Goods from the Woods

Investments in Forests and Forestry in Sweden and Finland: Risks and Opportunities for Responsible Investors

Briefing by Greenpeace Nordic

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Introduction

We present this briefing to provide investors interested in the forest sector with updated information and insights regarding risks and opportunities around investments in forests and forestry.

Besides well-known risks of investments in forests, such as the risk of natural disasters, valuation uncertainties, long term income cycles, etc., there are specific risks in all forestry operations in the Nordic area relating to climate change, environment, energy, human rights, land-rights, and other political issues.

There are great expectations on forests to provide all the resources we need for transition to a renewable, fossil free economy. Besides producing timber and wood pulp, forests are expected both to deliver biofuels and bioenergy in various forms and to act as a storage for carbon sequestered from the atmosphere as well as delivering on biodiversity targets. The matter is packed with conflicts of objectives and policy challenges. Accordingly, forests and forestry are subject to an evolving set of policies and regulations. From an investor perspective, this entails a certain amount of risk.

The ownership or management of land often gives rise to complex social, political, and environmental conflicts that may impact negatively on the underlying investor. Even if forestry, until recently, has been an upstream industry sector and rarely encountered expressions of consumer preferences, the lack of performance by a forest owner or manager may present a brand risk to companies further down the line, linking them through their supply chains to the destruction of forests.

To be successful and meet responsible investment objectives over time, investors must have the ability to operate in a wider context of environmental and social frameworks. Companies with high environmental and social standards that can show a flawless track record may stand to gain in the long term.

Nordic forests

Planted and natural forests cover around 70 percent of Sweden and almost 75 percent of Finland. The two countries together cover several vegetation zones with different climate conditions.

The Nordic forests were once full of large old growth trees, abundant with dead wood and full of biodiversity. Starting in the mid-19th century, the Nordic forests were intensively logged to supply a growing manufacturing industry. In Sweden, forests declined rapidly starting in the 1840's, reaching a minimum in the 1920's.

In 1923 the first National Forest Inventory[1] was made, since then the number of trees have gradually recovered, but not the forests as eco-systems, since 90 percent of the rejuvenation in managed forests is made by planting trees, most often in large monocultures where one or two species dominate. The total growing stock today is estimated at 3,7 Bm^3 (billion cubic meter) in Sweden[2] and 2,4 Bm^3 in Finland.[3]

Forests provide invaluable **ecosystem services**. These include carbon sequestration, nutrients cycling and water regulation, clean air and oxygen production, flood and erosion control, and resilience. Forests also provide opportunities for recreation, education, and cultural enrichment, and act as a repository for biodiversity and genetic resources.[4]

Forestry

Humans have inhabited and used the boreal forest since time immemorial, but the most intense utilisation has occurred during the last 300 years in connection with the development of the forest industry. At present, Fennoscandian forestry is among the most mechanised and intensive in the world. The result is that almost all forest land is now used for production, generating bioenergy, timber and wood pulp. This has had a highly negative impact on the structure and function of boreal ecosystems. Especially the logging of old-growth forests and the practice of clearcutting and replanting large areas have decimated the number of many endemic boreal species.[5]

Clearcutting is by far the most common forest management practice in both Sweden and Finland. It is a forestry method in which most or all trees in a given area are of the same species and of the same age and are uniformly cut down on one occasion. The logged areas can be up to several square kilometres in size but are today typically between 1 and 10 hectares in both Sweden and Finland.[6] Since clearcut areas also

can be located adjacent to each other, the total logged area can be much larger.

Even when a forest is logged in smaller non-adjacent pieces, the resulting fragmentation may be detrimental to the biodiversity of the forest.[7]

Clearcutting is usually followed by a dense replantation, succeeded by one to three thinning operations before the final harvest. This means that a significant part of harvested biomass is weak dimension timber with a high share of low-value tops and branches.

Timber with small dimension is used for bioenergy or pulp and both are poorly paid products for the forest owner who often has to spend money on re-planting material, planting and repeated thinning before any real income will come from the final felling 60–120 years later.

The clearcutting model tends to use benefits of scale to the advantage of large forestry companies but provide constantly less income to smaller private forest owners. Their profitability in Sweden has been in decline for decades, with a reduction of 20 percent in the last 20 years.[8]

As a result of intensive forestry and the clearcutting practice, more than 90 percent of all productive forest land in Finland and Sweden is covered by structurally simplified, even-aged, and even-structured forest stands.[9]

Close-to-Nature Forestry

One alternative to clearcutting is Close-to-Nature Forestry (CNF), a management system that always maintains a tree cover in uneven-aged production forest stands. It can be used to deliver multiple benefits such as outdoor recreation, enhancing the landscape, stabilising soils, protecting water, maintaining biodiversity while also producing valuable timber. It also lowers the risk of damage from pests and diseases and makes the forest less prone to storms. Close-To-Nature Forestry can reduce financial risks for forest owners by mitigating natural disasters and bark-beetle infestations, both of which are becoming more common in a changing climate.

The more constant cashflow of harvesting that is repeated over the growth cycle is also a more secure business model for smaller forest owners.

Close-to-Nature Forestry is a Forest Management Approach that aims to create production forests that are as close to natural state as possible, meaning mixed, uneven-aged forests with high amounts of deadwood that support biodiversity and fulfil their important role as carbon sinks.

CNF uses natural processes and forest dynamics such as natural rejuvenation to develop resilient forests that deliver high quality timber while at the same time reducing risks from natural calamities such as storms, droughts and bark beetle infestations.

Production forests managed according to CNF generate profit through several principles:

High quality over quantity
High quality timber generates higher prices on the market compared to industrial wood. Furthermore it can be used to produce climate-friendly long-life products.

Reduction of avoidable costs
By using natural processes such as natural rejuvenation costs from e.g. planting and soil preparation are reduced.

Value of forests is increased by increasing timber stock
CNF uses single stem harvesting methods, meaning that forest cover is upheld at all times. By harvesting only single trees the standing timber stocks are increased over time which in turn increases the value of the forest.

Climate and biodiversity

Forests are increasingly the focus of two major environmental challenges: climate change and the loss of biodiversity. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the UN Intergovernmental Panel on Climate Change (IPCC) have issued warnings that both biodiversity and the climate are threatened in the near future and that these threats are intimately connected.[10]

Biodiversity is rapidly decreasing in Nordic forests. The Swedish Species Information Centre (Artdatabanken) has concluded that more than half of the threatened species in Sweden are found in forests and most of these are dependent on old-growth forests. Clearcutting is mentioned as the single factor most detrimental to threatened forest dwelling species.[11]

Forests are also increasingly seen as an important asset in the struggle to combat climate change in two different ways. On one hand, there are hopes that wood and other renewable resources from forests will be able to replace fossil fuels, thereby over time reducing the amount of greenhouse gases emitted to the atmosphere.

On the other hand, forests take up carbon dioxide from the air and store it in organic material, both in living trees and plants above ground, but even more so in the soil underground.[12]

The Swedish National Institute of Economic Research recently issued a report stating that *"There is a great climate value in letting carbon stay bound in forests and land or in long-lived wood products instead of increasing the concentration of carbon dioxide in the atmosphere"*.[13]

To complicate matters, forests are also heavily affected by accelerating climate change. Increasing temperatures, coupled with changes in precipitation and disturbances such as droughts and storms are already pervasively altering vegetation dynamics.[14]

Carbon in forests

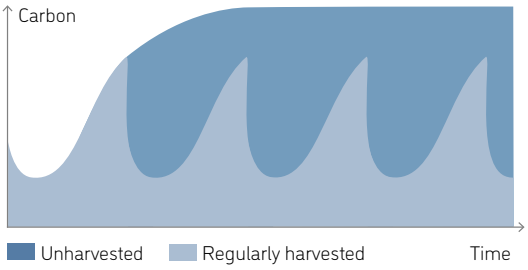
Forestry is championed by the forest industry as a major answer to climate change. The argument is that growing trees take up carbon from the air and store it in their wood. When trees are felled and the timber is used for building material, furniture and other long-lived products, the carbon will be safely stored for a long time. Meanwhile, new trees will be planted, and more carbon will be captured.

The real world is more complex:

1. The percentage of carbon in a forest that is actually stored in trees varies with type of forest, soil type and climate but is generally below 20 percent. The rest is found in understory, dead wood and below ground in roots and the soil itself.[15] After a logging operation, and even more so after a clearcut, most of this carbon will be released to the atmosphere within a few years. Depending on soil type it can take decades and up to centuries to restore the stored carbon to original levels. Studies have shown that the logging of a primary forest will need more than 300 years to restore the carbon content of the forest soil.[16]

2. Trees in a Nordic forest typically take 60-120 years to grow to harvestable size.[17] This means that the biomass of a tree that is felled today will only be replaced sometime between 2080 and 2140, and the carbon released at felling will be in the atmosphere exactly at the critical time when the world is struggling to keep emissions as low as possible.

Figure 1: Difference in carbon storage between an unharvested and regularly harvested forest area.

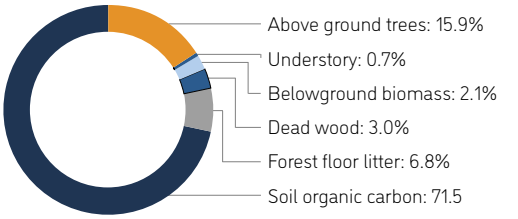


3. If the tree is used as building material or any product with a long lifetime, the carbon will be stored and not released to the atmosphere. The problem is that for Sweden, some 80 percent of the material removed from forests during harvesting becomes short lived products, meaning the carbon that was stored in the felled trees is reemitted to the atmosphere in approximately two years after their removal.[18] The situation in Finland is similar.[19]

4. Clearcutting and the subsequent soil preparation cause major disturbance of the ecosystem and can have many consequences for the climate and the environment and may increase not only emissions of carbon dioxide, but also of other greenhouse gases, such as methane and nitrous oxides.[20]

The consequence is that logging, and especially clearcutting, of forest, at least in a timeframe of up to a hundred years, releases substantially more greenhouse gases than it will absorb.

Figure 2: Average carbon content in forests [21]



It has been calculated that a clearcut forest will emit 7–18 tons of carbon dioxide per hectare in the first year after felling. Even assuming that emissions would be in balance within only 10 years, each hectare will have emitted about 90 tons of carbon dioxide. Swedish forestry clearcuts around 200,000 hectares per year, leading to annual emissions of carbon dioxide of 18 million tons, equal to 27 percent of Sweden's yearly emissions.[22]

The Nordic Forest Industry

The Nordic countries have 1.6 percent of the world's forested area. Still, they account for 13 percent of the world's pulp production, 15 percent of sawn timber exports, and 18 percent of exported paper and paper products.[23]

The following is a brief listing of the largest actors within the Swedish and Finnish forestry sector together with their main investors.[24]

Essity

Essity AB is a fibre-based health and hygiene company based in Sweden with branches in more than 20 countries. The company operates in three segments: personal care, consumer tissue, and professional hygiene. Essity's products span baby care, feminine care, toilet paper, facial tissue, and wet wipes, as well as hand soap, hand sanitizers, and dispensers for institutional customers. Essity generates most of its revenue in Europe.

Market value: 20706 million EUR

Table 3: Shareholders, capital and vote (%) in Essity

Shareholder	Capital	Vote
AB Industrivärden	10.1	29.4
AMF Försäkring & Fonder	5.2	7.9
MFS Investment Management	5.0	2.8
Norges Bank Investment Management	3.9	6.5
Swedbank Robur Fonder	3.6	2.0
Handelsbanken Fonder	3.5	2.4
SEB Investment Management	2.3	1.3
Nordea Investment Funds	1.8	1.0
Skandia	0.9	1.9
SCA and Essity pensions funds	0.1	0.8
Other	64.6	45.0

UPM-Kymmene

UPM-Kymmene Oyj (UPM) is a Finnish paper and biomaterials company. The company's product range includes paper, pulp, and plywood. UPM is also a major electricity generator in Finland and is one of the globally most important producers of self- adhesive labelling materials. Geographically, the company has operational footprints in Sweden, Finland, the Netherlands, and other regions.

Market value: 17090 million EUR

Table 1: Shareholders, capital and vote (%) in UPM-Kymmene

Shareholder	Capital	Vote
SEB (publ), Helsinki Branch	32.4	32.4
Nordea Bank Abp	24.3	24.3
Citibank Europe Plc	5.9	5.9
Clearstream Banking S.A.	2.3	2.3
Ilmarinen Mutual Pension Insurance Company	2.3	2.3
Varma Mutual Pension Insurance Company	1.5	1.5
Euroclear Bank SA/NV	1.0	1.0
Elo Mutual Pension Insurance Company	0.9	0.9
Holding Manutas Oy	0.5	0.5
Society of Swedish Litterature in Finland	0.5	0.5
Other	28.4	28.4

Stora Enso

Stora Enso Oyj is a paper and biomaterials company with headquarters located in Helsinki, Finland. Its operations are organized in six divisions: consumer board, packaging solutions, biomaterials, wood products, paper, and others. Geographically it carries out sales in Germany, Finland, Sweden, Poland, China, and other regions.

Market value: 13683 million EUR

Table 2: Shareholders, capital and vote (%) in Stora Enso

Shareholder	Capital	Vote
Solidium Oy	10.7	27.3
FAM AB	10.2	27.3
Social Insurance Institution of Finland	3.1	10.1
Ilmarinen Mutual Pension Insurance Company	3.0	2.6
SEB Investment Management	1.3	0.4
Elo Mutual Pension Insurance Company	1.2	1.2
Varma Mutual Pension Insurance Company	0.8	2.2
MP-Bolagen i Vetland	0.7	2.1
Erik Johan Ljungberg's Education Foundation	0.5	0.8
Bergslagets Healthcare Foundation	0.3	0.3
Other	68.2	27.7

SCA

Svenska Cellulosa AB, SCA, is the largest private forest owner in northern Europe with more than two million hectares of forest land. SCA mainly operates through its Forest, Wood, Pulp, and Paper segments but also

engages in bio-fuels, quarrying and wind power. Its products include solid-wood, pulp, kraft liner and publication papers. Geographically, activities are carried out throughout Sweden.

Market value: 9 638 million EUR

Table 4: Shareholders, capital and vote (%) in SCA

Shareholder	Capital	Vote
AB Industrivärden	10.3	29.3
AMF Pension & Fonder	8.5	6.1
Norges Bank Investment Management	7.2	9.6
T. Rowe Price	3.9	2.1
Alecta Pensionsförsäkring	3.9	2.1
BlackRock	3.6	2.1
Swedbank Robur fonder	3.2	1.7
Vanguard	2.6	1.6
Handelsbanken Pensionsstiftelse	1.4	3.4
Livförsäkringsbolaget Skandia	0.6	1.4
Other	45.2	59.3

Holmen

Holmen AB is a Swedish company that produces and sells timber, wood products, a variety of paper products, and electricity generated through renewable energy sources. The company organises itself into five segments and its product portfolio includes logs, biofuel, paperboard for consumer packaging, paper for books, construction timber, and renewable energy from hydro and wind power. The company is based in Stockholm and earns most of its revenue in the European markets.

Market value: 6 521 million EUR

Table 5: Shareholders, capital and vote (%) in Holmen

Shareholder	Capital	Vote
L.E. Lundbergföretagen	34.1	62.3
Kempe stiftelserna	7.4	17.5
Carnegie funds	4.3	1.2
Alecta	2.8	0.8
Swedbank Robur Fonder	2.6	0.7
Nordea Funds	2.4	0.7
Norges Bank	2.3	0.7
Vanguard	1.7	0.5
BlackRock	1.5	0.4
Other	40.9	15.2

BillerudKorsnäs

BillerudKorsnäs AB produces a variety of packaging, paper, and board products. Most of the company's sales come from the food and beverage packaging industry. BillerudKorsnäs organises itself into four segments: Board, Paper, Solution & Other, and Currency hedging.

Market value: 4 000 million EUR

Table 6: Shareholders, capital and vote (%) in BillerudKorsnäs

Shareholder	Capital	Vote
Frapag Beteiligungsholding AG	12.1	12.1
AMF Försäkring och Fonder	10.9	10.9
Fjärde AP-fonden	6.4	6.4
Swedbank Robur funds	6.4	6.4
Alecta	4.4	4.4
Schroders	3.6	3.6
Handelsbanken Fonder	3.1	3.1
Vanguard	2.6	2.6
BlackRock	2.0	2.0
Dimensional Fund Advisors	1.6	1.6
Other	46.9	46.9

Metsä Board Oyj

Metsä Board Oyj is partly owned by Metsä Group (see below) and manufactures and sells a variety of fibre-based products. Its product portfolio includes pulp, boxboard, and linerboard, which are used in foodservice and consumer goods packaging. Most of the revenue is generated in Europe. Metsä also operates in the Americas and the Asia-Pacific region.

Market value: 3 001 million EUR

Table 7: Shareholders, capital and vote (%) in Metsä Board

Shareholder	Capital	Vote
Metsäliitto Cooperative	48.0	67.5
Varma Mutual Pension Insurance Company	4.9	6.0
Ilmarinen Mutual Pension Insurance Company	3.3	3.6
Etola Erkki Olavi	1.8	0.6
Elo Mutual Pension Insurance Company	1.1	0.4
The State Pension Fund of Finland	0.9	0.3
Evli Finnish Small Cap Fund	0.7	0.2
OP-Finland Small Firms Fund	0.6	0.2
OP-Henkivakuutus Ltd	0.3	0.1
Danske Invest Finnish Equity Fund	0.3	0.1
Other	38.1	21.0

Other (non-listed) corporations

Metsä Group is a Finnish forest industry group which consists of the holding company Metsäliitto Cooperative together with Metsä Forest and Metsä Wood, which are parts of the cooperative, and three daughter companies: Metsä Tissue, Metsä Board and Metsä Fibre. Metsäliitto Cooperative is owned by approximately 100,000 forest owners. It has a yearly turnover of 5,055 MEUR and an average of 9,200 employees. Its members own 50 percent of the privately owned forest land in Finland.

Ahlstrom-Munksjö is a Swedish-Finnish manufacturer of fibre-based products, including packaging, filters, laminates, and other paper products. Ahlstrom-Munksjö has 7,800 employees and sales are 2,700 MEUR/ year. The company is currently owned by a group of private investors and was as of 31 May 2021 delisted from Nasdaq Stockholm and 23 June 2021 from Nasdaq Helsinki.

Sveaskog is Sweden's largest forest owner with 3.9 Mha, 14 percent of Sweden's forest land. It is fully owned by the Swedish state through its Ministry of Enterprise and Innovation. Sveaskog had a 660 MEUR turnover and 827 employees in 2020.

Metsähallitus Metsätalous Oy (Metsähallitus Forestry Ltd.) is the forestry branch of Metsähallitus - a state-owned enterprise set up to administer all state-owned forests in Finland. Metsätalous Oy owns 3,5 Mha of forest land. It has an annual turnover of 306 MEUR and 421 employees.

Risk

Investors have traditionally looked at forests and forestry as an inflation hedge, an asset class with relatively low correlation to equity and bond markets and as a stable long-term holding.[25]

Besides well-known risks of investments in forest lands, such as the risk of natural disasters, valuation uncertainties, long term income cycles, etc., there are specific risks in investments in all forestry operations in the Nordic area. These relate to environmental and energy issues, land-rights, human rights and other political issues.

Increased Pressure

There are great expectations on forests to provide all the resources needed for transition to a renewable, fossil free economy. In addition to producing timber and raw material for the pulp and paper industry, forests are expected both to deliver biofuels and bioenergy in various forms, as well as industrial feedstocks and to act as a storage for carbon sequestered from the atmosphere.

The matter is packed with conflict of objectives and policy challenges. Climate change is already starting to impact the health of forests (see separate box) potentially resulting in reduced production.

Forestry in a warming world

Many aspects related to climate change are prone to affect forest growth and productivity.

• The productivity and distribution of forests could be affected by changes in temperature, precipitation patterns, and the amount of carbon dioxide in the air.

• Climate change will likely alter the frequency and intensity of forest disturbances, including wildfires, storms, pests and pathogens, and the occurrence of invasive species.

• Climate change will likely worsen the problems that the forests already face due to land development and air pollution.[26]

Forestry practices can to some extent mitigate the impacts of climate change. It has been shown that alternative forest management models, such as biodiversity-centred management, wetlands restoration, Close-to-Nature Forestry, adaptive rotation, and uneven-aged mixed management practices not only build resilience against climate change but also help sequester more carbon.[27]

Increasing demand

There is currently an increased demand for wood and wood-based products for building and construction materials, partly driven by a trend towards materials with less climate impact. There is also a growing market for wood fibres to replace fossil fuel-based materials and for use in various composite materials and textiles. Ongoing research is constantly revealing new areas of use for wood products. Lignin electrolytes for supercapacitors and batteries is one example.[28]

Bioenergy and biofuels are often presented as sustainable alternatives to fossil fuels (see separate box below).

An interesting development is the rise in demand for "clearcut-free" timber. A large Swedish building supplier, Byggmax, is now considering offering "clearcut-free" wood products.[29]

Lack of supply

The primary production of roundwood is now almost fully exploited by the forest industry given today's conditions. Demand for roundwood from the pulp industry and sawmills today exceeds domestic felling. Historical over-logging is driving forestry operations into new frontiers including mountainous areas, old growth forests, reindeer herding areas etc., leading to conflicts and reduced production.

There are also risks directly related to the method of production. The monocultures that are the results of the standard clearcutting practice tend to be more vulnerable to droughts, fire, and pests. Problems with erosion, soil depletion and soil degradation as a consequence of monoculture may also materialise in the longer term.[30]

Due to the long production cycles, current forestry practices, such as clearcutting, soil scarification and mono-cultures, risk not being able to meet the demand as customers preferences change towards more sustainable production.

As a result, production in the Nordic forest industry will grow more slowly than the world market.

Forest conservation

Conservation of forests is an important tool in the efforts to protect biodiversity and ecosystem services. In a context of competition for raw material, it may become a threat to investors. Knowing and understanding trends and policies relating to forest protection and conservation is important when looking to invest in the forest sector.

Bioenergy – a two-edged sword

As the climate crisis is growing, many look to forests to provide a renewable fossil-free source of energy, thereby increasing the pressure on forests. In both Sweden and Finland, bioenergy already plays an important role in the production of energy.

In recent years energy derived from biomass has accounted for almost half of Sweden's total energy consumption[31] and around one fourth of Finland's.[32] In both countries, bioenergy is still the fastest growing source of renewable energy. In Sweden, biofuels cover 23,3 percent of the fuel market.[33]

The forest industry together with the Swedish and Finnish governments have ambitious plans for substantially increasing energy generation from forests over the coming years. The Swedish government's initiative Fossil-free Sweden estimates an increase in production of bioenergy of 9 percent by 2030 and an increase of 17 percent by 2045 while the total demand for bioenergy in 2045 is projected to be much larger.[34]

At first glance the idea of using by-products from the forest seems like a good idea. The problem is that more or less everything is already being used or is essential to biodiversity. An increase in energy production from forests must therefore come from an increased logging or by-products that are already being used for other purposes.

The objectives of maintaining biodiversity, climate mitigation and other ecosystem services in the forest clashes hard with the quest for more biofuels. The current push for a major increase in the volume of production of biofuels, bioliquids, and biomass fuels, will make agreed sustainability goals difficult to meet.[35]

Land rights issues

The Nordic forest industry has a track record of land use disputes with the Sami people of northern Sweden and Finland. Reindeer husbandry holds a cultural and economic significance for the Sami community.

The reindeer herding area covers about 50 percent of the productive forest land in Sweden[36] and about 40 percent in Finland.[37] [38] In winter, reindeers need lichen that only grow on old trees. Modern forestry practices, including clearcutting, interfere with the reindeers' search for food and lead to escalating conflicts between foresters and reindeer herders.

Reputational Risk

In a fast-changing business and market environment, a company's reputation is an asset in its relationship with customers, investors, employees, and business partners.

Good reputation is built on trust, which is earned by delivering environmental and social performance and communicating openly and honestly about that performance. Companies also earn trust and build strong reputations by reacting quickly to mistakes and recognizing responsibility. Companies can do great harm to their reputations by not acting in this way.[39]

The ownership or management of land often gives rise to complex social, political, and environmental conflicts that may impact negatively on the underlying investor.[40]

Forestry is an upstream industry sector and rarely encounters expressions of consumer preferences. But activities by a forest owner or manager presents a risk to companies further down the line, linking them through their supply chains to the destruction of forests.

Brand value may accrue to forest companies that have made a reliable commitment to improving their environmental and social performance and to following up on that commitment.[41]

Regulatory risks

Forests and forestry are subject to an evolving set of policies and regulations. From an investor perspective, this entails a certain amount of risk. The following is an overview of current and perspective legal framework related to forests and forestry that may have an impact on investment choices.

Certification

Investors seeking to reduce risk in forest investments often take refuge in forestry certification schemes such as the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).

Studies on the effect of certification schemes conclude that although certification is rewarded with price premiums and improved market access, certified forest owners are not significantly more likely to preserve areas of high conservation value than others, or to increase the magnitude of the areas that are set aside for conservation purposes.[42]

Especially the industry-owned PEFC, which has been the major certification scheme in Finland, has performed so poorly that even governmental institutions have left the programme, citing a lack of sufficient knowledge base and missing consideration of ecological criteria.[43]

For forest certification to have an effect, the standards must be tightened, and the monitoring and enforcement of forest certification schemes strengthened.[44]

It has even been proposed that the focus on certification is distracting from and delaying the implementation of a comprehensive and integrated set of solutions including robust laws and regulations, thereby hindering the transformation of commodity production systems away from a model that relies on continued destruction of natural ecosystems.[45]

In 1993 Sweden changed its forest policy to integrate ecological considerations with modern forestry practices. The policy focuses on two major objectives, one for production and one for environmental concerns. Both objectives are ambitious. In contrast, the legal demands on forest management, mainly set by the Forestry Act and the Environmental Code, are much less demanding.

The policy is often described as 'freedom with responsibility' and presumes a willingness of forest owners to make larger investments and take more measures

in their forest management than what is stipulated by law.[46] In practice production most often takes precedence over environmental considerations and the situation has generated increasing demands for legislators to codify more of the environmental and social expectations on forestry into forest law.

Finland has a similar situation with voluntary protection measures highly emphasized in Finnish forest policy. According to current legislation, restricting the amount of annual logging is not possible in Finland since existing statutes only place restrictions on logging in certain protected areas and habitats. Many of the forest governance instruments such as subsidies and forest planning still encourage an increase in logging volumes, while few measures are designed for the purpose of enhancing biodiversity or water protection.[47] If and when this changes it will have a profound impact on investments in forestry.

In July 2021 the EU Commission launched its new ***Forest Strategy for 2030***, intended to contribute to reducing emissions of greenhouse gases. The strategy sets "a vision and concrete actions for increasing the quantity and quality of forests in the EU and strengthening their protection, restoration and resilience".[48] The strategy has been met with criticism from the forestry sector in both Sweden and Finland, accusing the Commission of intruding on Member State competence.[49]

The EU Forest Strategy is an integral part of the ***2030 Biodiversity Strategy***, *"a comprehensive, systemic and ambitious long-term plan for protecting nature and reversing the degradation of ecosystems"*. The Strategy sets out new ways to implement existing legislation more effectively, new commitments, measures, targets, and governance mechanisms and includes transforming at least 30 percent of Europe's lands into effectively managed protected areas.[50] It also stipulates that all primary and old-growth forests will have to be strictly protected.

The strategy specifically mentions clearcutting as a practice that *"affects above ground biodiversity and causes the loss of carbon in the roots and part of the carbon in the soil"* and *"should be used only in duly justified cases"*.

A parallel development with importance for investors is the ***EU Taxonomy***, a classification system intended to orient investments towards more sustainable technologies and businesses and make Europe climate neutral by 2050. The Taxonomy is part of the EU's overall efforts to reach the objectives of the European Green Deal and make Europe climate-neutral by 2050. The Taxonomy is meant mainly to have the function of an affecting force. Reputation and brands of companies and organisations should be so important that they can't afford not to adapt to the Taxonomy.

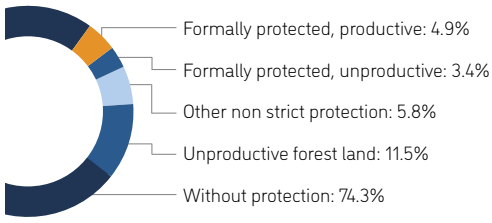
Protected Forests

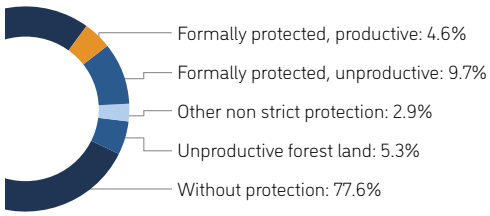
How protected are protected forests? The Swedish Forest Agency (Skogsstyrelsen) describes protected forests in four categories: formally protected forests (productive and non-productive); voluntary set-asides; consideration areas; and unproductive forest land.

Counting only formally protected forests, Sweden protects 4.9 percent of its productive forest lands, and more than half of the formally protected areas are found inside the mountain range area in north-west Sweden.

Finland protects a similar percentage (4.6 percent) of which the largest part is found in the north of Finland.

Figure 3: Protection of forests in Sweden (above) and Finland (below)





A Taxonomy Climate Delegated Act that covers bioenergy and forestry and "*defines the technical screening criteria for economic activities that can make a substantial contribution to climate change mitigation and climate change adaptation*" was launched in 2021.[51]

The Taxonomy delegated act was strongly criticised in both Sweden and Finland with both governments set to vote against it when it was brought to the European Council on 9 December 2021.[52] However, the act was cleared by the council and entered into force on 1 January 2022.

Furthermore, a recent initiative from the European Commission, after a massive push by EU-citizens and organisations on an EU legal framework to *"halt and reverse EU-driven global deforestation"* focuses on stricter control on *"forest and ecosystem-risk commodities"*, FERC.

Although the initiative's main intention is to stop destruction of tropical forests, it also covers European forests and specifically states that *"commodities covered by the proposal and their derived products placed on the Union market should not result in, or derive from, the degradation of natural forests or natural ecosystems due to human activity"*. The final legislation is expected to be approved in autumn 2022

On the international level the 196 countries that are parties to the Convention on Biological Diversity, COP15, will come together in 2022 with the objective to agree on a *"Biodiversity Framework to guide actions worldwide through 2030 to preserve and protect nature and its essential services to people"*.[53]

One of the targets of the draft Framework is to *"ensure that at least 30 per cent globally of land areas and of sea areas, especially areas of particular importance for biodiversity and its contributions to people, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscapes and seascapes"*.[54]

Many experts state that the global biodiversity crisis is as deep and serious as the climate crisis, and that they interact and enforce each other. Assuming this is the case, we are bound to see a number of more stringent regulations being enforced over the coming years on global, regional and national levels.

Into the Future

There is not enough forest to meet all demands. But with smart and innovative management strategies, we can have forests that both produce enough goods and maintain the biodiversity and ecosystem services to fill our needs.

To secure biodiversity and ecosystem services, scientists agree that we need to set aside at least 30 percent of all forest land through effectively and equitably managed, ecologically representative, and well-connected systems of protected areas.

A major part of the forests should be managed through sustainable, ecosystem based, continuous cover forestry methods, built on natural regeneration. A small part of forest land could then be used for more intensive production in a balanced and responsible manner.

Besides the production of timber and other wood products, there is a huge potential in multi-purpose management of forest lands. A forest can be used in so many more ways than just cutting down its trees and using its wood. A more open-minded approach to forest use can create jobs and generate income well above today's levels.

Maybe the most obvious alternative use of forests is for tourism. Tourism services open a spectrum of business ideas for creative entrepreneurs, including hiking, fishing, hunting, physical exercise and all the services that can be built around them.

To be successful and meet responsible investment objectives over time, investments must have the ability to operate in a wider context of environmental and social

frameworks. Investors may also need to engage in the commercialisation of ecosystem services provided by natural forests as public goods in order to secure their conservation.

Recommendations

To avoid financial and reputational risk, investments in forests or forestry should only be made where the following recommendations are supported. Certification has its problems as shown in this report. It is a baseline requirement but far from enough in itself. Current investors should exert their influence to make sure that their investments are safe-guarded:

- Avoid exposure relating to clearcutting: Investors looking for stable investments should avoid exposure to risks relating to clearcutting methods. Clearcutting was identified as a main issue in the EU-forest strategy as part of the Fit for 55 package soon being rolled out across Europe. Also, increasing pressure for storing more carbon in soil as part of the new LULUCF-regulations might mean that large parts of productive forests will have to be spared.
- Ensure diverse forest portfolios: In order to increase resilience of forest ecosystems and adjust to the political changes mentioned above, investors need to make sure forestry companies have a diverse forest portfolio; meaning forests with diverse age-structures and a broad range of species. Companies with intense clearcutting practices will often have young forests that yield less or are too young to log.
- Ensure due diligence in human rights issues: The ownership or management of land often gives rise to complex social, political, and environmental conflicts that may impact negatively on the underlying investor. Investors should always do their due diligence and do a check of company history pertaining to complaints or fines due to conflict with e.g. reindeer herders.
- Prioritise products with long life spans: Investors should prioritise investments in forestry with a higher ratio of long living products (lifespan of >25 years) and new materials such as construction material and textile fibre. Long living products are prioritised in the EU-forest strategy and they yield more profit per cubic metre of wood than short lived products and fuels.
- Invest in forestry that supersedes regulatory demands: With more and stricter sustainability rules and criteria for forestry expected on a EU-level, investors looking for long term stability should invest in forestry that supersedes current regulations.

Checklist for investors

The following is a list of questions to help investors appraise potential investment targets in the forest sector. A more comprehensive list of due diligence questions relating to investments in forestry can be found at the PRI (Principles for Responsible Investment) website.

Policy

– Do you support the 30 percent protection of forests as described in the EU Biodiversity Strategy?
– Have you taken other EU and international targets into consideration?
– Are your forestry operations certified by an internationally recognised body such as the FSC? If so, since when have they been certified and what percentage of your operations are covered by certification?
– Do you have a biodiversity policy? What is it?
– What is your policy and practice regarding indigenous people's rights?

Governance and resourcing

– How is responsibility for overseeing and implementing environmental, social and governance (ESG) factors structured? Are the responsible staff qualified for the role? Are they using any external resources?
– How do you ensure that staff have adequate ESG knowledge and stay up to date with evolving best practice?

Reporting

– Which channels do you use to communicate ESG information to investors, and how frequently do you do so?
– Can you provide samples of ESG disclosures? If not, would you consider introducing ESG reporting.
– Is the management of ESG factors included on the agenda at investor meetings?
– How do you disclose material ESG incidents to your investors?

Endnotes

1 The Royal Swedish Academy of Agriculture and Forestry (KSLA). 'Forests and Forestry in Sweden', 2015. https://www.skogsstyrelsen.se/globalassets/in-english/forests-and-forestry-in-sweden_2015.pdf.

2 Food and Agriculture Organisation of the United Nations (FAO). 'Global Forest Resources Assessment 2020 - Sweden'. Rome, 2020. https://www.fao.org/3/cb0063en/cb0063en.pdf.

3 Food and Agriculture Organisation of the United Nations (FAO). 'Global Forest Resources Assessment 2020 - Finland'. Rome, 2020. https://www.fao.org/3/ca9995en/ca9995en.pdf.

4 Jenkins, Michael, and Brian Schaap. 'Forest Ecosystem Services - Background Study Prepared for the Thirteenth Session of the United Nations Forum on Forests'. United Nations Forum on Forests, April 2018. https://www.un.org/esa/forests/wp-content/uploads/2018/05/UNFF13_BkgdStudy_ForestsEcoServices.pdf.

5 Esseen, Per-Anders, Bengt Ehnström, Lars Ericson, and Kjell Sjöberg. 'Boreal Forests--The Focal Habitats of Fennoscandia'. In Ecological Principles of Nature Conservation, edited by Lennart Hansson, 252–325. Boston, MA: Springer US, 1992. https://doi.org/10.1007/978-1-4615-3524-9_7.

6 Kuuluvainen, Timo, Henrik Lindberg, Ilkka Vanha-Majamaa, Petri Keto-Tokoi, and Pekka Punttila. 'Low-Level Retention Forestry, Certification, and Biodiversity: Case Finland'. Ecological Processes 8, no. 1 (December 2019): 47. https://doi.org/10.1186/s13717-019-0198-0.

7 Komonen, Atte ; Penttilä, Reijo ; Lindgren, Mariko ; Hanski, Ilkka Oikos, 2000-07, Vol.90 (1), p.119-126. https://www.jstor.org/stable/3547115.

8 https://www.skogsaktuellt.se/artikel/2228798/lnsamheten-fortstter-minska-i-skogen.html.

9 Gustafsson, Lena, Jari Kouki, and Anne Sverdrup-Thygeson. 'Tree Retention as a Conservation Measure in Clear-Cut Forests of Northern Europe: A Review of Ecological Consequences'. Scandinavian Journal of Forest Research 25, no. 4 (August 2010): 295–308. https://doi.org/10.1080/02827581.2010.497495.

10 IPCC. 'Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty', 2018. https://www.ipcc.ch/sr15/.

11 Rödlistade arter i Sverige 2020. Uppsala: SLU Artdatabanken, 2020. http://urn.kb.se/resolve?urn=urn:nbn:se:hig:diva-37182.

12 Food and Agriculture Organisation of the United Nations (FAO). 'Roles of Forests in Climate Change'. Forestry and climate change, 2021. https://www.fao.org/forestry/climatechange/en/.

13 Konjunkturinstitutet, Miljö, ekonomi och politik 2021 – Skogen, klimatet och politiken, KI 2021:30 Dnr 2021-445, 2021. https://www.konj.se/download/18.10535f7c17db81574dd22fb/1639490341602/Årlig%20rapport%20sammanlagd.pdf.

14 Asbeck, Thomas, Francesco Sabatini, Andrey L. D. Augustynczik, Marco Basile, Jan Helbach, Marlotte Jonker, Anna Knuff, and Jürgen Bauhus. 'Biodiversity Response to Forest Management Intensity, Carbon Stocks and Net Primary Production in Temperate Montane Forests'. Scientific Reports 11, no. 1 (December 2021): 1625. https://doi.org/10.1038/s41598-020-80499-4.

15 United States Department of Agriculture. 'The U.S. Forest Carbon Accounting Framework: Stocks and Stock Change, 1990-2016'. General Technical Report. US Forest Service, November 2015. https://www.fia.fs.fed.us/forestcarbon/docs/FCAF_draft_110415.pdf.

16 Dean, Christopher, James B. Kirkpatrick, and Andrew J. Friedland. 'Conventional Intensive Logging Promotes Loss of Organic Carbon from the Mineral Soil'. Global Change Biology 23, no. 1 (January 2017): 1–11. https://doi.org/10.1111/gcb.13387.

17 Skogforsk (the Forestry Research Institute of Sweden). 'Skogforsk'. Accessed 15 November 2021. https://www.skogforsk.se/om-skogforsk/ars--och-hallbarhetsredovisning/oktober-2020-gallring--avverkning/.

18 https://www.natursidan.se/nyheter/svensk-skog-blir-till-75-procent-kortlivade-produkter/.

19 Natural Resources Institute Finland, Total wood consumption 2020. https://stat.luke.fi/en/total-wood-consumption.

20 Vestin, Patrik, Meelis Mölder, Natascha Kljun, Zhanzhang Cai, Abdulghani Hasan, Jutta Holst, Leif Klemedtsson, and Anders Lindroth. 'Impacts of Clear-Cutting of a Boreal Forest on Carbon Dioxide, Methane and Nitrous Oxide Fluxes'. Forests 11, no. 9 (1 September 2020): 961. https://doi.org/10.3390/f11090961.

21 United States Department of Agriculture. 'The U.S. Forest Carbon Accounting Framework: Stocks and Stock Change, 1990-2016'. General Technical Report. US Forest Service, November 2015. https://www.fia.fs.fed.us/forestcarbon/docs/FCAF_draft_110415.pdf.

22 Lindroth, Anders, Ben Smith, Martin Sykes, Håkan Wallander, and Patrik Vestin. '"Landsbygdsministern Har Fel – Kalhyggen Inte Klimatsmarta"'. Dagens Nyheter, 30 May 2012. https://www.dn.se/debatt/landsbygdsministern-har-fel-kalhyggen-inte-klimatsmarta/.

23 Ekström, Håkan, Mats Hannertz. 'Nordic Forest Statistics 2020 - Resources, Industry, Trade, Conservation and Climate - Revised Version'. SNS, Nordic Forestry Research, March 2021. https://nordicforestresearch.org/wp-content/uploads/2021/03/Nordisk-skogsstatistik-3.pdf.

24 Company information from each company's own website 30 November 2021. Financial data taken from public listings at Nasdaq Stockholm and Nasdaq Helsinki on 30 November 2021 as presented on www.avanza.se.

25 'An Introduction to Responsible Investment in Forestry'. Principles for Responsible Investments. UNEP Finance Initative and United Nations Global Compact, 2019. https://www.unpri.org/download?ac=6441.

26 United States Environmental Protection Agency (EPA). 'Climate Impacts on Forests'. Climate Change Impacts. Accessed 10 December 2021. https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-forests_.html.

27 European Commission. 'European Forests for Biodiversity, Climate Change Mitigation and Adaptation'. Science for Environment Policy Environment FUTURE BRIEF. European Union, November 2021. https://ec.europa.eu/environment/integration/research/newsalert/pdf/issue-25-2021-11-european-forests-for-biodiversity-climate-change-mitigation-and-adaptation.pdf.

28 Leonard Sean Anthony, Mugashini Vasudevan, Veeradasan Perumal, Mark Ovinis, Pandian Bothi Raja, Thomas Nesakumar Jebakumar Immanuel Edison, Bioresource-derived polymer composites for energy storage applications: Brief review, Journal of Environmental Chemical Engineering, Volume 9, Issue 5, 2021. https://www.sciencedirect.com/science/article/abs/pii/S2213343721008095?dgcid=rss_sd_all.

29 Byggvarujätte öppnar för hyggesfritt, 23 June 2021. https://www.atl.nu/byggmax-kan-borja-salja-hyggesfritt.

30 Corsa Lok Ching Liu, Oleksandra Kuchma, Konstantin V. Krutovsky, Mixed-species versus monocultures in plantation forestry:Development, benefits, ecosystem services and perspectivesfor the future, Global Ecology and Conservation, Volume 15, July 2018. https://www.sciencedirect.com/science/article/pii/S235198941830088X.

31 Energimyndigheten. 'Användning Av Biobränslen per Bränslekategori 2019'. Statistikdatabas, 2021. http://pxexternal.energimyndigheten.se/pxweb/sv/Årlig%20energibalans/Årlig%20energibalans__Total%20användning%20av%20energivaror/EN0202_4.px/table/tableViewLayout2/?rxid=2317b153-6985-401d-96e3-354d614f9cde.

32 Ministry of Agriculture and Forestry of Finland. 'Wood Fuels in Energy Generation in Finland'. Accessed 1 December 2021. https://mmm.fi/en/en/forests/use-of-wood/wood-based-energy.

33 Energimyndigheten. 'Drivmedel 2020', November 2021. https://www.energimyndigheten.se/fornybart/hallbarhetskriterier/.

34 Fossilfritt Sverige. 'Strategi För Fossilfri Konkurrenskraft - Bioenergi Och Bioråvara i Industrins Omställning', September 2021. https://fossilfrittsverige.se/wp-content/uploads/2021/09/Strategi-for-fossilfri-konkurrenskraft-bioenergi-och-bioravara-i-industrins-omstallning_webb.pdf.

35 Thunberg, Maria, and Philip Hansson. 'Sustainable Use of Biomass for Heating and Transport Fuel'. Nordic Energy Research, February 2020. https://nordicforestresearch.org/wp-content/uploads/2020/03/Sustainable-use-of-biomass-for-heating-and-transport-fuel-1.pdf.

36 Skogsstyrelsen, Forests and forestry in Sweden. https://www.skogsstyrelsen.se/globalassets/in-english/forests-and-forestry-in-sweden_2015.pdf.

37 Nordregio, Reindeer herding districts in Finland. https://nordregio.org/maps/reindeer-herding-districts-in-finland/.

38 Natural Resources Institute Finland, The impact of forestry on reindeer husbandry. https://nordregio.org/maps/reindeer-herding-districts-in-finland/.

39 Millenium Ecosystem Assessment. 'Ecosystems and Human Well-Being - Opportunities and Challenges for Business and Inndustry'. Accessed 1 December 2021. http://millenniumassessment.org/documents/document.353.aspx.pdf.

40 Binkley, Clark S., Fiona Stewart, and Samatha Power. 'Pension Fund Investment in Forestry'. Washington: IBRD/The World Bank, 2020. https://openknowledge.worldbank.org/bitstream/handle/10986/35167/Pension-Fund-Investment-in-Forestry.pdf?sequence=5&isAllowed=y.

41 Millenium Ecosystem Assessment. 'Ecosystems and Human Well-Being - Opportunities and Challenges for Business and Inndustry'. Accessed 1 December 2021. http://millenniumassessment.org/documents/document.353.aspx.pdf.

42 Nordén, Anna, Jessica Coria, and Laura Villalobos. 'Evaluation of the Impact of Forest Certification on Environmental Outcomes in Sweden'. Working Papers in Economics. Department of Economics, University of Gothenburg, May 2016. http://hdl.handle.net/2077/44417.

43 Elinkeino-, liikenne- ja ymperistökeskus, ELY-keskukset olisivat toivoneet parempaa tietopohjaa ja ekologisten kriteerien huomiointia PEFC-standardin valmistelussa. https://www.ely-keskus.fi/-/ely-keskukset-olisivat-toivoneet-parempaa-tietopohjaa-ja-ekologisten-kriteerien-huomiointia-pefc-standardin-valmistelussa.

44 Villalobos, Laura, Jessica Coria, and Anna Nordén. 'Has Forest Certification Reduced Forest Degradation in Sweden?' Land Economics 94, no. 2 (2018): 220–38. https://www.muse.jhu.edu/article/690445.

45 Greenpeace International. 'Destruction: Certified', March 2021. https://issuu.com/greenpeaceinternational/docs/greenpeace_international_-destruction_certified_10.

46 The Royal Swedish Academy of Agriculture and Forestry (KSLA). 'Forests and Forestry in Sweden', 2015. https://www.skogsstyrelsen.se/globalassets/in-english/forests-and-forestry-in-sweden_2015.pdf.

47 Mauerhofer, Volker, Daniela Rupo, and Lara Tarquinio. 'Summary and Conclusions'. In Sustainability and Law, edited by Volker Mauerhofer, Daniela Rupo, and Lara Tarquinio, 755–73. Cham: Springer International Publishing, 2020. https://doi.org/10.1007/978-3-030-42630-9_36.

48 European Commission. 'Questions and Answers: European Green Deal: New EU Forest Strategy for 2030', July 2021. https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3548.

49 Finnish Government. 'New EU Forest Strategy Is Partly Stepping over the Competence of Member States on Forests, Different Aspects of Sustainability Included Better than Anticipated'. Accessed 1 December 2021. https://valtioneuvosto.fi/en/-/1410837/new-eu-forest-strategy-is-partly-stepping-over-the-competence-ofmember-states-on-forests-different-aspects-of-sustainability-included-better-than-anticipated.

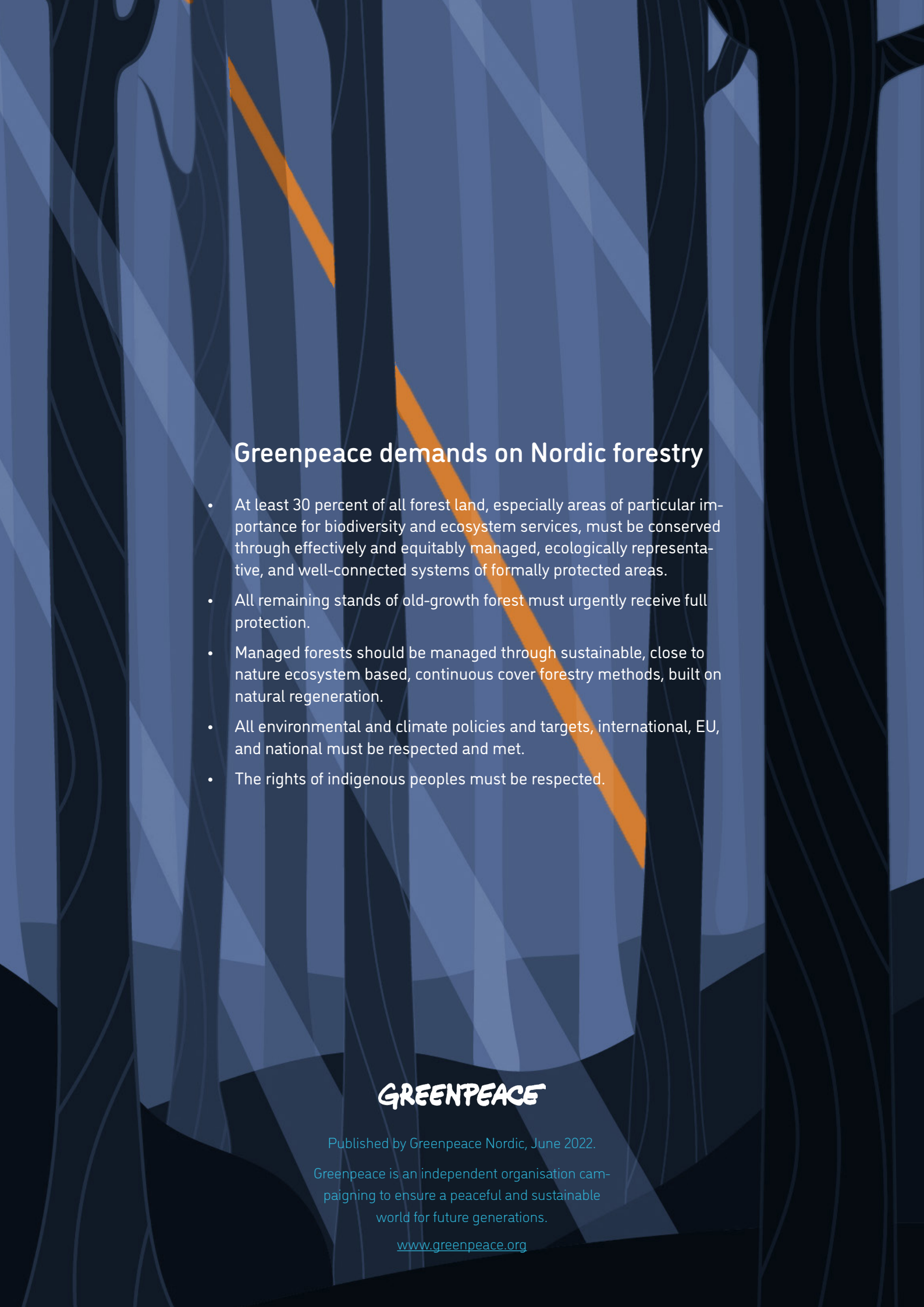
50 European Commission. 'Questions and Answers: EU Biodiversity Strategy for 2030 - Bringing Nature Back into Our Lives'. Accessed 1 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_886.

51 European Commission. 'Questions and Answers: Taxonomy Climate Delegated Act and Amendments to Delegated Acts on Fiduciary Duties, Investment and Insurance Advice'. Accessed 1 December 2021. https://ec.europa.eu/commission/presscorner/detail/e%20n/qanda_21_1805.

52 Euractiv, https://www.euractiv.com/section/politics/short_news/finland-will-vote-against-eu-climate-delegated-act/

53 https://www.unep.org/resources/publication/1st-draft-post-2020-global-biodiversity-framework

54 Convention on Biological Diversity, First draft of the Post-2020 Global Biodiversity Framework, CBD/WG2020/3/3, 5 July 2021, https://www.cbd.int/doc/c/914a/eca3/24ad42235033f031badf61b1/wg2020-03-03-en.pdf



Greenpeace demands on Nordic forestry

- At least 30 percent of all forest land, especially areas of particular importance for biodiversity and ecosystem services, must be conserved through effectively and equitably managed, ecologically representative, and well-connected systems of formally protected areas.
- All remaining stands of old-growth forest must urgently receive full protection.
- Managed forests should be managed through sustainable, close to nature ecosystem based, continuous cover forestry methods, built on natural regeneration.
- All environmental and climate policies and targets, international, EU, and national must be respected and met.
- The rights of indigenous peoples must be respected.

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