Landshypotek Bank

Green Bond Impact Report

15 May 2020

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

Stockholm 15 May 2020

Per Lindblad
CEO

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Issued bonds – brief facts

Issue date: 25 May 2018

Tenor: 5 years

Nominal amount: SEK 5.25 billion

Maturity date: 25 May 2023

Type of bond: covered bond

Coupon rate: 0.75 %

ISIN: XS1824244807

Issue date: 18 nov 2019

Tenor: 6 years

Nominal amount: SEK 3.00 billion

Maturity date: 18 nov 2025

Type of bond: covered bond

Coupon rate: 0.615 %

ISIN: SE0011870021

Forestry terminology

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

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

FSC = Forest Stewardship Council

Net change in growing stock = The change in the standing growing stock measured in m^3ob, that is growth less harvesting.

PEFC = Programme for the Endorsement of Forest Certification

Site quality = The land's natural capacity to produce timber. Expressed in m^3ob/ha/year.

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.

Volume over bark (m^3ob) = 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.

Green Bond Impact Report

Background

In May 2018, Landshypotek Bank issued its first SEK denominated green covered bond. Last year, the bank issued an additional green covered bond. At the time of publication of this report, Landshypotek has completed two green bond issues. Both of the issues comprise covered bonds and are used exclusively to finance sustainable Swedish forestry. The total volume issued amounted to SEK 8.25 billion. The underlying forest corresponds to an area the size of Öland and Gotland combined.

In the spring of 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 both 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.

This report solely describes the impact from the underlying projects that meet the framework's sustainable forestry criteria.

"Our successful issue of another forest bond in 2019 underscores the strong underlying demand in the market for sustainable investments and the bank's continued ambition of financing sustainable forestry in Sweden."

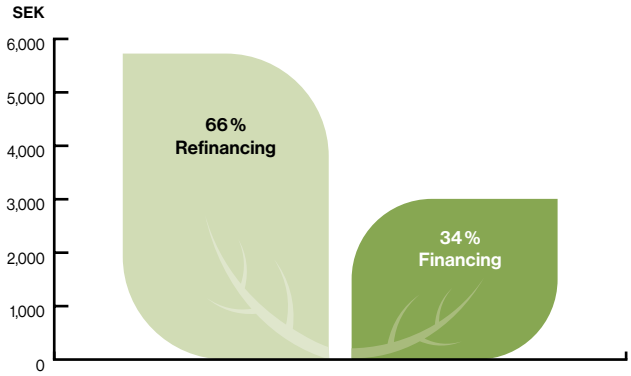
– Martin Kihlberg, Chief Sustainability Officer, Landshypotek

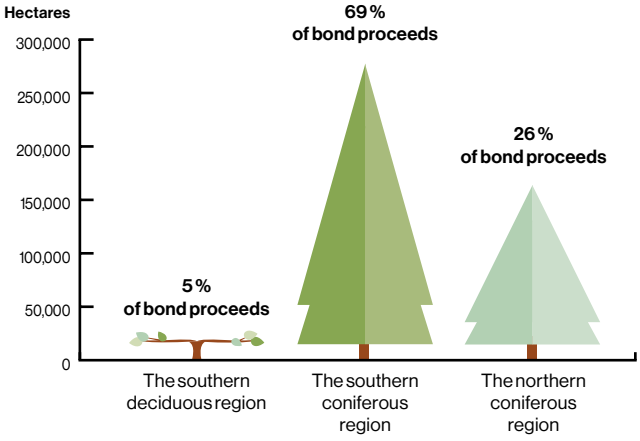
Landshypotek Bank and the forest

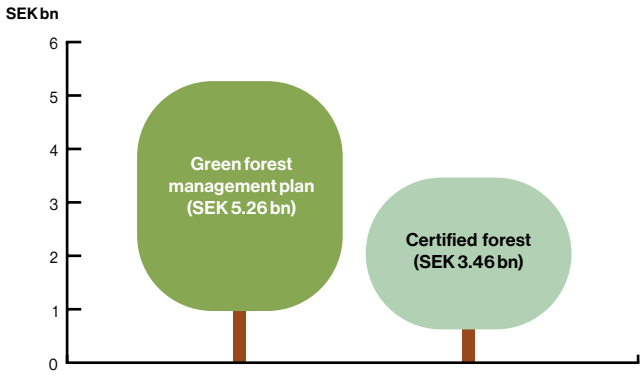
Landshypotek has financed Swedish forestry since 1836. The bank is owned by Landshypotek Ekonomisk Förening, in which all of the bank's loan customers in the farming and forestry sector are members, and thereby own the bank. All of the bank's profits are reinvested in the bank or distributed to the association's 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.

Impact reporting

A growing forest binds carbon dioxide from the atmosphere. The more the forest grows, the more carbon dioxide is stored. The total net growth at the properties financed through the green bonds was estimated at a volume over bark of 700,000 cubic metres for the past year. This corresponds to an annual carbon sequestration and substitution benefit of around **2 million tons of CO_2**. This means that for every SEK 1 million invested in the bonds, around **240 tons of CO_2** has been absorbed and avoided. The figures include substitution effects but have not taken into account loan-to-value ratios, refer to the section *Growth and climate benefit calculations*.







14.6 % of the covered bonds issued by Landshypotek Bank are green

13.1 % of all senior and covered bonds issued by Landshypotek Bank are green

426,000 ha sustainable forest has been financed with the green bonds

All data as of 2020-03-31

Sustainable Development Goals – SDGs

Goal 13: Climate action

13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Landshypotek Bank

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 dangers and natural disasters.

The minimum target of five per cent deciduous tree 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.

Goal 15: Life on land

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

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 Bank

Landshypotek's contribution: The Swedish Forestry Act states that the forest is a renewable resource, which is to be managed to ensure a 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 tree. 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.

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. Following the issue of the first bond, the Green Bond Committee has held eight meetings to decide on the addition of further green assets. 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 exceed the nominal amounts. At 31 March 2020, the volume of green assets backing the bonds amounted to SEK 8.73 billion, 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. The review for the 2019 report has placed particular focus on checking that the properties meet the criteria for categories A or B under the framework and that the properties are insured. The review was conducted mainly in the form of spot checks and was presented to Landshypotek's Green Bond Committee. The main findings of the review were that there was a need to clarify the bank's policies for certain parts of the process and a need to compile and save relevant information in the bank's systems.

Importance of sustainable forestry – for growth 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.

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 sequestration, 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 CO_2/harvested m^3ob[1].

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, from 11 m^3ob/ha/yr in the south to 2 m^3ob/ha/yr in the north.

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1. Lundmark, 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 m^3ob/ha/yr), the southern coniferous region (8.0 m^3ob/ha/yr) and the northern coniferous region (4.2 m^3ob/ha/yr). Based on the Forest statistics 2019 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 (m^3ob) 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[2] which is a weighted average for pine and spruce, and the CF has been set at 0.51[3]. To convert carbon sequestration into carbon dioxide sequestration, the following formula has been used:

Total carbon dioxide sequestration (tons) = carbon sequestration (tons) x (CO_2 molecule's weight/C molecule's weight).

In 2019, the growing stock in the financed projects increased 2.8 million m^3ob (8 percent of the growth was in the southern deciduous region, 72 percent was in the southern coniferous region and 20 percent was in the northern coniferous region). On the assumption that 75 percent of the growing forest is harvested and is used to replace other material, a substitution benefit arises of 990,000 tons in avoided carbon dioxide emissions. At the same time, the remaining standing forest contributes to a net carbon sequestration of around 985,000 tons.

The project's average loan-to-value ratio is 0.46, which means that 0.91 million tons of CO_2 is a direct result of the financing and 1.97 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.

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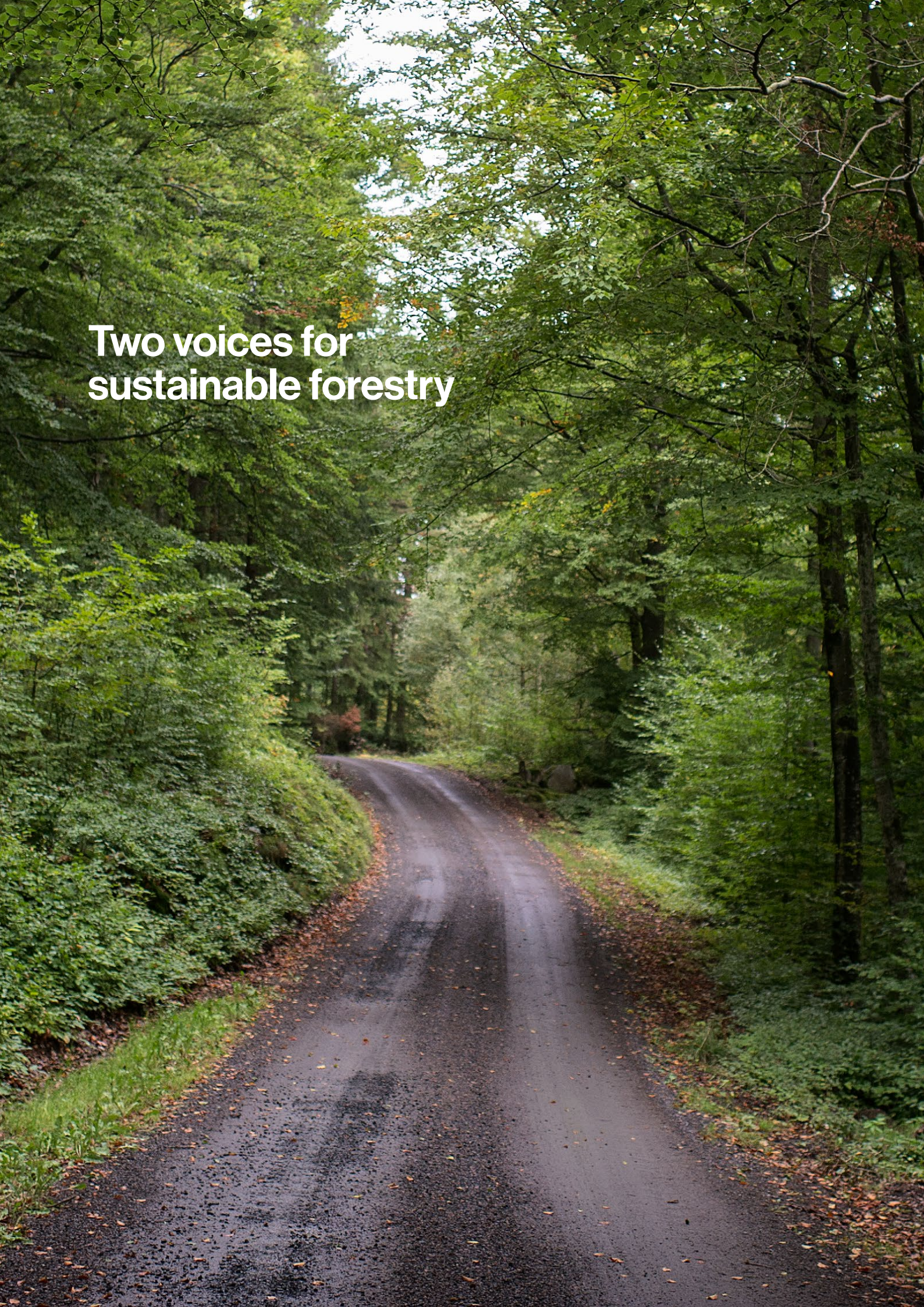
2. Lehtonen, Aleksi & Mäkipää, Raisa & Heikkinen, Juha & Sievänen, Risto & Liski, Jari. (2004). Biomass expansion factors (BEFs) for Scots pine, Norway spruce and birch according to stand age for boreal forests. Forest Ecology and Management. 188. 211-224. 10.1016/j.foreco.2003.07.008.
3. 2006 IPCC guidelines for National Greenhouse Gas Inventories.



Two voices for sustainable forestry

Revisiting the mixed forests of northern Skåne

Ingvar Pålsson is the sixth generation to manage the forest on the property located just between Perstorp and Klippan in northern Skåne. The property that Ingvar took over and has continued to invest in is called Lycke. The forest is dominated by deciduous trees, the most common being beech, birch and oak, but the property also contains a considerable amount of pine and spruce. What sets Ingvar's forestry apart is the combination of productive forestry and recreational forest. We have returned to the forests of northern Skåne to pose a few questions about the past year's forestry operations.

How did 2019 start for forestry?

– The climate has become increasingly fickle. The outcome for our planting in 2018, with a summer where it barely rained, was not very successful. Many of the plants suffered severe damage from the drought. The only recourse was to order new plants and turn a blind eye to the expense.

Have you carried out any final felling during the year?

– Yes, I engaged a contractor to carry out final felling for two hectares early in the year, which was good as I was able to have it completed before the autumn rains started. The rain caused problems for many forest owners. Sometimes, you have a little luck. We will reforest the area with pine seedlings, which will be a first for us. Previously, we have just allowed pines to self seed. It will make a good mix with our existing areas of spruce and deciduous trees.

– In consultation with the Swedish Forest Agency, I also carried out conservation felling of deciduous trees along a stream that runs through my property. At the same time, I also conducted a little release cutting around bronze-age graves.

What else have you done with your forest during the year?

– I have thinned about three hectares during the year, which is far too little, so I plan to outsource thinning operations next year to get the property's thinning needs under control. I strongly believe that thinning is one of the key measures for maximising the financial return from your forest and forestry operations.

So why didn't you conduct more thinning during the year?

– We carried out the conservation felling ourselves, which meant we prioritised those over thinning.

Was there anything special about the past year?

– It would be strange not to comment on the bark beetle. I followed up the early bark beetle alarm reports, but couldn't find any clear infestations on my property, which was a relief. I was concerned about one area where 7–8 spruce trees had died. However, when I peeled back the bark, I found no bark beetle traces, so they seemed to have been victims of 2018's drought.

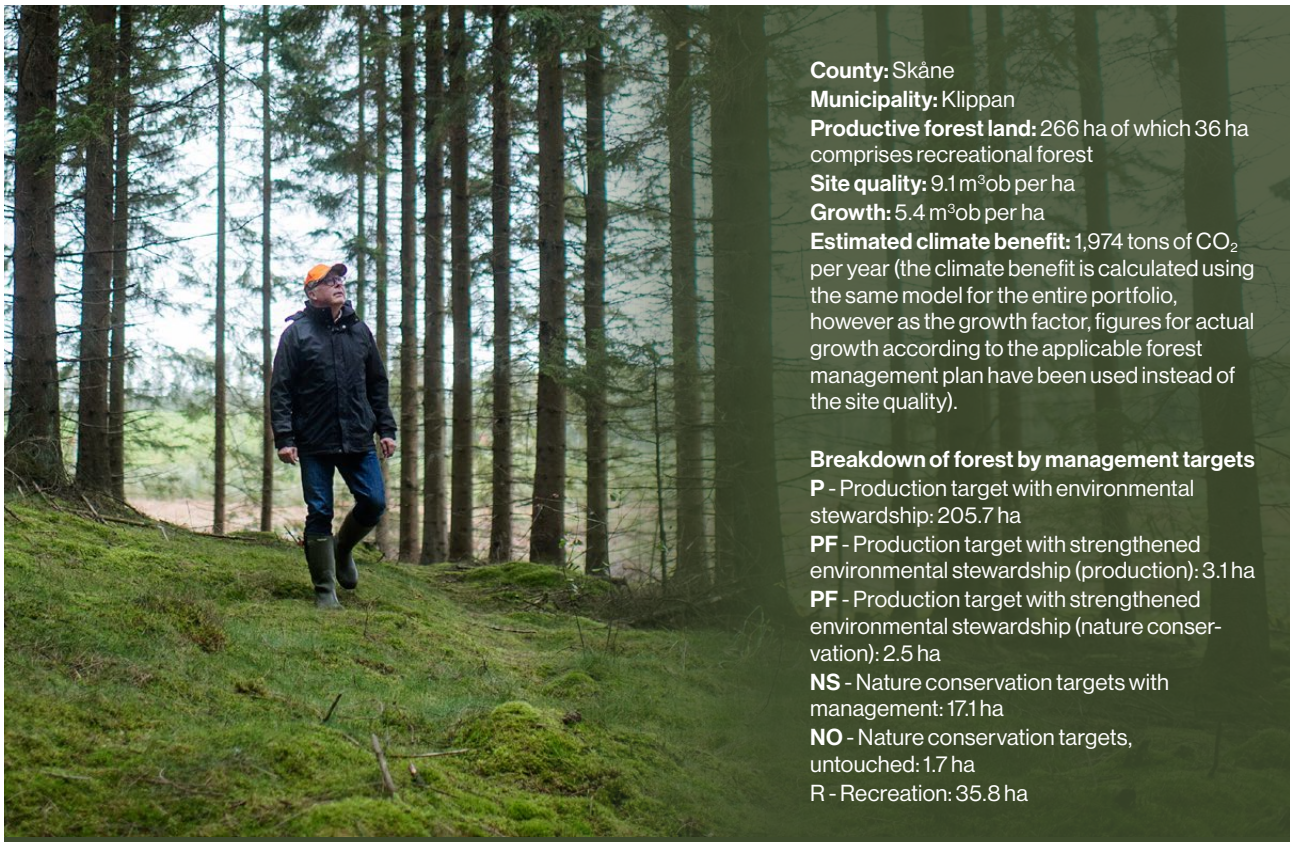
– Generally, prices have been very healthy over the year, particularly for timber. On the other hand, the pulp prices have not been as high, but from a historical perspective, both were at healthy levels throughout the year.

What do you expect from 2020? What will the year be like for forestry and how has it started so far?

– If you had asked me three months ago, I was expecting a very good 2020. Now, it is difficult to get any sort of grip on what will happen due to the coronavirus situation.

Before we conclude, do you have any great memories from the past year that you would like to share?

– I spend a lot of time walking in the forest – it's my way of relaxing and charging my batteries. I also have the benefit of being an elected representative of the forest owner movement, which adds a further dimension to my forestry operations. It allows me to share my experiences with others who are also highly committed to forests and forest management.



County: Skåne
Municipality: Klippan
Productive forest land: 266 ha of which 36 ha comprises recreational forest
Site quality: 9.1 m^3ob per ha
Growth: 5.4 m^3ob per ha
Estimated climate benefit: 1,974 tons of CO_2 per year (the climate benefit is calculated using the same model for the entire portfolio, however as the growth factor, figures for actual growth according to the applicable forest management plan have been used instead of the site quality).

Breakdown of forest by management targets
P - Production target with environmental stewardship: 205.7 ha
PF - Production target with strengthened environmental stewardship (production): 3.1 ha
PF - Production target with strengthened environmental stewardship (nature conservation): 2.5 ha
NS - Nature conservation targets with management: 17.1 ha
NO - Nature conservation targets, untouched: 1.7 ha
R - Recreation: 35.8 ha

County: Västerbotten
Municipality: Skellefteå
Productive forest land: 135 ha
Site quality: 4.0 m^3ob per ha
Growth: 5.0 m^3ob per ha
Estimated climate benefit: 987 tons of CO_2 per year (the climate benefit is calculated using the same model for the entire portfolio, however as the growth factor, figures for actual growth according to the applicable forest management plan have been used instead of the site quality).

Breakdown of forest by management targets
P/PG - Production target with environmental stewardship: 127.7 ha
NS - Nature conservation targets with management: 5.7 ha
NO - Nature conservation targets, untouched: 1.6 ha

Revisiting the forest outside Burträsk

Beatrice Wikman purchased her first forest property four years ago together with her husband Marcus. The forest has always been a major part of Beatrice's life and is a keen interest that she shares with Marcus. The property they acquired is in Burträsk, close to the farm where she grew up. Her parents have conducted milk production on the farm together with forestry operations since the mid-1970s. In 2018, the forest was PEFC certified. We have returned to the forests outside Burträsk to pose a few questions about the past year's forestry operations.

How would you describe the start of 2019 for forestry?

– We headed out on New Year's Day to start maintenance thinning of older spruce forests ahead of an upcoming final felling. Thinning ahead of harvesting is a common step in forestry to facilitate machine harvesting, thereby reducing the harvesting cost and to promote replanting – that is, the forthcoming regeneration. It was a lovely day out in the fresh winter air and a great start to the new year together with my husband. We also took the opportunity to thin deciduous trees on two G1 sections, that is, younger thinning stands, and carted it away with the snowmobile. We sold some off as lumber and kept the smaller logs for firewood for the farm.

What did you do in the summer?

– We started the summer by planting a smaller clear-felled area with pine. We tested planting fertilised pine seedlings this time, which we wouldn't normally do, so it will be exciting to see how they progress. During the summer we also fertilised about 1.5 hectares of 60-year-old pine forest as an experiment for the future.

Last time we met, you mentioned that you actively use the forest management plan in your forestry operations, have you also followed the measures this year?

– Yes, we use the forest management plan as a tool and as a schedule for our forestry management. We are using the 2017 forest management plan, and we have followed it fastidiously over the year. As I mentioned, we have a few test areas for spreading fertiliser, and we are restoring ditches to bring neglected areas of land up to scratch. We have invested considerable time in the forest this year, but we have also taken on an extensive renovation of the farmhouse, which will continue for a number of years.

Is there anything in your mind that sets the year apart?

– It was an early spring with excellent weather and lots of sunshine, which helped with getting everything done in the forest. We also carried out a larger final felling operation during the year.

What do you expect from 2020 for forestry? Is there anything specific that you believe will stand out for the year?

– As owners and foresters, 2020 appears to be a stable year, even if the global markets are turbulent. Unfortunately, the effects of the turbulence will impact the timber market and prices for a time to come.

Before we conclude, do you have any great memories from the past year that you would like to share?

– That would have to be when my husband and I were searching for last year's Christmas tree. It was a wonderful December day. The sort of day when the sun just manages to lift itself over the horizon and the thermometer is showing a couple of degrees minus. The forest was heavy with snow and we had to wade our way forward. A magical winter landscape! A perfect day to find the perfect Christmas tree on your own property. Very idyllic!

Further information about Landshypotek Bank Green Bonds are found at
https://www.landshypotek.se/en/about-landshypotek/investor-relations/green-bond-framework/