

Impact Report:



17 May 2024)

This report has been prepared within Landshypotek Bank's Green Bond Framework published 24 April 2018.

This is the sixth impact report in the series.

Stockholm, 17 May 2024

Per Lindblad Chief Executive Officer Martin Kihlberg Chief Sustainability Officer

Summary

Green Bond Framework: Published in April 2018 in accordance with the Green Bond Principles from the International Capital Market Association from 2017.

Second Opinion: Provided by CICERO (Center for International Climate and Environmental Research-Oslo) in 2018. The Green Bond Framework has been awarded the highest possible grade, "Dark Green". Green Bond Framework and Second Opinion are available on landshypotek.se.

Financed projects: Approximately 2,700 forest properties

Impact from financed projects: 2,690,000 tons CO₂

Impact per invested million SEK: 230 tons CO₂

Taxonomy reporting

The bank is currently working with the implementation of the EU's taxonomy for forest management. At present, the bank cannot report what proportion of the bank's lending to forestry meets the technical screening criteria for forest management. However, the bank can conclude that it will be difficult for an individual forest owner, who comprise the majority of the bank's customers, to meet the requirements of the technical screening criteria. There is currently no accepted method for a group assessment whereby a group of forest properties is determined to fulfill the requirements of the technical screening criteria.

Taxonomy reporting

Issue date: 18 Nov 2019 (3 billion) / 18 Nov 2020 (2.5 billion)

Duration: 6 years

Nominal amount: SEK 5.5 billion

Maturity date: 18 Nov 2025

Type of bond: covered bond

Coupon rate: 0.615 %

ISIN: SE0011870021

Issue date: 25 Apr 2023

Duration: 5 years Nominal amount: SEK 6 billion

Maturity date: 25 Apr 2028

Type of bond: covered bond

Coupon rate 3.60 %

ISIN: SE0015810965

Forestry terminology

BEF (Biomass Expansion Factor) =

Conversion multiple for finding the total dry biomass.

Site quality = The land's natural capacity to produce timber. Expressed in m³ob/ha/year.

Carbon Fraction (CF) = Carbon content of dry wood.

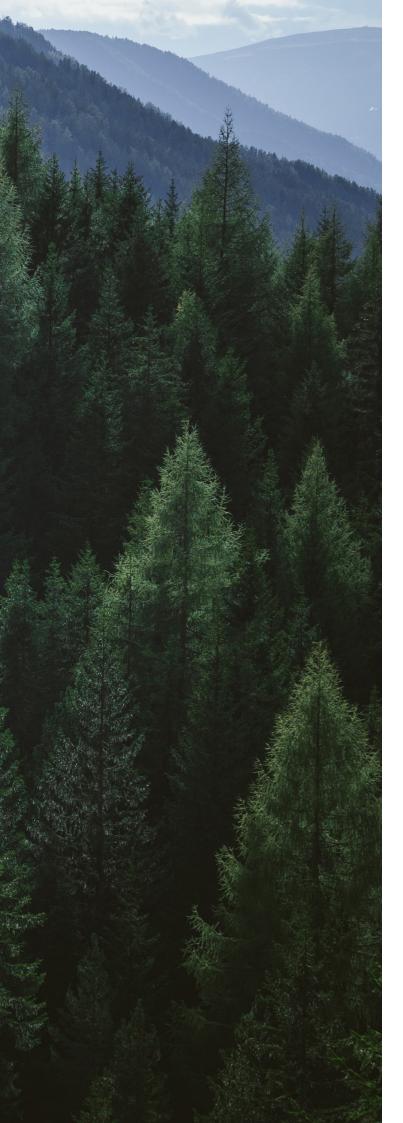
FSC = Forest Stewardship Council

PEFC = Programme for the Endorsement of Forest Certification

Volume over bark (m³ob) = This metric shows the forest stand's wood volume and includes the entire trunk above the normal stump height. Branches, stumps and roots are excluded.

The carbon dioxide effect: Through this green bond there are two carbon dioxide effects – absorption and avoidance. As the forest grows, carbon dioxide is stored and absorbed in the tree and the amount of carbon dioxide is reduced from the atmosphere. When harvesting forest and when forest raw materials are replacing other material the carbon dioxide emissions are reduced and carbon dioxide emissions are avoided and stored through substitution.

Net change in growing stock = The change in the standing growing stock measured in m³ob, that is growth less harvesting.



It is through the diversity of active, sustainable forestry that we achieve a long-term perspective regardless of the state of the economy.

Summer is just around the corner when this report is released. We look back on a year with a particularly dry spring, a cool and rainy summer and a winter with lots of rain. On the whole, 2023 was a favorable year for forest owners. Demand for wood and pulp has been strong and prices high. However, the high prices are matched by increased costs for forest management practices and higher interest rates. The prevalence of spruce bark beetle has been lower thanks to the cooler summer. Unfortunately, storm damage has occurred, and the wet conditions have resulted in a higher than usual amount of damage caused by machines used in active forest management.

At the beginning of the year, the World Economic Risk Report for 2024 was released. Four of the main global risks in the coming 10-year period are environmentally related. Sustainable forestry is one of the keys to solving the climate crisis and ensuring a transition to a fossilfree society whilst protecting biodiversity and other important ecosystem services. This is evident for many, in particular those of you who are reading this report.

These are interesting times, and many see the diverse values that forests create. It has been an intense period for the forest and forestry from a regulatory perspective. Forests and forestry have been widely discussed in the EU, whilst here at home we are now seeing the consequences of, among other things, the Swedish Species Protection Regulation (Art-skyddsförordningen). It will be interesting to see how everything plays out. Let's hope that the individual forest owner's perspective is given precedence when politics and regulation become reality. It is the forest owner who ultimately creates all the ecological and societal values that we all want to share and ensure for future generations.

I wish that we could highlight all of the approximately 2,700 projects that we finance with our green bonds. It is through the diversity of active, sustainable forestry that we achieve a long-term perspective regardless of the state of the economy. This time we have selected four talented and hard-working forest owners who, based on their location and given ecological conditions, create value in their forests – for society, for the forest industry and for nature every day, all year round.

Martin Kihlberg Chief Sustainability Officer

For forests since 1836

Landshypotek has financed Swedish forestry since 1836. The bank is owned by Landshypotek Ekonomisk Förening, in which all of the Bank's loan customers in the farming and forestry sector are members, and thereby own the bank. All of the bank's profits are reinvested in the bank or distributed to the association's members – Sweden's farmers and foresters. Being the first institution, back in 2018, to issue a green covered bond backed by Sweden's forests was unique and is fully aligned with the objective of Landshypotek's vision, namely, to make a real impact in promoting a sustainable society based on the daily activities by entrepreneurs across the country.

Landshypotek's Green Bond Framework

In spring 2018, Landshypotek prepared its first green framework to enable the issue of green bonds. The framework has been reviewed by the independent Center for International Climate Research (CICERO), which awarded the framework the highest shade "Dark Green." Under the framework, Landshypotek can issue covered bonds, senior bonds and subordinated notes. The proceeds raised by Landshypotek through the green bonds are to be used to finance sustainable forestry, renewable energy or green buildings.

In May 2018, Landshypotek Bank issued its first SEK denominated green covered bond. In 2019, the bank issued an additional green covered bond and a further tranche of the second bond in 2020. In April 2023, Landshypotek Bank issued a new green, covered bond which is used exclusively to finance sustainable Swedish forestry. This report details the impact of the green bonds which Landshypotek Bank issued in 2019/2020 and 2023 respectively. The total volume issued amounted to SEK 11.5 billion. The underlying forest in the volume of green assets backing the bonds amounts to 580,000 hectares, which corresponds to an area the size of Dalsland and Öland combined.

This report solely describes the impact from the underlying projects that meet the framework's sustainable forestry criteria. This report, like previous years, includes all green assets backing the bonds which ensures that the pool of underlying green assets is larger than the amount of green bonds issued. The total volume of green assets backing the bonds which totals SEK 12.5 billion.

230tons CO₂

has been absorbed and avoided for every SEK 1 million invested

15.4 %

of the covered bonds issued by Landshypotek Bar are green

15.0 %

of all senior and covered bonds issued by Landshypotek Bank are green

Photosynthesis – function and impact

Photosynthesis is a natural process, whereby plants absorb carbon dioxide from the atmosphere and then convert it into energy. While some carbon dioxide is returned immediately through respiration, a considerable portion is allocated into the plant/ tree. As the tree grows, carbon is also allocated into the ground via the roots. Active use and management of forests lead to increased growth and, accordingly, greater carbon seguestration, which in itself results in a greater climate benefit. When harvesting forest, forest raw materials are extracted for further consumption. Forest raw materials have numerous applications and the stored carbon could return directly to the atmosphere if used for combustion but can also be stored in, for example, buildings. Moreover, a substitution benefit arises when forest raw materials replace other fossil materials or materials that consume large amounts of energy in their extraction. The substitution benefit often outweighs the primary benefit arising from the carbon sequestration in forest growth, but it is difficult to calculate exactly since this requires information about the manufactured products and their lifespans as well as the materials they replace. An average value for the substitution effect in Sweden is around 470 kg CO₂/harvested m³ob.

A growing forest binds carbon dioxide from the atmosphere. The more the forest grows; the more carbon dioxide that is stored, which also means that sequestration by Sweden's forests varies according to the location of the forest. Site quality, defined as the soil's innate capacity to produce timber, is determined by the soil, the climate, moisture conditions and exposure. Site quality is expressed in volume over bark per hectare and year. There are substantial geographical differences in site quality in Sweden.

¹Lundmark, T., Bergh, J., Hofer, P., Lundström, A., Nordin, A., Poudel, B.C., Sathre, R., Taverna, R., och Werner, F. (2014) Potential Roles of Swedish Forestry in the Context of Climate Change Mitigation, Forests 2014, 5(4), 557-578.

Growth and climate benefit calculations

Within the framework of this report, the locations of the forest properties, financed and refinanced with the bank's green bonds, have been divided into three geographic areas – the southern deciduous region (10.7 m³ob/ha/yr), the southern coniferous region (8.2 m³ob/ha/yr) and the northern coniferous region (4.4 m³ob/ha/yr). Based on the forest statistics for 2023 from the Swedish University of Agricultural Sciences' Swedish National Forest Inventory, the average site quality has been established for the three regions. Thereafter, the average site quality has been used as a growth multiple for calculating the change in the growing stock. Growth has been calculated for a full year, even if the issue dates varied throughout the year.

To calculate carbon sequestration at the forest properties financed by Landshypotek, the following formula has been used:

Total carbon sequestration (tons) = change in growing stock (m3ob) x BEF x CF

BEF (Biomass Expansion Factor) = conversion multiple for finding the total dry biomass

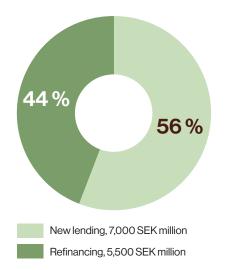
CF (Carbon Fraction) = carbon content of dry wood

For calculation purposes, the BEF has been set at 0.75, which is a weighted average for pine and spruce, and the CF has been set at 0.51. To convert carbon sequestration into carbon dioxide sequestration, the following formula has been used:

Total carbon dioxide sequestration (tons) = carbon sequestration (tons) x (CO₂ molecule's weight/C molecule's weight)

Distribution - refinancing and new lending

Percentage of issued amount (%)



In 2023, the growing stock in the financed projects increased by 4.1 million m³ob (6 percent of the growth was in the southern deciduous region, 73 percent was in the southern coniferous region and 21 percent was in the northern coniferous region). The total net growth at the properties financed through the green bonds was estimated at a volume over bark of 820,000 cubic metres for the past year. On the assumption that 80 percent of the growing forest is harvested and is used to replace other material, a substitution benefit arises of 1,542,000 tons in avoided carbon dioxide emissions. At the same time, the remaining standing forest contributes to a net carbon sequestration of around 1,150,000 tons. This corresponds to an annual carbon sequestration and substitution benefit of around 2.69 million tons of CO₂.

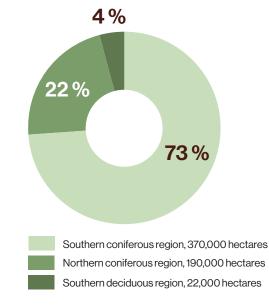
The project's average loan-to-value ratio is 0.32, which means that 0.85 million tons of CO_2 is a direct result of the financing and 2.69 million tons of CO_2 indirectly (when the entire forest stands are included). The calculations are based on site quality – in other words, the growth at the culmination of the average growth rate.

Development since last year's report

A growing forest is a biological process where the forest's growth and absorption of carbon dioxide varies from year to year. Compared with last year's report, the amount of carbon dioxide which has been absorbed and avoided per million invested SEK has decreased from 240 tons CO_2 to 230 tons CO_2 . The decrease is due, in part, to an increase in the overall issued amount of green bonds from 10.75 billion SEK to 11.5 billion SEK. This means that the total climate benefit is divided amongst a larger bond volume which explains the decrease compared with last year's reported effect per invested million SEK.

Geographical distribution of projects

Percentage of issued amount (%)



Selection process for green assets

Landshypotek Bank has a Green Bond Committee that determines which assets can be financed with the green bonds issued under the framework. The Green Bond Committee has held 19 meetings since the Green Bond Framework was published. Repayments and redemptions are conducted on an ongoing basis throughout the year and, accordingly, it is crucial that the Committee meets regularly to ensure that, at any time, the volume of green assets backing the bonds exceeds the nominal amounts. At 31 March 2024, the volume of green assets backing the bonds amounted to SEK 11.5 billion, or approximately 2,700 underlying properties, and comprised exclusively sustainable forestry.

Review

Under the framework, Landshypotek's independent credit risk department is appointed to control and review, at least annually, that the allocations of Green Bond net proceeds are made in accordance with the Green Bond Framework. For the 2024 report, the review has been focused on the meetings of the green committee that decides which assets can be financed by greens bonds issued under the bank's green framework. The review has focused on the green committee participants, forestry expertise and documentation. The review resulted in some minor proposals for improvement that the bank will implement during the coming year.

Sustainable Development Goals



SDG 13. Climate action

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters inall countries.

Landshypotek's contribution: Sustainable forestry binds carbon dioxide and can also replace fossil fuels used for energy in the form of fuel and other products. This means a reduction in carbon dioxide levels in the atmosphere and greenhouse gas emissions, and thereby strengthens the resilience and ability to adapt to climate-related hazards and natural disasters. The target of setting aside a certain percentage to deciduous forest that is included in the bank's Green Bond Framework criteria also means that the resilience of individual forests also increases in terms of natural disasters such as fires, storms and pests.



SDG 15. Life on land

Target 15.1: Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

Target 15.2: Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

Landshypotek's contribution: The Swedish Forestry Act states that the forest is a renewable resource, which is to be managed to ensure sustainable yields of good returns, while taking into consideration the natural and cultural environments, reindeer husbandry and other interests. An obligation to replant after harvesting is also contained within the law. The bank's framework requires customers to comply with the law, and also includes requirements in terms of a green forest management plan, that at least five per cent is set aside for nature conservation measures and that there are targets for inclusion of a minimum proportion of deciduous forest. The forest can also be certified through FSC/PEFC, both of which set at least equivalent requirements. These measures promote more long-term sustainable use of forests and accord with the international agreements implemented in Swedish legislation.

Four voices for sustainable forestry

Importance of sustainable forestry – for growth, biodiversity and climate benefit

Global warming is one of the greatest challenges of our times. The growing forest has a key role to play in countering climate change. 30 percent of the surface of the earth is covered by forest. The forest is key to the transition to a fossil-free society, since it is included as a natural part of the carbon cycle and absorbs carbon dioxide from the atmosphere. In Sweden, the forest covers almost two thirds of the total land area and is seen as a national asset and resource. Its significance and size makes it important to use and manage forests sustainably with a long-term perspective. This is to ensure that growth in the forests remains high and to preserve biodiversity and maintain the natural variations of the landscape.

Meet Cecilia, Viktoria, Daniel and Mimmifour of the forest owners whose forests are financed by Landshypotek Bank's green bonds. Read about how they manage their forests for growth, biodiversity and for the benefit of the climate.



I am only involved for a short time in a tree's lifespan

Just outside of Åseda between Växjö and Oskershamn in the province of Småland, sisters Cecilia and Viktoria manage 800 hectares of productive forest. They inherited a large part of the forest from their father who was an active forest owner himself for many years. It was important for their father that both sisters were treated equally and the final result felt right for all parties involved. Thus, the process took some time. Cecilia, Viktoria and their father discussed the matter for nearly ten years to make sure that everything was right. Having taken over the forest from their father five years ago, both Cecilia and Viktoria have each purchased more forest on their own. Cecilia and Viktoria welcomed Landshypotek Bank into their forest on a windy day in April.

Tell us about your forest properties

"We have our own forest properties that we look after individually. Since the ownership transfer was completed, I purchased an additional 110 hectares of productive forest. I own around 400 hectares of forest divided up over two separate locations", Cecilia explains.

"I have the privilege to have all of my forest near my farm which is great. I have also bought some more forest as I had the opportunity to purchase the neighbouring forest which is directly beside my existing forest. I own around 440 hectares of forest of which approximately 400 hectares are productive forest. Aside from the forest, I also have a bit of cropping and grazing land, Viktoria explains.

How do you manage your forests?

"For both of us, forest ownership is a way of life. We only own the forest for a small time of its total life cycle, which is quite incredible", says Viktoria.

"I have not worked so much in the forest before, but we grew up with the culture and pride of forest ownership. I now try to do a bit of the work by myself. It is really lovely to be outside and work in the forest. It is a good contrast to my office job which takes up a lot of my time. I've been busy clearing, planting seedlings, looking after damage caused by wild animals, and planning", says Cecilia.

"The most enjoyable part for me is chopping the wood. I plant on the plots when I have a clear picture of how I want it to look and which varieties of trees are best to plant in certain locations", Viktoria continues.

You are both doubly certified via FSC and PEFC. Was that an easy decision?

"The forest was already certified when we took it over and it was an easy decision to continue with certification. Not everyone views forest owners as positively as we do so certification is a good way to demonstrate that we, as forest owners, take a little extra responsibility", says Cecilia.

"You do get paid more as a result of certification, but that is not the driving force, I would say. It is more about getting a 'stamp of approval' for what you do", says Viktoria.

"The only challenge is the requirement for a certain proportion of leafy trees in each area which can be difficult to reach as the ground is actually better suited for pine in some parts. My forest management plan is, in my opinion, bit of a problem as the areas are strictly divided into smaller plots. There are leafy trees but they are not evenly distributed across all areas. Leafy trees grow where they are best suited according to the natural conditions", Viktoria adds.

What have you done in the forest over the past year?

"It has been a fairly quiet year on the forest front for both of us. For my part, I have been granted an environmental permit to clear two areas. I will clear out more oak and other leafy trees. I will also do some work to help protect the pines from the moose which cause damage to the trees otherwise", says Cecilia.

"I will take care of some trees that fell during winds and storms last year. It has been very windy, even during the winters, but luckily the damage has been minor. This autumn, I have a smaller thinning planned and there will always be some clearing to do", says Viktoria.

How do you manage and adapt your forestry methods to a changing climate?

"The biggest difference is probably that we plant significantly more pine today. Pine is better suited to these soils and also reduces the risk of spruce bark beetle attack. We have not yet seen the consequences of having more pine on this land. It is quite possible that there will be other problems for pines later on. That is what is so difficult about forestry. It is such a longterm investment. The climate is changing now and it is impossible to know how well what we plant today will hold up in 60 years time", says Cecilia.

"I plant fewer plants on a given area now compared to before so as to ensure that there is enough water. In addition, we let the leafy trees take up more space in the stands so that there is greater variety and resilience", adds Viktoria.

"An interesting aspect is that birch has started to be discussed more and more in the forestry industry. That was not the case before. However, I am happy about it because I've always let birch trees grow so we can only hope that the demand for birch also increases", Viktoria continues.

Is there anything else that worries you besides the climate?

"It is true that there are so many different opinions about the forest. If I have a 110-year-old forest, will I be required to protect it or will I be allowed to harvest it? It creates uncertainty for me as a forest owner that I do not really know what the rules of the game will look like in the future", says Cecilia.

"I agree. The social debate around forests is challenging and worrying. It is easy to portray a picture of largescale, industrial logging in the north of Sweden in the media and present it in a way that makes it look like this is the case in all of Sweden's forests. It is unfortunate and could not be further from reality", says Viktoria.

What is the best thing about owning and managing a forest?

"The best thing about owning a forest is the feeling that you are part of something larger. I am only involved for a short time in a tree's lifespan and all the ecosystem services that the forest offers. It is incredible to be involved in that process", says Viktoria.

"To be able to participate and contribute to future generations and to hopefully pass something onto the children. You also can give something back to society. That could be a forest for people to walk in or raw material to use. For me, it is important that it is fun. If it is not fun to own and manage, then you should sell", says Cecilia.

"Being a forest owner really is a way of life", concludes Viktoria.



VIKTORIA - FOREST OWNERSHIP

Municipality: Uppvidinge Municipality: FSC and PEFC Forest management plan: 2011-2021 (new plan under development) + 2018-2028 Area: 437 hectares Productive forest land: 388 hectares Pine: 52% Fir: 32% Leafy tree: 16% Growth: 5.9 Areas with nature conservation objectives: 6%

CECILIA - FOREST OWNERSHIP

Municipality: Uppvidinge Municipality: FSC and PEFC Forest management plan: 2015-2025 Area: 425 hectares Productive forest land: 392 hectares Pine: 41% Fir: 47% Leafy tree: 12% Growth: 6.5 Areas with nature conservation objectives: 7%



There is financial security in having both agriculture and forestry

In Bjurvalla, just outside Östervåla in the northwestern parts of Uppland, Daniel Johansson and Mimmi Andersson live with their two daughters. They run their agricultural company that combines crop cultivation, forestry and machine contracting. Daniel is the fifteenth generation on this property. Even though it is the same the property that his ancestors farmed for hundreds of years, the business today is something completely different. Daniel and Mimmi took over operations in 2018 but the farm itself in Bjurvalla only changed hands three years ago. When they took over the business, they farmed just under 200 hectares of arable land, today they farm 560 hectares of arable land – a combination of owned and leased land. Their forest ownership has also expanded in recent years from 65 hectares to today's 240 hectares of productive forest land. It is not an understatement to say that a lot has happened in Bjurvalla in recent years.

Tell us, how does your company run today?

"My father is still active in the business. It is me, Mimmi and my father who form the basis of the company. During spring and harvesting which are our busiest times of the time, we have some help if necessary but otherwise it is the three of us who run this place together. Dad is actually working out in the forest now", says Daniel.

How do you see the combination of agriculture and forestry in your business? How are they connected?

"I recently constructed a forest road for another landowner and he said to me "you cannot be interested in both agriculture and forestry". I am not so sure though. I think it is fun with both agriculture and forestry. It is a relatively large business that we run and I think that agriculture and forestry complement each other well. I do not think about the forest when I am sowing my crops at 2 am in the spring. However, I am fully focused on the forest when I am working there. I think I would get be bored if we just did the one thing. There really is something very appealing about the combination of both agriculture and forestry", says Daniel.

"Crop cultivation is very seasonal and incredibly intensive in periods. It is nice to be able to change jobs and go out in the forest where it is a quieter tempo and not as weather dependent", Mimmi adds. "There is also financial security in having both agriculture and forestry. Forestry is a long but stable investment. In agriculture, the investment cycles are much shorter and the returns vary greatly from one year to another. In agriculture, the risks are higher and much more dependent on external circumstances beyond our control. It is nice to know then that you have a growing forest", Daniel adds.

How do you conduct your forestry?

"We do a lot ourselves. We do most of the clearing by ourselves. Otherwise, we use help from timber buyers for thinning and final felling. Most of the time, we also get help with replanting, as the plants have to be planted on the hill basically at the same time as the spring harvest starts on the farm. We tend to do some individual planting of seedlings on our own. This year, we are actually going to try sowing pine seeds for the first time now at the beginning of April. It will be exciting to see how it goes", says Daniel.

Describe your forest. What does it like?

- It is dominated by conifers, in particular spruce and pine. The Gräsbo property borders some muddy bog and therefore has a greater variety with more leafy trees. We have left a lot of birch out on a headland. It is really true that the birch is the mother of fir as there is a lot of self-rejuvenating fir coming up there. On the higher parts, there are more conifers, in particular pine, as it is drier. They have roots that cope much



better than spruce. In the lower parts, there is more spruce and leafy trees. It is nature that gets to decide when we replant, we plant the trees that best suit the land. Even if we were to only plant pine and spruce, we also allow room for other tree species to grow. On the whole, it is a good mix", says Mimmi.

"We have some areas close to the muddy bogland where it is basically exclusively pine as it is the only thing that grows there. There is something special about how different species thrive in different conditions", says Daniel.

You have chosen not to certify your forestry. Why is that?

"It is not something that timber buyers have discussed with us in these areas. Therefore, the incentives have not really been there for us. There is a wide range of timber buyers in these areas, which is good for us forest owners, but it is important to consult with them when it is time to sell. It can make a huge difference. You want to be paid for something that you have taken care of for a long time and that has taken 100 years to grow", says Daniel.

What have you done in the forest during the year?

"During the winter, we completed a final felling on a parcel of four hectares that borders a muddy bog. Everything went really well. They harvested around 1,400 cubic meters which we were really satisfied with. In the spring, the area will be prepared and planting will take place during the autumn. Usually, we like to plant in the spring or summer but we did not have the time or capacity for that this year. We will see how it goes. You really want the plants to establish themselves before winter comes. Others who have planted during the autumn say it has gone well, but it probably varies a lot from year to year depending on the weather", says Daniel.

What is the best thing about owning and managing a forest?

"It is the most sustainable thing I am doing. In the past, the forest was worth nothing. There was no economic benefit when you had to pull logs out with a horse. Today there are real economic benefits and I do not think we have seen the peak yet. Every part of the tree is taken care of. It is really great to be a part of something larger", says Daniel.

"It is a real honour to own and manage a forest. The forest we plant and look after today is the basis for the next generation", concludes Mimmi.



DANIEL OCH MIMMI - FOREST OWNERSHIP

Municipality: Heby Forest management plan: 2015-2025 Area: 354 hectares Productive forest land: 240 hectares Pine: 61% Fir: 27% Leafy tree: 12% Growth: 6.0 Areas with nature conservation objectives: 8%

