

TFD's Sweden ILCF Background Paper

Small-scale private forestry in Sweden

Carl Henrik Palmér, Areca Information
chp@areca.se

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1. Some features characterizing forests and forestry in Sweden

There are a few things that distinguish Swedish forests and forestry from many other parts of the world:

Flat ground. Only a tiny fraction of our forests grow on real steep slopes or in high mountainous areas. Our forest ground is normally quite flat, which makes it easy to grow and harvest timber.

A good road infrastructure. There are more than 400,000 kilometres of roads in Sweden. Appr. 50 per cent of those are forest roads, built with the single purpose to enhance haulage of timber to the industries. A majority of these roads were built in the 1940's and 50's, often with economic support from the State.

No "basic" land-use conflict. Our forests are normally growing on stony soils, so called "morains", which are unsuitable for agriculture (but there are, of course, other conflicts, such as reindeer husbandry in the forest, the moose population and conservation issues).

Supportive ecosystems. Trees will eventually grow on most sites even without special reforestation activities – although we can promote our preferred species and enhance growth with active regeneration and forest management.

Degradation no longer an issue. During the 19th century we had a growing population, and an increasing level of livestock grazing in the woods. This resulted in degraded forests. But from the 1930s onwards, cattle are almost completely separated from the forest land. In northern Sweden, we had a period with an over-exploitation of our forests from around 1850 to 1950. Only the big trees were cut in the old growth stands and very limited regeneration measures were performed. But from 1950 onwards, a system with clear-cutting followed by planting was introduced on a broad scale in Sweden, both in the south and the north. Thanks mainly to the reduced livestock grazing and the improved silviculture, the standing volume in our forests has increased substantially. Since 1920, when we had the first nationwide forest inventory, the volume in the Swedish forests has almost doubled.

2. Owners and ownership

Forests cover 70 per cent of Sweden. The total area of forest land is appr. 28 million hectares. Of these, 23 million hectares are classified as productive. Big companies own roughly 25 per cent of this and 25 per cent is Public-owned. Private family forest owners hold the remaining 50 per cent.

The private owners' forests are divided into 233,000 properties, which give an average forest area per holding of 50 hectares.

The total number of forest owners is more than 330,000 – out of a total population of 9 million. 125,000 of them are women.

Small-scale private forestry is dominating in the southern parts of Sweden, where the soils are more fertile. Hence, private forest owners' proportion of the Swedish annual forest increment amounts to 60 per cent, while their share of the forest land is 50 per cent.

Fifty years ago the majority of the private forest owners lived in rural areas and worked as farmers on their properties. Today, this connection is weaker; at least one third of forest owners live outside their holdings, often in urban areas.

3. Land tenure

3.1. History

3.1.1. Southern Sweden

Small-scale private forest ownership is a quite modern phenomenon. Before the 19th century, almost all forest land in Sweden was commonly owned and used primarily as extensive grazing land for cattle and goats in the summer time. The villagers also took their firewood and timber for house-construction from the commonly “owned” woods. As long as the land was sparsely populated, there was forest in abundance. The woods had a low economic value and there was no need to regulate land use.

In the beginning of the 19th century we had a number of land reforms in Sweden. The prime purpose was to improve agriculture by concentrating scattered pieces of the arable land so that each property only would have a few lots to manage. Before the reforms, every single farm had its share of every single field in the village, forcing the farmers to plough, sow and harvest each field together and simultaneously.

In connection with these land reforms, the forest land was also privatized. Each landholder in the village got its own part of the commonly owned forest with marked and registered borders. In 1850 this process was more or less finished in the southern and central parts of the country. We had, for the first time in Sweden, private forest owners with individual tenure rights.

3.1.2. Northern Sweden

In northern Sweden, the privatization of the forest land came somewhat later. The large forests were virtually no man's land, extensively used for grazing and fodder production for the few farmers living in the valleys. The State claimed ownership over these woods, but in the mid 19th century, there was a political ambition to enhance agriculture in these wide areas. The existing farmers should get as much forest as they needed so that new farmers could colonize the rest. The State's ambition was to sell the forests to the existing farmers, but they were not interested: Why pay money for something that was of no value? Grazing was free, and the standing trees

were worthless, since it was impossible to transport the timber to the market – there were virtually no roads. Finally the State more or less gave the forest land to the unwilling farmers; single properties could get thousands of hectares of forest.

This process was finished just one or two decades before the forests in the interior north of Sweden became interesting for the growing sawmill industry. In the second half of the 19th century, a lot of sawmills were established on the coast of the Baltic Sea in northern Sweden, often close to the outfall of the big rivers. The forests close to the mills were first harvested, but as the nearby forests disappeared, the mill owners had to invest in new infrastructure, to access the large unexploited interior forests. Rafting was the only possible way to transport the timber, but the streams had to be cleaned and waterfalls bypassed. In quite a short time we got a dense network of drivable water courses, virtually covering the whole inland. When the infrastructure was established, the prize of forest land rose dramatically.

In the beginning of this process, many farmers were persuaded to sell their forest land to the forest companies for extremely low prices. The farmers were happy to get “money for nothing” as they saw it, but realised after only a few years that the value of their former forest holdings had risen several times when the logging infrastructure was established. The farmers who sold their forest land in the beginning of this process got much less money than the later ones. Many farmers felt cheated by the companies – and still today you can find distrust between private forests owners and forest companies in parts of Sweden.

During a short period, from 1870 to 1906, the companies in northern Sweden bought millions of hectares of forest land from the farmers. This caused a rising opposition, politicians were afraid that the farmers could lose their future source of income - and hence not be able to pay taxes! So, in 1906 the Parliament decided that the companies no longer were allowed to buy forest land from farmers. From the beginning the law was only applicable to the northernmost parts of Sweden, but after some years it became a national law. The law is still in place, implying that if a company purchase of forest land from a private owner, this has to be compensated by the same company, who has to sell out an equal forest area to a private person. So, since the beginning of the 20th century, the overall structure of forest ownership in Sweden has been more or less the same as it is today.

Selling and heritage of family forests to other private persons are free with an important limitation that forests estate cannot be divided if the yearly growth falls below 200 m³/year

3.1.3. Remaining commons

There are still some commonly owned forest properties in Sweden – in total 655,000 hectares or three per cent of the total forest land. These commons are owned and managed jointly by the landowners within a parish or other administrative unit. Normally each single property's share of a common is corresponding to the area of its (historic) arable land.

3.2. Today's tenure rights

The rights of a tenure holder are strong in Sweden. The forestland owner and the borders of the property are recorded in a cadastral register. As a forest owner you have the right to cut and sell your trees on a free market. You have the right to hunt (during hunting season). You have the freedom to manage your forest within quite wide limits.

But of course there are restrictions:

The Forestry Act tells what you are allowed to do when managing your forests – and what is forbidden. Two examples can illustrate this: you must reforest after a final felling through planting or by other means – and you are not allowed to clear cut younger stands, only thinning is accepted.

The Forestry Act also tells you what environmental considerations you have to take in your forestry, such as leaving trees standing on and around a final felling area, for conservation and enhancement of the nature values in the forests.

As a forest owner you have to accept that people walk in your forest and it is allowed for everyone to pick "your" wild berries and mushrooms through what is called "the right of public access".

In large parts of northern Sweden, the indigenous Sami people have the right to herd and graze their reindeer in your forest without paying any compensation.

The government can expropriate forest land for common goods, such as roads, power lines and nature conservation purposes. The main principle is that the owner gets full economic compensation for the property he/she is forced to sell. Since couple of years, the owner even gets an additional 25 per cent of the lost value.

4. Silviculture in small-scale forestry

4.1. Even-aged stands dominated by conifers

The normal silvicultural practice is management in even-aged stands with rotation periods ranging from 60 years on fertile soils in southern Sweden to 110 years on poor sites in the north.

The majority of managed stands are dominated by two tree species; Norway spruce (*Picea abies*) and Scots pine (*Pinus silvestris*). In most stands, there is normally also some birch (*Betula pendula*, *B. pubescens*) and aspen (*Populus tremula*). In southernmost Sweden there are stands dominated by beech (*Fagus sylvatica*), oak (*Quercus robur*, *Q. petraea*), ash (*Fraxinus excelsior*) and other hardwoods.

4.2. Standard silvicultural model

The standard silvicultural model begins with soil scarification after a final felling, followed by planting. After 5 to 15 years it's time for a cleaning (non commercial thinning), when unwanted trees, mostly naturally regenerated birch and aspen, are felled and left on the ground. After another 15 to 25 years, the stand is thinned. Some 30 per cent of the volume is then taken out as pulpwood and small-dimension sawn logs, making space for the remaining trees to grow better. On poor sites there is one more thinning before final felling, on more fertile sites two.

In the final felling, some 90 per cent of the remaining trees are cut, the rest are left for environmental purposes and/or as seed trees for natural regeneration. On many sites, tops and slashes are nowadays harvested and burnt in heating plants in the cities.

This standard silvicultural model is performed both by forest-owning companies and in small-scale private forestry, though with a wider variation in the latter. In small-scale forestry you find properties with extremely well managed forests as well as properties with more laissez-faire in their management.

4.3. Forest management plans

A majority of the private forest owners have their own management plan. It is an inventory of the standing volume in each stand, combined with management recommendations for the coming ten years.

The management plans of today are called *green plans*, where the property's forests are divided into three goal-classes:

Production forest with normal conservation concern (normally 90 to 95 per cent of the total forest area)

Protected forest – areas where nothing should be done

Environmental management forest – proposed activities shall promote biodiversity (example: remove Norway spruce to improve life for hardwoods).

5. Economy

5.1. Few owners can live on their forest

The annual mean net revenue from a forest property with balanced age-distribution ranges from app Skr400 to Skr1,000 per hectare (income from timber harvest minus costs for silviculture and management (but not interests). This means that very few forest owners can live solely on the revenue from the property (to compare: a manual worker earns some Skr300,000 per year in Sweden).

5.2. The market for forest products

In the old days, the forest owning farmer did most of the harvesting in the winter, when agriculture required less time. Sawmills and pulp industries bought the timber at roadside, where an independent scaler measured the timber's quality and quantity. The farmer got paid both for the timber *and* for his harvest work. The income from the forest was important.

Today, logging is fully mechanized, and almost all forest owners leave the harvesting to a Family Forest Association or a purchasing company. They, in their turn, engage a contractor, equipped with a harvester and forwarder, who performs the harvesting work, which nowadays is a year-round activity.

There are several business models applied on the market. A common model is that the forest owner gets paid for the wood value according to price-lists, minus the actual harvesting cost. The timber's quantity and quality is measured when it arrives to the mill. This measurement is performed by an independent organization, paid mutually by the buyer and seller.

In another common business model, the forest owner gets a fixed, agreed sum per cubic meter (independent of quality). The volume is measured when it comes to the mill.

In most parts of Sweden, a forest owner has four to five different competing buyers to choose among: normally one forest-owners association, one or two big forest companies and a number of independent sawmills. Many forest owners have a long-term relationship with his/her buyer, who also provides advice and other services for the forest management.

On average, some 60 per cent of the revenue from a forest property comes from sawn logs and 35- 40 per cent from pulpwood. Forest fuel, i.e. residuals from final fellings, contributes only to a minor extent. However, the demand for forest fuel is increasing and prices are going up, but from a very low level.

5.3. The market for forest properties

It has been very profitable to invest in forest properties in Sweden the last 20 years. The prices have almost doubled from 2002 to 2011! There are several reasons for this; one is that the market today is less regulated, which has widened the number of potential buyers. It has also become "fashion" for urban people with high income to buy forest land as a combined economic and life-style investment.

The highest prices are paid for forest properties close to the big cities in southern Sweden. The prices here are not at all mirroring the expected future timber revenue. Other values, like hunting opportunities, good living environment and the tax system, affect the prices substantially.

6. The role of forest certification for small-scale forestry

There are two parallel systems for forest certification in Sweden, FSC and PEFC. The objective for both of them is to guarantee the market and the final wood-consumer that the timber comes from a sustainably managed forest – environmentally, economically as well as socially.

FSC is the oldest system; the first Swedish standard was agreed in 1997. This has been the main certification system for the big forest-owning companies.

The first Swedish PEFC-standard is from year 2000. This was from the beginning the main system for small-scale private forest owners.

The two systems are today quite similar, and many properties, both companies and private, are certified under both systems.

When you certify your property, you commit yourself, among many other things, to develop a management plan where at least five per cent of your forest area will be set aside for protection. You must also pay proper salaries to people working in your forest.

It is voluntary to join a certification system; you normally get somewhat higher prices for your timber if the property is certified.

An educated guess is that 75 per cent of all forest land in Sweden is certified today. Both systems have around 11 million hectares associated, but since many properties are double-certificated, you can't just add up the figures.

7. The role of Family Forest Owners Associations

In the beginning of the 20th century Sweden was facing deforestation, at least regionally. Spontaneously and independently, small forest holders initiated *village forest owner associations*. These small and tiny organisations tried to defend and create a fair market place. They also had a simple extension service.

As time went by, the hundreds of small village associations merged and became stronger. They developed from civil right organisations to economic cooperatives. After a few decades the associations created a national federation (The Federation of Swedish Family Forest Owners). This new body fully took part and influenced national forest policy.

During World War II, the associations were given the task to provide the urban parts of Sweden with firewood. This formed an economic basis for the years to follow. The associations engaged themselves more and more in industrial processing such as sawmills and board production. This development had two drivers: to ensure a market for the members' timber and to earn money.

Today, after a long period of mergers, there are four regional family forest associations covering entire Sweden (see table).

Family forest association	No of members	Forest area owned by members, million hectares	Industries
Södra Skogsägarna	51,300	2.4	5 pulpmills, 8 sawmills and owner of Södra Interior, a chain for processed wood products
Mellanskog	32,000	1.7	Partner in Setra, Sweden's biggest sawmill group
Norrskog	13,000	0.9	3 sawmills
Norra skogsägarna	14,000	1.2	3 sawmills, 1 pole mill, 1 component factory for joineries
Total	110,300	6.2	

SÖDRA Skogsägarna, working in southern Sweden, is more or less fully integrated; their sawmills and pulp mills process the main part of the members' timber. The other three cooperatives have some sawmills, but the majority of the members' timber goes to other industrial companies.

The family forest associations are organised as producers' cooperatives, and their main task is to help their members with silvicultural and harvesting services and to market the members' timber. They also work with extension, training and local policy issues as well as professional advice in forest management issues. Some 50 percent of all private forest owners are members in a forest owner's association.

The associations are democratic organizations, ruled by their members. The principle is one member, one vote, independent of the size of the property.

The Family Forest Associations are divided into districts. The districts have a local board of forest owners and form the democratic platform of the association. They send representatives to the Associations yearly meeting. The districts also organize thematic days/evenings for training, discussion and social reasons.

8. The role of The Swedish Forest Agency

The Swedish Forest Agency is an authority, established already in 1905. The main task today is to implement the forest policy adopted by the Swedish Parliament. The forest policy places equal emphasis on two main objectives: production goals and environmental goals.

The Agency, placed under the Ministry for Rural Affairs, supervises the implementation of the Forestry Act. An important part of the Agency's work is performed in the forest, such as inventories, site visits and contacts with forest owners. The Agency is geographically divided into five regions and 34 districts, together covering the whole country.

9. Key lessons learnt from small-scale forestry

9.1. Key factors for success

Small-scale private forestry in Sweden has for more than two hundred years substantially contributed to the wealth of forest owners, rural society and the Nation.

The private owners' forests are normally well managed and their production potential is well utilized. The great number of individual owners provides for diversity in management. Many experts argue that this has benefited biodiversity better than the more uniform management of the big companies' forests.

Some key factors for this success are:

- Strong and clear tenure rights
- A long-term strong support from the State, both with extension and, during the 20th century, subsidies for road construction, ditching, etc.
- Cooperation within the Forest Owners Associations
- A profitable forest industry that can afford timber-prices that make it worthwhile investing in silviculture
- An independent timber measurement system that both parties can trust: i.e. the buyer knows what he/she pays for and the seller knows what he/she gets paid for.

9.2. Key constraints

But of course there are problems facing the private forest sector in Sweden:

- *Decreasing timber prices.* Timber prices have fallen steadily the last 30 years, with a rate of app. 2 per cent per year. So far, this has been compensated by an increased productivity in harvesting, so that the net profit for the forest owner has been more or less

constant in real prices. But the last few years, the productivity has decreased, which could mean less money to the forest owner in the future. This could lead to a decreased interest to invest in silviculture.

- *Increased demands on environmental considerations.* During a quite long period, lasting from early 1990's to 2010, it was quite silent in the Swedish forests. The environmental NGO's were focussing on other issues. This was partly an effect of a more environmental-friendly forest practice and the introduction of the certification systems. But the last few years, the debate has started again. There is a pressure from the environmental groups that more forests should be protected from forestry. The NGO's claim that at least 20 per cent must be protected to maintain the biodiversity. Today, only 4 per cent of our productive forest land is formally protected by law, but an additional 5 per cent is voluntary set aside by the forest owners. And if you add the low-productive forests, which are all legally protected, you end up with app. X per cent (must be checked)
- *The moose.* In parts of Sweden, we have too many moose, which makes it almost impossible to grow Scots pine; too many seedlings are destroyed by moose browsing. To avoid this, many forest owners nowadays plant Norway spruce instead, even on poor sites. This will lead to a substantial lower future yield. The conflict is eternal: the landholders want less moose, the hunters want more. One thing makes the situation extra complicated: the landowner and the hunter is often the same person. So, the conflict is not only eternal, it is also internal!

Read more

- **The Swedish Forestry Model.** Pamphlet published by the Royal Academy of Agriculture and Forestry 2009.
- **Swedish Statistical Yearbook of Forestry 2011.** The Swedish Forest Agency

Links

FSC: www.fsc.org

PEFC : www.pefc.org

The Swedish Forest Agency: www.skogsstyrelsen.se/en/

Family Forest Owners Associations

- Södra Skogsägarna: www.sodra.com/en
- Mellanskog: www.mellanskog.se
- Norrskog. www.norrskog.se
- Norra skogsägarna: www.norra.se