Chapter 21
Forest Certification in Boreal Forests: Current Developments and Future Directions

Constance L. McDermott, Marine Elbakidze, Sara Teitelbaum, and Maria Tysiachniouk

Abstract Forest certification has expanded rapidly in boreal forests as a means to verify responsible management. It was spearheaded in the early 1990s by civil society organizations concerned about the negative impacts of industrial forestry on biodiversity and the rights of Indigenous and local communities. Certification standards are agreed by multistakeholder groups and outline a set of environmental and social requirements. Forest companies that meet those standards can put a green label on their wood products, thus gaining market recognition for good forest practice. This chapter reviews the particular challenges facing certification in the boreal region and the ongoing debates about how best to address those challenges. It examines differences between certification schemes and variations in requirements across world regions on key issues, such as protecting the rights of Indigenous and local communities and management of woodland caribou. It finds, for example, that the recognition and protection of Indigenous rights are more comprehensive in Canada than in Russia. This highlights the political and dynamic nature of certification as it evolves and adapts to changing social and environmental contexts.

C. L. McDermott (✉)
Environmental Change Institute, School of Geography and the Environment, University of Oxford, OUCE 5 South Parks Road, Oxford OX1 3QY, UK
e-mail: constance.mcdermott@ouce.ox.ac.uk

M. Elbakidze
Faculty of Forest Sciences, Swedish University of Agricultural Science, Herrgårdsvägen 8, 739 31 Skinnskatteberg, Sweden
e-mail: marine.elbakidze@slu.se

Faculty of Geography, Ivan Franko National University of Lviv, Doroshenko str., 41, Lviv 29000, Ukraine

S. Teitelbaum
Département de Sociologie, Université de Montréal, Pavillon Lionel-Groulx, P.O. Box 6128, Stn. Centre-Ville, Montréal, QC H3C 3J7, Canada
e-mail: sara.teitelbaum@umontreal.ca

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21.1 Introduction

Forest certification is a system for labeling forest products produced in accordance with environmental and social standards of responsible forestry. Forest certification first emerged in the late 1980s and early 1990s in response to rising concerns over the negative impacts of industrial wood production, particularly in tropical and temperate old-growth forests. Tropical deforestation was accelerating at this time, as were conflicts over the logging of old-growth stands on the Pacific Coast of North America (Cashore et al., 2010). This era was also pivotal in the struggle over Indigenous rights to land and territory, with the adoption by the International Labour Organization's (ILO) of the Indigenous and Tribal Peoples Convention in 1989. The strong presence of Indigenous peoples and other local communities in forest areas around the world led to the inclusion of Indigenous rights and community well-being in forest certification standards from the outset of the forest certification movement.

More recently, global attention has expanded to encompass boreal forests. These forests contain nearly the same percentage of intact forest landscapes as the tropics and hence are considered important biodiversity "hot spots" (Potapov et al., 2008). They are also home to large numbers of Indigenous and forest-dependent communities. As industrial harvesting in the boreal region intensifies, large boreal forest companies are under increasing pressure to become certified to demonstrate responsible practice that protects biodiversity and does not harm the rights and livelihoods of local communities. This pressure is reflected by the countries with the largest boreal forest areas, such as Canada and Russia, leading the world in area of certified forest (FSC, 2019, PEFC, 2020).

Forest certification is frequently referred to as *nonstate market-driven* (NSMD) forest governance (Cashore et al., 2004) because it is spearheaded by nongovernmental actors and is focused on market incentives. The oldest global scheme is the *Forest Stewardship Council* (FSC), which was founded in 1993 by a consortium of environmental and social nongovernmental organizations (NGOs) and concerned members of the wood products and retail sectors. These stakeholders were frustrated by the failure of governments to agree on a global forest convention that would protect the world's forests and by the limited effectiveness of boycotts and other negative pressure campaigns to arrest forest loss (Auld et al., 2008). They were also alarmed by the growing number of private labels and claims being made about the sustainability of wood products and the lack of transparency about what was behind these claims (Elliott, 2000).

Hence, the FSC was designed as a global multistakeholder institution that sets environmental and social standards of responsible forest practice, e.g., see Pattberg

M. Tysiachniouk
University of Eastern Finland, Yliopistokatu 2, P.O. Box 111, FI-80101 Joensuu, Finland
e-mail: maria.tysiachniouk@uef.fi

Nelson Institute, University of Wisconsin-Madison, 550 N. Park Street, Madison,
WI 53706-1491, USA

(2005). It is a membership organization divided into three chambers—environmental, social, and economic—each with equal voting power. Voting power is likewise evenly split between the global North and South. At the international level, the FSC has created ten principles and criteria (*FSC P&C*) for good responsible forest management (FSC, 2015a). They are supplemented with national indicators developed by national working groups to guide the interpretation of the FSC P&C in particular country contexts.

All FSC standards are subject to revisions every five years to improve and update their relevance to contemporary forest challenges (FSC, 2008). As discussed in more detail in Sect. 21.3, the FSC has recently introduced a set of *international generic indicators* (IGIs) to harmonize standards across countries. This follows a general trend among certification standards toward increasing detail and prescription to ensure consistent interpretation (Judge-Lord et al., 2020). Debates over the correct level of harmonization between national standards and the correct level of prescription or flexibility in certification standards have generated considerable conflict and dynamism in certification rule-making over time.

In addition to its multistakeholder standards, the FSC's claim to legitimacy is also based on a system for accrediting and monitoring third-party auditors to assess the compliance of forest companies to its standards. It likewise oversees the *chain of custody* (CoC) of wood products leaving certified forests and entering the marketplace, requiring formal monitoring and verification of product claims involving the FSC label.

Despite the FSC's efforts to serve as the single go-to label for responsible forestry, its lack of government authority and reliance on market support leave it open to competition from other schemes. In particular, the *Programme for the Endorsement of Forest Certification Schemes* (PEFC) has gained widespread industry support as the FSC's main competitor. The PEFC is a global organization that endorses national forest certification schemes which meet its rules and guidelines. Over time, the FSC and PEFC have competed with each other for market dominance, engaging in claims and counterclaims about the relative stringency or appropriateness of their respective standards and procedures (Judge-Lord et al., 2020). As of April 2020, the FSC had certified roughly 211 million ha in 82 countries compared with PEFC having certified about 325 million ha in over 70 countries (FSC, 2020c).

Whatever the differences between the FSC and PEFC, both schemes share several core challenges. First, the distribution of forest certification worldwide is highly uneven, with most certified areas located in developed countries in the global North and involving large, high-capacity producers able to (1) meet the extensive requirements for formal documentation of forestry management planning and forestry impacts and (2) absorb the high costs of annual auditing. As the relatively lucrative wood product markets in developed countries are increasingly demanding certification, this can exclude many small-scale and community-based producers from these markets, even if these producers practice responsible forest management. Indeed, these kinds of inequalities are common to sustainability certification across a range of sectors beyond the wood products industry (McDermott, 2013).

In part because of these inequalities, the presence of large areas of forest not managed primarily for timber production, as well as factors such as low demand for certified wood products and the low industrial capacity in the global South (Ebeling & Yasué, 2009), growth in certified forest area worldwide has slowed (FSC, 2020c). This fuels concern that, even if certification succeeds in promoting good practice within certified forest areas, it could displace rather than eradicate bad practices beyond its borders. It also feeds debates over the difficulty and stringency of certification standards—standards that are very stringent and expensive to implement may have limited market uptake, whereas standards that are very flexible may do little to change status quo forest practice (Cashore et al., 2007a). Yet regardless of these ongoing challenges and debates, some of certification's greatest impacts may be on forest governance as a whole through the creation of new norms for stakeholder participation and the protection of a wide range of forest values (Auld et al., 2008).

All these issues serve as a backdrop to the particular case of certification in boreal forests. The next section outlines some of the key forest management challenges relevant to boreal forests, including respecting and protecting the rights of Indigenous peoples and local communities and protecting the remaining large, intact boreal forest landscapes. We then delve into the FSC's recent introduction of IGIs and discuss the pros and cons of harmonizing standards between countries and how harmonizing efforts have played out differently across the boreal forest countries of Russia, Canada, and Sweden. This is followed by a discussion of other key trends, including the expansion of forest certification to encompass additional environmental priorities, e.g., climate change and ecosystem services, the role of new monitoring technologies to improve credibility and lower costs, and the efforts to increase access to certification for smallholders and low-intensity forest producers. We then conclude with some general reflections on the dynamic and evolving nature of forest certification in boreal forests and beyond.

21.2   Key Challenges in the Certification of Boreal Forests

21.2.1   *Respecting the Rights of Indigenous Peoples*

Both major forestry certification systems in boreal regions, the FSC- and PEFC-endorsed national certification schemes, address the rights of Indigenous peoples in their forest management standards. However, the conciliation of industrial forestry with the livelihood practices of Indigenous peoples represents a significant challenge and land-use conflicts are frequent (Huseman & Short, 2012; Johnson & Miyanishi, 2012; Tulaeva & Tysiachniouk, 2017). In some countries such as Canada and Sweden, legal systems provide the foundations for arbitrating relationships between Indigenous peoples and resource development; however, there is also a role played by market-based initiatives such as forest certification.

The FSC has been described as leader in the area of Indigenous rights because of its governance structure and standard design (Mahanty & McDermott, 2013; Meadows et al., 2019). Within governance structures at international and national levels, Indigenous peoples are usually represented within the FSC's social chamber. In Canada, however, a fourth Aboriginal chamber was created. In 2013, the FSC International Board created a *Permanent Indigenous Peoples Committee* to advise the board on issues affecting Indigenous rights. In regard to standards, the international FSC P&C include "Principle 3: Indigenous peoples' rights" along with multiple associated criteria, such as requirements to uphold the legal and customary rights of Indigenous peoples through *Free, Prior, and Informed Consent* (FPIC), adherence to United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the International Labor Organizations' (ILO) Convention 169, and the protection of special sites and traditional ecological knowledge (FSC, 2015a).

The 2018 international PEFC benchmark standard also calls for compliance with ILO 169, UNDRIP, and FPIC under Sect. 6.3 on "compliance requirements" (PEFC, 2018a). The PEFC's endorsement of national certification schemes requires demonstrating compliance with the PEFC benchmarks, but there is flexibility in translating these benchmarks into national standards (Judge-Lord et al., 2020). In Canada, consultation requirements are framed around stipulations for developing Indigenous policies, conferring with Indigenous peoples, and responding to inquiries and concerns (Smith & Perreault, 2017). In Sweden, the PEFC standard addresses Sami rights through provisions requiring large forest owners to obtain agreements through consultation with Sami peoples before establishing exotic species on sites of special importance to reindeer herding and requiring compliance with provisions from the Swedish Forest Act (PEFC Sweden, 2016).

Only a few studies have looked at the impacts of certification on Indigenous peoples in boreal regions, and some only address Indigenous rights as part of a larger suite of issues. Most of these studies have focused on the Forest Stewardship Council rather than the PEFC.

Research addressing FPIC in Canada includes a study by Mahanty and McDermott (2013) that compared the FSC FPIC standards and implementation in Canada and Brazil. These authors found that contextual factors, such as the strength of government laws and policies, play a key role in either supporting or undermining FPIC requirements. Similarly, Teitelbaum et al. (2019) and Wyatt and Teitelbaum (2018) provided examples of the politicization of FSC certification resulting from a "regulatory gap" between the FSC's Indigenous consent requirements and governmental practices of consultation. In one case, this culminated in a high-profile dispute between a well-known forestry company and an Indigenous nation (the James Bay Cree), which, while instigated by an FSC-certification decision, was only resolved through high-level negotiations at a governmental level (Teitelbaum et al., 2019).

In another Canadian study, Masters et al. (2010) found that the FSC's Indigenous requirements are some of the most challenging to achieve, observing that Principle 3 accrued the second-largest number of mandatory corrective action requests compared with the nine other FSC principles. A review of audit reports and an in-depth qualitative study of one audit by Teitelbaum and Wyatt (2013) showed a

tendency for auditors to issue minor nonconformances and to accept evidence of "work in progress" rather than outright compliance. Several studies have also indicated that Indigenous-owned forestry companies, many of which are small-scale, face barriers to certification because of the high financial costs and administrative burdens associated with certification (Collier et al., 2002; Mahanty & McDermott, 2013).

In regard to PEFC in Canada, a study of the PEFC-endorsed Canadian Standards Association (CSA) forest certification scheme found evidence that Aboriginal organizations were not satisfied with CSA standards for Indigenous consultation. As a result, the National Aboriginal Forestry Association withdrew from participating in the CSA review process because of the lack of a distinct Aboriginal criterion (Smith, 2004; Tikina et al., 2010). For both the PEFC and FSC, Indigenous communities face challenges related to insufficient knowledge and information concerning forest certification (Johansson, 2014; Kant & Brubacher, 2008).

In Russia, a recent study examined the effects of FSC certification on the Evenk community in Tokma, Siberia. In this remote community, local consultations conducted as part of efforts to meet the FSC Russia standard led an FSC-certified company to construct a winter road for local residents, contribute to renovations of the post office and airport, provide essential medical equipment, and respond to community requests for lumber (Tysiachniouk & Henry, 2019).

Several studies in Sweden focus on the perceptions and experiences of Sami reindeer-herding organizations having FSC certification. Overall, the research findings reveal mixed reactions. On the one hand, there is a recognition among Sami interview respondents that the FSC has improved the consultation processes. For example, the introduction of FSC requirements increased the geographic area included under forestry industry consultations to include those forests used during the winter—forests previously excluded from the consultations required under the Swedish Forest Act (Sandström & Widmark, 2007; Keskitalo et al., 2009). Another study, focused on a single Swedish county, found that Sami respondents felt forestry companies had become more aware of issues faced by reindeer herders (Johansson, 2014). On the other hand, several studies report dissatisfaction among Sami respondents with the consultation processes owing to a lack of influence (Keskitalo et al., 2009). Sami respondents in Johansson's study (2014) reported that current forest management practices were resulting in the progressive degradation of key grazing habitat because of the lack of real integration of Sami concerns, creating "very pessimistic views on the long-term effects of FM [forest management] in this county" (Johansson, 2014, p. 184). Similarly, in a study by Sandström and Widmark (2007) covering territories under both government consultation and FSC regimes, respondents from reindeer-herding communities described consultations as a form of "information sharing" or "dialogue" with little real influence over decisions.

21.2.2 *Local Forest-Dependent Communities*

The certification standards of both the FSC and PEFC cover a range of issues relating to local communities, including the protection of local people's livelihoods, workers' rights, and the protection and use of nontimber forest products. However, the ways in which local communities value and use local resources vary significantly among countries and regions.

In Russia, approximately 20% of the population lives in forested areas. Many of these communities depend directly on forest resources (e.g., mushrooms, berries, and bushmeat) for their basic subsistence. Life in these rural areas is affected by general institutional turbulence at the national level, the restructuring of Russian state agencies with constantly changing jurisdictions, and the domination of large international companies in the forest sector (Kotilainen et al., 2008). Local people in the more marginalized and remote areas suffer from poor infrastructure, poor development of local small and medium businesses, and severe unemployment. Logging rights to Russia's state-owned forests are generally allocated to large-scale timber concessions and generate minimal local employment (Tysiachniouk & McDermott, 2016). Although local workers may be employed for low-skill, low-wage work in harvesting and wood processing, skilled workers, such as those required to run harvesters and forwarders, are typically hired from outside the local communities (Tysiachniouk, 2012).

Despite forest certification standards calling on forest companies to consult with local communities about logging impacts, research on standards' implementation suggests such consultation is often minimal. As standard practice, companies may make formal announcements in the newspapers to invite local residents to consultations; however, attendance at such meetings is low. Those who do attend may focus on grievances such as road damage and dust from logging activities, poor village infrastructure, high prices for sawed wood, and the lack of firewood, but many of these complaints are likely to go unresolved (Tysiachniouk, 2012).

Some FSC certificate holders employ social experts in community organizing to better comply with certification requirements, and there is some evidence this has led to significant improvements in community outreach (Maletz, 2013; Maletz & Tysiachniouk, 2009; Tysiachniouk, 2012). These improvements have been achieved through the extensive and proactive engagement of community members, informing them of the FSC standards and what rights they have within the FSC system (Tysiachniouk & Henry, 2015; Meidinger & Tysiachniouk, 2006). Such cases are, however, more the exception than the rule, and most communities lack the institutional capacity to engage effectively with companies in the absence of external support (Keskitalo et al., 2009; Tysiachniouk, 2012).

Whereas there is limited evidence that the FSC's generalized requirements for community consultation have had much effect on forest practices in Russia, FSC Principle 9 requirements for designating socially valuable *high conservation value* (HCV) forests have shown more promise. In some cases, villagers have participated actively in the HCV process to allocate places on company leaseholds for the special

protection of sites where communities gather mushrooms and berries or where there are historically valuable territories, such as battlegrounds, cemeteries, and places of religious significance (Maletz & Tysiachniouk, 2009; Tysiachniouk, 2012; Tysiachniouk & Henry, 2015). There has been less success, however, in allocating hunting grounds as HCV. Hunters are often reluctant to disclose their hunting sites, which may be spread across many localities and include sheds that are considered illegal in Russian legislation. Similar to the findings on Principle 3 and Indigenous rights detailed above, these observations testify to the importance of legal recognition of customary rights in shaping the implementation of FSC standards (Shmatkov et al., 2014).

Apart from Russian-based studies, there is very little research looking at the certification impacts on communities outside of Indigenous communities, a gap acknowledged in the literature (Sténs et al., 2016). One Swedish case study revealed a concern among some local stakeholders that attention to Indigenous rights and forest protection would adversely impact forestry activities, in turn having negative consequences for local economies. Another study from Sweden found that private forest owners were favorable to certification, in part because of the perception of offering enhanced protection of social values such as recreation (Bjärstig & Kvastegård, 2016). In Canada, a study from Québec looked at the role of stakeholders in the implementation phase of certification processes—including the FSC, CSA, and the United States–based Sustainable Forestry Initiative (SFI) systems—through a province-wide survey. Respondents reported that although certification created opportunities for participation, this was at a consultative level; the respondents did not perceive that they had significantly influenced decisions (Roberge et al., 2011).

21.2.3 Intact Forest Landscapes

As discussed in the introduction to this chapter, the conservation of highly valued habitats, such as old-growth forests, has been a driving concern of forest certification since its inception. This concern has been addressed under FSC Principle 9, which initially designated "large" and relatively undisturbed "landscape-level forests" as another key type of HCV forest (FSC, 2002). More specific requirements for the protection of *intact forest landscapes* (IFLs) have since been introduced into the 2015 FSC P&C and associated guidance documents (FSC, 2015a, 2020a).

The evolution from the protection of *large landscape-level forests* (FSC, 2002) to the more precise concept of IFLs (FSC, 2015a) can be traced to the work of Greenpeace Russia in defining IFLs within Russian boreal forests (Yaroshenko et al., 2001). IFLs are defined as a natural environment having no signs of significant human impacts or habitat fragmentation. IFLs are also of sufficient size to contain, support, and maintain a viable complex of native biodiversity, including sufficient populations of a wide range of genera and species (Potapov et al., 2008). An operational definition of IFL has been developed that defines IFL as a territory having an area of at least 500 km^2 (50,000 ha) and a minimal width of 10 km, located within today's

global extent of forest cover, and containing forest and nonforest ecosystems that have been minimally influenced by human economic activity (Yaroshenko et al., 2001). IFLs, as the last remaining large unfragmented forest areas on Earth, have been identified as critical for biodiversity conservation, climate mitigation, the maintenance of ecological processes, and the supply of ecosystem services at multiple scales (Watson et al., 2018).

IFLs are estimated to cover 23% of forest ecosystems (13.1 million km^2). Two biomes hold almost all these IFLs: dense tropical and subtropical forests (45%) and boreal forests (44%). Three countries—Canada, Russia, and Brazil—contain 64% of the total IFL area (Potapov et al., 2008). Approximately 19% of the global IFL area is under some form of legal protection; however, about 80% of IFLs are open for any human activities, including mining, oil and gas extraction, and commercial forestry. Currently, powerful short-term economic interests, intensified forest management, natural resource extraction, globalization, and other drivers create multiple challenges for the maintenance of IFLs (IPBES 2018). According to Potapov et al. (2017), industrial timber extraction, resulting in forest landscape alteration and fragmentation, was the primary cause of the global decline of IFL area. From 2000 to 2013, the global IFL area decreased by 7.2%, a reduction of 919,000 km^2. Three countries are responsible for 52% of the total loss of IFLs: Russia (179,000 km^2 lost), Brazil (157,000 km^2), and Canada (142,000 km^2) (Potapov et al., 2017). Environmental NGOs have played a vital role in using forest certification schemes to reduce logging in the remaining IFLs.

During the last decade, the FSC certification system has been widely criticized for failures to protect IFLs, and several prominent environmental NGOs (e.g., Greenpeace International, Greenpeace Russia) have left the FSC processes in protest of the inability of the FSC to stop logging in IFLs. In 2014, the FSC approved Policy Motion 65 to strengthen the protection of IFLs within their forestry standards. In 2017, the preliminary directives came into effect, instructing that forest management cannot reduce an IFL below 50,000 ha or impact more than 20% of IFLs within a forest management unit. World Wildlife Fund (WWF)-Russia with the FSC Standards Development Group invented another approach to IFL protection, called *80-50-30*. This approach requires forest managers to set aside 80% of the area of an IFL within their forest management unit when a rigorous IFL zoning process with relevant stakeholders is not conducted. If the manager is committed to reaching an agreement with stakeholders and conducting such a process—the process should identify priority areas for conservation and adapted methods for timber harvesting in the remaining areas—then the threshold of full protection can be brought down to 50%. If the forest manager is also willing to jointly lobby with stakeholders to have the IFL "core area" set aside as an officially protected area, and this is successful, then the threshold can go as low as 30% (WWF, 2018).

However, at least four challenging issues have provoked conflicting debates among relevant stakeholders. The first relates to the agreed threshold of 50,000 ha. Some stakeholders, including academics and environmental NGOs, claim that this threshold is inadequate to meet the very broad objectives of protecting all biodiversity and ecological processes, particularly in boreal forests (Bernier et al., 2017; Venier

et al., 2018). For example, the scale at which the most extensive natural processes, e.g., fire and insects, occur and the size of habitat required by some species, e.g., woodland caribou, is likely greater than 50,000 ha (e.g., Venier et al., 2018). Thus, the rigid IFL requirements are useful for global tracking of IFLs but may be inadequate for biodiversity conservation at the regional level.

The second challenge concerns contrasting opinions on acceptable measures related to the conservation and protection of IFLs. Some stakeholders, mainly forest companies, complain about the prescriptiveness of the FSC resolution in Motion 65 that could protect the vast majority of IFLs, which might negatively affect their economic viability without using some portion of the IFL on their territory. Other stakeholders, e.g., Greenpeace Russia, argue to the contrary that the FSC should demand a stop to all logging of IFLs.

The third challenging issue highlights the difficulty in translating the global-scale conceptual idea of IFLs to a practical operational definition at a regional scale. This is particularly relevant for countries where the large majority of forests are publicly owned, such as in Russia or Canada. The challenge is that forest operators do not have the authority to prevent logging of IFLs located outside of their forest management units or to stop resource extraction or the creation of roads from other industries or governments within their leased areas.

Finally, the fourth challenging issue is integrating the protection of IFLs with traditional land uses of boreal forests by Indigenous communities. For example, many IFLs are used by Indigenous communities for their traditional activities, such as hunting, fishing, and wild food/medicine gathering. In Canada, for example, a critical element of the IFL debate has become the concept of *Indigenous Cultural Landscapes* (ICL) developed by representatives of First Nations communities. The ICL concept seeks to ensure that Indigenous communities' rights, interests, and values, including economic development, are considered when decisions are made about land use in FSC-certified forests.

21.3 To Harmonize or Not to Harmonize?

21.3.1 Debates Over Consistency Versus Diversity

21.3.1.1 FSC Versus PEFC and Differences Within These Schemes

Two obvious conclusions can be drawn from the above debates: (1) the environmental and social context of a particular country or company matters in shaping what standards are appropriate or achievable, and (2) there is considerable variation in stakeholder perspectives on the best way to address key challenges for boreal forest certification. Yet global certification labels such as the FSC and PEFC were designed to communicate a consistent, global message of good forestry performance, wherever their point of origin. This creates tension between both schemes and countries.

FSC and PEFC compete for the reputation of having high standards and attracting companies to their schemes through affordable prices and achievable requirements. At the same time, both FSC and PEFC face pressure to justify to consumers and producers any variation in standards between countries. The FSC addresses this balance between global consistency and local context by supplementing its international P&C with national indicators. The PEFC system, which is more decentralized, endorses national schemes based on their consistency with PEFC guidelines but does not require that all countries adopt these guidelines verbatim.

21.3.2 How is the Consistency/Diversity Tension Playing Out in Russia, Canada, and Sweden?

The following case studies draw on research within the FSC system to compare and contrast how this tension between ensuring global consistency, keeping costs down, and accommodating diversity in the local context have played out in regard to key challenges in the boreal forest countries of Canada, Russia, and Sweden. We take as our starting point the most recent FSC standards revision processes and the obligation for national standards to integrate the FSC's new IGIs as a means to strengthen and harmonize national standards. It was a FSC requirement that each country either adopt the IGIs verbatim or justify why they should be adapted, dropped, or have new indicators added (FSC, 2016). The differing responses of stakeholders in these countries and the resulting differences in their revised standards speak to the diversity of contexts in which boreal forest certification takes place. At this chapter's writing, Russia and Sweden had yet to implement their new standards, whereas Canada had just started transitioning to its new standards on January 1, 2020. It remains to be seen how and to what degree differences in standards requirements result in differences in on-the-ground performance.

Box 21.1 Comparing the Treatment of FPIC in FSC in Russia, Canada, and Sweden

A study by Teitelbaum et al. (2021) reveals some differences between the treatment of *Free, Prior, and Informed Consent* (FPIC) within Forest Stewardship Council (FSC) certification standards in three boreal countries: Canada, Russia, and Sweden. The study looks specifically at the process of developing the latest national FSC standards in these three countries, which also have the highest proportion of FSC-certified forests in the world. These national standards, which are elaborated by a chamber-balanced group of FSC members, are based on the new version of FSC's Principles & Criteria (P&C) through the addition of context-specific national indicators. The process was guided by FSC's international generic indicators (IGIs). The new P&C include a

strengthened commitment to FPIC for both Indigenous and local communities through adherence to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and through the development of a process covering information sharing, impact assessment, and explicit consent for management operations.

The researchers conducted interviews with participants in standard development processes ($n = 49$) in all three countries and compared the written standards approved by each nation. Teitelbaum et al. (2021) found a different dynamic within each of the standard development groups (SDG). In Canada, much emphasis was placed on building consensus around a "relational" approach to FPIC, meaning a process that emphasizes building meaningful relationships between Indigenous peoples and forestry companies through ongoing engagement. The resulting national standard stays close to the wording of the IGI, although at times adopts stronger language, e.g., terms like "dialogue" rather than "informing" Indigenous communities. FSC Canada also pushed for more flexible timelines associated with FPIC processes to accommodate differences in time, capacity, and priority among Indigenous communities.

In Russia, negotiations around FPIC were more conflictual. Members of FSC Russia's economic chamber resisted the integration of FPIC for both Indigenous and local communities on the basis that FPIC could contravene Russian law and result in Indigenous or local communities placing a veto on forestry operations. The resulting national standard in Russia is also more restrictive in its application of FPIC. It limits the applicability of FPIC to customary rights that are *not governed by law.* It also outlines several circumstances where FPIC need not apply, such as when FPIC obligations conflict with other requirements of the standard (e.g., causing significant job losses) or when obtaining FPIC will lead to a conflict between the forest company and rights-holders or between different groups of rights-holders.

In Sweden, where Sami reindeer herding overlaps with forestry operations, a subgroup of the SDG was instrumental in developing appropriate wording for the indicators. The approach taken in Sweden was much more prescriptive, designed to integrate FPIC into an existing process of participatory planning that is applied uniformly across all Sami reindeer-herding territories. The national standard sets out a more operational approach to engagement around FPIC, including specifying which activities should be included under participatory planning, what the timelines should be, and what conflict resolution processes are to be followed in cases where FPIC has not been achieved.

Box 21.2 Comparing the Treatment of Caribou and Reindeer Habitat in FSC Canada and FSC Sweden

A paper by Elbakidze et al. (2022) analyses why, and to what degree, current FSC standards harmonization efforts at the global level have changed because of national contextual factors. Among the debated issues during the negotiation processes in Canada and Sweden was how to improve forest practices to maintain habitats of *Rangifer tarandus*, known as boreal woodland caribou in Canada and reindeer in Sweden. In both countries, *R. tarandus* is recognized as an important species because of its ecological and social significance, its status as a hallmark species, and its presence serving as an indicator of forest ecosystem integrity. However, conservation and maintenance of this species are addressed differently in the new national FSC standards in Canada and Sweden, partly owing to sociolegal differences between these two countries. In Canada, most indicators related to *R. tarandus* are included in Principle 6 "Environmental values and impacts," whereas in Sweden, they are included in Principle 3 "Indigenous people's rights."

In Canada, the Committee on the Status of Endangered Wildlife designated woodland caribou as a threatened species, and the species was included in the Federal Species at Risk Act in 2012. This act triggered the development of the *Recovery Strategy for the Woodland Caribou* (2012). However, despite these new government policies, the protection of caribou habitats remains an issue of significant debate among diverse stakeholders in Canada. During the latest FSC-standard development process, the main discussions among forestry-related stakeholders were on maintaining the intactness of boreal forests needed for caribou while maintaining timber production and socioeconomic benefits for local and Indigenous communities. From interview data, Elbakidze et al. (2022) identify two main factors that helped lead to agreement on the maintenance and protection of caribou in Canada's FSC standard: the Federal Recovery Strategy for the Woodland Caribou and the availability of scientific evidence.

The Federal Recovery Strategy for Woodland Caribou formed the basis for three main management options for caribou under the new FSC Canada standards. These options are outlined under Indicator 6.4.5, which is devoted entirely to the management of habitat for boreal woodland caribou. The first management option requires that caribou habitat be managed according to a Species at Risk Act (SARA)–compliant range plan that is consistent with the content, measures, and objectives in the Range Plan Guidance for Woodland Caribou (ECCC, 2016). The second option might be applied in a case when a SARA-compliant range plan does not yet exist and sets out requirements based on a management template put forward in the Federal Recovery Strategy for the boreal population of woodland caribou (Environment Canada, 2012). Finally, the third option is to use an engagement process to develop other approaches that are consistent with the Range Plan Guidance requirements. Agreement

on these caribou habitat requirements was further reinforced by cutting-edge scientific knowledge used by experts involved in the standard development process.

In Sweden, reindeers are semi-domesticated animals that belong to the Sami. The protection of reindeer habitats is an integrated part of the criteria and indicators (C&I) related to the protection of Sami rights as Indigenous People in Sweden (Principle 3). Sami reindeer herding, including the management and protection of reindeer habitats, is implemented through the participatory planning process as a part of FPIC (see Box 21.1 about the planning process). The participatory planning process is conducted using a landscape perspective, allowing the forest management activities to be analyzed in a larger context.

21.4 Other Key Trends

Sections 21.2 and 21.3 examined forest certification's evolving response to three issues of long-standing concern: Indigenous rights, the welfare of local communities, and the protection of large and relatively undisturbed forest landscapes. A review of both the FSC (https://fsc.org) and PEFC (https://pefc.org) websites and strategic plans (FSC, 2015b; PEFC, 2018b) reveals several other recent developments that illustrate the dynamic and evolving nature of forest certification. The following sections divide these developments into three general categories: (1) the expansion of certification focus from timber to a broader suite of forest-related values; (2) the use of new technologies; and (3) innovations to enhance the reach and accessibility of certification schemes.

21.4.1 Changing Climate, Changing Values: New Standards for Ecosystem Services

Environmental concerns, social values, and economies change, and, likewise, certification schemes must adapt. Forest certification has initially focused on timber and wood products as a means to promote sustainable forest management. Although these schemes intend to recognize diverse forest values, this initial focus on timber reflects relatively long-standing societal concerns about the role of wood products in deforestation and forest degradation. Hence, timber producers presumably have market incentives to become certified to enhance their reputation in ways that those managing forests for nontimber forest products, e.g., mushrooms, berries, and game, conservation, and recreation, for example, may not.

Over time, however, forest certification schemes have been criticized for focusing too heavily on timber. In particular, rising concerns about climate change and biodiversity loss have driven the development of new markets for forest carbon and other *ecosystem services* that forests provide. These ecosystem service payment schemes, which like forest certification are generally voluntary, face their own credibility challenges and need to distinguish themselves in the marketplace. In response, both the FSC and PEFC have been developing new standards and processes that move beyond their traditional focus on timber production. The FSC has launched processes for certifying nontimber forest products and the ecosystem services of biodiversity conservation, carbon storage and sequestration, soil conservation, and recreation services (FSC, 2018a). Likewise, the PEFC has launched task forces to address ecosystem services and trees outside of forests.

21.4.2 New Technologies—Enhancing Efficiency or Reliability? Experimenting with Remote Sensing, DNA Testing, Blockchain, etc.

Another key development for certification schemes stems from the increasing use of advanced technologies to improve credibility and potentially lower the costs of certification. This use of technology includes experimentation with remote sensing to monitor forest cover change (Lopatin et al., 2016), the testing of wood samples for DNA as a means to verify claims regarding the origin of wood products and track the *chain of custody* of certified wood products back to their point of origin, and the use of blockchain to increase the efficiency of financial transactions and/or guard against fraud (FSC, 2020d). All of these advances coincide with the expansion of certification into more remote regions, including large expanses of remote boreal forests where traditional methods of on-the-ground monitoring and sampling may be cost prohibitive.

21.4.3 Expanding Certification Access: New Approaches for Smallholders

As discussed in Sect. 20.1, forest certification and other sustainable certification schemes can create disproportionate barriers to entry for small-scale, low-intensity, and community-based forest operators because of heavy reporting requirements, economies of scale, and other factors. The FSC and PEFC approach this problem in different ways. The more decentralized PEFC system has supported the use of simplified standards and highly reduced certification requirements for small-scale operators or family forest associations in some countries. Examples of these approaches include the American Tree Farm Association, which focuses on small private forests in the

United States, or the Finnish national standard, which allows simultaneous certification at the level of forestry associations encompassing thousands of individual forest ownerships (Cashore et al., 2007b).

The FSC has taken a somewhat different approach to improving smallholder access. This includes incorporating the concept of *scale, intensity, and risk* into FSC standards, whereby requirements are adjusted on the basis of the risk of the proposed forestry activities. This enables a lessening of certain requirements for smaller landholdings if forest management activities on those landholdings are considered to pose a lower risk. Other important strategies include *group certification* and *resource manager certification*, whereby organized groups of forest owners, or forest managers who manage multiple properties, apply for certification on behalf of all of the properties who opt for certification. More recently, the FSC has launched its "New Approaches" project to experiment with more radical innovations. These include pilot tests to simplify the content and language used in the standards, improve procedures for certifying groups, and divide responsibilities across forest owners, group entities, and forestry contractors (FSC, 2020b).

21.5 Closing Reflections

Forest certification has become an increasingly influential tool to address boreal forest challenges. Whereas global interest in forest certification may have initially been sparked by concerns over tropical and temperate old-growth forests, certification has since expanded at an exceptionally rapid rate in boreal forests. As a *nonstate market-driven* form of governance, certification has been promoted by civil society as a means to pressure companies to prove that the forest products they produce do not contribute to the loss or degradation of boreal forests, or violate the rights of the many thousands of Indigenous and local communities dependent on these forests. However, precisely how certification should provide that assurance and what constitutes genuinely "sustainable" boreal forest management remains a subject of ongoing debate.

One overarching source of such debate is the degree to which certification standards should be prescriptive or flexible, harmonized or locally adapted in relation to key issues such as IFLs and the rights of Indigenous and local communities. These debates relate, in turn, to ongoing concerns over rising costs and other barriers of access to certification, especially for small and low-intensity forest producers. Meanwhile, shifting societal values and priorities and rapidly changing technologies are pushing forest certification schemes to expand their focus beyond timber to other ecosystem services and develop new verification systems. All these pressures contribute to the dynamism and change in certification standards and procedures.

In general, forest certification requirements have become more complex and prescriptive over time. However, there are signs this trend could change. For example, the FSC, which has historically supported more prescriptive forest standards, is currently transitioning toward a *risk-based approach*, which could help simplify

the standards across some criteria in countries where the likelihood and impact of noncompliance are deemed to be low (FSC, 2018b). Hence, just as political disputes push and pull on the nature and degree of governmental forest regulation, forest certification faces its own political tensions. This dynamic highlights the need to continually monitor and adapt forest certification to ensure positive impacts on boreal forests and the people who depend on them.

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