



# Transformations Towards a New Era in Small Scale Forestry: Introduction to the Small-Scale Forestry Special Issue

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## Background and Motivation

Family, community, and other small-scale forests have played a vital role in society and, for many forested countries, they form the backbone of local rural livelihoods by supporting forest-based businesses, and provision of multiple ecosystem services in a sustainable socio-ecological systems framework (Zhang et al. 2005; Pagdee et al. 2006). Recently, however, the global turbulence around international trade and climate agreements (see e.g. Bayramoglu et al. 2018)—without mentioning the covid-19 pandemic—have reminded the world that progress is not linear. In the same way, small-scale forestry is influenced by its changing operating environment and may encounter incremental developments, regressions, and transformative leaps (Kouplevatskaya-Buttoud 2009; Haugen et al. 2016). Such developments may follow patterns witnessed in other areas of society such as technology, the economy, and policy. Regardless of the scope of impact, transformations have a systemic and revolutionary nature (Wagener 1993). Such transformations cannot be fully orchestrated, but many can be foreseen, shaped, and prepared for (Cagnin et al. 2013). In small-scale forestry, that endeavor requires a deeper understanding of change, collaboration across disciplines and sectors, and out-of-the-box thinking.

Many ongoing changes in small-scale forest ownership, such as forest fragmentation, parcelization, and urbanization and connected lifestyle changes (Wiersum et al. 2005; Hatcher et al. 2013; Snyder et al. 2019), have been regarded as challenges by forestry professionals and policymakers. For example, in Europe, the increase of very small-scale ownerships has been considered problematic from the wood supply and economic viability viewpoints (Poje et al. 2016; Rizzo et al. 2019). However, this could also be viewed as a positive development when considering that it is beneficial for as many people as possible to have a connection with nature through forest ownership (Hujala et al. 2020). Such a connection

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might enable deeper transformations of socio-ecological systems as adaptations to complexities within societies both locally and globally.

The economic aspects of small-scale forest ownership are important because owners are often families or private individuals using the land to provide for some share of their livelihood (Toscani and Sekot 2017), although this share has been declining due to societal changes. Additionally, such owners often live in rural and less economically saturated regions. Research related to new products and services that can be developed from the forests (Kurttila et al. 2019), novel business models effective in creating sustainable profits (Hansen et al. 2019), and professional assistance in developing such business ventures are all crucial for developing a thriving and sustainable rural economy.

Forest health issues, including mitigation of and adaptation to climate change through climate-smart forestry, will only increase in importance in the coming years (Ramsfield et al. 2016; Verkerk et al. 2020). Climate change influences not only the environmental functions of the forest but also the economic systems that have been relied on in the past (Tol 2018). Thus, it is important to continue to study how small-scale forest owners are being impacted by climate change effects, how they are reacting to these impacts, and how outreach and other activities can help the owners and the forests (Laakkonen et al. 2018; Hengst-Ehrhar 2019; Mostegl et al. 2019).

## **The IUFRO 3.08.00 Small-Scale Forestry Conference 2018 in Vaasa, Finland**

On the west coast of Finland, in a geographically unique setting of post-glacial land lifting (Danielsen 2001), the University of Vaasa, the University of Helsinki, and the University of Eastern Finland held the 2018 IUFRO 3.08.00 Small-Scale Forestry conference. The group's 36th gathering, organized nearly annually since 1986 (see Tikkanen et al. 2018, pp 12–13), featured a theme on future transformations in small-scale forestry. The conference featured 68 participants from 16 countries, and 53 scientific contributions.

The presentations and discussions focused on landholder engagement with aims to unify stakeholders and empower small-scale forest owners. Conflicting land-use issues were discussed such as swidden agriculture as well as hunting rights. The discussions showed the current issues holding forest owners back from capitalizing—economically, socially, or ecologically—on their own lands.

Transformations in the operating environment of small-scale forestry were seen as signs for initiating a new era. Keynote talks highlighted the adaptive capacity of public organizations in steering family forestry, and the contribution of changing forest ownership to rural livelihoods. Unique, subtle features of small-scale forestry were evident. Simultaneous advances in technology and social practices appeared pivotal.

The book of abstracts from the conference is available in the permanent address: <https://urn.fi/URN:ISBN:978-952-61-2790-3>

## Articles in this Special Issue

Following a call for manuscript submissions, originating in the presentations given in the above described Vaasa Small-scale Forestry Conference 2018, six articles succeeded through the peer-reviewing process over a period of 18 months and constitute this Special Issue.

In her article “What Can an Understanding of the Changing Small-Scale Forest Owner Contribute to Rural Studies? The Swedish Case”, based on a keynote talk in the Vaasa Conference, Carina Keskitalo builds a bridge between rural studies and changing forest ownership with evidence from several studies in Sweden. In particular, the article argues that emerging urban–rural interactions among landowners are shaping and shaped by the struggling and reviving rural areas in Fennoscandia. Keskitalo underlines that rural forest properties are not considered “wilderness”, but are rich with social attachments and activities. This may be seen as an asset that may help rural areas to contribute to livelihoods with new forest-based products and services.

David N. Bengston, Teppo Hujala and Brett J. Butler consider the consequences of changing operating environment to family forest owners in their article “The “Coming Age of Wood” and Family Forest Owners: An Implications Wheel© Exploration”. They use a diverse pool of experts from Finland, Norway, and the United States to identify implications of a given future scenario, the age of wood, which is based on horizon scanning observations of plausible and interesting futures. The article demonstrates that the second (and third) order implications, i.e. implications of implications, are more insightful than the first-order implications that come first to mind. Evidently, the coming age of wood will likely mean both positive and negative things to woodland owners, for example increasing wood prices and better services, but also more conflicts and unreliable service offers.

Bianca Ambrose-Oji, Mark Atkinson, Gill Petrokofsky, and Gabriel Hemery also take a change perspective in their article “Do Environmental Worldviews and Distrust Influence Action for Adaptation to Environmental Change Among Small-Scale Woodland Managers?” They argue that resilience is a key factor in climate-change originated behavioral change. Relying on British Woodlands Survey and discourse analysis of semi-structured interviews, the article investigates intentions to diversify forest management. Using the New Ecological Paradigm (NEP) framework, they found that many small-scale woodland managers hold strong ecological worldviews. But this may be acting against adaptation of management activities aimed at increased climate change resiliency due to either wanting nature to take its course and/or a fear of doing more harm than good. But regardless of the owners’ or managers’ attitudes, the framing, salience and robustness of the messaging will be critical.

Mingtao He, Senwei Huang, Yaoqi Zhang, and Mohammad M. Rahman present in their article “From Peasant to Farmer: Transformation of Forest Management in China” an analysis of factors contributing to Chinese rural society transforming from self-subsistence management to more business-oriented management.

They employ household survey data and a logit model and find that not only the age and education level of the household head and the family size and forest area but also the province is among the most important transformation factors. The authors argue that by knowing the propensities for transformation better, more targeted and future-oriented policies can be designed.

Kalle Kärhä, Jyry Eronen, Teijo Palander, Heikki Ovaskainen, Kirsi Riekkö, and Heidi Hämäläinen present in their article “Information Needs of Non-industrial Private Forest Owners after Logging Operations in Finland: A Case Study” an analysis of forest owners’ wishes concerning information delivery after harvesting on their land. A landowner survey to wood sellers in a timber-buying company’s customer database revealed a need for increased information after logging operations, especially among the more urbanized owners’ segment as well as among large-holders and short-tenure owners. The authors infer the need to prepare alternative logging reports for the various needs to better serve their customers.

Finally, Iryna Skulska, Inês Duarte, Francisco Castro Rego, and Cristina Montiel-Molina report their spatiotemporal analysis on Portuguese forest wildfires in their article “Relationships between wildfires, management modalities of community areas, and ownership types in pine forests of mainland Portugal”. They explore the forest wildfires on different property and management classes between 1975 and 2017. Over that period, Portugal’s rural areas have experienced a decline of population and abandonment of traditional silvo-agro-pastoral land-use practices. Decentralization of forest governance led to changes in forest tenure, and at the same time, increased wildfires were observed. Highest rates of wildfires were generally observed in the Baldios or community forests, and in the most recent period, in public forests. Forest management plans and protected areas have also affected the number and extent of burned areas. The presented historical analysis provided evidence for further revising forest governance in Portugal to mitigate wildfire risks and unlock social and economic benefits from forests under changing conditions.

## Editorial Remarks

This Special Issue creates a snapshot of small-scale forestry research that was underway in 2018. The geographical distribution is wide: the articles are based on data from China, Finland, Norway, Portugal, Sweden, United Kingdom, and United States. In the Issue’s articles, the main theme, transformations towards a new era, is represented in various ways, such as mapping the history to inform future policies, considering farther future operating environment, and assessing value-driven behavioral change prospects. Overall, analyzing change patterns is a common denominator among the studies comprising this Special Issue. The general learning from across all the articles is that the change patterns are interconnected, and they create complex entities that scientific studies can analyze for deeper understanding and better-informed anticipatory policies and practices.

The present article collection, while not being more numerous than half a dozen articles, also demonstrates the characteristic multidisciplinary nature of contemporary small-scale forestry research. The approaches range from rural sociology case

studies and land manager interviews to futures-oriented expert panel evaluation, household survey econometrics, landowner customer survey, and further to spatiotemporal governance analysis. This diversity, while on one hand providing richness, challenges the small-scale forestry community for a self-reflection of what are the boundaries and essential elements of small-scale forestry research in years to come. Perhaps in the near future the earlier conceptualization (Harrison et al. 2002) will be revisited with an aim to strengthen the self-identity of small-scale forestry research and make it more conscious of the existing, evolving, and forthcoming change patterns around its own operating environment.

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