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To cite this article: Marlène Elias, Riina Jalonen, Maria Fernandez & Alessandra Grosse (2016): Gender-responsive participatory research for social learning and sustainable forest management, *Forests, Trees and Livelihoods*, DOI: [10.1080/14728028.2016.1247753](https://doi.org/10.1080/14728028.2016.1247753)

To link to this article: <http://dx.doi.org/10.1080/14728028.2016.1247753>



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Published online: 08 Dec 2016.



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## Gender-responsive participatory research for social learning and sustainable forest management

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### ABSTRACT

Participatory research on forests has been commended for fostering social learning, innovation, community empowerment, social inclusion, and leading to more sustainable resource management. Yet, critiques of participatory approaches – and of the simplistic ways they are, at times, employed to address gender and social exclusion – also abound. These call for new strategies to meaningfully engage socially differentiated men and women in research on natural resource management. This special issue focuses on the nexus between gender and participatory research in forest and woodland management. It examines: (1) the diversity of stakeholders' forest-related knowledge, skills, needs and priorities in forest-dependent communities through the use of gender-responsive participatory approaches, and (2) choices in research design that can foster inclusive participation, knowledge sharing and social learning within and among social groups. In this introductory paper, we position the special issue in relation to critiques regarding the lack of attention to gender in participatory research. We then summarize the authors' empirical findings, contextually rooted across four African and Asian countries, and their importance for understanding the value, opportunities and challenges of working with participatory methods, both from the perspective of the researchers and of the research participants. The papers illustrate that traditional ecological knowledge is neither homogeneously distributed within communities nor concentrated among socially more powerful groups who, in the absence of a gender-responsive approach, are often the ones selected as research participants. The authors offer an optimistic view of the potential participatory methods hold, when applied in a gender-responsive way, for sharing knowledge and promoting inclusive social learning on forests and tree resources. Papers demonstrate the need to carefully consider when to create segregated or mixed spaces – or indeed both – for participants to create situations in which social learning within and across diverse social groups can occur.

### KEYWORDS

Participatory research; gender; social learning; local knowledge; forestry; Asia; Africa

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## Introduction

Achieving sustainable management of natural resources requires engaging with the diversity of stakeholders who use, manage, and benefit from these resources (Mascia et al. 2003; CGIAR Consortium 2015). In pursuit of this goal, researchers and practitioners are increasingly relying on participatory methods to work with local communities. In parallel, the role of gender in shaping agro-ecological systems has become firmly established, with international instruments such as the Sustainable Development Goals reflecting the crucial link between gender equality and sustainable development (UN Women 2014). Gender relations influence control, access and use of natural resources and the very benefits resource users derive from these (Quisumbing et al. 2001; Howard 2003a). Knowledge, skills, and interests also vary according to gender, which intersects with age, socio-economic status, and other social characteristics to shape use and management of biodiversity and agro-ecological systems (Cavendish 2000; Fernandez 2008; Nightingale 2011). Achieving gender equality – and women’s ability to make sustainable natural resource management decisions – is thus seen not only as an end in itself, but also as a pre-condition for meeting the other great challenges of our century.

Despite this recognition, researchers and practitioners often find it difficult to engage local resource managers – farmers, forest dwellers, and others – in conservation research and praxis (Stringer & Reed 2007), let alone to engage with the gendered power relations that shape resource management and research processes (Cornwall 2003). What is more, many research endeavors still operate under the cultural bias that household heads are male and that men speak for all members, even when data exist to the contrary (Twyman et al. 2015). Women’s work, knowledge, perspectives, needs and challenges remain invisible to, and unexplored by, researchers for reasons ranging from the typically localized and non-monetized nature of women’s work to the greater public presence and decision-making authority of local men (Howard 2003b). And so our understanding remains limited when it comes to the role of gender in shaping the knowledge, priorities and skills of men and women in natural resource management across diverse socio-ecological contexts; the benefits they derive and the constraints they face; and their ability to participate and be heard in the processes where management decisions are taken (Pfeiffer & Butz 2005; Colfer 2011). This special issue focuses on the nexus between gender and participatory research in forest and woodland management to provide empirical evidence for and reflection on the significance of gender in such research processes and in promoting equitable social learning and sustainable development opportunities.

In what follows, we first position this special issue in relation to critiques regarding the lack of attention to gender in participatory research. We then describe the Gender Research Fellowship Programme from which the special issue articles emerged. The contributions the different articles make to larger debates around gendered forest knowledge and local engagement in participatory, social learning processes are then introduced. We conclude by reflecting on the challenges and opportunities for adopting inclusive, participatory research methods to enhance the breadth of local socio-ecological knowledge elicited within a community and the gender-equitable social learning opportunities they provide.

## Seeking out gender in participatory research

Participatory approaches began to arise in the 1970s as an alternative to the previous development paradigm, which was characterized as top-down (Johnson et al. 2003). The overarching goal was to give voice to marginalized people – who had previously been

perceived by external organizations as passive recipients of development interventions – into research and planning processes. Since the 1980s, there has been increasing recognition that externally designed and managed development projects that did not engage with local interests were not ‘transforming existing patterns of social interaction and resource use, because they do not relate adequately to local priorities’ (Vira & Jeffery 2001, p. 1). Initial experiences with participatory research sat largely within ‘Farming Systems Research,’ which mobilized participatory approaches to engage small-scale, resource-poor farmers in research for development that holistically addressed their particular biophysical and socio-economic conditions (Francis & Hildebrand 1989). Participatory methodologies became more widely applied within natural resource management in the 1990s (Johnson et al. 2004), and have continued to expand in the 2000s.

Participatory methods have shown promise for reorienting decision-making to promote bottom-up identification of problems and priorities among participants, who are then poised to develop sustainable, actionable solutions to the challenges they face (Chambers 1997; Gladwin et al. 2002). They have been lauded for stimulating innovation and empowering local communities by broadening local knowledge through information sharing during the research process and forging strong relations among participants (Jones et al. 2014). Empowerment also stems from allowing participants to assess and address their own needs directly or by articulating demands toward research and state organizations (Hellin et al. 2008). In a review of 150 projects comparing participatory plant breeding to conventional breeding, Ashby and Lilja (2004) demonstrate that participatory methods improved research efficiency and adoption rates of new varieties (see also Humphries et al. 2015), increased benefits from the projects, and importantly, were more effective in reaching women and the poor. Paris et al. (2008) provide compelling evidence of women’s empowerment through a participatory plant breeding project in India, which increased their capacity to make decisions and access to improved varieties (resources), to recognize their own knowledge, and which improved gender relations. In forestry research, participatory approaches have helped enhance conservation outcomes by overcoming free-rider attitudes that lead to over-harvesting, loss of biodiversity, land use change, degradation of eco-systems or habitats or illegal logging and harvesting (Pound et al. 2003; Ribot 2004). They have also favored social learning and social inclusion in joint or collaborative forest management (Cronkleton 2005; McDougall et al. 2013a).

Yet, critiques of participatory methods – their application, the assumptions they embed and the simplistic ways they are, at times, employed to address gender and social exclusion – are plentiful (Cooke & Kothari 2001; Cornwall 2003; Hayward et al. 2004; Hickey & Mohan 2005; Resurreccion & Elmhirst 2008; Paris et al. 2008). Participatory methods arose specifically from a need to incorporate the voices of marginalized people; a challenge that requires careful attention to whose participation should be sought and how it can best be achieved (Wollenberg et al. 2005; Lilja & Dixon 2011). However, in their extensive review of 59 self-proclaimed participatory research-for-development projects focused on natural resource management, Johnson et al. (2004) found that stakeholder selection and participation were often inadequate. Although participants benefited from project interventions, projects lacked attention to power relations and inequitable outcomes resulted from the inadequate integration of women and other marginalized groups in research processes. Only 27% of the reviewed projects had used equity as a criterion for selecting project participants and women and marginalized groups were often not included in projects until the dissemination of

technologies phase. As others note, however, engagement early on in the research process is key for identifying problems, deciding on inclusion of key actors and defining potential intervention pathways (Johnson et al. 2003; Paris et al. 2008; Lilja & Bellon 2008; Lilja & Dixon 2008). Shaw and Kristjanson's (2014) review of nine participatory projects on climate adaptation in rural settings illustrates how exclusion from research processes represents a lost opportunity to engage in social learning about (in their case) environmental conditions and policies.

Reasons for poor integration of gender considerations in participatory research approaches – already evident by the mid-1990s – range from the time required and inconvenient timing of research activities for women, to men's typically higher mobility and literacy, to social norms that prescribe distinct levels and spaces (e.g. public vs. private spaces) of participation for women and men (Mosse 1994; Rocheleau 1994; Martin & Sherington 1997; Paris et al. 2008). Gender is still frequently equated with women, and 'women' are considered as an all-inclusive category. Yet, 'gender exists through other social identities' (Resurreccion & Elmhirst 2008, p. 14), including ethnicity, age, religion, and other social attributes that position individuals in relation to their society (Agarwal 2015). Hence, Cornwall (2003) cautions against an uncritical assumption that undefined women involved in group discussion are necessarily representative of all women in their community. Others also warn against the assumption that including women in research activities will lead to their active participation and voices being heard (Johnson et al. 2004; Lilja & Dixon 2008). Agarwal (2001) stresses the need to understand what participation actually means in terms of the level (of activeness) and objectives of participation, whereas Cornwall (2003) warns against tokenism, arguing that the inclusion of women in a group can be used to provide legitimacy whether or not women's opinions are actually reflected in the group's decisions. She further notes that 'increasing the numbers of women involved may serve instrumental goals, but will not necessarily address more fundamental issues of power' (Cornwall 2003, p. 1330). Agarwal's (2015, p. 1) research in India suggests that numbers – or reaching a critical mass – do matter for social inclusion, but that positive outcomes are enhanced when there is a 'conscious recognition and collective articulation of shared interests' (see also Arora-Jonsson 2012).

To maneuver this complexity of gender and power relations, new strategies for meaningfully engaging with socially differentiated men and women in research on natural resource management are needed. The concerns noted above suggest the need to revisit the ways participatory methods are mobilized, both as research tools to gather more representative information that pays heed to gender and social differentiation, and as ways to support social learning and collective solutions to pressing ecological concerns through more socially inclusive approaches (cf. Wollenberg et al. 2005; Shaw & Kristjanson 2014). Articles in this special issue take up this challenge by examining: (1) the diversity of stakeholders' forest-related knowledge, skills, needs and priorities in forest-dependent communities across socio-cultural contexts in four African and Asian countries through the use of gender-responsive participatory approaches, and (2) choices in research design that can foster inclusive participation, knowledge sharing and social learning within and among social groups. In this pursuit, the contributors analyze gendered social relations in different forest contexts, investigating the 'ins and outs' of using participatory methods in research-for-development from the perspective of both scientists and participants.

## Situating the special issue: research contexts and methodological approach

The articles presented in this special issue emerged from Bioversity International's Gender Research Fellowship Programme; a two-year research initiative (2013–2015) to strengthen capacities in gender-responsive participatory research that can deliver positive social and forest-related outcomes. Launched in 2013, the Programme supported female (3) and male (2) researchers from West and Central Africa, and Central, South, and Southeast Asia to hone their research skills in gender-responsive participatory methods. Aside from research grants, the Programme provided the Fellows with capacity strengthening workshops, mentoring, collaborative learning and knowledge sharing instances, and opportunities to participate in international conferences (see Thull et al. 2015 for more information and an ex-post assessment of the Fellowship Programme).

The research projects were designed to study women's and men's forest and tree-related knowledge, skills and management practices within larger collaborative projects implemented by Bioversity International and partners. The emphasis on socially inclusive participatory methods reflected the Fellows' commitment to engage participants in a social learning process through research activities, as further discussed by Hegde et al. (2017, this issue).

All research projects followed a similar design, in which group work using a set of participatory tools was prioritized. Participant groups were segregated by gender and along at least one other axis of social differentiation (age, ethnicity or caste, residence status) deemed most relevant in shaping their experiences and perceptions regarding forest use and management. In a given study site, participatory exercises were conducted with each gender group separately and in parallel, after which the participant groups came together in plenary at the end of the activity to share their knowledge. This setup was intentionally designed to create safe spaces for participation among more marginalized groups (e.g. McDougall et al. 2013a, 2013b), while promoting inter-group, cross-gender knowledge sharing, appreciation, and social inclusion. Recognizing that power relations among participants shape group dynamics and lead to certain individuals dominating in group situations (Kapoor 2001), facilitators were explicitly tasked with encouraging diverse voices to surface.

The Fellows came from various disciplinary backgrounds, including agricultural sciences, sociology, economics and forestry, and had varying levels of experience with social science theories and methodologies. Prior to their participation in the Fellowship Programme, two of the authors had been working within a larger, affiliate project for three years, and had already built rapport with the research participants when they initiated their Fellowship study. These two more senior Fellows originated from the civil society and government sectors, while the three more junior Fellows had only recently completed their Master's degrees. As discussed by Nchanji et al. (2017, this issue), the positionality of the Fellows shaped their research experience as well as that of the local women and men they worked with. Furthermore, a lack of experience in the social sciences and in facilitating group sessions made it difficult for some of the Fellows to reflexively apply a participatory methodology. Given the broad range of their experiences, the reflections of this diverse group will resonate with both junior and more seasoned researchers.<sup>1</sup>

## Overarching findings

### ***Socially differentiated knowledge and priorities for tree resources***

The contributing articles demonstrate that across socio-ecological contexts, traditional ecological knowledge is neither homogeneously distributed within the communities nor concentrated among socially more powerful groups (such as elderly men or higher caste groups) who, in the absence of a gender-responsive approach, are often the ones selected as research participants. The study of Faridah et al. (2017, this issue) in Sarawak, Malaysia, demonstrates the necessity of engaging with different gender and age groups to build on local knowledge of mango (*Mangifera spp.*) and rambutan (*Nephelium spp.*), two valued native fruit tree taxa. In their two study sites, the authors found that older women named the highest number of local mango and rambutan 'types' (species, varieties and ethnovarieties), followed by older men and subsequently by younger women. In contrast, when asked about local organizations that provided services to their community and could be involved in supporting socio-economic development and conservation, older men identified substantially more organizations than did older women or younger women and men. Different sets of knowledge across gender and age groups reinforced the understanding that excluding any segment of the community from the research process would yield an incomplete representation of the local knowledge held within the village.

In a similar focus on native fruit trees in an Indian context, Hegde et al. (2017, this issue) describe the value of a research setup that promotes the use of participatory tools in mixed ethnic groups segregated according to gender and age to illuminate local socio-ecological knowledge and foster social learning. Similar to Faridah et al.'s findings, Hegde et al. (2017) demonstrate that the level of knowledge about mango, Indian gamboge (*Garcinia indica*) and Malabar gamboge (*Garcinia gummi-gutta*) varies across groups, with knowledge differentials linked to the diverse experiences women and men from different ethnic and age groups have in collecting and using native fruit species. In study villages where elder Hindu men were primarily responsible for collecting fruits, these men could name a greater number of native fruit tree species and identify more locations where these could be found than local women. In contrast, in a study village where a higher proportion of residents were from Scheduled Tribes, it was the elder women who had better knowledge of fruit species and locations than their male counterparts because women were the ones typically collecting fruits.<sup>2</sup> Knowledge about phenology, agronomy, use and marketing of the three aforementioned native fruit tree species also varied across participant groups, with different patterns observed depending on the village and the type of knowledge investigated. Hegde et al.'s findings underscore the context-specificity of local knowledge, reflecting culturally distinct, gendered and age-specific experiences with native fruit trees, and the need to be socially inclusive to gather fuller data.

In a meta-analysis of the field research experience in Cameroon, Nchanji et al. (2017) point out how surveys designed to be answered by household heads (typically male) failed to yield accurate information on the production and sale of non-timber forest products, since many of these products are typically harvested and traded by women. Moving to Burkina Faso, Karambiri et al. (2017, this issue) indicate that knowledge of shea (*Vitellaria paradoxa*) ethnovarieties is both shared and differentiated across genders and ethnicities. Women and men participants have adopted a common shea classification system based on the same fruit and nut traits. Different ethnic groups – including the indigenous Bobo and the migrant

Moose and FulBe – showed converging ways of recognizing and classifying shea ethnovarieties. The most frequently recognized ethnovarieties named by almost all gender and ethnic groups, which highlight that knowledge of this species, widely used by both women and men in the study site, is overlapping. Yet, gender and ethnic differences were also observed in relation to the less frequently named ethnovarieties, highlighting the existence of gendered and culturally specific ways of knowing the natural world even in a relatively small locality.

In sum, the degree of overlap of knowledge among groups and who the most knowledgeable groups are varied between study sites, communities, and topics. However, in all cases the knowledge held by the different groups in a community was distinct, overlapping and complementary. This observation, echoed by others such as Muller et al. (2015), substantiates Mosse's (1994, p. 512) claim that, 'dominant male models are incomplete; they do not, and perhaps cannot, express important aspects of women's experience and interests.' As no one group holds the complete repertoire of local knowledge, researchers can elicit the fullest information by involving people from different social groups in knowledge generation. Doing so is particularly valuable when equity in benefit sharing and decision-making is a concern.

These findings are in line with those from previous research. For example, Howard's (2003a) edited collection on *Women and Plants* brings together what is perhaps the widest number of cases demonstrating gender-specific knowledge of the plant world. Yet, the implications of these findings for the way research is conducted have not always been clearly articulated. Differentiated knowledge implies that effectively involving a diversity of local actors, including marginalized groups such as women, ethnic minorities, or poorer societal groups in research is needed to reduce bias and better represent the breadth of knowledge in a community. Moreover, it suggests that all groups stand to learn from knowledge sharing with others. The findings underline the need to consider carefully which criteria for social disaggregation are needed to obtain the most relevant data in each case (Nchanji et al. 2017; Muller et al. 2015). While the need for gender-responsive approaches is gaining recognition among researchers, a more detailed diversity analysis to draw out other relevant forms of social differentiation that bear upon the data sought remains a challenge (Johnson et al. 2004; Reed 2008). Creating inclusive spaces for participation in research processes is relevant not only for eliciting differentiated sets of knowledge but also for fostering social learning, as discussed in the next section.

### ***Fostering knowledge sharing, social learning, and inclusiveness***

Depending on the research purpose and the socio-cultural context, diverse methods were used by the Fellows to foster participation, knowledge sharing, and inclusive social learning. Participants were segregated into groups beyond gender, based on age, ethnicity or residence status, to make it easier for marginalized groups to share their views in a group of peers. At specific points in the research process, gender, age, and/or ethnic groups were also intentionally mixed to stimulate exchange of information and collective learning.

Communities generally appreciated participatory research tools for the opportunity they provided to share knowledge internally and learn collectively. Nchanji et al. (2017) observed curiosity, enthusiasm and pride among research participants as they used, for the first time, participatory research tools that allowed them to display and reflect on their extensive local



knowledge in group settings, as opposed to the surveys and structured focus group discussions they were familiar with from previous research. Faridah et al. (2017) found that the set of four participatory tools they used were positively evaluated by all gender and age groups in terms of their usefulness to the community, and were by and large considered easy to use. Nonetheless, nuanced differences related to gender and age suggest the need to adapt tools based on the capacities and interests of different user groups to foster active and meaningful participation. Acceptance of participatory tools among community members also varied depending on how straightforward and (un)threatening the research topic was perceived to be. Some topics were met with particular reluctance as participants considered them to be private or contentious (Nchanji et al. 2017). Moreover, the perceived usefulness and the ease of use of the tools depended on the capacities and experiences of participants (Faridah et al. 2017), researchers and facilitators (Nchanji et al. 2017). As Njanjani et al. note, facilitation skills take time to develop and can often be best learned through apprenticeship.

In line with McDougall et al. (2013b), the studies contributing to this special issue demonstrate that inclusive social learning opportunities can indeed be created when safe spaces for participation facilitate the active engagement of both women and men from differentiated groups. Faridah et al. (2017) examine emic perceptions of the participatory research tools and of the overall participatory approach designed to promote social inclusiveness. The authors note that the process of working in small gender and age-segregated groups made young women and young men feel particularly at ease expressing themselves and sharing their perspectives (see Cronkleton 2005; Kusumanto et al. 2005 for similar experiences). Bringing the groups of men and women together in plenary created some awkwardness as norms were broken when young women spoke in public in front of their male elders and as male elders recognized that other members of their community had important and different perceptions of their own. Learning across groups was reported by all research participants, who gained perspective on the varied experiences of different members of their community.

When the research setup is implemented by an entity external to the community (the researcher and his affiliate project), it may become possible to break through certain long-standing social norms around how gender and caste-based interactions should occur (Hegde et al. 2017). In the 'contact zones' of participatory research, meaningful interactions, knowledge sharing and learning occurred across caste groups in unconventional ways, 'blurring' the boundaries across groups. The physical spaces for research interactions further encouraged mixing among caste and gender groups. As opposed to formal public places, such as community halls, where privileged men's voices tend to dominate (Mosse 1994), meeting in the outer recesses of people's homes, where mixing of caste groups is socially permitted (versus inside the home), facilitated interactions. Again, the authors considered that encouraging consecutive experiences in mixed-ethnic but gender- and age-segregated groups, followed by activities in larger mixed groups promoted gender equity and social inclusiveness. They found that this kind of research process has the potential to instigate change in social norms in other aspects of community life and resource management practices over time.

While there is still some distance between the predominantly diagnostic research projects described in this issue and concrete, transformative social change in the study communities, several signs suggest that exercises carefully designed to foster equitable participation can

encourage inclusive social learning among research participants, even over a relatively short time. The study of Hegde et al. (2017) demonstrates a process of self-reflection among participants about how documenting locally differentiated knowledge of valued native fruit trees can foster collaborative understanding and motivate collective conservation actions (Hegde et al. 2017). In the Faridah et al. (2017) study, women, and men participants of different age groups recognized the value of knowledge sharing for developing marketing opportunities around native fruit tree products.

These findings taken together resonate with the observations of Hickey and Mohan (2005) who show, in their review of sixteen participatory research development projects, that participatory methods can be an improvement on traditional ones, particularly when attempting to understand complex social networks and to include marginalized groups (see also Bruges & Smith 2008). Despite the challenges posed when using participatory methods (Nchanji et al. 2017), the special issue authors suggest that these methods offer prospects for advancing positive social and ecological outcomes, and for empowering research participants (Faridah et al. 2017). Finally, the findings indicate that not only *who* participates but also *how* people engage in the process determines the quality of the research outcomes.

## Conclusion

Contributions to this special issue demonstrate the need to effectively involve the diversity of actors engaged in natural resource management in research-for-development if the range of local knowledge held locally is to be made visible. Collectively, the four papers present empirical evidence, contextually rooted across four African and Asian countries, for understanding the value, opportunities, and challenges of working with participatory methods, both from the perspective of the researchers and of the research participants. The authors offer an optimistic view of the potential these methods hold for sharing knowledge and promoting inclusive social learning related to the management of forest and tree resources. They temper the critiques of participatory research implementation, and in so doing advance the dialog around this research approach. They show that participatory methods in and of themselves are neither bad nor good. It is the ways they are operationalized that determine whether women and men can meaningfully engage in a process of self-reflection, knowledge sharing, and social learning that contributes to positive socio-ecological changes.<sup>3</sup>

Careful consideration to who is invited to participate in research processes, and how they do so, matters. When safe spaces for participation are created – and sometimes less comfortable spaces that are needed to foster mutual understanding and social change (see Faridah et al. 2017; Hegde et al. 2017) – opportunities for self-expression and learning from and with others are created, even for marginalized groups. The papers suggest the need to carefully consider when to create segregated or mixed spaces – or indeed both – for participants to create situations in which social learning within and across diverse social groups can occur.

## Notes

1. See also Long et al. (2016), who draw on discussions with graduate student Fellows to explore broadly applicable questions of ethics and reflexivity in participatory research.

2. The term Scheduled Tribe is an official designation by the Government of India for a number of marginalized indigenous groups considered India's 'original inhabitants.'
3. The edited collection by Ojha et al. (2013), in which authors provide a self-critical look at their work on Adaptive Collaborative Management – a participatory approach for enhancing social inclusion and sustainable forest management outcomes – conveys a similar message.

## Acknowledgments

We thank Carolyn Booth for her research assistance, and Carol Colfer and Catherine Hill for constructive comments on a previous version of the manuscript. Hubert de Foresta, Editor of the journal, provided invaluable support throughout the process of publishing this special issue.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This work is supported by the CGIAR Research Program on Forests, Trees and Agroforestry and CGIAR Fund Donors.

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