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Chapter 14

Sustainability as a Driver in Forestry-Related Services



Anne Toppinen, Mirja Mikkilä, Anni Tuppuru and Gerdien de Vries

Abstract Rising environmental consciousness has shifted the focus of small-scale forestry away from productive functions towards more diversified ownership objectives. From transition management perspective, we analyze the role of private sector voluntary sustainability initiatives as a system driver in forestry, and review research on the role of sustainability in forestry-related service markets. The focus is on the view of small-scale service-oriented businesses, and by drawing experiences from the Nordic context. Based on the literature review, sustainability is gaining deeper level interest and active engagement among small scale forest owners due to, perhaps first and foremost, increasing awareness on global sustainability challenges, and the role of forests in these. A challenge remains in diffusion of the sustainability-related niche innovations. In addition, the strong environmental-economic emphasis in sustainability may lead to the undervaluing the potential of some socially driven forest ecosystem services. The effectiveness of new methods, such as framing as a tool to nudge family owners towards more sustainable forestry practices, provides avenues for future experimentation and research.

Keywords Framing · MLP · Nudging · Service development · Sustainability transition

14.1 Introduction

The forest sector is facing a system change: it shifts a focus from productive functions towards more diversified objectives and higher interest in sustainability related initiatives. This shift can lead even a larger systemic transition promoting sustainability both in practical forestry and in services aligned with changing forest owner

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values and behavior. The systemic transition refers to the transition path of the socio-technical system from one level to the next, desired level including the required change of various involved actors (for example Auvinen et al. 2015) and commonly requiring the time span of 20–30 years. The systemic transition can promote sustainability by placing it as the overall target of the process. The research field of the sustainability transition seeks to understand how transitions to more sustainable systems can be initiated (across a range of sectors including, for example, energy, transport, food and water) as well as working with policy actors to implement such changes (Markard et al. 2012).

Here, the framework for the sustainability transition within the forest sector is provided by sustainable development seeking balance between economy, society, and the environment (Hetemäki et al. 2017). Traditionally, sustainable development within economic systems, such as forest management, is presented through the concept of the triple bottom line, consisting of three different pillars: economic, ecological and social (e.g., Mikkilä 2006; Mikkilä et al. 2015). Nowadays, the concept is interpreted more widely as economic development that supports the prosperity and wellbeing of the entire human society, but within given environmental boundaries at local, regional and global scale (Griggs et al. 2013). Sustainability in ecological contexts has commonly referred to sustainable management of (renewable) natural resources without weakening the ecological tolerance of nature. In other words, the environment may only be altered to the extent that nature is able to recover its former condition after the change (e.g., Finnish Forest Association 2017; Gabzdylova et al. 2009; Knüppe and Meissner 2016; Schusser et al. 2015). Overall, sustainability transition can be regarded as a key influencing element in the forest sector. That is, the transition affects citizens as well as private and public landowners in both developed and developing regions of the world.

The transition to sustainability is a complex process (Bennett 2012; Winkel 2017). It is the result of a co-evolution of economic, technological, institutional, cultural, and ecological developments at different scale levels (Grin et al. 2010). As an example, the bioeconomy strategy in Finland has been developed to enable a switch from fossil to green energy resources in order to tackle the challenges of climate change and resource dependencies, and to tap into the economic opportunities that arise (Bosman and Rotmans 2016; TEM 2014). However, as addressed in a recent review by Pelli (2018), the question remains open on *how the increasing role of services can be assessed as a part of forest bioeconomy development?* This question can be approached using multi-level perspective outlined by Geels (2002). Second question is *what types of upstream sustainability services could support the further downstream industries in the “next production revolution”?*

The role of services (or servitization, see Toivonen and Kowalkowski, this volume) increasingly influences the economic growth potential of the forest sector. Due to digitalization and sharing economy aspects there are also many opportunities to enhance sustainability in the production and consumption system. Nevertheless, the service(s) aspect is a largely neglected area both in forest sector-level policy programs (MMM 2015; Pelli 2018) and at firm-level strategies aiming at improving

competitiveness (Näyhä et al. 2015). According to Toppinen et al. (2013), emergence of service-dominant logic (S-D logic) by Vargo and Lusch (2004, 2008) can provide the next management paradigm in the forest sector. This calls for co-creation of value between producers and customers, and thus requires users and consumers to be involved more closely in the product and service development, and in the related innovation processes (for more discussion, see Toivonen and Kowalkowski, this volume; and Hansen, et al., this volume).

Borrowing conceptually from transition management framework with multi-level perspective (MLP) (Geels and Schot 2007; Geels 2011) and CSR/CR (corporate [social] responsibility) literature (Toppinen et al. 2016), this chapter discusses the sustainability transition happening at multiple levels. We hypothesize that practices and learning networks, in which both public and private service businesses and family forest owners are present, are essential to co-create shared value. We identify factors both driving and factoring transition towards a higher level of sustainability and discuss possible implications for governing this transformation process with an example of using nudging techniques (e.g., emphasis framing) on private landowners towards more sustainable management practices.

To address the research gaps on the role of sustainability in forestry-related service markets, we aim at discussing paths for sustainability transition in forestry using some illustrative cases. We will do this through analyzing the role of private sector voluntary sustainability initiatives as a system driver in forestry, especially from the view of small-scale service-oriented businesses, and by drawing experiences mainly from the Nordic context. As an example, the Finnish forest sector is well regulated through legislation and various policy means, such as incentives and taxation, that guarantee the basic level of the forest management and utilization ever since the establishment of the first forest law in 1886 (Natural Resources Institute Finland 2018). Here, our focus is to study the further sustainability transition through voluntary actions of the private sectors. We chose two types of means for the deeper analysis; forest certification and the use of nudging techniques. Forest certification has been applied for already two decades in Finland and is well-known both among the industries and private forest owners, whereas nudging, a kind of motivation and promotion of desired choices among the forest actors, has not applied largely in Finland so far. Although we initiate our analysis on the ability of forest certification related practices to promote sustainability, we also reach beyond these, and try to give a more holistic view on the factors of behavioral change towards sustainability transition and point out gaps in research.

From the viewpoint of future development, Hetemäki and colleagues (2017) distinguish between *forest-related services* (services that are directly related to forests as such, for example, nature tourism and recreation, hunting, mushroom and berry picking, soil and water services, and carbon sequestration in forests), and *forestry-related services* (which can include advisory services, forest management planning, forest inventory, administration, governance, R&D and education). Thus, our viewpoint is mostly from the second forestry-related service category from Hetemäki and colleagues (2017) with private landowners as customers (and value co-creators) of sustainability-oriented services (see Toivonen and Kowalkowski, this volume).

The first category of forest-related (ecosystem based) services from Hetemäki and colleagues (2017) is also important, but can be understood more as a context, from which the demand and supply of forestry-related services emerge from.

14.2 Conceptual Background for Transition Frameworks and Applications to Forest Sector

Achieving a transition to forest-based bioeconomy is a complex process of socio-technological innovations and simultaneous learning. Geels (2002) outlined a multi-level perspective (MLP) framework to approach the phenomenon comprehensively. The framework brings together both technological and social approaches to system transition, hence being one of the leading theories regarding sustainability transitions in the socio-technological system (Geels 2011). MLP explains trajectories of sustainability transitions. Emerging sustainability innovations challenge and aim at replacing the existing, typically unsustainable system (Geels and Schot 2007; Geels 2011). The approach assumes a three-level structure consisting of a niche level, a regime level, and a landscape level. Technological trajectories locate in the socio-technical landscape, consisting of a set of deep structural trends, such as economic growth, oil price, or resource scarcity. Therefore, the regime level refers to rules that enable and constrain activities within communities (Geels 2002). The existing governmental systems, or large-scale, permanent industrial settings, are examples of actors within established regimes. Regimes usually generate incremental innovations. In other words, they come up with more efficient solutions based on traditional technologies and regimes. Radical innovations are generated in niches based on new technological solutions and system settings.

However, Genus and Coles (2008) and Berkhout and colleagues (2005) criticized the definition of transitions being problematic overall, being challenging to specify the start and end of transitions. Markard and Truffer (2008) argued that the definition of a regime is incoherent in MLP and regimes can be defined at different levels of combination and from different perspectives. Moreover, MLP has steadily discussed policies as steering methods within the framework, but the policy is often an external force that is not actually implemented in the socio-technical transition (Smith et al. 2010). One of the critiques against MLP considers agency and how it is underplayed in the framework. Sometimes MLP falls to focus on the technological transition rather than agency that has the capability to transform the existing regime (Smith et al. 2010; Genus and Coles 2008).

Regardless of the limited consideration of various agencies, MLP provides a promising option to analyze the transition in the bioeconomy due to the current governance mechanisms. Bosman and Rotmans (2016) assessed the governance strategy of the Finnish bioeconomy sector to be a top-down oriented, focusing on economic possibilities over inherent sustainability concerns. This strengthens the incremental innovations within the existing structure keeping the overall structure of existing

industries intact. Previous studies also showed that the transition towards sustainable bioeconomy systems are prevented by several barriers, such as market failures, lack of directionality, policy coordination, institutions, capabilities, and infrastructure (Hoppe et al. 2016).

Only few previous researches have tested the applicability of the MLP in the context of forestry (e.g., Mattila 2015). Regardless of this, we assess that the sustainability transition within forestry could be analyzed within the MLP framework, as the regime level of the forest sector, including various forest related governmental and non-governmental organizations as well as large-scale industries, is well established. The related niche innovations are highly encouraged, but as our chapter will point out, there are relatively few successful innovations, especially in the here studied service sector.

The traditional development of industries has been a consequence of series of mainly technological innovations. However, governments can also play a role in this technological transition in bringing about structural change (Rotmans et al. 2001). Transition management was introduced as a new governance approach for sustainable development in the Netherlands in 2000 (Loorbach 2010). Since then, the approach has often been applied in energy and traffic sectors. Hartikainen and Hetemäki (2008) assessed that the transition approach could provide elements for the further development of forest policy, such as longer planning and target setting period, within the economic structural changes.

In the context of forest industry, most of the earlier sustainability focused studies have investigated corporate sustainability management aspects with a focus on large, even multinational companies (Toppinen et al. 2016), thereby neglecting the sustainability management needs and potential of small and medium-sized enterprises (SMEs) (Mikkilä et al. 2015). Furthermore, much of a research focus has been on the adoption of voluntary sustainability practices in the downstream industrial level, for example via forest certification or Chain of Custody practices (Tuppura et al. 2016). According to Toppinen et al. (2014), forest certification is globally considered as the key mechanism prompting changes in environmentally, economically and socially sustainable forest management practices. Many studies have found that consumers and businesses favor certification, and many express a willingness to pay some premium to get a certificate (e.g., Aguilar and Vlosky 2007; Chen et al. 2011). However, there are also studies that show that negligible premiums or none can exist (for a review, see Toppinen et al. 2014).

We can argue that most research in the forest sector has been focused on industrial level downstream sustainability as an organizational innovation in comparison to upstream resource management and goes beyond what constitutes ecological sustainability of forest management. As an exception, Lönnstedt (2012) explored perceptions of Swedish non-industrial private forest owners (NIPF) explicitly from the triple-bottom line sustainability perspective using a case study approach. He found that the participating NIPFs perceived the benefits from engaging with more sustainable forest management as modest. It would be interesting though, to re-evaluate these perceptions in a wider geographical context since Lönnstedt's data originated from the early 2000s and were only collected in Sweden.

14.2.1 Analyzing Transition Within the Forest Sector—Landscape and Regime Level

The national bioeconomy strategies tend to follow much the traditional framing focusing on economic potential of the bioeconomy within environmentally sustainable boundaries (Bioeconomy 2014). For example, in Finland, sustainability of the forest sector as a part of European policy debate is presented also much through the resource-based view, i.e. emphasizing direct resources and resource efficiency in addition to a conservation dimension as a basis of sustainable forestry (Primmer et al. 2016). The challenge for a sustainability transition in the forest sector is its aim at incremental change that keeps the overall structure of existing industries intact. Furthermore, a more traditional, shorter-term, top-down governance strategy is adopted, focusing mostly on the economic possibilities of new solutions (Bosman and Rotmans 2016).

The goal of sustainable forest management is to enhance the sustainable production of the material and immaterial benefits of the forests in order to serve the needs of the citizens, thereby advocating ecosystem-services-based thinking and balancing between economic, environmental, and social sustainability (for Finland, see e.g., MMM 2015). Forest certification is largely considered as a key criterion for sustainable forestry practices (see Box 14.1 about forest certification in Finland). However, whether certification is sufficient to promote general transition towards a more sustainable bioeconomy, is an open question. In Finland, for example, most of the private forest properties is certified automatically through a group certification, PEFC (Programme for the Endorsement of Forest Certification). Hence, forest owners do not have to consider profoundly their personal sustainability motives to apply for certification. In other words, their personal values and preferences as sustainability drivers can have a minor role in this decision. Lähtinen and colleagues (2016) found that small scale forest owners had overall only limited motivation to voluntarily adopt sustainable activities, and their priorities were not well integrated with those within downstream value chain members.

Box 14.1: Trends in Forest Certification in Finland

According to the Forest Stewardship Council (FSC) there is 1.4 million FSC certified hectares in Finland, whereas the amount of PEFC (Programme for the Endorsement of Forest Certification) certified hectares is 17.7 million (117 FSC Chain of custody certification [Coc] and 229 PEFC Coc). According to the Ministry of Agriculture and Forestry more than 90% of forest that is used for commercial purposes has PEFC certification. The reason for the popularity of PEFC is that Finnish forest owners automatically join the PEFC group certificate when they were/are members of the association of forest owners. To advance the FSC certification, the biggest forest-based products companies in Finland—UPM, Stora Enso and Metsä Group—have started to offer FSC

group certification, which is available for under 500 ha forest estates (FSC Finland). The costs, prerequisites as well as the possible benefits vary between the offering companies. Stora Enso, for example, requires at least 50 ha estates and that the location of the certified forest is pivotal to Stora Enso (Stora Enso).

As there is abundance of PEFC certified wood available, it is unlikely that there would be any price premium for PEFC certified wood in the Finnish wood market. There is only anecdotal evidence that there are price premiums for FSC certified wood (Maatilan Pellervo 2016). According to UPM it pays 1–2 euro/m³ bonus for FSC UPM group certified wood (Metsämaailma)¹. The wood-based products producers appear not to gain price premiums from certified products. In a study from 2006, Owari et al. find that price premiums were not possible for most of the studied Finnish companies (n = 25), however, forest certification was needed to retain and satisfy customers. Thus, as there is demand for FSC certified wood, the price premium could be accounted for proportional rarity of FSC in the Finnish wood market, which could explain the growing interest in double certification of forests.

In the light of the possible price premiums alone, the number of FSC certificate hectare in Finland is quite low. One possible explanation for that is that the average size of privately-owned forest estates in Finland is very small (only 30.1 ha according to the Official Statistics of Finland). Furthermore, most of the estates already have PEFC so the forest owners may feel that the costs of certifying further may overrun the benefits. Another reason may be lack of knowledge. A recent survey among private forest owners² revealed that 33% of the respondents experienced to have no knowledge on FSC certification and 28% had very little knowledge on the topic. The respondents' experienced knowledge on PEFC was on average a bit higher, but as many as 19% of the respondents did not know if they had any certification (Kohtakanigas 2017). These low percentages may illustrate a situation in a PEFC and small-scale dominated country naturally, the outcome could be very different in other types of contexts.

One further aspect to consider is that the current landscape level strategies framing sustainability paths in forestry focus on the economic and environmental dimensions, and leave less space for the social dimension, which appears as a common approach in the sustainable natural resource governance. For example, Baum and colleagues (2017) recognized the challenge of quantifying cultural services, such as recreational opportunities.

Observations from other natural resource sectors show a set of common drivers with a socio-political dimension for sustainability. For example, according to a study

¹According to a survey among 1000 forest owners, the yearly average amount of wood trade per forest estate was 467 m³ in 2000–2005 (Anttila et al. 2008). As an example, in August 2017 the price for wood varied (depending on the type of wood) between 15 and 57 e/M³ (Luke 2017).

²This survey was directed to forest owners who owned at least 50 ha in Pirkanmaa area.

from Gabzdylova and colleagues (2009) on the New Zealandian wine industry, the most important drivers for sustainable practices are personal values, preferences, and satisfaction with the profession (i.e., enjoyment of the work itself), followed by product quality, and customers' demand. Knüppe and Meissner (2016) observed that the establishment of new policies became a key driver towards increased sustainability within water and land management in South Africa. The environmental-economic emphasis in sustainability may lead to the undervaluing or even ignoring of the potential of some socially twisted ecosystem services—like the role of the forests for human well-being or pharmaceutical options—for promoting the transition towards a sustainable forest-based bioeconomy.

14.2.2 Niche Level Service Innovations Towards Sustainability

Service-dominant logic can provide light into what type of new service businesses might be needed for the future NIPFs (Berghäll 2018). The systemic and multi-level perspectives are well in line with the emerging view of forest sciences as an integral part of sustainability research (Toivonen and Kowalkowski, this volume). According to Vargo and Lusch (2008), all social economic actors act as resources-integrators, co-creating value through service provision. According to Toivonen and Kowalkowski (this volume), understanding the role of innovation is an inherent element of value creation, emphasizing continuous innovation.

Overall importance of the information on the sustainability of forestry-wood product value chains is increasing. Long value chains and limited communication in forestry-wood markets represent a key barrier for integrating sustainability aspirations between landowners and end-users. Forest certification as a communication tool seems to fail—at least in the short run—in producing more than market access as a reward (Toppinen et al. 2014). According to Lähtinen et al. (2016), private landowners and sawmill managers have only limited motivation to adopt systematic sustainability communication via formal reporting if the value of the adoption is indirect or unclear. Lönnstedt (2012) also presented a rather bleak picture on the transformative power of individual landowner behavior towards enhancing sustainability. So, the question is open where the change could begin, if we take the normative stance that more sustainable use of forests is a key long-term societal goal.

In a broader context, according to a recent European study (Feliciano et al. 2017), small scale forest owners tend to associate forest management goals strongly with multi-functionality, i.e. as a mixture of forest maintenance, ecosystem stewardship and economic activities (including timber production). In Finland, during the 2010s, there has been a growing academic and practical forest interest towards continuous cover-forest management practices. The Finnish forest legislation was changed in

2014, enabling more flexibility to private landowners in deciding between management options in their forests. However, area wise, the share of continuous cover forest management continues to be negligible, just around 1%.

It is also possible that more NIPF owners would be interested in sustainable forest management practices if they were motivated to invest their time to learning about forest management in the first place. In their study among Swedish and Finnish forestry service organizations, Mattila and Roos (2014) observed that from the services providers perspective, polarization appears among the NIPF owners in terms of value creation logic, i.e. besides the traditional wood producers are those owners who are not oriented to industrial wood production. The mainstream service providers have difficulties to reach the latter group, resulting in a fraction of forest owners who are not even included to the service market.

After studying forestry services markets in Finland and Sweden with use of the MLP framework, Mattila (2015, see Fig. 14.1) concluded that the dominant regime level players seem to rather resist than promote transformation enabling higher order sustainability.

According to Mattila (2015), the main source of transformative power is embedded in niche players (for example promoting alternative continuous cover forestry practices), but these are yet weak in forestry service markets. In addition, there are disruptive, external landscape level pressures of renewal, which arise also from changing landowner value orientation (see Häyrinen et al. 2015, as well as Karppinen et al., this volume). Sometimes this is identified to be associated with the increasing proportion of urbanized, more educated, and female forest owners (see Lidestav et al., this volume; and e.g., Umaerus et al. 2019).

Matthies et al. (2016a) advocate (in the context of managing multiple ecosystem services) that service firms that shift towards a holistic (non-linear) S-D logic approach could benefit from the complementarity of holistic service thinking and sustainability. From the service business development side, the operating space for new, radical innovations through, for example, service or social based solutions can still be limited and bounded by the current governance structures of the forest sector.

The changing institutional and market environment of forestry organizations, for example in Finland, has offered pre-established and new service organizations an avenue to develop their business models. According to Mattila (2015) there are signs of change towards a more customer-oriented and sustainability-driven direction. A development that could aid in better profiling service business actors according to different forest owner segments and meets the needs of those landowners with more sustainability-oriented values and lifestyles (Häyrinen et al. 2016). At the time being, this change represents a more niche-level phenomenon, although there are signs of growing interest and increasing demand on behalf of landowners (Asikainen et al. 2014; Mattila 2015). Overall, despite the idea that there may not yet be sufficiently developed niche-innovations connected to regime-level actors to change the direction of service-based business development, the situation can change in the future. One example is discussed in Box 14.2, regarding the case of a company operating in the Finnish forestry service market.

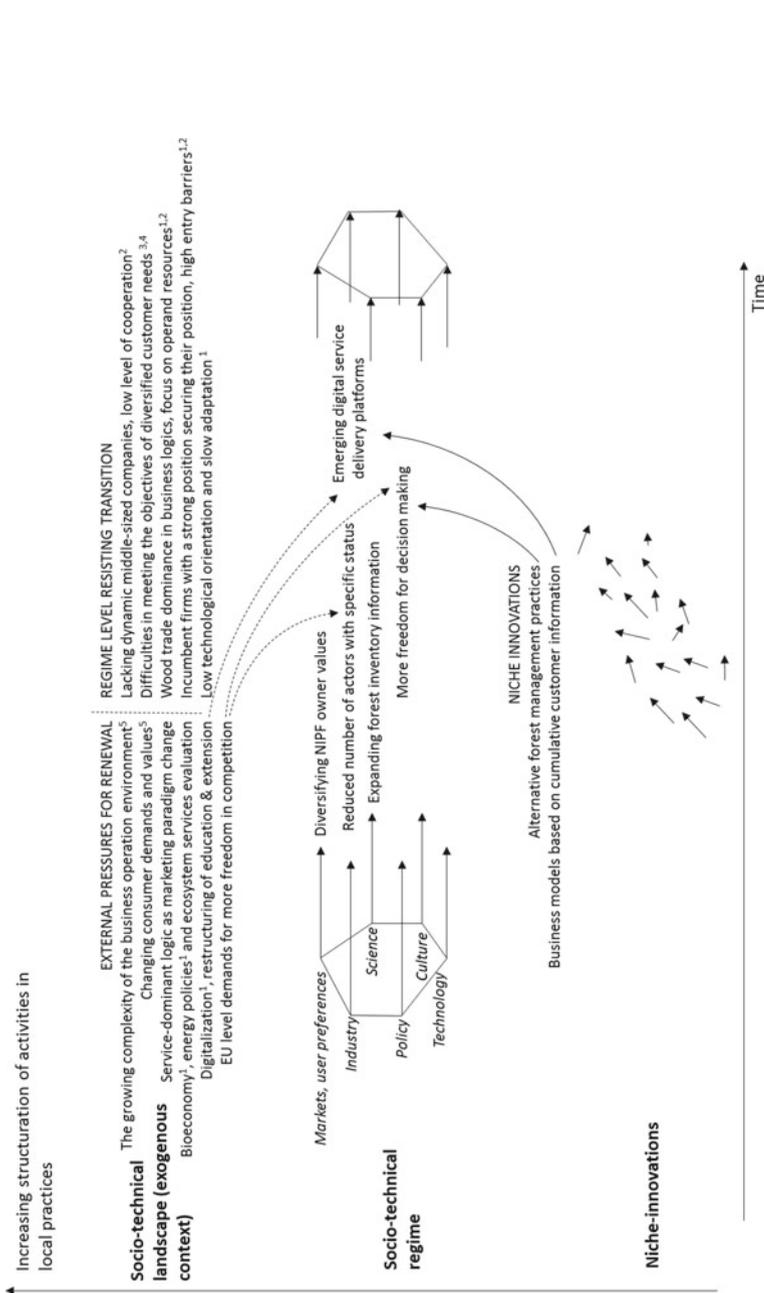


Fig. 14.1 Adaptation of the multi-level perspective to transition in the context of forestry service markets (adapted from Mattila (2015) with numbers referring to his thesis articles 1–4)

Part of the difficulty of diffusing niche-innovations is that they are disconnected from regime-level actors. However, this difficulty is eased by an increased societal awareness on the gravity of global sustainability challenges. These challenges are most prominently deforestation of the tropics, the role of forests in combatting climate change, as well as the increased risks and hazards that climate change can bring into forests in both boreal and tropical zones. A new way to further increase environmental awareness and nudge forest owners towards more sustainable choices in the context of boreal zones lies in emphasis framing: a communication tool involving emphasizing a particular aspect of an issue over another aspect in information.

14.2.3 Framing as a Tool to Nudge Towards Sustainable Forestry

As stated earlier in this chapter, mainstream of small-scale forest owners have had only limited motivation to adopt voluntary-based sustainability practices (e.g., Lönnstedt 2012; Lähtinen et al. 2016). This is unfortunate because these practices may represent new business opportunities for small and medium enterprises, while simultaneously serving public needs.

We introduced forest certification as a promotor of sustainable forestry, but certification is not the only policy tool that could be effective in nudging small scale forest owners towards a sustainability transition. Other potential effective drivers to sustainable management and use of private nonindustrial forests are education, technical assistance, regulation, and the use of financial incentives (see Jacobson et al. 2009). Because it is difficult to steer disconnected groups of forest owners without legal measures, researchers and policymakers are on the constant lookout for alternative drivers. A potential alternative driver is positively framed environmental communication on sustainable forestry. Research has shown that emphasizing positive climate aspects in public communication (such as emphasis framing of the reduction of CO₂ emissions) can be a more effective way to nudge people into a more positive stance towards a policy in comparison to emphasizing negative aspects (such as potential safety risks or economic losses), as shown by, e.g., Chong and Druckman (2007), de Vries et al. (2016), or Nisbet (2009).

A recent study on the effectiveness of environmental communication shows that emphasis framing can be particularly effective in changing people's attitudes when the frame contains the language of its audience and is shaped by the values and experience of this audience. The researchers conducted their study in India—a country with a critical importance in the world of climate change—and demonstrated that general climate change language did not connect to the people of India because it is dry, technical or too strongly based in the campaign culture of the Global North. The researchers concluded that environmental communication is more effective when it speaks to the values and identity of the specific audience (in the Indian case, self-sufficiency, Marshall et al. 2017). Also in case of Finnish private owners, results by

Matthies et al. (2016b) indicated that with the landscape management preferences, nudging private owners can lead to marginal gains in ecosystem service provisioning above the baseline management and above neutral owner preferences towards supply of ecosystem services, and can possibly also increase the aggregate ecosystem service provisioning (see also Caputo et al., this volume). Based on the above, one could refer that to nudge small scale forest owners towards more sustainable forestry, information about this issue must fit their expectations and views. To be able to reach that policy goal, it is necessary to investigate these expectations and views.

There is some literature on expectations and views of small-scale forest owners, but it is very scarce. This literature reveals that small scale forest owners care for forest maintenance, ecosystem stewardship, and economic activities (Feliciano et al. 2017). Furthermore, owners can be concerned about loss of open space, forest fragmentation, or the impact of globalization of forest product markets (see Jacobson et al. 2009). These could be topics to touch upon in communication about sustainable forestry. However, it might be best to survey views, expectations and (social) identity of small-scale forest owners before tailoring information more specifically.

Tailored—or framed—information can be a particularly strong nudge when combined with public commitment. This is demonstrated by research on the environmental quality of farmlands in the Netherlands (Lokhorst et al. 2010). The researchers have developed and tested a behavioural intervention focusing on improving farmers' nature conservation practices. They found that farmers showed a stronger desire to engage in sustainable behaviour after receiving personally framed information based on self-reported data on habitat area and conservation. However, this effect was particularly visible when the farmers also publicly committed to this behaviour during personal meetings with other members of their agricultural organisation (Lokhorst et al. 2010).

In sum, emphasis framing can be an effective tool to nudge family forest owners towards sustainable forestry. It should be noted, however, that emphasis framing has a few pitfalls and can have long-term costs when these pitfalls are not accounted for. Recent experimental research indicates that backlash effects can occur when: (1) information about environmental policies conveys too many (technical) irrelevant details that obscure the core message (de Vries et al. 2014), (2) the information is perceived as biased or manipulative (de Vries et al. 2016), or (3) when the audience is under the impression that the source of the information has a hidden agenda (de Vries et al. 2015). These pitfalls can prevent sustainable behaviour instead of promoting it (de Vries 2017).

Having said that, we would like to encourage future research on the effectiveness of framing as a tool to nudge towards sustainable forestry. As the tool can be particularly effective when information is concise, balanced, credible, and tailored to the identity of the audience. Transparent and legitimate framing fits in with modern methods and policy approaches in the forest sector (e.g., de Bruin et al. 2017).

Box 14.2: INNOFOR—Forest Management Services Targeting Higher Sustainability Premises

Innofor is a Finnish forestry services company that carries out forest management planning, biodiversity assessments, roundwood trading, and forest certification services, among others. Innofor's basic business principle is to offer tailor-made customer-oriented services, and the company has strived to emphasize ease of use and trustworthiness as a business partner. Innofor actively promotes forest management methods that put strong weight on sustainability and maintenance of biodiversity values. Instead of clear cutting Innofor promotes forest management services that aim at continuous cover forestry, cuttings from the above, and using natural regeneration. High biodiversity is promoted by leaving deciduous trees and higher volume of deadwood and promoting un-even age forestry and high variety in terms of wood species. Further, they leave soil intact during harvesting, which has a positive influence on forest carbon balance. With uneven-age forest management it is possible to decrease the carbon emissions related to harvesting, but also to enable higher resilience in terms of foreseen consequences of climate change, such as changes in the annual rainfall, longer growth seasons, or increased risks on pests and wind damages.

According to the managing director of Innofor, customer interest and demand for their services has been increasing. Especially the change in the Finnish forest code in 2015, giving more freedom of choice to the forest owners, was a turning point. Typical Innofor's clients are landowners who actively seek alternative means to forest management, in particular so that they wish to have income from the forest in more sustainable way. However, on average, small-scale forest owners in Finland are not yet aware of—or actively consider—the increased risks and consequences of climate change on their forests. Consequently, they may not consider ecological sustainability as a key factor when choosing a service provider for their forest management needs.

Nowadays, it is increasingly common that small-scale forest owners in Finland outsource forestry related services. This is related to the fact that a new generation of owners arisen: being more often highly educated, urban, and female due to inheritance processes. This new generation of forest owners has less knowledge or interest in forest management, industrial wood production, and timber sales income than the previous generations who traditionally, carried out some or most of the forestry work by themselves while living in rural areas nearby their forests. As a response to the change in the structure and values of this new generation of forest owners, Innofor has developed their service portfolio also to the direction that they could serve well both remote—traditional—forest owners as those new-generation clients, who most appreciate the easiness of the services.

Innofor is a small company with less than 10 employees, and partnerships between local harvesting companies are essential. The size of the clients'

forests vary, a typical size is 10–50 ha. Clients often find Innofor via the internet, but references from former clients has also expanded company clientele. The growth of Innofor's customer base is somewhat slow, since on average forest owners need forest management services in 5–10 years, says the CEO. He also views that the current forest policy regime provides Innofor a favorable business environment to operate in. As for the future, the zero-emission forestry concept provides growth potential, as do remaining challenges for maintaining forest biodiversity in face of increasing industrial cutting levels in Finland.

14.3 Conclusions and Future Research Needs

In summarizing previous research, it appears that research focus at organizational level has been given to sustainability questions at the industrial downstream stage than in the upstream forestry. Furthermore, we can conclude that in making transition toward sustainability, analyzing the role of niche level players has been of much less interest in comparison to large-scale or institutional (regime or landscape) level issues (Mattila 2015). For example, a large body of CR literature highlights relatively limited impact of responsible practices in many contexts. Hence, the power of certification and nudging of forest owners, theoretically considered here, as means of sustainability transition requires further empirical testing in the future. However, these empirical observations from the shorter term are challenging transition period being commonly 20–30 years, like stated in the beginning of this chapter.

The state of the art in forestry service business literature is especially weak in comparative analyses of different regions and countries (a notable exception being Mattila and Roos 2014). Based on the reviewed research, sustainability is gaining more interest and active engagement among small scale forest owners due to increasing awareness on global sustainability challenges and the role of forestry in these, and partly also being due to changing forest owner background, values and objectives (for more discussion, see Karppinen et al., this volume). But the question that remains open for future research is concerning which actors and organizations will take a lead in steering the landowners into more sustainable land management practices, and what would this mean in more practical terms. Many public service organizations, such as local forestry associations in the Nordic setting (see Staal Wåsterlund, this volume), are struggling to renew their business models in facing diminishing public subsidies and entering the market, for which regulatory burdens have been loosened. According to Asikainen and colleagues (2014), there is at least local level evidence that these associations can often act as gate-keepers if their experts are not willing to change their mindset towards more multifunctional goals of landowners. Issues related to neutral information provisioning, or level of required professional

expertise to better serve more sustainability-oriented landowners, for example, can be lacking (Asikainen et al. 2014; Mattila and Roos 2014; Häyrinen et al. 2016).

As a limitation to this chapter, we focused on analyzing the role of private sector voluntary sustainability initiatives as a system driver in private forestry, and especially from the view of offerings by small-scale service-oriented businesses. In addition, our experiences were mainly drawn from the Nordic context. In the future research, there would be impetus for broadening the scope to other regions in which private forestry also plays a dominant role (such as the USA South or Northeast). Alternatively, comparing managerial responsibility in publicly owned land management organizations, which constitute a major role in many countries of Eastern and Southern Europe (see e.g., Liubachyna et al. 2017), could be worthwhile. With reference to importance of enabling a niche level change towards sustainability, building a multiple case-based studies on service providing businesses could enable tapping best practices of sustainability leaders and identify barriers to sustainability change. This would help to better reflect their strategic stance towards sustainability and sustainable business model development in the context of small-scale forestry (see also Leban et al. in this volume on business model changes ongoing in transition countries).

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