by IPBES (2022: 22): *"Gender is seldom taken into account in the governance of wild species, leading to inequities in the distribution of costs and benefits from their use."* Such gender-blindness is highly problematic because in many settings women are denied formal land and resource ownership rights and consequently the rights to the monetary derivates thereof (Kambugu *et al.*, Minter and van der Ploeg, this volume). Importantly, the idea that logging money is male money often is not limited to the royalties that may be paid, but in many cases also to the money that may be earned through employment in logging, which creates intra-household income inequality (see also Burivalova *et al.* 2017, Roberts 2019).

Part of this has to do with the strongly gendered labour arrangements in the sector (see MacDonald 2018 on similar dynamics in the mining sector). Although at the urban-based offices of logging companies women may work as administrators, very few women are employed in the actual logging concessions. The sole jobs fulfilled by women are the low-paid care jobs of cooking and cleaning for the male workforce in logging camps. In the informal logging sector, too, the division of labour is strongly gendered. Kambugu *et al.* (this volume) describe that in Uganda, with the exception of a small number of young women who are involved in the harvesting process as timber carriers, female involvement is mostly in trading. Women traders prefer to procure and sell timber at the market (despite lower profits) in order to avoid risky and time-consuming activities associated with timber production. They also operate smaller wood stocks than men. Moreover, in these roles, they depend on men (usually their spouse) to deal with law enforcement agents.

Conflict and violence

Several papers show how these heightened inequalities produce situations of conflict and lack of safety, or may do so in the future, in at least three ways.

First, the generally deeply contested nature of the formalization of landownership, the inequity and lacking transparency surrounding decision-making and benefit-sharing, are sources of deep rifts within and between local communities.

Indeed, Defo notes that inter-ethnic and xenophobic conflict looms in Cameroonian logging operations, as tensions between incoming logging employees and local residents increase. Likewise, Kambugu *et al.* express concern that in Uganda, lack of local benefit capture could produce conflicts between local communities and timber harvesters. They call for careful consideration of this risk by local and national policy makers in order to reduce inequities and prevent conflicts along the value chain. In Solomon Islands, logging operations are without exception associated with local conflict, regularly resulting in outbursts of, sometimes lethal, violence within and between local communities, as well as between local communities and logging companies (Allan *et al.* 2013, Minter and van der Ploeg, this volume).

Second, the masculinity of the logging industry and the patriarchal nature of local socio-political arrangements together produce harmful and unsafe situations for local women and girls (Minter 2021a, b). Indeed, sexual violence in logging operations is widespread and systemic. For instance, during a visit of Indigenous environmental activists from Malaysia to the Netherlands in May 2022, a young Penan woman from Sarawak described to the first author how she and her friend (both minors at the time of the incident) hitchhiked on a logging truck from school to home, when one of them was groped by the truck driver, an employee of the logging company. For lack of public transport, the girls endured the sexual harassment and ran out once the truck stopped. This is not an isolated incident: earlier cases of rape by employees of the same logging company have been documented.[4]

As a result of both forced and voluntary sexual encounters between incoming loggers and local girls, teenage pregnancies and fatherless children are common in logging concessions (Defo, Minter and van der Ploeg, this volume). Moreover, as has since long been noted, through its heavy dependence on a highly mobile male workforce, the logging industry is associated with increased risk of the spread of Sexually Transmitted Diseases (Counsell *et al.* 2007, Defo, this volume, IOM 2019, World Bank 2017).

A third way in which logging operations contribute to unsafe situations is through an increase in alcohol and drug abuse that is reported in the papers by Defo and Minter and van der Ploeg (see also Alemagi and Nukpezah 2012). In both Cameroon and Solomon Islands logging wages are known to be predominantly spent on alcoholic beverages and drugs. These problems are also related to an increase in high school drop-out rates, and incidences of gender-based violence and theft.

Finally, the risk of these conflicts spilling over to supra-local levels is real, especially because local grievances often also relate to close entanglements between the logging sector and national political elites as well as State capture (Allen 2008, Young and Nkuintchua, this volume). In Solomon Islands this is attested by periods of violent civil unrest in the late 1990s and more recently in late 2021. In both cases, dissatisfaction over the distribution of logging revenues is known to be among the roots of the violence (Bennett 2002, Donald

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[4] See Bruno Manser Fonds | News, for how these accusations resulted in retaliation by the logging company.

2022, Ride 2021). Similar conflicts over the distribution of logging and mining benefits have also plagued Papua New Guinea (Laurance *et al.* 2012, Macintyre 2007). All of these examples should act as reminders of how easily natural resource conflict can escalate into episodes of national violence.

CONSIDERATIONS FOR FUTURE POLICY, PRACTICE AND RESEARCH

The evidence presented in this *Special Issue* demonstrates that the social impacts of logging for local communities are overwhelmingly negative, ranging from limited monetary contributions, to undermining subsistence economies and social relations, to human rights violations. In the following, we identify a number of key issues that require specific attention from policy makers, practitioners and researchers in the forestry sector, and in particular from the logging industry itself. An important insight to begin with, however, is that much of the social harm and lack of lasting benefits need not occur if existing legal and policy frameworks were adhered to. The two opening contributions to this *Special Issue* make this very clear.

First, Mei provides an overview of Indigenous peoples' rights as articulated by three United Nations human rights treaty bodies and two regional human rights courts. She points out that Indigenous rights in relation to natural resource exploitation, including logging, can be grouped into four interrelated categories, namely: well-being rights; cultural rights; land, territory, and resource rights; and self-determination rights. Mei highlights that prevention of any harmful infringements of these rights must begin prior to actual logging operations, and she calls on the logging sector to set aside time and resources to do so.

Next, the paper by Young and Nkuintchua continues the discussion on rights by analysing and comparing the legal frameworks specifying logging companies' social obligations towards local communities in Liberia, Ghana, Cameroon and Republic of Congo. The authors demonstrate that in all four countries, wealth redistribution from logging companies to local communities is not just a voluntary act of corporate social responsibility, but a legal requirement. However, despite the existence of legal frameworks that specify these obligations, they materialize very poorly. Where do things go wrong?

Free, Prior and Informed Consent and community representation

A thorough and meaningful Free, Prior and Informed Consent (FPIC) process is at the heart of socially sustainable logging operations. This legal obligation is stipulated in many national and international frameworks, as well as in certification guidelines. As Mei details in her paper, under this participatory process, any planned logging operation starts with conducting an assessment of the potential social, cultural, economic and other human rights impacts of the logging operation, and of its prevention and mitigation measures.

Next, the outcomes of this assessment need to be shared with the potentially affected communities as part of their decision-making process around the project. This then results in the community either providing or withholding their approval of the project. If the decision is positive, finally, consensus needs to be reached with the community regarding prevention and mitigation measures, damage compensation and benefit-sharing.

Much has been written on what FPIC is, why it is important and how it should be implemented (Colchester and MacKay 2004, Esteves *et al.* 2012). However, the growing body of empirical literature on the implementation of FPIC and the accompanying need for community representation, also shows that the process is often flawed and the outcomes highly unsatisfactory. This is because despite its intentions to break through existing power imbalances between project proponents and resident populations, it fails to do so.

These imbalances show in differential access to political connections, money, legal support and information among and between company staff, forestry officials, local and supra-local elites, men and women, older and younger community members, Indigenous and non-Indigenous communities, and those whose rights to land are and are not recognized.

Such differences are exacerbated by the complex, bureaucratic nature of FPIC procedures, which through multiple steps eventually leads to a contractual agreement between parties that are highly uneven in terms of political leverage, knowledge-base and wealth (Bracamonte 2018, Buenafe *et al.* 2016, Persoon and Minter 2018). In the worst case, FPIC in practice is a process that is *not* free, *not* prior, *not* informed, while resulting in activities taking place *without* consent (Minter *et al.* 2012).

Fundamental but often unresolved issues include whose consent is actually to be sought and how community representation is to be organized in culturally meaningful and just ways. Young and Nkuintchua note that of the four Central African countries they studied, none has sufficient guidance in this respect. Likewise, in Solomon Islands, customary rules on collective decision-making processes are not safeguarded in forestry legislation. A comprehensive effort to counter these problems is the new version of the guidelines for the implementation of FPIC that FSC adopted in March 2021 after a long process of stakeholder consultation. Although this is a non-normative (i.e. non-prescriptive) document (FSC 2021: 9), it will be very important to document, monitor and evaluate experiences with and outcomes of this new guideline.

Grievance mechanisms

Another crucial element in ensuring that logging operations are socially equitable is having effective mechanisms for legal recourse if any party feels aggrieved (Young and Nkuintchua, this volume, see also VanClay 2020). However, grievance mechanisms are in many cases absent, dysfunctional or highly complex, which intentionally or not, serves to discourage local residents in logging operations to complain at all (Minter and van der Ploeg, this volume). In as far as grievance mechanisms are present, they tend to exist in contexts of poor

overall delivery of justice (Allen *et al.* 2013), which hampers their performance.

Young and Nkuintchua show that in the four African countries that are part of their legal review, conflict resolution mechanisms are under development as part of FLEGT-VPA initiatives. However, they also note that it is as yet unclear how these will provide recourse for citizens with grievances relating to their rights or benefits. They conclude that many VPA-related grievance mechanisms seem to stop at the establishment of dispute resolution mechanisms, and do not extend to whether they function, with transparency and accountability, or to how disputes have been resolved. Thus, Young and Nkuintchua warn that the onus will be on communities and civil society more broadly to improve documentation and presentation of complaints and keep written records of engagement with forestry or other officials.

A specific problem related to grievance mechanisms concerns damage compensation. This raises the fundamental question of what proper compensation consists of and whether damage and trespassing can be compensated for at all. This is highly culturally contextual and often locally contested. A fundamental problem is that in many situations, the 'logic' of damage compensation, namely that what was lost is commensurable with money, does not match local realities and institutions (Li 2013). Forest-based livelihoods, health, cultural identities, spiritual connections with past generations, attachment to place and violations of cultural taboos, simply have no monetary equivalent (Buenafe-Ze *et al.* 2016, VanClay 2020).

Smallholder voices

While most papers in this *Special Issue* focus on social impacts in relation to concession logging, the papers by Cromberg *et al.* and Kambugu *et al.* discuss the position of small-scale timber producers, processors and traders, who generally operate either in the margins of industrial concessions or in post-logging frontiers. While the legal frameworks of many countries acknowledge such operators, rules and regulations continue to be biased in favour of large-scale concessions (Kambugu *et al.*). This means, firstly, that smallholder interests and realities remain poorly represented in policy dialogues and reform processes; and secondly, that they continue to operate illegally.

Kambugu *et al.* specify this problem for the case of Uganda, where practically all sawn timber is informally produced by small-scale operators, who face legal barriers to formalize their business. The authors advocate for restraint in criminalizing the sector and recommend that policy makers reconsider overly stringent and technocratic regulation in view of actors' livelihood needs, emphasizing the need for 'do-no-harm' policies vis-à-vis the large number of currently informal operators and their families who depend on the informal timber business.

Cromberg *et al.* likewise demonstrate how the needs of smallholders in floodplain forests in the Brazilian Amazon, remain unaddressed in policy reforms. Although a Decree issued in 2013 aimed to respond to local realities and simplify the rules for formalization, the new requirements instead increased complexity and reinforced smallholders' dependency on outside institutional and technical support. As a result, small-scale timber producers and traders continue to work in the shadows, with high transport costs and low selling prices.

Both papers emphasize that the failure to include smallholder voices results in a mismatch between licensing procedures and local harvesting and processing realities, which in turn forms a major barrier to legal operation.

Power

Implicit in all of the foregoing is the idea that addressing many of the current problems requires more effective stakeholder participation in impact assessment procedures, decision-making and benefit sharing negotiations. Indeed, participatory processes in which all stakeholders to a logging operation are represented are, in theory, at the heart of FPIC procedures, grievance mechanisms, proper auditing procedures and addressing small-holder needs. While a lack of such participatory processes certainly is a major cause of the presently poor social outcomes of logging operations, introducing them is no guarantee for more equitable outcomes.

This is because in their design and implementation, such processes rarely acknowledge and address the power-inequalities between stakeholders. Paradoxically, multistakeholder forums may therefore perpetuate the status quo by benefiting powerful actors and reconfirming the marginal position of Indigenous people, women, youth and other less powerful actors (Londres *et al.* 2021, Minter *et al.* 2014, Sarmiento Barletti and Larson 2021, Tsanga *et al.* 2014, Yami *et al.* 2021).

As our discussion of FPIC showed, in the context of logging operations, these power inequalities arise at many levels, in many shapes and they often mutually reinforce each other. Indeed, the FSC Guidelines on FPIC explicitly call for sensitivity to such disparities, noting that: '*Although the right to grant, withhold or withdraw consent empowers the affected rights holder, there are systemic inequalities and cultural barriers that may prevent their effective participation (FSC 2021: 12).*' But *how* these inequalities can be overcome, is another matter. Larson and Sarmiento Barletti (2020: 5) have found several key features of multi-stakeholders forums that were relatively successful in this respect. These include commitment to the process and its goals, which is demonstrated not only by resources and consistent follow-up, but also by time and willingness to listen to and learn from people, especially those with less powerful positions. The importance of an unrushed process and setting aside sufficient time likewise is a central element of FSC's FPIC guidelines: time to listen, time to deliberate, time to negotiate, and time to resolve disputes.

Yet, in the context of most logging operations, it is exactly time that is scarce. As an operations manager of a Malaysian logging company operating in Solomon Islands explained to the first author: *"[…] operations often stop because of disputes […]. Landowners […] don't know how to compromise. But […], we don't have time to wait until they have resolved*

their disputes" (pers. Comm., April 16 2017) (Minter *et al.* 2018: 30). Moreover, even under perfect circumstances where company managers, forestry officials and local elites are excellent listeners and in no rush to achieve their goals, this will in itself not solve the issue of power imbalances. As Larson and Sarmiento Barletti (2020: 6) note, these imbalances may be such that local people cannot insist on their positions, and challenging discrimination and inequality often require structural institutional change.

Indeed, an alarming recent development shows how wealthy logging companies may actively capitalize on, rather than bridge power differences, by filing expensive lawsuits to silence critical activists, journalists and civil society organizations, through so-called SLAPPs (Strategic Lawsuits Against Public Participation[5]). In June 2021, certified[6] logging company Samling filed a lawsuit against Malaysian NGO SAVE Rivers for publishing allegedly defamatory statements as part of its support of local communities in Sarawak, who have expressed concerns about the quality of FPIC and other community consultations conducted by Samling as part of the certification process. The logging company demands an apology, an order to stop SAVE Rivers from reporting community claims, and damage compensation amounting to over one million USD, which is 45 times the NGO's annual budget. The SLAPP has effectively resulted in stalling the public complaint procedure (UN Special rapporteur on human rights defenders 2022).[7]

CONCLUSION: TOWARDS A WIDER PERSPECTIVE ON SUSTAINABLE FORESTRY

With the overall aim of putting the importance of the multiple social impacts of logging more prominently on the research and policy agenda, this *Special Issue* brings together in-depth studies on the subject from across the tropics. Together, they provide evidence that the many negative social impacts they reveal, are not just incidental phenomena occurring in isolation. Instead, they are systemic and symptomatic of a sector that is in urgent need of improvement.

In this introductory paper we have explored the commonalities between the papers. The web of activities and interactions that arise in and around logging operations, have profound impacts on local and Indigenous people's livelihoods, their relationships with the forest and with each other. More specifically, while damage to local livelihoods is severe, local economic and development benefits of logging operations are highly disappointing. Women and Indigenous people benefit least from logging operations and are most negatively impacted by them. Logging operations are also commonly associated

with conflict between local residents and logging companies, as well as among and within communities. Alarmingly, sexual exploitation of women and girls is common in logging operations.

To address these issues, we call for a wider perspective on sustainable forest management (SFM). Although the social aspects of forestry are integral to common definitions of SFM, in forest policy, practice and research the environmental and economic aspects continue to take precedence. Moreover, such sensitivity to the social impacts of logging must not be limited to labour relations and conditions. These are of undeniable importance and much work remains to be done to achieve fair and reliable payment of forestry workers, as well as a safe and healthy workplace. However, as this *Special Issue* makes clear, the everyday social impacts of logging reach far beyond the immediate workplace and those employed in it. They are also felt for much longer than the duration of the logging operation itself, and may have spill-over effects to the rest of society.

On a more practical level, achieving more equitable outcomes of logging operations requires at least the following five things. While none of these are new, their materialization is lacking. First, the meaningful involvement of local communities prior to the awarding of concessions and throughout operations cannot be over-emphasized. The keyword here, however, is *meaningful* because, as this introduction and previous research has shown, issues of power continue to challenge equitable decision-making processes.

Second, precisely because of these power imbalances and because social impacts can be both material and immaterial, social impact assessments, FPIC procedures and social audits must be designed and carried out by independent, well-trained teams with in-depth social scientific knowledge and methodological skills.

Third, to avoid reproduction of the same gender-blindness and inequities that characterize the logging sector, such teams must be gender-balanced, and pay specific attention to the needs and interests of women, Indigenous communities and other marginalized groups.

Fourth, much more attention is needed for the design, implementation and monitoring of unambiguous, transparent mechanisms for benefit sharing between logging companies, local communities and government agencies. These mechanisms must be sensitive to intra-community diversity and the risk of reinforcement or creation of inequities.

Fifth, there is a need for much more effective grievance, compensation and dispute resolution mechanisms, which are tailored to local socio-political contexts and which facilitate, rather than hamper public complaint procedures. The spiritual and other immaterial values of forests for local communities must receive a much more central place in these mechanisms.

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[5] Several countries have passed legislation that aims, or can be used, to protect defenders against SLAPPs. See: Business & Human Rights Resource Centre. The EU is working on a similar initiative.

[6] Samling is certified under the Malaysian Timber Certification Scheme (MTCS), which is endorsed by the international timber certification body Programme for the Endorsement of Forest Certification (PEFC).

[7] See also these publications by Save Rivers and The Borneo Project and these letters to Samling and the Malaysian certification scheme MTCC.

In parallel to each of these practical conditions for socially equitable logging operations a future research agenda emerges. As industrial logging operations in human-inhabited tropical forests are expected to continue, they must be accompanied with long-term, empirical scrutiny. Even though certified concessions currently only form a small share of the tropical production forests, they beg specific enquiry. As they claim to represent current best practices of SFM, more evidence is needed to assess and understand the results of these efforts, in order to accelerate the much-needed transition to socially equitable logging.

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