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Scandinavian Forest Economics
No. 44, 2012



Proceedings of the Biennial Meeting of the
Scandinavian Society of Forest Economics
Hyytiälä, Finland, May 2012

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A Comparative Assessment of the Forestry Services in Finland and Sweden

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Abstract

Non-industrial private forest owners (NIPFs) are the most significant ownership group in Finland and in Sweden by owning more than half of the productive forest land. Emphasis on meeting the industry requirements for stable roundwood supply has traditionally dominated the service offerings targeted to NIPFs but the changing objectives of the private forest owners have also diversified their service needs. Therefore, it seems that the traditional 'roundwood supply approach' does no longer match the service needs among modern forest owners. More flexible service markets and a larger number of actors might improve conditions for those forest owners with more diverse service needs. Environmental and cultural similarities combined with the long common cultural traditions make the comparison of Finnish and Swedish forestry services markets reasonable: the good methods in each country could be adopted also by the 'neighbour'. The Finnish markets are facing structural changes when it comes to organising the service delivery system. In Sweden, especially the role of the forest owners' organisations and the present situation offers some clues of the way the Finnish system is possibly going to evolve. Changes in the financial base of the Finnish forest management associations towards the Swedish way of the voluntary membership system could affect the whole service markets. Simultaneously, the stronger interest groups of the independent forestry entrepreneurs in the Finnish markets are supporting entrepreneurship, compared with the Swedish where contractors struggle in a difficult market environment against strong industry. The theoretical objective is to examine and compare the market and institutional background for service innovation in the contexts of Finnish and Swedish forest clusters. Based on the concepts of service-dominant logic and dynamic capabilities, the empirical objective of the project is to describe the existing and potential service business models and their development possibilities. This research contributes to an improved service-dominant logic based system in which customer value is created at the level of the whole network of actors. Using qualitative approach and 16 thematic expert interviews in Swedish and Finnish service organizations, we will aim to identify potential barriers and opportunities for creating new services in the NIPF markets and, further, suggestions to develop new service innovations to fulfil emerging needs among forest owners.

Keywords: forestry services, Finland, Sweden, service dominant logic

1 Introduction

The area of privately owned forests land both in Finland and Sweden is rather stable and due to urbanization the owners are decreasingly dependent on their forestry incomes. Service providers that operate in these evolving markets try to attract the owners by introducing add-ons to their service portfolios that traditionally have been dominated by roundwood trade associated services. In the competition of this segment of forestry service market, innovativeness and the ability to find new ways to reach the forest owners become increasingly important. A broader understanding about the value creation of a modern forest owner is needed and it should be questioned if the current organisations with their current images are even capable of offering attractive and activating service portfolios to all private forest owner segments.

Both countries are among the most extensively forested lands in Europe and the forests are dominated by coniferous trees. In Sweden there is 28 million hectares forest land (69% of the total land area) of which 22.5 million is classified to productive forest land (FAO 2011, Swedish Statistical... 2011). In Finland there is 22 million hectares forest land (73% of the total land area) of which 20.1 million is classified to productive forest land (FAO 2011, Finnish Statistical... 2011). There are almost 228 000 private forest estates in Sweden and 374 000 in Finland and the mean size of private forest estate in Sweden is some 50 hectares and in Finland about 30 hectares (Fig. 1).

Private forest owners are the most significant ownership group in both countries. In Sweden, they own half of the productive forest land and in Finland 60% (Fig. 2). The state is also a significant owner in Finland by owning 26% of the productive forest land. In Sweden, the most of the state owned forests are held through a state owned company summing up the total number of state owned forests close to 17%. In Sweden, private owned companies have more forests (25% of the productive forest land) compared with Finland (9% of the productive forest land), but in both countries the industry is very dependent on roundwood supply of NIPFs.

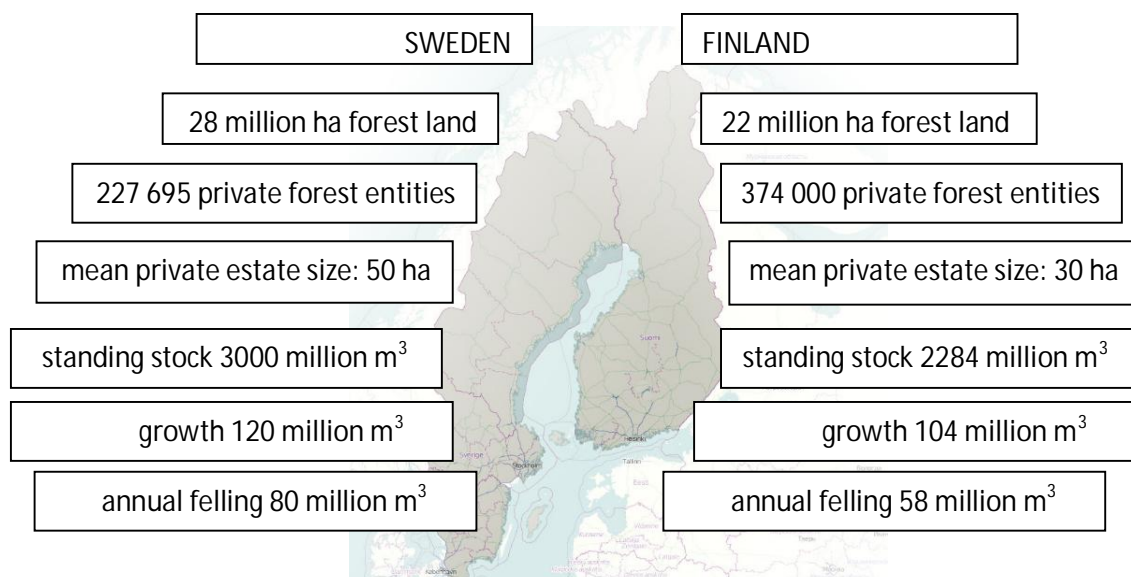


Fig. 1. Statistics of forests and private forest owners in Sweden and Finland (sources: Swedish statistical... 2011, Finnish statistical... 2011, OpenStreetMap)

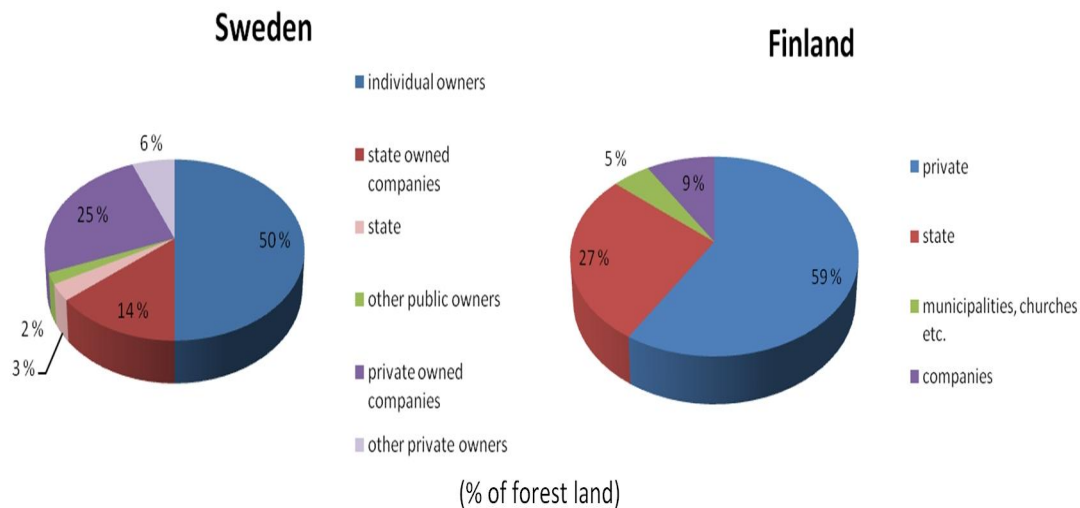


Fig. 2. Forest ownership in Sweden and Finland (sources: Swedish statistical... 2011, Finnish statistical... 2011)

There is ample research about the Scandinavian private forest owners and the structural change in the ownership. Trends like the increasing number of city-dweller owners, larger share of women and ageing among forest owners have been recognized as the drivers of increasing heterogeneity (e.g. Ripatti and Järveläinen 1997, Karppinen 1998, Boon et al. 2004, Ingemarson et al. 2006). The forestry service research, instead, is usually more concentrated on some specific part of the markets; most often roundwood markets (e.g. Rämö et al. 2002, Tilli and Skutin 2004). Although there is research about the services more broadly (e.g. Rämö and Toivonen 2007) and about the organisations (e.g. Sinkkonen et al. 2007, Lidestav and Arvidsson 2012, Lönnsted 2012), no up-to-date comparison of the Finnish and Swedish forestry services markets as a whole is available.

The concept of forestry service in this paper includes all various services offered to private forest owners. They include wood procurement, forest management, property administration and information services. In this study, we try to find possible differences in the logic the organisations in Finland and Sweden are providing services to the private forest owners. Identified differences can offer possibilities to predict the effects of changes in the markets. In Finland for example, the market environment change is now triggered by the institutional changes driven by politics. The exceptional position of the automatic membership and tax-like membership fees of the forest management associations are about to be abolished. Restructuring the public finance of the organisations will affect the whole forestry services markets. Instead of doing a deep all-inclusive comparison between the markets structures, the idea of this study is by exploring the logic of the organisations to find best practices, as well as possibilities for new emerging service oriented ideas in both countries.

The main organisations that offer forestry services to the private owners are listed in Table 1. In both countries, forest owners have their own organisations that supervise their interest. In Finland they are associations; their activities are based on the national policy and they are partly financed by tax-like membership fees. In the Swedish system they are cooperatives that pay shares of their profits to the owners. Forestry centres in both countries are public authorities that enforce forestry laws but they also offer some business-based services. In both countries, large-scale forest industry is a significant service provider and their service portfolios are built to support their main activity: wood procurement. The service portfolios of sawmills vary between basic wood procurement services to all-inclusive full service packages. Also forestry enterprises have rather variable assortments usually including operational services for forest management or forestry planning services.

Table 1. Forestry service organisation comparison between Sweden and Finland (Sources: Staland et al.¹ 2002, Rieppo 2010², Tapion vuositilastot 2010³ Rummunkainen et al. 2009⁴)

	FINLAND	SWEDEN
FOREST OWNERS' ORGANISATIONS	<ul style="list-style-type: none"> - 103 local associations - automatic membership and membership fee - 70% of NIPFs pay membership fee³ - supervising interests, lobbying - education, extension - help to sell wood - forestry operational services - planning, evaluation 	<ul style="list-style-type: none"> - 4 regional cooperatives → pay shares of profits to the owners - 50% of NIPFs are members - supervising interests, lobbying - education, extension - buy stumpage from members
FORESTRY CENTER	<ul style="list-style-type: none"> - public services unit (channels funds, advisory, promotion, enforce implementation of the forestry act, forest inventory information) - business services unit (road building and maintaining, peatland management, forestry planning, seed and plant production) 	<ul style="list-style-type: none"> - public authority - planning, evaluation, education, organising road building and management
LARGE-SCALE FOREST INDUSTRY	<ul style="list-style-type: none"> - few large-scale companies using pulp wood (one of them a cooperative owned by forest owners) - extensive full service packages - buy stumpage 	<ul style="list-style-type: none"> - few large-scale companies using pulp wood - extensive full service packages - wood trade
INDEPENDENT SAWMILLS	<ul style="list-style-type: none"> - 1500 small sawmills (using less than 10000m³ wood annually) pulp wood (one of them a cooperative owned by forest owners)² - 170 major sawmills² - varying services 	<ul style="list-style-type: none"> - 1600 small sawmills (producing less than 1000m³ annually)¹ - 300 major sawmills (producing more than 1000m³ annually)¹ - varying services
FORESTRY SERVICE AND HARVESTING ENTERPRISES	<ul style="list-style-type: none"> - 650 forestry service enterprises² - 1650 harvesting enterprises² - variety of expert services 	<ul style="list-style-type: none"> -- ~ 1600 forest entrepreneurs⁴ - variety of expert services

2 Theoretical background

The research interest in services and service innovations has in general evolved from various disciplinary backgrounds. A distinct area of service research has stemmed from business-oriented research into knowledge intensive services (Gallouj 2002, Miles 2005, Kuusisto 2005, Toivonen et al. 2007). In marketing, Vargo & Lusch (2004, 2006, 2008) and Grönroos (2008) have been propagating a new service marketing discipline. These issues have been discussed in studies on services under the topic of 'company driven inside-out view of the approach to one's markets' vs. 'outside-in view of a customer driven service-company'.

Service dominant logic (SDL) by Vargo & Lusch (2004) offers an interesting viewpoint for examining forestry services, presenting a case for mapping the new logic and the possible business opportunities it creates. According to the SDL, service is considered the fundamental driver of exchange and the physical goods are just the distribution mechanism for the service provisions (Vargo and Lusch 2004). According to the view, a customer creates value together with the company that offers resources for the process, and all social and economic actors can be thus be understood as resource integrators (Vargo and Lusch 2004 and 2006). Therefore, in order to add any additional value to the value creation process for a client, a service provider still needs to offer those resources that enable or improve the process.

In line with SDL, service providers and customers combine their resources in the value creation process, so the resource-based view (Barney 1991) should be widened to cover the resources held by the customers as well (Gallouj and Savona 2010). Heinonen et al. (2010) have widened the perspective into customer dominant logic (CDL). Not only are resources of a customer regarding a service described by those authors, other activities of the customer and life as a whole as a primary driver of business interaction, have been covered. Connected to this, social network research has taken its first steps among Finnish private forest owners and their timber sales networks (Korhonen et al. 2012).

Although the interviewees in the empirical part of this study most commonly spoke from a more practical point of view, the SDL framework was nevertheless used as a starting point when designing the questionnaire for the thematic interviews. The main objective was to try to understand the logic that the service organisations use in their business and find out if it can be understood to be in line with the SDL-oriented mindset.

3 Data and methods

The first stage of interviews was performed in Finland in 2011 among eight forestry service organisations (Table 2). The interviews were with the forestry service enterprises (3 interviews), the forest management association, an information technology company, a large-scale forest industry company, a wood procurement company and a forest machine entrepreneur. The lengths of these interviews ranged between 0:37 hours and 1:54 hours with a mean of 1:02 hours.

Table 2. Interviews in Finland

Anonymous 1	forestry entrepreneur	Jun 2011
Anonymous 2	executive manager, forest management association	May 2011
Anonymous 3	managing director, information technology company	Sep 2011
Anonymous 4	owner relations director, large-scale forest industry	Mar 2011
Anonymous 5	forestry entrepreneur	Sep 2011
Anonymous 6	executive vice president, wood procurement company	May 2011
Anonymous 7	forestry machine entrepreneur	Oct 2011
Anonymous 8	forestry entrepreneur	Oct 2011

Table 3. Interviews for this study in Sweden

Anonymous 9	marketing chief; consulting company	Feb 2012
Anonymous 10	regional marketing chief; large-scale industry	Feb 2012
Anonymous 11	forest advisor, forestry centre	Feb 2012
Anonymous 12	manager, entrepreneurs' association	Feb 2012
Anonymous 13	forest advisor, forest owners' co-operative	Feb 2012
Anonymous 14	forestry expert, forest owners' central organisation	Mar 2012
Anonymous 15	forestry chief, forest owners' co-operative	Mar 2012
Anonymous 16	executive manager, conservation foundation	Mar 2012

The interviews in Sweden consisted of eight interviews in the local forestry service organisations having an emphasis on cooperatives owned by private forest owners (Table 3). The lengths of these interviews ranged between 0:54 hours and 1:46 hours a mean of 1:08 hours.

All 16 theme interviews except one (Anonymous 5) were recorded and transcribed. The interviewees were selected on the basis of their organisations: the most important organisations were chosen on the basis of earlier studies of forestry service markets and discussions with local researchers. The experts in the organisations were selected on the basis of their duties in order to find people with a deep insight of the forestry service markets.

The research method was qualitative in its approach because of the objective to broadly understand the logics of the market actors. Maxwell (1996) describes the qualitative method suitable for understanding meaning, context, identifying unanticipated phenomena. These characteristics influence the generation of new theories and understanding the process by which actions take place and thereby assist the development of causal explanations. Although the qualitative method can only offer references for a basis of an interpretation, it can increase the understanding about a phenomenon, if implemented thoroughly (Saaranen-Kauppinen and Puusniekka 2006).

Themed interviews were started with the interviewee giving a basic description of her or his particular organisation to induce the free flow of speech. The main themes were the organisation in itself, forestry services in the markets, changes happened in the demand and competitive environment. Since this approach was clearly perceived as being intrusive by one of the interviewees, the generality of the purpose of the study was stressed in the later interviews. Apart from this, the main objective was to explore the current general situation and

development needs in the forestry service market to identify existing barriers and opportunities, rather than to focus on the identification of the existing strategies of individual companies.

4 Results

Forestry service markets in Finland and Sweden are very similar from the viewpoint of the organisations and their service offerings. One of the most interesting differences is related to the forest owners' own organisations that lobby and supervise forest owners' interests in both countries. The Finnish way to organise the associations is about to change towards the Swedish system with voluntary membership. Nowadays the membership in Finland is automatic as well as tax-like membership fees. Currently, about 70% of the Finnish NIPFs pay membership fee, 29% do not have to pay it on the basis of their small estate size and 1% have a remission of the fees (Tapion vuositilastot 2010). In Sweden, half of the owners have decided to be members of the forest owners' cooperatives (Swedish Statistical... 2011). They pay a share to the organisation when they sell wood but they also get shares of the profits of the organisation.

The abolishment of the Finnish system of tax-like membership fee will force the associations to concentrate on the services that the forest owners are truly willing to pay for. The forthcoming change in the Finnish system will also remove restrictions for the businesses of the associations. This means, that they will be allowed to buy wood and have their own industry, like they have in Sweden. It can be expected that economic pressures will lead to consolidations among the 103 Finnish associations. Consolidations have decreased the number of forest owners' cooperatives in Sweden into four. This will mean that the associations will widen their scope not only to be local actors but more likely regional or even larger: Scandinavian. Whereas the associations in Finland have traditionally been local actors, the forest owners' cooperatives in Sweden have a much wider view: 'The biggest part of our business is to do business with timber and pulp wood' (-) 'And I think the business for us has changed. We are in the whole Scandinavia and northern Europe is nearly the same business area (Anonymous 15).

The change in the financial base of the Finnish forest owners' organisations currently seems to be the most significant organisational change in these two markets. The situations of the other organisations are more stable although the changes affect the Finnish markets as a whole. Forestry centres have their public funding in both countries and the Finnish version of business unit is adjustable as a result of the most recent organisational reformation. In Finland, there is also an interesting trial to create a service portal that will connect forest owners and their forest inventory information to the forestry service providers. From the viewpoint of small forestry planning enterprises these can be seen as 'publicly financed actors that disturb the markets' (Anonymous 8) whereas organisations with other main businesses than planning more usually seem to feel it as a 'really good thing. It helps people to see what they have to do' (Anonymous 10).

Demand for forestry services seems to have changed in some perspectives. Forest owners no longer are that familiar with the forestry issues and they are more frequently requesting services and information. 'More and more living in the city and they don't live in the farm and they are not farmers. But you can also see a trend that people are less loyal. The loyalty is less because they want to compare. They know that they should' google' and have PriceRunners and you have things like that, so you have to compare different prices (-). And then maybe you take the one you used to have before because it's almost the same, but I think the thing is that you should compare. Otherwise you get cheated. You get fooled. I think it's a small trend' (Anonymous 11). Although there is information available there are also challenges: people have other interests than searching for information about subjects they are not interested in. If the forestry sector is unable to offer interesting and attractive services related to forests, people

become alienated from forestry. Another factor for increased demand for full services is the long time scale related to forests: 'When you own forest you're having a company that is working for a very, very long time, to be exact, nearly hundred years for a tree. Then you have to have business partners, partners for nearly the whole time. I think as a forest owner I want to have help with small plant with ditching, soil preparation, clearing and these kinds of things. This is just one piece. It's a like store that just sells socks. You have them. Maybe it's good quality of these socks but...' (Anonymous 15).

In Finland, passive forest owners have been seen as a threat to some extent, like Anonymous 4 defined: 'If you have some 10, 15 or 20 hectares of forest, you start thinking that there is just a berry field in the backyard, let it be there. It doesn't have economic significance and it goes away from the use of industry, little by little. This is what I see as a major threat in the long term'. From the Swedish point of view, the forest owners were more active despite the decrease in forestry know-how: 'They are active as owners. You have to let others do the job but you have to manage how to do it and that, I think Swedish owners are good at' (Anonymous 9). One of the reasons is undoubtedly the difference between estate sizes which changes the service needs but there may be some differences in the attitudes. Social factors like the following were not mentioned in any of the Finnish interviews as an aspect: 'very proud of it (to be forest owners) and it's something that – it's good in the social life' (Anonymous 9).

The long time scale in forestry operations and uncertainty related to the lack of knowledge have maintained personal selling an important channel for forestry services and the easiest way for the customers to buy them are full-service packages. As forest owners grow apart from their forests and have less time to spend on forestry, service organisations have concentrated more on offering full service packages to fill this gap. Interviewees both in Sweden and Finland told the demand for forestry services has evolved more towards easily available and understandable full service packages. This change in demand was seen in a Swedish forest owners' cooperative as follows: 'It's going straight to the direction of full service. Because when they call us, they say to me: "please, do anything you have to do. Then the money, when it is over: send it to me. Thank you"' (Anonymous 13).

There is one important obstacle related to offering full services among service organisations: the need of large scale to reach efficiency. Because of the stiffness of the wood markets, it seems that it is not enough to create a successful service concept but an organisation has also handle the whole value chain to processing. Even energy companies as new players have not successfully penetrated the market. 'The paper industry is so strong both Sweden and Finland. They have always controlled the market. They have had the control of pulp wood and they have the control of the sawmill products that come back to them. They don't like the idea of having – burn it up to get warmth'. (-)'but I think, but as a forest owner: if I can find a way to get more money for my forest, I give it to them if it's a sawmill or bioenergy power plant. But we are so brainwashed: "it's gonna be this way, it has been this way, it's gonna be this way". And I'm not sure, about 10-15 years from now: things can happen. You can say about, all the nuclear power, if they'd stop, we only need one more crash like in Japan somewhere in Europe' (Anonymous 12). Forest owners' organisations in both countries are actually filling the gap in the wood markets by creating freer markets for wood. In addition, Finnish forestry centre tries to connect the other service providers with forest owners. This would build better situation for small, service oriented companies. 'So, it's, maybe in the future we have more of the business that the good entrepreneurs, the free entrepreneurs can sell their services to private owners to make better business for everyone but the big companies don't want it because they want to control it, the whole chain. They want to control the whole chain' (Anonymous 12).

In both countries remote owning and demand for full services are challenges especially for the smallest sawmills and forestry service enterprises. 'Many contractors are married to the customer. They are not free business men. They are the workers for a company.' (Anonymous 12). Instead of the fierce competition of the current customers there might be possibilities for win-win results by the way of collaboration. By helping entrepreneurs to develop their marketing by offering a market place, it would be possible for industry to attract new customers among those forest owners who are difficult to reach. Instead of offering bulky all-inclusive services through one brand name, the personality and image of entrepreneurs could be utilized when contacting some customer segments. If there were possibilities for entrepreneurs, it could also help with 'a struggle to have good entrepreneurs and personnel: good workers' (Anonymous 14). The problem for that is the low attractiveness of the branch which is a result of difficult market situation. It is not solved only by marketing. 'The attractiveness of the branch: it's very low now. And we have told about it a lot in Sweden and I have been talking about it a lot in media and papers. My view is: we have the big companies – the big bosses in the big companies – they tell everyone: "we must tell everyone how good it is to work in the forest business: very good for a contractor, very good! We need a lot of them! And it's a very good future!"(-) Next day they come to the entrepreneurs and say: no profits at all. Ok, your costs have risen for 4 %, we give it to them, you get zero from us. You must work harder to get". This way of thinking and doing is catastrophic' (Anonymous 12).

From the viewpoint of service innovations, the forestry sector is not always seen as a very out-minded and communicative. The atmosphere is likely not sufficiently open: 'You have the same teachers, the same school, the same way of thinking and that's not a good thing' (Anonymous 12). The traditional branch is not attracting people from other sectors and the ones with new ideas tend to move to other branches: 'the people who have other ideas – see things with new eyes: a lot of them are not still in the forest sector because they haven't got a job!' (Anonymous 12).

5 Discussion

Despite the preliminary nature of this study, some interesting differences were found. It appears to be relevant to try to predict the changes in the Finnish situation based on Swedish experiences, because the institutional change is obviously underway. Especially the change in the financial base of the Finnish forest owners' organisations will lead to some operational changes. Consolidations are a probable result but the business models of emerging new units have to change as well. An interesting difference compared to Sweden is that in Finland there already is one nationwide forest owners' cooperative that has industry (Metsä Group). There may not be space in the market for new industrial plants owned by forest management associations, so their role may be more like mediators in wood trade. As electric wood trade systems develop and the scope of the Finnish forest owners' organisations enlarges, it is even possible that a Scandinavian level roundwood markets will emerge.

Another plausible change in Finland as a result of the consolidations of the forest owners' associations is the increasing number of the foreign workforce in forestry operational services. One significant reason for that is that the bigger forest owners' associations will not have similar responsibilities when it comes to supporting local communities: associations in Sweden are operating in large areas and their main objective seems to be to find the cheapest solution to forest owners need. In Finland, instead, associations are more local actors still employing local loggers, to some extent. Undoubtedly, this has been a moral barrier to using cheap labour and limited the number of large logger companies using foreign workers. From this point of view, enterprises able to organise cheap labour to offer full-service for forest owners' associations are

probably going to evolve. When subcontracting is widely used, there is also more need for supervision. This strengthens the role of forest owners' organisations.

It seems likely that if the current forestry service organisations try to attract those forest owners they have failed to activate until now, they should clearly change their business logic. They should either to be more clearly aware of the forest owners' economic situation to offer services at the right time or to be able to split the large-scale roundwood driven transactions into smaller pieces. If the owners are not at all familiar with forestry, the whole field of forestry services may seem too fuzzy for them, and there are currently not enough incentives to familiarize oneself with the branch. There are good experiences from developing tools in some other sectors, such as in buying airline tickets, to compare the services and find the best prices beforehand. Forestry services instead, are more fragmented and less transparent. As mentioned in one of the interviews, there is a trend of the need to compare the services beforehand. A similar trend can be found for example in the case of Finnish housing agencies (eg. Autio et al. 2012). Although personal selling is important and even essential in long scale decisions like they are in forestry, it is surprising how big role personal selling still has in this business despite the high costs and difficulties of finding sufficiently competent service-oriented people in the sector. By creating tools for entrepreneurs to facilitate easier contact with the 'passive' forest owners, it might be possible to get some seeds for new ideas to the markets of forestry services in Finland and Sweden.

Acknowledgements

Financial support from FP-SERVE project funded by the Finnish Innovation Agency Tekes during 2010-2012 is gratefully acknowledged. We also thank for all of the interviewees.

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REDD+ benefit sharing mechanisms: Does it make a difference in equity?

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Abstract

The concept of Reducing Emissions from Deforestation and Forest Degradation (REDD+) has become a key debate of international cooperation on climate change. While most countries acknowledge the importance of so called community carbon benefits under REDD+ interventions, they are only just beginning the process of defining institutional arrangements for the sharing of economic benefits in REDD+. The Tanzanian Community Carbon Enterprise and UN-REDD+ models offer two examples of benefit sharing mechanisms which remains to be analyzed. The various actors and groups involved in designing these models have varying degrees of negotiation powers and diverse interests regarding the objectives, design and implementation of REDD+. This raises questions of institutional choices: how REDD+ benefit sharing mechanisms influences equity in forms of recognition of local representation and accountability of the non-governmental organizations to agrarian communities and in various levels of governance.

1 Introduction

Climate change poses enormous governance challenges and has profound social implications for people (see Byravan and Rajan 2008, Sovalcool and Brown 2009). It is assumed that the pro-poor climate strategies need public acceptance, thus public involvement in developing such strategies is necessary for their effective implementation. There is also a possibility that people's priorities in facing uncertainty related to climate change is more towards securing the future reactively in the short run, without variations among the various stakeholder groups at a local level (Sapountzaki 2007). The further research is needed to discover whether the proponents of global level climate strategies and interventions are able to understand the aspirations of the local stakeholders and function with responsive governance. This is particularly important for determining future socially-acceptable, climate-compatible development paths for local people (Mustalahti et al. 2012).

In our current study, REDD+ is approached as a global environmental governance¹ reform process, which can lead to both expected and unforeseen impacts, environmentally and socially. Within the global environmental governance regime, there is a proliferation of institutional arrangements and mechanisms involved in initiating a wide range of REDD+ activities in what could be "observed and controlled" as global multi-layered environmental governance. Ribot (2004;2007;2009) has

¹ Governance here means environmental governance consisting of the set of regulatory processes by actors such as governments, international organisations, communities, the private sector and NGOs which all influence each other (Lemos and Agrawal, 2006:298).