# The costs and benefits of certification for community forests managed by traditional peoples in south-eastern Tanzania

G.E. FREY[a], S. CHARNLEY[b] and J. MAKALA[c]

*[a]U.S. Department of Agriculture, Forest Service, Southern Research Station, P.O. Box 12254, Research Triangle Park, NC 27709, U.S.A.*
*[b]U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 620 SW Main Street, Suite 502, Portland, OR 97205, U.S.A.*
*[c]Mpingo Conservation and Development Initiative, P.O. Box 49, Kilwa Masoko, Tanzania*

Email: gregory.e.frey@usda.gov, susan.charnley@usda.gov, jasper.makala@mpingoconservation.org

## HIGHLIGHTS

- Certification of community forests managed by traditional peoples in Tanzania has monetary costs that exceed financial returns.
- Community forest managers had overall positive views of certification, believing it should be maintained despite the costs.
- Forest management activities associated with certification were perceived as more worthwhile than not, with benefits more frequent than drawbacks.
- Major social benefits of certification perceived by traditional peoples included promoting worker health and safety, strengthening tenure rights, and sustaining forest benefits into the future.

## SUMMARY

Community forests managed by indigenous, traditional, and local communities must be environmentally, socially, and economically sustainable for their benefits to persist. Certification of community forests communicates that products harvested there meet these standards. However, certification of community forests has been limited, particularly in Africa. Financial analysis, review of audit reports, and a survey of forest managers were used to explore monetary and non-monetary social costs and benefits of Forest Stewardship Council certification for 14 timber-producing community forests managed by traditional peoples in south-eastern Tanzania. Direct monetary costs of certification outweighed monetary benefits, threatening economic sustainability. Nevertheless, forest managers believed that community forests should retain certification because they valued its non-monetary benefits, which were consistent with the Forest Stewardship Council's social principles. This study demonstrates that certification of community forests can help indigenous and traditional peoples ensure safe working conditions, strengthen forest tenure rights, sustain multiple community benefits, and protect culturally-important sites, however, financial barriers persist.

Keywords: Forest Stewardship Council, community forest enterprise, tropical forestry, financial analysis, perceptions

## Faida na Gharama za Uthibitishaji wa Misitu inayopo chini ya umiliki wa Vijiji- Kusini Mashariki mwa Tanzania

G.E. FREY, S. CHARNLEY na J. MAKALA

Misitu ya vijiji inayosimamiwa na wanajamii imekuwa ikiwapatia manufaa mengi wanajamii husika. Ili iweze kuwa endlevu, ni lazima misitu hii ikidhi malengo ya kimazingira, kijamii na kiuchumi. Hata hivyo, uthibitishaji wa Misitu upo kwa kiasi kidogo sana hususani katika Bara la Africa. Faida za kifedha na zizizo za kifedha za Uthibitishaji Misitu chini ya FSC zimefanyiwa utafiti kupitia tathmini ya kifedha, uchambuzi wa taarifa za ukaguzi na mahojiano na wajumbe wa Kamati za Maliasili za vijiji (Mameneja wa Misitu) katika vijiji 14 vinavyouza mbao chini ya Mpango wa Usimamizi Shirikishi wa Misitu kusini mashariki mwa Tanzania. Utafitu huu unaonyesha kuwa gharama za kifedha za uthibitishaji ni kubwa kuliko faida zisizo za kifedha. Hata hivyo, Mameneja wa Misitu ya vijiji (Wajumbe wa Kamati za Maliasili za Vijiji), wanaamini kuwa Misitu ya Vijiji ni bora ikaendeleza Ushibitishaji wa Misitu kwa sababu wananufaika na faida zisizo za kifedha ambazo zinaendana na kanuni za uthibitishaji Misitu. Utafiti huu unadhihirisha kuwa Uthibitishaji Misitu katika muktadha wa misitu ya vijiji unaweza kusaidia wanajamii kuwahakikishia mazingira bora ya kazi, kuweka mazingira bora ya umiliki wa misitu, kuongeza mapato ya vijiji, kuchangia katika maisha bora na kuhifadhi maeneo muhimu ya kijadi na kimila. Hata hivy bado kuna changamoto ya gharama za uthibitishaji Misitu.

## Coûts et bénéfices de la certification des forêts communautaires gérées par les peuples traditionnelles dans la Tanzanie du sud-est

G.E. FREY, S. CHARNLEY et J. MAKALA

Les forêts traditionnelles gérées par des communautés traditionnelles, autochtones et locales doivent être durables socialement, économiquement et d'un point de vue environnemental, pour que leurs bénéfices persistent. La certification des forêts communautaires témoigne du fait que les produits qui y sont récoltés atteignent tous les standards énumérés ci-dessus. Toutefois, la certification des forêts communautaires a été limitée, en Afrique en particulier. Une analyse financière, un examen des rapports d'audit, et une enquête auprès des gestionnaires forestiers ont été utilisés pour explorer les coûts et les bénéfices monétaires et sociaux non-monétaires, de la Certification du Forest Stewardship Council dans 14 forêts communautaires productrices de bois, gérées par des peuples traditionnels en Tanzanie du sud-est. Les coûts monétaires directs de la certification étaient supérieurs aux bénéfices monétaires, menaçant la durabilité économique. Les gestionnaires forestiers pensaient, en revanche, que les forêts communautaires devaient garder leur certification, car ils estimaient ses bénéfices non-monétaires, lesquels étaient en accord avec les principes du Forest Stewardship Council. Cette étude démontre que la certification des forêts communautaires est à même d'assister les peuples autochtones et traditionnelles dans leur souci d'assurer des conditions de travail sûres, de fortifier les droits fonciers forestiers, de permettre à de multiples bénéfices pour la communauté de perdurer, ainsi que de protéger les sites d'importance culturelle. Cependant, les barrières financières persistent.

## Costos y beneficios de la certificación para los bosques comunitarios gestionados por los pueblos tradicionales en el sureste de Tanzania

G.E. FREY, S. CHARNLEY y J. MAKALA

Los bosques comunitarios gestionados por comunidades indígenas, tradicionales y locales deben ser sostenibles desde el punto de vista medioambiental, social y económico para que sus beneficios perduren. La certificación de los bosques comunitarios comunica que los productos recogidos en ellos cumplen ciertos estándares. Sin embargo, la certificación de los bosques comunitarios ha sido limitada, especialmente en África. Este estudio utilizó un análisis financiero, una revisión de informes de auditoría y una encuesta a los gestores forestales para analizar los costos y los beneficios sociales, tanto monetarios como no monetarios, de la certificación del Forest Stewardship Council (FSC) de 14 bosques comunitarios productores de madera gestionados por pueblos tradicionales en el sureste de Tanzania. Los costos monetarios directos de la certificación superaron a los beneficios monetarios, lo cual amenaza la sostenibilidad económica. No obstante, los gestores forestales creen que los bosques comunitarios deben mantener la certificación porque valoran sus beneficios no monetarios, que son coherentes con los principios sociales del FSC. Este estudio demuestra que la certificación de los bosques comunitarios puede ayudar a los pueblos indígenas y tradicionales a garantizar unas condiciones de trabajo seguras, a reforzar los derechos de tenencia de los bosques, a la sostenibilidad de múltiples beneficios comunitarios y a proteger los lugares de importancia cultural, a pesar de que sigan existiendo obstáculos financieros.

## INTRODUCTION

Decentralization of forest management from national and sub-national governments to indigenous, traditional, and local communities has accelerated globally over the last few decades as an approach to incentivize conservation, promote transparent governance, and stimulate rural development (Charnley and Poe 2007, Hajjar and Molnar 2016). 'Community forests' (CFs) employ a variety of approaches in which local community members are involved in governance and management of local forests, and their rights to access and receive benefits from those forests are recognized (Charnley and Poe 2007). For CFs to be sustainable in the long-run, they must meet environmental, social, and economic objectives (Burivalova *et al.* 2017, Hajjar *et al.* 2020).

Forest certification is a voluntary, market-based approach to assure consumers that the forest products they purchase have been derived following sustainable management principles and practices (Cashore *et al.* 2004). Two dominant international systems for forest certification have emerged, the Forest Stewardship Council (FSC) and the Programme for Endorsement of Forest Certification (PEFC) (Brack 2018). These systems mandate creation of administrative and management plans by forest managers that adhere to sustainable forestry standards, and independent evaluations (audits) of compliance with those plans (Moore *et al.* 2012). Forest certification accounts for 424 million ha or 10.4% of global forest area (United Nations 2019), and FSC-certified forests account for 22.6% of global industrial roundwood production (FSC 2018a). However, this certified area is concentrated in temperate and boreal regions, with only about 5% of certified forests in the tropics (McGinley and Cubbage 2011). Only 3.7% of FSC's total certified area is in Africa (7,520,000 ha), which is dominated by large concessions in Gabon and Republic of Congo and industrial plantations in South Africa (FSC 2020).[1] Only 0.1% (242,000 ha) of forests in Eastern

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[1] FSC is the dominant certification standard in Africa. PEFC's certified area in Africa is limited to 597,000 ha in Gabon (PEFC 2020).

Africa and 0.7% (1,563,000 ha) in Southern Africa are FSC-certified (FSC 2020, Kalonga *et al.* 2020).

The goals of community forestry and forest certification have significant overlap. Certification can help increase engagement of traditional peoples in forest management and stewardship, strengthen relations between traditional peoples and forests, and promote human rights (Humphries and Kainer 2006, Molnar 2004, Quaedvlieg *et al.* 2014, Wiersum *et al.* 2013). There are programs to streamline FSC procedures for groups and small and low-intensity managed forests (SLIMF), and national certification indicators tailored to CFs in the African context (FSC 2018b). Research from Latin America and South/South-east Asia has shown that communities perceive numerous social and economic benefits and costs associated with CF certification, many unexpected (Humphries and Kainer 2006, Wiersum *et al.* 2013). Costs can preclude benefits from being realized, and low levels of adoption persist (Minang *et al.* 2019, Wiersum *et al.* 2013), suggesting that barriers are substantial. Decisions about whether to initiate or maintain certification require communities to have a comprehensive understanding of its social and economic benefits and costs. Not all costs and benefits are easily recorded on a financial ledger; they may be non-monetary or indirect in nature, such as the cost of restricting activities in sensitive areas, or benefit of enhanced community reputation. Understanding community forest managers' perceptions of the relative importance of these costs and benefits is an essential component of rigorous evaluation and decision-making for forest certification (Romero *et al.* 2017).

An FSC-certified group of 14 CFs managed for timber production by traditional peoples in south-eastern Tanzania was the focus of this research. This group constitutes the first, and to the authors' knowledge still the only, FSC-certified community forests in Africa. The research objectives were (1) to explore the actual and perceived monetary and non-monetary impacts of certification to generate a comprehensive understanding of its social and economic benefits and costs to communities of traditional peoples; and (2) to assess whether and how certification can help traditional peoples as they engage in management of local forests. Previous research has found that these Tanzanian FSC-certified CFs are associated with biodiversity conservation, more equitable distribution of income earned, enhanced rule compliance, and greater community participation and support (Kalonga and Kulindwa 2017, Kalonga *et al.* 2015, 2016). Despite these successes and generation of revenues from timber production for community development projects, the CFs continue to face financial and other hurdles (Frey *et al.* 2021, Gross-Camp 2017). Logistical and administrative expenses of certification are particularly high, and timber revenues have been lower than anticipated (Frey *et al.* 2021). Some participants have questioned whether maintaining FSC certification is worth the cost. This research, which addresses this dilemma, can aid communities in south-eastern Tanzania and elsewhere in Africa and the tropics, as well as organizations supporting them, in making decisions about adopting or continuing certification in the future. Furthermore, the research provides insights about the roles and impacts of CF certification in the context of traditional peoples and communities in East Africa.

## BACKGROUND

### Traditional peoples and forests in south-eastern Tanzania

There has been extensive debate about what constitutes indigenous peoples in the African context (see Sylvain 2017). The Indigenous Peoples of Africa Coordinating Committee identifies the indigenous peoples of East Africa as being transhumant pastoralists and hunter-gatherers whose presence pre-dates the migrations of Bantu-speaking agro-pastoralist peoples into the region (IPACC 2021). Following this definition, because most residents of our study region in south-eastern Tanzania are from this latter group (Sakamoto 2008), they are considered here as 'traditional' rather than 'indigenous' peoples.

The distribution of traditional peoples, and their relations to forests, in south-eastern Tanzania during the 19th and 20th centuries were heavily influenced by the slave trade, inter-group conflict, war, disease, and colonial government policy (German 1885–1919, British 1919–1961) (Iliffe 1979, Neumann 2001, Sunseri 2014, Tuck 2009). Particularly significant were the Maji Maji Rebellion of 1905–1907, the creation of forest and game reserves by colonial authorities, and the colonial development agenda – all of which led to widespread displacement and removal of traditional peoples from customary forestlands. In the 1970s, post-Independence, government policy moved 70 percent of Tanzania's population into concentrated villages, and expanded protected areas, further altering customary relations between traditional peoples and forests (Sunseri 2014).

Today, the main ethno-linguistic groups residing in south-eastern Tanzania are the Matumbi, Ngindo, Mwera, and Makonde peoples, whose presence there dates back at least 300 years (Wembah-Rashid 1975). Historically, most lived in family clans that were loosely associated with territories (Saetersdal 1999, Sakamoto 2008), with settlements dispersed throughout the region's forests and woodlands. People lived at low densities owing to poor soils, water scarcity, inability to keep livestock because of endemic diseases, and conflict (Becker 2010, Sunseri 2014). They now live in villages where they cultivate maize, cassava, sorghum, rice, and legumes for food, and sesame and cashews as cash crops (Dondeyne *et al.* 2003). Under Tanzania's Local Government Act of 1982 and Village Land Act of 1999, villagers currently maintain forest access, use, and management rights to forests within the formally-demarcated boundaries of the villages where they reside.

Despite a turbulent past, the peoples of south-eastern Tanzania have maintained close ties to forests over time. Historically, clans had guardianship over particular forest areas (Sunseri 2003), which were revered as sanctuaries for ancestral spirits and as sites for rituals and burials. Forests also served as refuges from war and colonial oppression (Sunseri 2014). People have long relied on forests as a source of non-timber products for domestic uses including foods and medicine, and for wood used for construction, canoes, fuelwood, charcoal, and traditional carvings (Culwick 1936, Sunseri 2003, 2014). Forests also formed the basis for systems of shifting cultivation, still practiced today (Sunseri 2014).

In the past, forests in south-eastern Tanzania were also an important source of products for trade to generate cash and pay colonial taxes. The most important commercial non-timber forest products in the 19th and first part of the 20th centuries were vine-grown rubber (*Landolphia* spp.), beeswax, copal (*Hymenea verrucosa*) resin, game, and ivory (Iliffe 1979, Neumann 2001, Sunseri 2003, 2014, Tuck 2009). Through the mid-20th century international timber markets were largely for softwoods, although a smaller market for the region's coastal mangrove hardwoods existed for centuries, resulting in their harvest and export. The British greatly expanded hardwood timber production in southern Tanzania following World War II owing to a global supply shortage, but this waned as Independence drew near. The independent government of Tanzania also sought to increase timber production, but its policy focus was on creating plantations of exotic softwood species (Sunseri 2014). This focus, combined with relatively under-developed infrastructure (Becker 2010), meant interior south-eastern Tanzania's hardwoods largely escaped over-exploitation relative to other parts of the country (Sunseri 2014).

Against this backdrop, community forestry in Tanzania is another national government policy shaping local relations between traditional peoples and forests. In south-eastern Tanzania, it can also be viewed as an evolving form of commercial timber production by traditional peoples.

## CFs and certification in south-eastern Tanzania

Tanzania's Forest Act of 2002 authorized communities to establish and manage Village Land Forest Reserves (hereafter referred to as CFs). By 2012, 546,000 hectares of village land in 381 villages nationwide had been set aside into CFs (Pailler *et al.* 2015). The median CF was 425 hectares in 2012; however, individual CFs can be tens of thousands of hectares (Pailler *et al.* 2015). CFs operate in accordance with locally-developed forest management plans. Villages harvest and sell forest goods and services and retain 100% of revenues generated (Blomley and Ramadhani 2006). Forest governance is vested in locally-elected Village Councils, with management delegated to Village Natural Resource Committees (hereafter 'forest managers' or 'managers'). It is unknown exactly how many Tanzanian CFs focus primarily on commercial timber production. Past research has documented primarily sale of charcoal and firewood, and only rarely grazing rights, tourism and research access, commercial timber, and non-timber forest products (Green and Lund 2015, Lund and Treue 2008, Vyamana 2009).

The Tanzanian non-governmental organization (NGO) Mpingo Conservation and Development Initiative (MCDI), created in 2004, has supported the establishment, governance, administration, and management of CFs encompassing 569,343 hectares in 70 villages in south-eastern Tanzania (MCDI 2021a).[2] MCDI's goal is to use timber as an economic

tool for advancing forest conservation and community development in the region. Forest management costs to date far exceed available forest revenue; the difference is made up by external donors via MCDI (Frey *et al.* 2021).

In 2009, MCDI facilitated the first group FSC certificate for CFs in Africa (MCDI 2021b), which has contributed to MCDI's continued success in obtaining grants and donations to support CF in the region. The application of FSC principles in MCDI's case is through a national standard that places them into the Tanzanian context, and specifies concrete indicators and verifiers (FSC 2018b). As of 2018, the group FSC certificate (under the SLIMF program) included 188,833 hectares of CFs across 14 villages in three Districts (figure 1). The CFs primarily consist of Miombo woodland and East African coastal forests. These ecoregions are characterized by rainy and dry seasons with frequent fires, and contain several high-value tropical hardwood species such as East African blackwood (*Dalbergia melanoxylon*, 'mpingo' in Swahili), bloodwood (*Pterocarpus* spp., 'mninga'), and pod mahogany (*Afzelia quanzensis*, 'mkongo') (Frey *et al.* 2021). These slow-growing species are deciduous and are mixed in the landscape with numerous other commercial and non-commercial species.

The certified CFs generate revenue primarily from sale of standing timber to third-party loggers. A portion (generally 50%) of this revenue goes to the Village Council to invest in community development projects. The remainder is used to finance forest management labour, materials, equipment, and other associated costs and to contribute to MCDI and district government (Frey *et al.* 2021). Forest management activities include planning and maintenance (e.g., inventory, management plan, boundary marking), security and monitoring (e.g., patrols), silviculture (e.g., prescribed burns), timber sales (e.g., selecting trees for harvest and monitoring logger), certification (e.g., third-party audits), and administration (Frey *et al.* 2021).

## FSC social principles and potential benefits for indigenous and traditional peoples

Certification under FSC requires compliance with 10 principles, each of which is governed by numerous criteria, indicators, and verifiers (table 1) (FSC 2018b). Molnar (2003) called Principles 2-5 FSC's 'social principles', which assure that CFs are managed in a way that promotes social and economic benefits to indigenous and traditional peoples, and local communities.

Principle 2 incorporates the idea of equity and wellbeing of forest workers, many of whom are likely to be local community members. This includes worker health and safety, and training to ensure forestry operations are implemented safely and effectively (FSC 2018b). Forestry and logging are recognized as among the most hazardous occupations worldwide (Mylek and Schirmer 2015). Improved working conditions have been cited by past researchers as one of the

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[2]  The CFs supported by MCDI are substantially larger than the average size for Tanzania documented by Pailler et al. (2015). This is partly due to the relatively sparse population and less degraded forests in south-eastern Tanzania.

FIGURE 1 *Map of the study region. Map credit: Abigail Kaminski.*
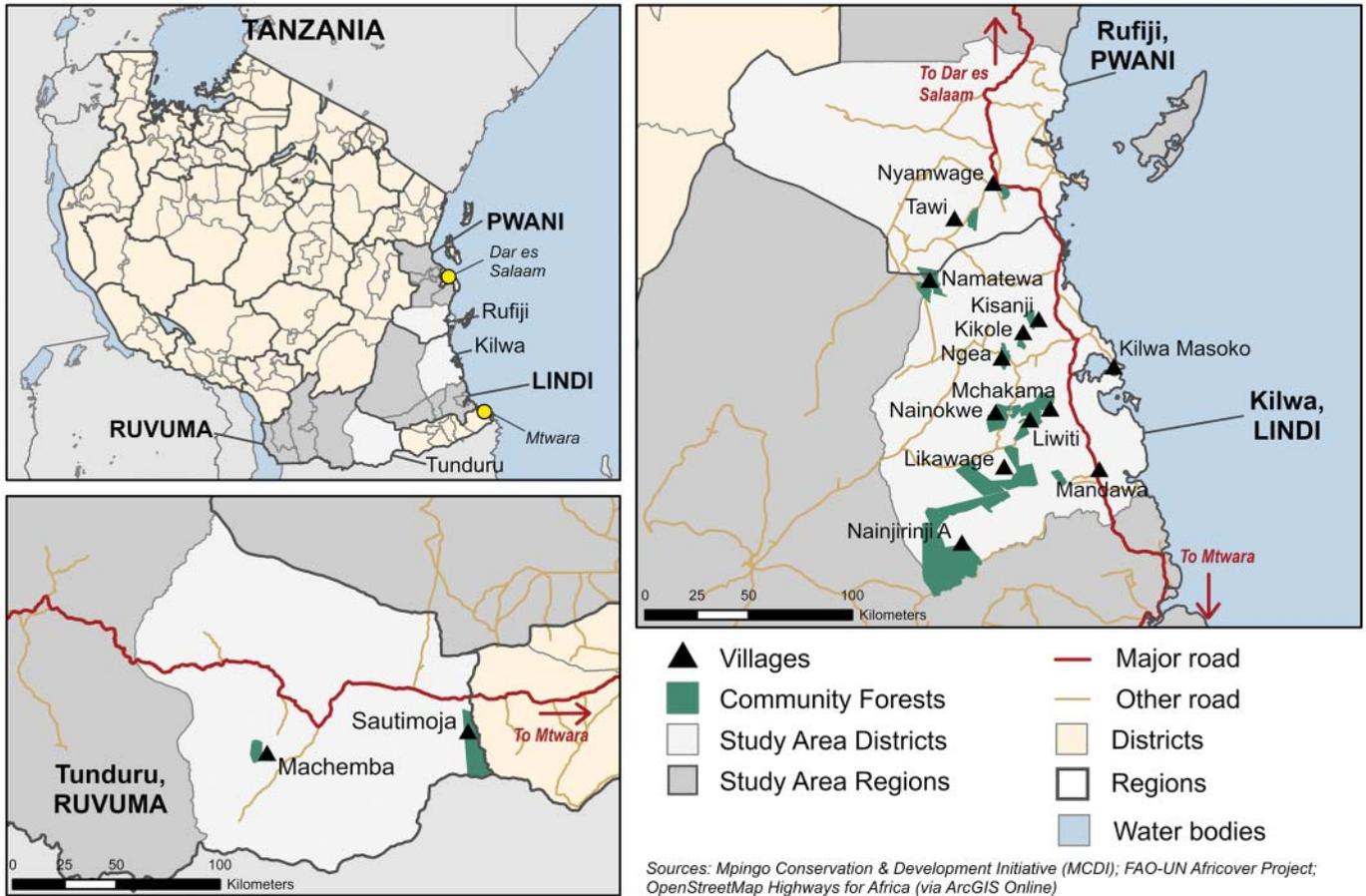


major benefits of CF certification in developing countries (Espinoza and Dockry 2014).

Principle 3 specifically recognizes indigenous peoples' rights, requiring forest managers "to identify and uphold Indigenous peoples' legal and customary rights of ownership, use, and management of land…" (FSC 2015). This requires free, prior, and informed consent (FPIC)[3] related to any activity affecting areas where indigenous peoples have legal or customary rights, or using their traditional knowledge. Because people in the MCDI project area are considered traditional rather than indigenous, their rights are addressed through other Principles, notably Principle 4.

Principle 4 describes certificate-holders' responsibilities to engage with, provide livelihood benefits to, and protect the resources of local communities in the area of the certified forest. This means maintaining or enhancing their socio-economic well-being including forest tenure rights and rights to use, manage, and benefit from forests; and protecting culturally-important sites. Notably, Principle 4 requires many of the same FPIC rights as Principle 3, but for local communities (including traditional peoples).

Principle 5 seeks to ensure long-term provision and sharing of benefits with local communities to the extent possible

(FSC 2015, 2018, Molnar 2003). It stipulates sustainable forest management to ensure that forests are well managed, produce a range of products and services, are economically viable, and will sustain social and environmental benefits from forests to local communities and economies over the long term.

One focus of scientific literature on forest certification and the rights of indigenous and traditional peoples pertains to forest operations spearheaded by non-indigenous organizations on or near lands where indigenous groups have customary claims (Teitelbaum and Wyatt 2013). Conflicts over certified operations affecting areas such as traditional hunting grounds without FPIC, or failure to demonstrate sufficient commitment to the principle of FPIC, have resulted in decisions not to pursue certification, as well as revocation or suspension of certificates (Teitelbaum *et al.* 2019). Such conflicts over communities' rights have been a particular issue with African certificates, but appear to have become less prevalent over time (Ehrenberg-Azcárate and Peña-Claros 2020). This may be because organizations are either increasingly working with local communities (Teitelbaum and Wyatt 2013) or are unable or unwilling to do so and are therefore dissuaded from adopting or continuing certification.

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[3]  Version 4 of the FSC standards (FSC 1996) used the term 'free and informed consent,' which was later amended to 'free, prior, and informed consent' (FPIC) in version 5-2. The FPIC term is derived from discussion surrounding the UN Declaration on the Rights of Indigenous Peoples, adopted by the UN General Assembly in 2007.

TABLE 1 *FSC Principles, version 5.2, with brief description (source: FSC 2015).[a] Principles 2 through 5, known as the "social principles" (Molnar 2003), are the focus of this research*

| Principle | Title | Description |
|---|---|---|
| 1 | Compliance with laws | Comply with all applicable laws, regulations and nationally-ratified international treaties, conventions and agreements |
| 2 | Workers' rights and employment conditions [b] | Maintain or enhance the social and economic wellbeing of workers, including health, safety, and training to ensure safe and effective operations |
| 3 | Indigenous peoples' rights | Identify and uphold Indigenous Peoples' legal and customary rights of ownership, use and management of land and resources |
| 4 | Community relations [b] | Contribute to maintaining or enhancing the social and economic wellbeing of local communities by engaging with, providing livelihood benefits to, and protecting the resources of local communities in the area of the forest |
| 5 | Benefits from the forest | Efficiently manage the range of multiple products and services of the forest to maintain or enhance long term economic viability and the range of environmental and social benefits |
| 6 | Environmental values and impacts | Maintain, conserve and/or restore ecosystem services and environmental values of the forest, and avoid, repair or mitigate negative environmental impacts |
| 7 | Management planning | Have a management plan consistent with its policies and objectives and proportionate to scale, intensity and risks of its management activities |
| 8 | Monitoring and assessment | Monitor and evaluate progress towards objectives, proportionate to the scale, intensity and risk of management activities |
| 9 | High conservation values | Maintain and/or enhance the High Conservation Values in the forest |
| 10 | Implementation of management activities | Management activities consistent with economic, environmental and social policies and objectives and in compliance with FSC Principles and Criteria |

[a] This manuscript refers to version 5-2 of the FSC standards (FSC 2015), which came into force in Tanzania in 2018 with a new set of national indicators (FSC 2018b). Version 4 (FSC 1996) was in place prior to 2018. Although the organization of principles and some of the wording changed between the two versions, the fundamental concepts related to indigenous and traditional peoples were maintained.
[b] Under Version 4 of the FSC standards (FSC 1996), Principle 2 was "Tenure and use rights and responsibilities" and Principle 4 was "Community relations and worker's rights." Version 5-2 (FSC 2015) reorganized these principles somewhat, with Principle 2 incorporating Workers Rights and Employment Conditions and Principle 4 incorporating Community Relations (which includes sections related to tenure and use rights).

A second focus of literature is on cases where indigenous, traditional, or local peoples are the certificate holders or major partners/proponents of the certified initiative. In these cases, for consistency with Principles 3 and 4, they must have relatively secure forest tenure and access rights. Many of these cases exist in Latin America, where some governments and NGOs have been active in promoting both CFs and certification. Existing studies of these operations suggest numerous challenges and limitations compared to large, industrial-scale certified forest operations, including: inequitable distribution of benefits, insecure land tenure, land disputes with nearby communities, ineffective or untransparent leadership, lack of capacity and information to comply with complex rules and regulations, and differences in values between local and non-local managers and stakeholders (Alemagi *et al.* 2012, De Pourcq *et al.* 2009, McDaniel 2003, Wiersum *et al.* 2013).

**Social and economic benefits and costs of certified CFs**

Despite the potential benefits of certification described above, it is expensive, particularly at the outset. Lack of domestic capacity in tropical countries to conduct annual audits means expensive international auditors are often necessary (Dahal and Cao 2017). Furthermore, price premiums for certified timber are generally small or non-existent, especially when timber from developing countries is marketed domestically (Alemagi *et al.* 2012, Barbosa de Lima *et al.* 2009, Hajjar 2013, Wiersum *et al.* 2013). CFs often lack the connections, scale, and capacity necessary to access international markets, so external assistance may be needed (Hajjar 2013). There are a few notable cases of price premiums for certified timber from communities and smallholders in tropical countries (e.g., Humphries *et al.* 2012), but these remain the exception to the rule. Thus, certified CFs often have a negative financial cost-benefit balance at least for the first few years, causing them to rely on international donors (Barbosa de Lima *et al.* 2009, Burivalova *et al.* 2017, De Pourcq *et al.* 2009, Frey *et al.* 2021, McDaniel 2003).

Although certification often does not meet direct, market-based, financial expectations, other benefits, though less tangible, can make certification worthwhile (Overdevest and Rickenbach 2006, Wiersum *et al.* 2013). Communities often report non-monetary benefits of certification such as greater recognition and standing to interact with regional and national governments, ability to participate in the national forest policy

dialogue, solidification of otherwise tenuous land tenure and access rights, or support from international donors (Humphries and Kainer 2006, Molnar 2004, Quaedvlieg *et al.* 2014, Wiersum *et al.* 2013). When properly leveraged, certification can also bring greater awareness of management inefficiencies and socio-economic disparities, improve labour conditions and productivity, and increase administrative capacity, record-keeping, and participatory decision-making (Burivalova *et al.* 2017, Espinoza and Dockry 2014, Humphries and Kainer 2006, Molnar 2004, Quaedvlieg *et al.* 2014, Wiersum *et al.* 2013).

## METHODS

The study area is comprised of the 14 villages in southeastern Tanzania with CFs that participate in MCDI's group FSC certificate (figure 1). A mixed-methods research approach was employed to develop a comprehensive view of the social and economic costs and benefits of certification at the group level, incorporating analysis of financial data, review of certification audit reports, and a survey of villagers responsible for managing the 14 CFs. Fieldwork was conducted in late 2017 and 2018.

### Financial data

To understand the financial costs of certification, comprehensive revenue and cost data were obtained for fiscal years 2013–14 to 2017–18. Eight CFs were established between 2006 and 2013, and six between 2014 and 2017. Financial data from earlier years were not analysed because they were not of consistent availability and quality; for CFs established after 2013, data were analysed for the years available. Data from each of the 14 CFs' financial ledgers were compiled and classified by activity. Further, MCDI data were compiled on expenditures in support of each of the 14 CFs, financed by grants from external donors. Up through 2017–18, forest managers sold standing timber to third parties as their primary source of revenue, typically as individual communities to individual buyers, sometimes with facilitation by MCDI. Revenues and expenses were recorded in Tanzanian Shillings but are reported here in United States Dollars based on the mid-fiscal-year (December 31, for July-June fiscal year) exchange rate each year. Financial costs were grouped into categories (table 2). More details of the complete financial analysis are given in Frey *et al.* (2021).

### Audit reports

Annual FSC audit reports[4] for the period 2013–18 were reviewed to identify findings related to FSC's social principles 2-5. These findings include corrective action requests (CARs)[5] as well as lesser observations. The findings were classified into topic areas.

### Survey of forest managers

A survey was developed and conducted with forest managers to obtain their perspectives on certification. The survey targeted forest managers rather than general village residents because they are most familiar with CFs and certification. The survey was pilot-tested in four villages and administered during 2018 in Swahili in all 14 villages with CFs in the FSC certificate. Fifty percent of managers in each village, and alternates in the case of unavailability or refusal, were randomly selected. Each respondent was compensated for his/her time, per typical protocol used by MCDI. Altogether, 132 managers from the 14 villages were surveyed; this included 87 men and 40 women (5 missing gender data). To meet certification standards, managers must conduct activities specified in their forest management plans (table 2). These activities were not exclusive to certified CFs, since uncertified CFs supported by MCDI also conduct many of the same activities to a degree. However, certification creates a higher minimum threshold, so management activities could potentially be reduced without certification.[6] Other activities not listed in table 2 either lacked a minimum threshold set by certification, or were deemed fully necessary regardless of certification.

Managers were asked whether they thought each activity in table 2 was worthwhile or not by providing one of four responses: (a) cost and difficulty of the activity outweighs the benefits of the activity (not worthwhile, scored as -1); (b) cost and difficulty is equal to the benefits (neutral, 0); (c) benefits are greater than the costs and difficulty (worthwhile, 1); or (d) don't know (excluded from average). A 5-point Likert scale was tested during piloting, but managers found it challenging to make finer distinctions.

A second series of statements asked managers about potential benefits and challenges of FSC certification (table 3). These were identified in advance through review of the literature on perceptions of certification for CFs (Burivalova *et al.* 2017, Humphries and Kainer 2006, Molnar 2004, Quaedvlieg *et al.* 2014, Romero *et al.* 2017, Wiersum *et al.* 2013), discussion with key informants during field visits, and pilot survey

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[4]  Audit reports are publicly available on the FSC international website (https://info.fsc.org/certificate.php) by searching for the License Code FSC-C012607.

[5]  A CAR results from an audit finding of noncompliance with FSC principles, criteria, indicators, or the forest management plan. Auditors state which principles and criteria were violated, how forest managers can correct it, and the timeframe for re-evaluation. Serious or persistent CARs can result in cancellation of the certificate (McGinley and Cubbage 2011).

[6]  Uncertified CF management plans must comply with national laws including the Forest Act of 2002, which involves village-level consultation and approval by the District Council. Certified CFs must comply with this legal process, as well as the FSC standards.

TABLE 2 *Forest management financial categories and activities associated with FSC certification included in the survey. Other activities not noted were deemed to be fully necessary regardless of certification*

| Financial Category | Certification-Associated Activity(ies) | Description |
|---|---|---|
| Planning and maintenance | Road maintenance | Repair and maintain CF road system to facilitate access and transportation of wood products. Keep roads accessible to prevent diversions around obstacles |
| Security and monitoring | Forest patrol | Conduct forest patrols to monitor activities occurring in CF and ensure no prohibited activities are taking place |
| | Biodiversity monitoring | Monitor specific bird species populations and distribution as an indicator of biodiversity |
| Silviculture | Controlled burning | Perform burning of understory vegetation in CF early in the dry season to prevent high-intensity wildfire later in the season |
| Timber sales | Supervise timber harvest | Supervise tree harvesting to ensure that harvests comply with specifications laid out in timber sale contracts |
| Administration | Record keeping | Maintain administrative records associated with CF activities and finances, up to the standard prescribed by government rules and the certification body |
| Multiple categories | Training | Participate in trainings on forest administration, planning, management, and certification |
| | First aid provider | Ensure first aid provider is on site during all field activities in case of injury |

TABLE 3 *Potential benefits and challenges of certification included in the survey*

| Variable | Description |
|---|---|
| Attract buyers | Certification helps us attract timber buyers |
| Price premium | Timber buyers are willing to pay more than the government price for wood from our CF |
| Better administration | Because of certification, we do administrative tasks better |
| Expensive | Certification is very expensive |
| Pride | Certification brings pride to my village |
| Dependent on donors | Certification makes my village depend on help from organizations like MCDI |
| Attract visitors | Certification helps us attract visitors to our village |
| Restricts timber sales | Certification limits the places where, and amount of wood that, the CF can sell |
| Manage differently | Without certification, we would manage our forest differently |
| More work | Certification creates too much work for the CF |
| Better recognition | Because of certification, we are better recognized by the government (district, regional, or national) |
| Complexity | It is difficult to understand the requirements of certification |

tests. Forest managers were asked to rate the frequency of the various potential benefits and challenges (in the order shown in table 3) using a 4-point scale (never, rarely, mostly, always, or unsure/don't know). A non-parametric Wilcoxon signed-rank test (Wilcoxon 1945) was used to test for statistically-significant differences in response levels between pairs of variables.

Qualitative survey questions asked managers to explain what they viewed as the costs and benefits of the forest management activities required to meet certification standards; to probe their understanding of FSC certification and how certified CFs differ from those that are not certified; and whether they saw value in continuing to have a FSC-certified CF, and why. Managers were also asked for their suggestions about how CFs could become more financially self-sustaining. The qualitative responses were translated into English, reviewed, categories/key points identified, and mentions quantified.

The survey was administered in-person and jointly by two employees of MCDI who were trained by the authors. MCDI employees are well-versed in the culture and language of the communities, in CF governance and management, and are known to community members. This allows for a greater level of response and comfort among survey participants, and for easier detection of areas of confusion where elaboration is necessary. However, it could introduce response bias if forest managers believed continued MCDI support were contingent on their responses. Authors' observations suggested that this was not the case, but it is impossible to eliminate this potential bias entirely. Overall, using known representatives of a trusted organization was believed to produce the most reliable responses.

RESULTS

**Financial costs**

The financial costs attributable to certification are presented here; full results of the financial analysis, including comparison among CFs and trends over time, are found in Frey *et al.* (2021). The direct monetary costs of FSC certification are primarily attributable to the annual FSC audit, as well as registration fees and the cost of training forest managers. All these costs are borne by MCDI, using funding from international NGOs and donor agencies. During the period 2013–18, the direct costs of certification were approximately 12% of total CF expenses, equivalent to $42,700 total per year, or $3,050 per CF per year on average, ranging from $45 to $19,800 per CF per year. Variability in costs was cyclical due to multi-year periodic training and audit cycles, and higher costs in the first years of adding new CFs to the group.

Average annual revenue was approximately $8,700 per CF per year, about 96% of which was from sale of standing timber with smaller revenues from sources such as fines and fees. Revenues ranged from $0 to $92,000 per CF per year. Overall, the direct costs of certification were 35% of revenue, substantially affecting overall financial viability of the system. Because MCDI currently pays these costs, if certification were dropped the savings would accrue to MCDI, and in years of low donor funding, would help MCDI remain solvent.

Indirect costs, including labour, materials, services, and equipment associated with forest management activities required to meet FSC certification standards (table 2) are borne by both MCDI and CFs. Reducing indirect financial costs of certification might allow further savings to both. From a financial standpoint, 33% of total expenses for operating the CFs were for planning and maintenance; 12% for security and monitoring; 11% for silviculture; 12% for timber sales; and 3% for administration. Not all these costs could be eliminated entirely, because the activities might be employed in uncertified CFs to some degree. Nevertheless, certification sets standards for management requirements that are higher than the legal minimum, so costs potentially could be reduced without certification. Additionally, 17% of expenses were for transfer payments to Village Councils for community development projects.

Forest managers largely recognized that their CFs are not currently financially self-sufficient; 93% surveyed said they did not generate enough money to pay forest management costs. The main direct financial benefit of certification would be a price premium for certified timber. As discussed below, forest managers perceived price premiums as a rare occurrence. These findings suggest that the main socio-economic benefits of certification are non-monetary, whereas costs are both monetary and non-monetary.

**Audit findings**

During the period 2013–18, the MCDI group certificate had annual audits that resulted in 40 findings classified as observations, minor CARs, or major CARs. Of these, twelve were related to FSC social principles 2-5. Seven of these were noted as observations; however, failure to respond could presumably have elevated them. The five social CARs included four minor and one major. Many findings were related to worker safety (5 observations), with fewer findings about forest monitoring (2 minor CARs), stakeholder consultation (1 observation and 1 minor CAR), unauthorized activities (1 observation and 1 major CAR), and cultural sites (1 minor CAR). All twelve findings were resolved to the auditors' satisfaction within two years.

Worker safety accounted for the most audit findings and resulted in concrete improvements, according to follow-up audits. Two dealt with ensuring all CFs have documents and training on proper procedures regarding timber harvesting. Two related to provision of adequate equipment for workers, specifically safety boots and shelter from rain during fieldwork. The final observation concerned a workplace accident during log loading, which resulted in multiple investigations, stakeholder consultation, new documents and procedures, and additional training.

Audit findings regarding stakeholder consultation, unauthorized activities, and cultural sites are particularly important to indigenous and traditional peoples' rights. The two stakeholder consultation findings pertained to delayed implementation of planned general forums at the regional/group level; neither appeared to be focused on local issues. One finding of unauthorized activities related to felling of a tree that should have remained standing, which occurred to make easier the felling of a harvestable tree. The second involved encroaching farmers from a neighbouring village. The village with the certified CF was found to have legal tenure over the area, and the encroaching farmers were evicted through a legal process. Resolution of the issue was eased somewhat by agreeing to pay villagers from the neighbouring village to assist in forest patrols. The finding related to cultural sites was a failure to document and include on a map known burial and other locally-important sites in some CFs. No timber harvest or other potentially damaging activities had occurred in these areas at the time of the audit, but demarcation was deemed necessary to prevent future mistakes or misunderstandings.

**Perceived net value of management activities**

Forest managers surveyed ($n = 132$) were asked whether eight activities (table 2) associated with certification were not worthwhile (-1), neutral (0), or worthwhile (1) (figure 2). A 'worthwhile' activity indicates a perceived positive net value, which might mean high benefit, low cost/ difficulty, or both. All eight activities had positive values, indicating that, on average, forest managers thought they were more worthwhile than not (figure 2). Still, some were more highly rated than others. The four perceived as being most worthwhile were not statistically different from each other: first aid provision, record keeping, training, and road repair and maintenance. Harvest supervision was intermediate but not statistically different from several other activities. The three lowest rated (least worthwhile) activities on average were not statistically different from each other either: forest patrols, biodiversity monitoring, and controlled burning.

FIGURE 2 *Average ratings of management activities, from worthwhile (1) to not worthwhile (-1), based on a survey of forest managers (*n *= 132). Superscript letters indicate statistical significance (variables that share one or more letters have no statistically-significant differences in response levels)*
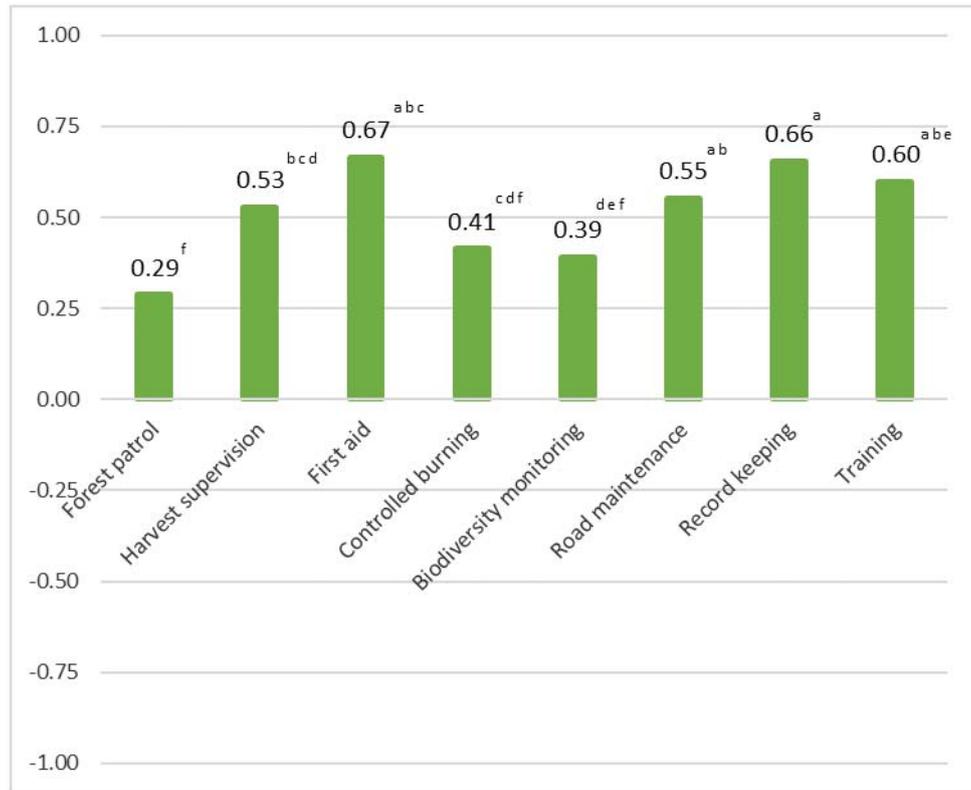


Managers explained their ratings by describing the benefits and drawbacks of each activity (appendix). They acknowledged that all activities entail financial costs, such as paying for labour, food, transport, and equipment. Many also acknowledged that MCDI helps pay these costs. Thus, the focus was on forest managers' perceptions of the benefits of each activity versus the challenges associated with performing them.

The four activities ranked as most worthwhile were also those considered to have no challenges associated with them according to the highest percentage of survey responses (trained first aid provider, 64%; record keeping, 54%; training, 75%; and road repair and maintenance, 32%). This suggests that the activities viewed most favourably overall were those with the lowest associated difficulty, though their benefits were also widely recognized. Nearly all managers valued having first aid immediately available when injuries, accidents, or emergencies occurred. Record keeping was valued for creating a record of past activities that could be drawn on to meet information needs. The main benefits of training were identified as general education, learning new information and skills, and learning how to manage the CF. Of the four activities deemed most worthwhile, road repair and maintenance entails the hardest physical labour: removing fallen trees, levelling, and repairing erosion. Although it had the lowest percentage of respondents reporting no challenges among the four activities, it was valued for helping people travel more easily and quickly through the forest, including for timber harvest activities and forest patrolling.

Managers deemed harvest supervision important to ensure that harvests are done according to established procedures and agreements. Its main drawbacks were the difficulty of selecting, measuring, and harvesting trees; the demands of being in the forest for long periods; and walking long distances.

Forest patrols, biodiversity monitoring, and controlled burning also entail physical labour in and around the CF. These activities, viewed as relatively less worthwhile, have benefits that are more ecological than social in nature. Forest managers said they were challenging because they involve long periods of walking in the forest, and sometimes sleeping there overnight with limited equipment. Several also considered this work to be dangerous owing to potential encounters with wild animals, poachers, and illegal loggers. Nevertheless, all respondents identified benefits of these activities that outweighed the challenges (figure 2; appendix), especially their conservation and forest protection benefits.

**Perceived social and economic benefits and challenges of certification**

Prior to questions about benefits and drawbacks of certification, forest managers were asked to explain their understanding of FSC certification and how certified CFs differ from those that are not certified. Forest managers were at least moderately well-versed in the meaning of certification and its implications. Thirty-three percent of managers explained that certification entails managing forestlands according to a set

of standards, criteria, and procedures. Additionally, 6% noted that certification requires external audits to verify compliance, 11% that certified timber can be sold at a higher price than uncertified, and 7% that certified wood can be sold on international markets. Other responses included factors that could be true of both certified and uncertified CFs, but generally were related to compliance with rules and regulations: existence of and compliance with bylaws and a management plan (28%), timber harvest following laws, bylaws, and rules (15%), boundary demarcation (13%), and forest patrols (10%). A final group of responses related to recognition of tenure: community authority to manage (13%), receive revenue from (5%), and generate community development from (4%) the CF; and government recognition of the CF (6%). The central theme that emerged from the survey was that forest managers perceived certified CFs as being better managed and in better condition than other forestlands.

Forest managers were then asked to rate statements about the frequency with which potential social and economic benefits and drawbacks of FSC certification occur (figure 3). The most frequently perceived benefit was better recognition of, and support for, their community by district, regional, or national governments. This was followed by better performance of administrative tasks, and pride in the community for having an FSC-certified forest. The next most frequently perceived benefits were attracting visitors who have an interest in certified CFs, and managing the CF differently than it would be managed without FSC certification. Specifically, the majority perceived certified forests to be better managed

and in better condition than non-certified forests, and to be protected and managed sustainably for future generations. Less often perceived was attracting buyers interested in FSC-certified wood. Obtaining a price premium for FSC-certified timber was rarely perceived as a benefit of certification.

Despite acknowledging several benefits of certification, forest managers also perceived drawbacks or challenges (figure 4). The drawback most often perceived was that certification made their communities dependent on partner organizations such as MCDI and outside donors for financial support. Other drawbacks often perceived were the expense of obtaining and maintaining certification; the additional workload certification creates; and restrictions on where and how much timber can be sold. The remaining drawback – difficulty in understanding the requirements of FSC certification – was only rarely perceived by forest managers.

When asked whether to discontinue FSC certification to cut financial costs and reduce the drawbacks of undertaking activities required by certification, 130 forest managers (98.5%) said that MCDI should continue certification, and 2 were unsure. The most common reasons cited for retaining it included higher value of forest products due to greater access to international markets, revenues to invest in community projects, and forest conservation for future generations. Less common reasons included training and continuing education, receiving concrete rules and guidelines that can be applied in practice, obtaining national and international recognition, and protecting village forestlands from appropriation through more secure tenure.

FIGURE 3 *Perceived frequency of potential benefits of FSC certification, based on a survey of forest managers (*n = 132*). Superscript letters indicate statistical significance (variables that share one or more letters have no statistically-significant differences in response levels). 0 = never, 1 = rarely, 2 = often, 3 = always*

FIGURE 4 *Perceived frequency of potential costs of certification, based on a survey of forest managers* (n = *132*). *Letters indicate statistical significance (variables that share one or more letters have no statistically-significant differences in response levels). 0 = never, 1 = rarely, 2 = often, 3 = always*
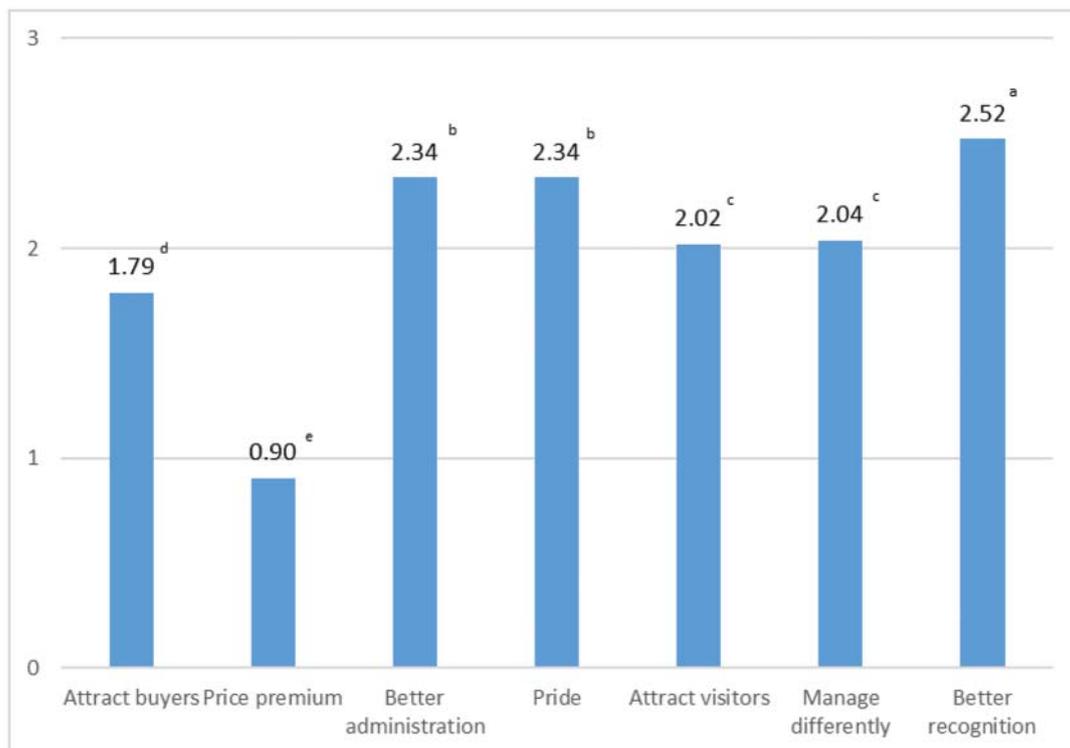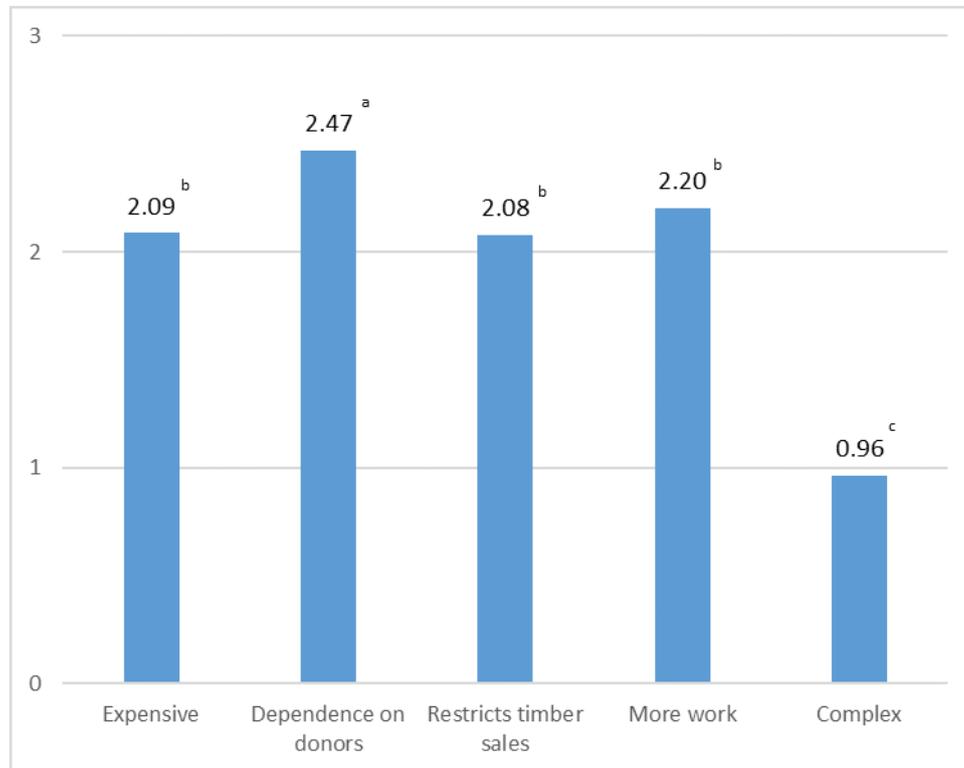


## DISCUSSION

This research explored perceived and actual impacts of certification on communities of traditional peoples who manage CFs to increase understanding of its social and economic costs and benefits, and to assess whether and how it can help traditional peoples engaged in forest management. A number of benefits to traditional peoples associated with certification were identified, as were costs.

### Employment conditions

Consistent with FSC Principle 2, audits showed that certification has had a positive impact on worker safety in the MCDI project area, which forest managers value. Most work in CFs is performed by village residents, usually forest managers, except for actual logging operations (undertaken by the buyer with local oversight). The FSC audits ensured MCDI and forest managers provided necessary documents, training, and equipment to improve employment conditions and worker safety. Although audit reports noted some deficiencies in these areas and one workplace accident, concrete actions were taken to improve working conditions going forward.

Activities required by certification that forest managers thought most worthwhile were having a first aid provider present to administer treatment immediately when injuries or illness occurred, and training activities that helped them increase their knowledge, skills, and capacity for forest

management. Road repair and maintenance were also deemed highly worthwhile, in large part because they make travel through the forest easier for managers and workers, including injured workers who need medical treatment at clinics quickly. These activities improve employment conditions in forestry work.

### Tenure and access rights

FSC Principles 3 and 4 address the forest tenure and access rights of indigenous and traditional peoples and local communities. Forest managers identified benefits from certification that help promote community forest tenure and access rights, including better recognition and support of their community and CF by government (at all levels) and other organizations. Attracting visitors to the community (national and international) was another frequently perceived benefit of certification that helped communities gain recognition and support for their CFs.

International research on community forestry suggests that managing CFs to meet conservation and sustainability goals can often have adverse impacts on community members' customary forest access and use rights (Hajjar *et al.* 2020). In the MCDI case, this does not appear to be a concern. Forest management plans for CFs under the group certificate allow villagers to extract non-timber forest products for cultural, domestic, and livelihood uses by requesting a free permit. Audit reports and forest managers noted no conflicts in this

regard. Furthermore, informal discussions with forest managers and MCDI staff suggested that forests on village lands outside of CFs, often closer to the village centre, are generally sufficient for villagers to access forest resources.

Regarding tenure, in Tanzania, CFs are supposed to be created on formally demarcated village lands, giving villages secure tenure and governance rights over them. Certification can help with enforcement of forest tenure rights. For example, the FSC audit reports noted a situation in which farmers from one village encroached upon the CF of a neighbouring village. Resolution involved a process of formal eviction followed by benefit sharing. Without the incentive to take corrective action to maintain FSC certification, and the recognition that certification generates at various levels of government and among external organizations, it may have been more difficult for this village to assert its forest tenure rights. Likewise, without certification, mapping and protection of a burial ground within the CF may not have occurred.

### Forest management to sustain community benefits

FSC Principle 5 states that forests should be sustainably managed so that they produce goods and services that benefit local communities over the long-term. Forest managers surveyed frequently acknowledged that they would manage their CF differently if it lacked certification. In general, managers perceived certified CFs to be in better condition than uncertified forests, better managed, and protected so that future generations could continue benefiting from them. These benefits included sustaining supplies of timber and non-timber forest products, providing other ecosystem services, and investments in community development projects financed by revenues from timber production.

### Financial costs of certification

FSC certification has direct and indirect socio-economic costs for CFs managed by traditional peoples. Past research indicates that financial costs are a substantial barrier to CF certification (Burivalova *et al.* 2017, De Pourcq *et al.* 2009). The direct costs create a financial burden and reliance on external donor and grant funding. Added to this are indirect costs of certification; costs associated with forest patrols, controlled burning, and biodiversity monitoring were the activities required by FSC certification whose perceived drawbacks and challenges were fairly high relative to their benefits. These activities comprise most of the Security and Monitoring and Silviculture costs, which together account for about 23% of forest management costs (Frey *et al.* 2021), and could be reduced or dropped if certification did not require them.

FSC Principle 4 states that forests should be economically viable so that they produce goods and services over the long-term that benefit local communities. If certification were discontinued and the above activities cut moderately, it could make a substantial impact on financial viability. However, these activities also help ensure that forests are well managed and protected to sustainably produce a range of goods and

services (another component of Principle 4). Eliminating certification might make CFs more financially viable, but none of the forest managers surveyed favoured doing so.

Past research also indicates that communities face substantial capacity and informational barriers to participating in forest certification (Alemagi *et al.* 2012). Notably, this survey showed forest managers did not believe that complexity of certification was a frequent challenge they faced. This may reflect the fact that MCDI has the most direct contact with auditors and FSC, as well as MCDI's ability to adequately train forest managers and translate certification concepts into practices they can apply. Forest managers viewed training and better record-keeping as two of the most worthwhile activities related to certification.

### Donor Dependence

The drawback of certification most frequently cited by forest managers was that it creates dependence on donors. At the same time, the financial support communities receive via MCDI, which helps pay forest management costs and allows Village Councils to spend roughly half of timber revenues for community development projects, comes largely from international organizations and is at least partially conditioned on maintaining certification (Frey *et al.* 2021). This raises important questions about the role of international donors in the CF certification context. Foundations and donors were deeply involved in the creation of FSC and the dissemination of forest certification in the 1990s and early 2000s (Bartley 2007). At that time, donors viewed certification as a way to shift the paradigm of the environmental movement regarding tropical deforestation away from 'negative' actions such as boycotts, towards a 'positive' movement to 'build a field' supporting sustainable management and local communities (Bartley 2007). However, once this field was built, what continuing responsibilities does the donor community have to support it? Furthermore, while donors may have the financial ability to seed or pilot projects and kickstart a movement, can they continuously and simultaneously support hundreds or thousands of CFs worldwide? These are questions for future debate and research, and are critical if certified CFs cannot achieve economic sustainability without this support.

### Weighing the benefits and costs

Overall, is continuing certification worth the cost? The potential direct benefits would be price premiums for certified timber, but this occurred only rarely during the time of this research. Domestic markets for FSC-certified wood in Tanzania are underdeveloped, and most buyers are generally unwilling to pay a price premium for certified wood products. To be competitive, MCDI has been marketing timber from the FSC CFs at the same official price set for timber harvested from government forest reserves, which are not certified. MCDI has been able to access some international buyers and niche markets for certified wood, and new markets are being explored that may offer additional potential. However, as of 2018 this was limited (Frey *et al.* 2021).

Past research suggests some communities drop certification because the ongoing benefits do not meet the ongoing costs, and it is challenging to maintain external financing (Ehrenberg-Azcárate and Peña-Claros 2020, Espinoza and Dockry 2014). Indeed, many benefits of certification have to do with the process of improving management and administration in order to achieve certification status (Humphries and Kainer 2006). Findings of this research suggest forest managers perceived benefits linked to continuing certification, rather than initially achieving certification. Therefore, if a community drops certification it may lose some of its benefits, such as hard-won standing among government officials, its attraction to visitors/tourists, and other social benefits. Therefore, forest managers wanted to retain certification.

Managers cited higher-value forest products (price premiums) through access to international markets as a reason for continuing certification despite the lack of price premiums to date, suggesting that there is a continued hope or aspiration of premiums for the future. This also may in part be because the costs are paid by MCDI and do not reduce timber revenues earned and distributed to village governments for investing in community projects. But managers also valued certification for other reasons, in particular its social benefits. The activities rated as most worthwhile were primarily social in nature, and in open-ended survey responses, forest managers generally noted social benefits associated with CF (whether or not certified): generating revenue for community development projects and conserving forests for future generations.

## CONCLUSIONS

This research examined the monetary and non-monetary socio-economic costs and benefits of FSC certification for traditional peoples in south-eastern Tanzania who produce timber from certified CFs. It was found that the direct financial costs of certification outweigh the financial benefits, but the perceived non-monetary and indirect financial benefits outweigh the costs. For example, adherence to FSC's social principles, reinforced via the audit process, was particularly important for promoting the health and safety of forest workers, helped traditional peoples enforce forest tenure rights, contributed to protection of culturally-important sites, and promoted good forest management practices that in turn help sustain a supply of forest goods and services that benefit community residents. Having a certified CF was also an important source of pride in communities. In addition, activities required by certification that forest managers thought among the most worthwhile – e.g., training activities and administrative record keeping – are important for managing CFs well, and might be discontinued or continued at a lower level without certification. Although forest managers primarily cited social benefits and activities associated with certification consistent with FSC Principles 2-5, they also noted forest conservation benefits, and conservation-related forest management activities were considered more worthwhile than not. In short, the forest managers who participated in our

study expressed an overwhelming desire to maintain certification, viewed its benefits overall as being more common than its drawbacks, and viewed the management activities required by certification as more worthwhile than not.

The primary barrier to continued FSC certification of CFs in south-eastern Tanzania is financial: revenue from timber production in CFs is insufficient to meet the costs of forest management, including certification, making communities dependent on support from outside donors – which they are aware of, and recognize as a drawback. If this outside support were not available and the cost of certification had to be taken from funds that would otherwise go to community development projects, it might change the calculus of the forest managers. Still, if FSC certification were eliminated for the 14 CFs to cut costs and increase financial viability, there would be trade-offs by potentially reducing the benefits of certification to traditional peoples. Furthermore, support from external donor organizations and potential business partners may to some degree depend on maintaining certification, as some organizations view it as an important control for ensuring environmental sustainability as well as promoting community development. Having the first FSC-certified natural forests in Africa that are managed as CFs by traditional peoples on village lands makes MCDI stand out in the eyes of donors. These indirect financial benefits from certification that come to communities via MCDI support are critical for sustaining CFs and the benefits they generate. These results lead to the conclusion that although significant financial barriers exist, forest certification in the context of community forestry can help indigenous and traditional peoples secure rights to forests, benefit from them, better engage in forest management and stewardship, and promote their human rights. The challenge is to seek ways of reducing financial barriers so that forest certification becomes a more viable tool for indigenous and traditional peoples to use in increasing rights to and benefits from forests.

## DISCLAIMER

The findings and conclusions in this publication are those of the authors and should not be construed to represent any official U.S. Department of Agriculture or U.S. Government determination or policy.

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APPENDIX

Open-ended explanations of the benefits and challenges of forest management-related activities required for FSC Certification provided by forest managers. The list below does not include verbatim responses, but rather shows similar answers grouped together post-survey by the research team.[a]

| Benefits | Percent of responses | Challenges | Percent of responses |
|---|---|---|---|
| Forest patrols | | | |
| Protect the forest and forest products, and prevent illegal harvesting, criminal activity, and forest destruction | 60% | It is difficult and tiring work: you spend a long time walking, especially hard in the rainy season when grasses are tall; some places are hard to get to; sometimes you must go out at night, in early morning, or on short notice; you get thirsty | 39% |
| Monitor overall forest conditions, including human activity, wildlife populations, tree growth, and when trees are ready to harvest | 37% | It is dangerous work: there may be wild animals, poachers, illegal loggers, illegal livestock, and patrollers don't have weapons | 26% |
| Identify good places for timber buyers to harvest trees so their needs are met | 1% | Transport to and from the CF is difficult if it is far from the village, and roads may be poor | 11% |
| | | There are no difficulties | 8% |
| | | The pay is poor and sometimes they must volunteer | 5% |
| | | Inadequate gear, such as tents if you must sleep in the forest overnight | 4% |
| **Harvest supervision** | | | |
| Ensure that the correct trees are harvested | 28% | It is difficult to select the trees, measure and harvest them, and to harvest without damaging other trees | 26% |
| Ensure that the correct amount of timber is harvested | 26% | None | 22% |
| Ensure customer follows harvest rules to prevent damage to the forest, ensure a sustainable harvest | 23% | It is a difficult job because it requires walking long distances in the forest, and getting to the forest can be difficult without transport | 15% |
| Ensure community benefits from timber harvests | 8% | It takes a lot of time – you must stay in the forest for long periods during tree selection and harvest, and it requires you to leave your personal activities behind | 12% |
| Ensure safety of the harvest, such as planning the direction in which trees are felled | 6% | Customers can be hard to please, sometimes they want to harvest more than they are allowed to, and they may not understand or follow harvest procedures and directions | 10% |
| Ensure customers get the trees they paid for and promote good relations between customers and village | 4% | It is dangerous work and there are wild animals in the forest | 5% |
| Understand the harvesting process and monitor progress of timber sales | 3% | There is insufficient equipment and taking care of equipment can be hard | 4% |
| Opportunity for harvest supervisors to earn money | 3% | There aren't enough funds to support the work, i.e., no food budget, it's a lot of work for little pay, sometimes you must volunteer | 4% |
| | | Training is needed because the supervisor must be competent | 2% |
| | | The community may not trust the harvest supervisor; there is a need to be transparent so that they understand his/her activities | 2% |

| Benefits | Percent of responses | Challenges | Percent of responses |
|---|---|---|---|
| **First aid provider** | | | |
| To provide immediate first aid in the forest when there are injuries, accidents, emergencies, or snake bites before going to the health clinic, or instead of going to the clinic | 93% | None | 64% |
| To look after the health of forest workers when they are in the forest | 3% | The work is difficult, for instance: walking long distances in the forest to reach forest workers, carrying the first aid kit, occasionally having to attend to more than one patient at once, and supervising work crews so that they avoid accidents | 15% |
| To provide safety guidance to forest workers during activities | 3% | Having to attend every work activity; there is often no need for first aid | 7% |
| To meet FSC requirements | 1% | You can't get the same level of care as in a health clinic because the provider doesn't have as much training and there is not enough equipment | 6% |
| There is no benefit | 1% | It is hard to move injured people out of the forest, especially if there is no transport available | 4% |
| | | If workers split up into groups, one provider is not enough | 3% |
| | | Volunteering your time | 1% |
| **Controlled burning** | | | |
| Protect the CF from wildfire; prevent fire from entering the forest | 62% | None | 24% |
| Reduce wildfire severity and impacts by causing fires to occur less often, spread more slowly, burn less hot, and become easier to control | 12% | It is difficult, i.e., knowing when to do it, knowing where to do it, ensuring all areas needing it are treated, completing it before fire season begins, creating the fire breaks | 24% |
| Protect biodiversity, including insects, wildlife, and habitat | 11% | It takes a long time and is tiring; you have to walk long distances and may have to leave home early and sleep in the forest | 17% |
| Stimulate grass growth, beneficial to animals for forage | 5% | It is difficult to supervise and control the fire to prevent unintended damage to the forest and homes | 12% |
| Help seeds germinate and promote growth of small trees | 5% | Being near the heat from the fire is uncomfortable | 9% |
| Improve forest conditions | 3% | There are not enough resources and capacity: i.e., labour, training, funding, equipment | 6% |
| Protect homes from fire | 1% | It is dangerous | 5% |
| | | Carrying and using the equipment is hard | 2% |
| **Biodiversity monitoring** | | | |
| Monitoring forest health | 28% | None | 17% |
| Monitoring forest growth | 22% | Walking in the forest at night | 14% |
| Observing and monitoring bird populations | 19% | Getting up early and walking in the morning | 13% |
| Observing overall forest conditions | 11% | It is dangerous and they lack weapons | 13% |
| Ensuring that the forest is being protected | 11% | Walking in the forest can be long and difficult | 11% |
| Monitoring animal populations and biodiversity | 6% | Sleeping in the forest at night | 11% |
| Earning money (by performing the work) | 1% | Lack of shelter | 8% |

| Benefits | Percent of responses | Challenges | Percent of responses |
|---|---|---|---|
| None | 1% | Insufficient resources, i.e., funds, transport, equipment | 6% |
| | | The work is difficult, i.e. walking transects, GPS | 5% |
| | | The work may be poorly done | 1% |
| **Road building and maintenance** | | | |
| They make it easier and faster for people and vehicles to travel through the forest | 34% | The work is difficult; i.e., cutting trees and removing them from the road, levelling roads, repairing erosion | 54% |
| They make it easier for forest monitors to patrol, helping to reduce crime | 30% | None | 32% |
| They are good for business, i.e. making harvesting timber and transporting logs easier | 20% | Insufficient equipment | 4% |
| There are environmental benefits – i.e., less erosion, less tree damage | 6% | It takes a lot of time and requires a lot of labour | 4% |
| Help keep people from getting lost in the forest | 4% | It's dangerous work | 2% |
| Help prevent wildfire transmission | 3% | Lots of trees are cut down | 1% |
| None | 3% | You have to pay people to do the work | 1% |
| | | Roads make the forest more accessible to illegal loggers | 1% |
| **Record keeping** | | | |
| Having a record of past activities | 58% | None | 54% |
| Having information readily available for responding to questions, reporting, providing guidance, and other needs | 18% | Lack of capacity and experience make it hard to do it well and easily; thorough training is needed | 21% |
| Providing information that can be used by others in the future | 14% | There is nowhere to keep the records | 13% |
| Taking better care of documents and not losing them | 4% | Records are hard to keep track of and easy to lose | 9% |
| Helping track income and expenses | 2% | Records can be hard to understand | 2% |
| Understanding trends over time | 2% | It is time consuming to keep records | 1% |
| Documenting CF boundaries | 1% | Insufficient equipment | 1% |
| Ensuring transparency | 1% | | |
| **Training** | | | |
| Learning how to manage the CF & conduct activities required for certification | 30% | None | 75% |
| Learning new things and new skills | 26% | Trainings can be hard to understand | 15% |
| Becoming more educated | 25% | It takes a lot of time and can interfere with personal activities | 6% |
| Improving skills and building VNRC capacity | 9% | It can be inconvenient – i.e., far away, bad timing | 3% |
| Learning more about the forest and its value | 7% | Low payment for attendance | 1% |
| Sharing knowledge with the community | 3% | | |

[a] Percentages indicate percent of total responses in each benefit or challenge category. The percentages do not always add up to 100 owing to rounding errors.