



CHANGES IN FOREST OWNERSHIP STRUCTURE IN SWEDEN

CHALLENGES AND OPPORTUNITIES
FOR FOREST MANAGEMENT,
CONSERVATION, AND RESTORATION



SUPERB
Upscaling Forest Restoration



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EXECUTIVE SUMMARY

Private owners hold nearly half of Sweden's forest land and a growing share is now owned by individuals who live outside the municipality where their forest resides, so-called non-resident forest owners (NRFOs). This is largely due to inheritance and increasing interest in forest land as a long-term investment. This trend raises important questions about how NRFOs may influence forest management, conservation, and restoration in Sweden. Although research on NRFO impacts is limited, emerging concerns include reduced forest management, impacts on biodiversity, rising land prices, and tensions with local communities and indigenous people.

This study investigates how increasing NRFO in Sweden —particularly in Västerbotten and Norrbotten counties — may shape forest-related outcomes in the country. Drawing on interviews with 18 stakeholders, the study highlights perceived drivers of increases in NRFOs and identifies related narratives on challenges and opportunities for forest management, conservation, and forest restoration. From the interviews, three potential drivers of an increase in NRFOs emerged: deregulation, inheritance, and investments. Four narratives were identified on how an increase of NRFOs impacts forest management, conservation, and restoration in Sweden. Two of these narratives were related to NRFOs that inherit their forest: *catalyst for change?* and *threat to the forest industry*, while one was related to NRFOs that invest in forest land: *threats to biodiversity, communities, and private forest owners*, and one was not associated with any type of NRFO: *focus on forest policy reform not ownership*. All stakeholders except forestry viewed inheritor NRFOs as a potential opportunity for more sustainable forest management and restoration in Sweden if several challenges related to their perceived lack of forestry knowledge can be overcome. While forestry stakeholders also saw challenges related to their lack of forestry knowledge, they mainly saw them as a threat to the forest industry instead of an opportunity for sustainable forest management and restoration. Investor NRFOs were seen by all stakeholders to have potential negative ecological and social impacts, including biodiversity loss and threats to private forest ownership traditions. To address these challenges, stakeholders emphasised tailored communication, financial incentives, and policy reforms, with different priorities depending on whether NRFOs are inheritors or investors. We recommend distinguishing between types of NRFOs (i.e., inheritor vs. investor) in forest management debates in Sweden, the creation of neutral information brokers on forests and forest management that can inform NRFOs and other forest owners of the diverse options of forest management, and development of financial incentives and alternative value chains for restoration and forest management in Sweden.



INTRODUCTION

Private forest owners (PFOs) own almost half (49 %) of the forest land in Sweden (Swedish Forest Agency, 2023). In recent decades, private forest ownership has become less local as an increasing number of owners no longer live on their estate where the forest is located (Ludwig & Co, 2023). When a forest owner lives outside the municipality where they own their forest, they are considered a 'non-resident forest owner', or, in Swedish, 'utboägare av skog'. The percentage of forests owned by non-resident forest owners (NRFOs) in Sweden has increased from 15.7% in 2000 to 20% in 2023 (Skogsstyrelsen, 2023). In total, 26% of the forest land in use for forestry in Sweden, equal to about 5,000,000 ha, is owned by NRFOs (Skogsstyrelsen, 2023).

The increase of NRFOs in Sweden is partially related to inheritance and investment. Inheritance accounts for 75% of acquired forest properties in Sweden while 25% are purchased on the open market (Ludwig & Co, 2023). The average age of a forest owner is increasing, and by 2028 it is expected that about 2.4 million hectares of forest land will be passed down to the next generation who often no longer live in the same municipality where their forest is located (Ludwig & Co, 2023). The number of forests purchased by individuals outside their resident municipality (and often county) increased from 45% to 60% between 2007-2022 (Ludwig & Co, 2023). The motivations behind non-residents purchasing forests on the open market are diverse, however forest land ownership in Sweden has gained popularity as a secure economic investment, especially when compared to investment in shares and funds (Ludwig and Co, 2023). Alternative land-uses and market chains to timber production and forestry are also developing in Swedish forests, including wind power establishments (Svensson et al. 2023a). These developments may be connected to increasing non-resident forest ownership, however this is yet to be investigated.

While the impact of an increasing number of NRFOs on forest management, conservation, and restoration has yet to be investigated in the scientific literature, several perspectives have emerged in the Swedish forest and forestry debate including that NRFOs may be (1) a risk to the forest industry because they are not interested in forestry and 'neglect' thinning and clearing (SVT 2020a) and relatedly (2) beneficial for biodiversity by leaving their forest unmanaged (SVT 2020b); (3) damaging for biodiversity by primarily using rotation forestry as a forest management system (Pehrson, 2023); (4) a threat to local PFOs by causing forest land prices to rise and outcompeting local forest owners in the purchase of forest land (SVT, 2023); and (5) a threat traditional forest rights and norms (e.g., disrupting reindeer grazing by the Sami people) (Sveriges Radio, 2023).

This study aims to investigate perspectives of changes in the balance between resident and non-resident forest ownership in Sweden and its impacts on forest management, conservation, and restoration held by different forest stakeholders. Particular attention is

given to how changes in non-resident forest ownership may affect the implementation of the Nature Restoration Regulation and a transition to more sustainable forest management in Sweden, which is considered by some Swedish stakeholders to be equivalent to forest restoration (O'Brien et al. 2025), given the extensive transformation of forests after nearly a century of intensive, industrial rotation forestry (Angelstam et al. 2020).

Specifically, our research questions are:

- (1) What do forest stakeholders perceive as the reasons for an increase in NRFOs?
- (2) What do different forest stakeholders perceive as challenges and opportunities for forest management, conservation, and restoration stemming from an increase of NRFOs?
- (3) If challenges are seen, what do forest stakeholders propose as potential solutions and is there the potential for consensus across stakeholder groups?

METHODS

Case study

This study has a regional focus on the two northernmost counties of Sweden, Västerbotten and Norrbotten, where the SUPERB Swedish forest restoration demonstration area, the Vindelälven-Juhtatahka UNESCO Biosphere Reserve, is located. These two counties have exhibited a 5.5% and 4.5% increase of NRFOs between 2000 and 2023, respectively. These rates are higher than the national average of 4.3% during the same time (Skogsstyrelsen, 2023). Additionally, a 2023 survey by Ludvig & Co found that only 32% of PFOs in northern Norrland, which includes Norrbotten and Västerbotten counties, reported that they live on their forest property, compared to 55% in the southern regions, Götaland and Svealand. However, this statistic may also include PFOs who own forest within their municipality but do not live on the property itself, potentially leading to an overrepresentation of NRFOs.

Selection of interviewees, data collection, and analysis

We conducted two rounds of interviews between Spring 2024 and Winter 2024. All interviews followed a semi-structured interview guide. The first round of interviews, conducted in March-April 2024 involved interviews with six researchers with different academic backgrounds ranging from forests and forest management, rural-urban dynamics, forest owners' values and preferences, and environmental psychology. The purpose of these interviews was to gain more background information about non-resident ownership in Sweden and help guide the development of interview questions with stakeholders. Therefore, the results of these interviews with researchers were primarily for context only

and the results are not included in this study. The second round, conducted in September-December 2024, consisted of interviews focused on the research questions, involving 15 interviews with 18 stakeholders in total (on three occasions two stakeholders from the same organisation were interviewed together) who were directly or indirectly involved with NRFOs in Norrbotten and Västerbotten, or Sweden more broadly (Table 1). Stakeholders were identified through recommendation of the Swedish SUPERB partners and snowball sampling (i.e., asking the interviewees for recommendations of whom to interview). All interviews were conducted online. Interviews were conducted in English unless the interviewee requested to do the interview in Swedish. In that case, the interview was conducted and transcribed in Swedish and subsequently translated into English. The interviews lasted between 1 and 1.5 hours. Interviews were coded in MAXQDA, a software for qualitative text analysis. Coding was done deductively and inductively. Stakeholder perceptions were analysed using narrative analysis, which aims to identify a problem, causes for the problem, and inherit solutions (Frei et al., 2020).

Table 1: Overview of interviewees

Reference code	Gender	Stakeholder's affiliation	Notes
S-1	F	Public forest administration representative	
S-2	M	Public forest administration representative	
S-3	M	Government agency representative	S-3 & S-4 interviewed together
S-4	F	Government agency representative	
S-5	F	Government agency representative	
S-6	F	Environmental/forest management NGO	
S-7	M	State forest representative	
S-8	M	Forest ownership association representative	
S-9	M	Forest industry representative	
S-10	M	Forest industry representative	
S-11	F	Environmental NGO representative	
S-12	F	Environmental NGO representative	S-12 & S-13 interviewed together
S-13	M	Environmental representative	
S-14	M	Public environment administrative representative	
S-15	M	Community forest representative	
S-16	M	Community forest representative	
S-17	M	Hunting association representative	S-17 & S-18 interviewed together
S-18	M	Hunting association representative	

RESULTS

Causes of forest ownership changes

Stakeholders across various groups perceived that NRFOs are increasing in Sweden, particularly in Norrbotten and Västerbotten counties. This change was seen as a gradual, long-term shift, with many stakeholders highlighting a notable rise in non-resident ownership over the last 20 years. Stakeholders attributed this increase to three main drivers: (1) deregulation, (2) inheritance, and (3) investment.

1) Deregulation

Stakeholders attributed the deregulation of the Swedish forest market in 1990 with an increase in NRFOs because it allowed individuals to purchase forest land in rural areas outside of their resident municipality by applying for a permit. Prior to 1990 this was not possible, and as a result there was a more pronounced local ownership profile.

2) Inheritance

According to the interviewed stakeholders, inheritance is the main driving factor of an increase in NRFOs in Västerbotten and Norrbotten. Stakeholders described the process where younger generations move away from rural, northern inland areas to the coast or larger cities to study or work. At the time of inheritance, they are then often not living in the municipality where their forest is located. Stakeholders attributed this change to rural depopulation and urbanisation. Stakeholders noted that while some heirs may sell inherited forest land, often to investors, most retain ownership.

In addition, stakeholders perceived that forest holdings are increasingly owned by multiple individuals, as properties are inherited by children and ownership becomes further divided over successive generations. Due to rural depopulation and urbanisation, this may also lead to a growing number of NRFOs owning subsequently smaller areas.

3) Investments

Stakeholders perceived that NRFOs are also increasing due to an increase in both domestic (e.g., Stockholm and other larger cities) and foreign (e.g., Germany, Norway, Netherlands) investments in forest land in northern Sweden. Some stakeholders noted that while the number of investors may not be increasing, there may be an increase in the total area of forest land owned by investors. Stakeholders thought investors are primarily motivated by the economic potential of forest land, viewing it as a secure long-term investment, primarily due to the high land value. Some stakeholders perceived that investors may be speculating on economic forest land opportunities for renewable energy such as windmills, or carbon and biodiversity credits.



In addition, since the forest market deregulation in 1990, stakeholders noted that there was a significant increase in land prices and as a result local forest owners were outcompeted by wealthier, non-resident investors. Roger Akelius, who at the time of this publication was the largest private forest owner in Sweden, was mentioned as an investor outcompeting locals: "(...) When I spoke to people here, they said 'no, we can't buy any forest because he's buying everything.' (...). So, in one way the prices went up for all the forest owners (...) if some local wanted to buy a little more forest or buy their first forest property, they just couldn't" (Public forest administration representative S-2).

Challenges and opportunities for forest restoration and sustainable forest management

From the interviews, four narratives emerged on how an increase of NRFOs impacts forest management, conservation and forest restoration in Sweden: (1) *catalyst for change?*; (2) *threat to the forest industry*; (3) *threat to biodiversity, communities, and PFOs*; (4) *focus on forest policy reform not ownership* (Table 2). The first two narratives, *catalyst for change?* and *threat to the forest industry*, were relevant to NRFOs who inherit the forest from their parents or relatives (hereafter referred to as 'inheritor NRFOs'). The third narrative, *threat to biodiversity, communities, and PFOs* was relevant to NRFOs that purchase forests as an investment (hereafter referred to as 'investor NRFOs'). The fourth narrative, *focus on forest policy reform not ownership*, challenged the dominant narrative that NRFOs are relevant to wider trends in forest management in Sweden and instead argued that forest policy reform is needed to transition to more sustainable forest management and a focus on forest restoration.

Narrative 1: Catalyst for change?

All stakeholder groups voiced this narrative except for forestry stakeholders. Under this narrative, stakeholders thought that an increase in inheritor NRFOs could be an opportunity for a transition to more sustainable forest management in Sweden, with a greater focus on biodiversity conservation and forest restoration. However, they stressed that this potential would only be realised if several key challenges were addressed. On the one hand, they thought that inheritor NRFOs are usually not economically dependent on their forest and more personally connected to their land, which could make them more interested in alternative forest management strategies other than the dominant rotation forestry strategy used in Sweden. This could include, for example, managing for ecosystem services other than timber production, such as biodiversity conservation and recreation, especially hunting and fishing, or following continuous cover forestry or other alternative forest management principles.

On the other hand, stakeholders were worried that inheritor NRFOs may lack knowledge and resources to do forestry and therefore may rely on (or be less critical of) the advice of forest companies or forest ownership associations (FOAs) to manage their forests. These companies were thought to primarily focus on timber production goals, using rotation forestry as their only management approach. FOAs were perceived to act as intermediaries for the forest industry and may shape inheritor NRFOs perspectives to closely align with the

industry's objectives. A representative of an environmental NGO expressed this: "It's funny because they're called member organisations. They should (...) be interested in the wellbeing of the members. But they are actually really just channels for acquiring more raw material to the forest industry" (NGO representative S-13). Stakeholders further argued that companies and FOAs may intentionally exclude the option of alternative management strategies or value chains when consulting with NRFOs or, in the case an NRFO suggests an alternative management approach, they may use powerful narratives about forests and forest management to persuade them. Stakeholders acknowledged an increase in smaller companies offering alternative management approaches but perceived them to be outcompeted by the larger forest companies.

Overall, stakeholders perceived that if these challenges materialised, they could decrease the diversity of management approaches shaped by PFOs' personal objectives. This diversity was thought to be an important cultural aspect of forestry in Sweden that has persisted across centuries and results in more diverse forests. Relatedly, stakeholders thought that forest companies and FOAs will not be interested in diversifying management practices that may contribute to forest restoration: "...larger companies tend not to change the way they work when it comes to restoration law, they want to keep it as it's always been done because the industry and all their machine parts and everything is made for big clearcutting" (Hunting association representative S-18).

To turn the increase of NRFOs into an opportunity for biodiversity, more sustainable forest management, and restoration in Sweden and overcome challenges related potential reliance of forest companies and FOAs, stakeholders advocated for improved informational services about nature conservation and forest restoration that can challenge powerful narratives used by the forest industry. Stakeholders argued that these services should focus on one-on-one engagement with forest owners, preferably in informal settings (such as in their forest) to build trust. Developing tailored communication strategies for individual NRFOs was also perceived to be a useful tool to gain their trust and foster interest and openness to alternative management strategies. Stakeholders also highlighted the need for financial incentives and other tools for NRFOs and other PFOs for implementing nature conservation measures in their forests, and that these incentives should be able to compete with profits made from rotation forestry.

	'Inheritor' NRFOs		'Investor' NRFOs	Other (counter narrative)
	Catalyst for change?	Threat to the forest industry	Threat to biodiversity, communities, and PFOs	Focus on forest policy reform not ownership
Challenges	An increase of inheritor NRFOs could have positive effects on forest biodiversity and restoration in Sweden but depends on overcoming several challenges. NRFOs are usually not economically dependent on their forest, making them more open to alternative management strategies and value chains. However, their lack of forestry knowledge and resources may result in contracting forest companies or FOAs for planning and management decisions, which standardise and simplify forest management to focus on wood production with negative effects for biodiversity.	Inheritor NRFOs neglect their forest by not actively managing it. This is due to lack of personal connection, limited forestry knowledge, or speculation of future profit from leaving the forest unmanaged. Without knowledge of forestry and being distant from their land, inheritor NRFOs impose unnecessary harvesting restrictions for timber companies and complicate negotiations about forest management and timber sales. This could lead to negative impacts on jobs, timber supply, and the economy.	Investor NRFOs function as forest companies. They manage their forests for economic profits and only meet minimum standards for nature conservation. This has negative impacts for biodiversity and indigenous and local communities. In addition, they outcompete smaller, local PFOs from buying forest and can more easily navigate legislative uncertainties, leading to a decrease in local PFOs over time and weakening the cultural significance of forest ownership in Sweden.	Whether a PFO is a resident or non-resident has little effect on increasing forest biodiversity and restoration in Sweden. A transition away from the dominant forest management regime of rotation forestry to more sustainable forest management focused on biodiversity and social values is needed. Voluntary, profitable, locally adapted, financial incentives for PFOs to implement conservation measures in their forest are currently lacking in Sweden.
Solutions	Informational services, tailored communication and support strategies, and outreach for NRFOs on forest conservation, forest restoration, and alternative management strategies; financial incentives	Informational services, tailored communication and support strategies, and outreach for NRFOs on forest management and forestry	Changes to clearcutting policies; legal limits of the forest area owned by a single person; communication between NRFOs and communities to reduce social conflicts; development of carbon and biodiversity markets	Changes to clearcutting policies; the state should take more responsibility for reducing uncertainty of environmental legislation for PFOs; financial incentives; development of carbon and biodiversity markets
Main stakeholders voicing the narrative	All except groups forestry stakeholders	Forestry stakeholders	Biodiversity concerns (NGOs, gov. agencies); community concerns (NGOs, gov. agencies, community forests, hunting associations); PFO concerns (forestry stakeholders)	Changes to clearcutting policies (gov. agencies, NGOs); need for financial incentives and reducing legislative uncertainty (forestry stakeholders)

Table 2: Narratives on how an increase of NRFOs impacts forest management, conservation and forest restoration in Sweden

Narrative 2: Threat to the forest industry

This narrative, advocated solely by forestry stakeholders, suggested that inheritor NRFOs would decrease active management of forests with negative impacts on timber supply, the timber industry, and the economy. This narrative sharply contrasts with the *catalyst for change?* narrative which suggests that an increase in inheritor NRFOs could result in more intensive forest management across Sweden if challenges are not addressed. Forestry stakeholders argued that NRFOs often neglect active forest management due to the distant location of their forest, a lack of personal connection to the land, and a lack of knowledge about forests and forest management. Some stakeholders also suspected that inheritor NRFOs may not manage their forest because they are speculating that its value will increase if left unmanaged for a longer period. In addition, forestry stakeholders, particularly from forest companies, perceived that they impose unnecessary restrictions on timber harvesting, for example limiting timber extraction during bird breeding seasons or preventing road use in the summer months. Similarly, some stakeholders felt that because they live far away from their forest and are less knowledgeable about forestry, they are harder to contact for timber sales and decision-making processes related to management are often more complicated and take a long time, especially when the forest has multiple owners due to inheritance. Overall, forestry stakeholders expressed concern that a continued increase of inheritor NRFOs could lead to timber shortages, negatively impacting the Swedish forest industry and economy.

As for the perceived solutions to these challenges, forestry stakeholders indicated the need for targeted communication strategies to advise inheritor NRFOs about forests and forest management opportunities: "(...) we [the forest ownership association] have educated personnel and we have long experience, and we have connections. And that's even more important for non-residents. But of course, it's also more difficult, because our operations are close to the forest, and if the resident is not close to the forest, well then, we need to tackle it somehow. (...) it's part of why we are necessary to help the forest owner. If every forest owner could easily handle everything connected to the forestry all by themselves, then there would be no reason for an association like ours and the further away you get from your forest is the more possible good can we do to help you with your forestry" (Forest ownership association representative S-8). Several stakeholders mentioned that their companies or FOAs either already have or are currently developing tailored communication and outreach strategies to reach NRFOs.

Narrative 3: Threat to biodiversity, communities, and private forest owners

Stakeholders expressing this narrative perceived that a continued increase in investor NRFOs will have both ecological and social impacts on local communities and PFOs. The narrative was shared by all stakeholders, but ecological and local community concerns were primarily voiced by representatives from environmental NGOs, government agencies, community forests, and hunting associations, while impacts on PFOs were made by forestry stakeholders (except community forest representatives). Negative ecological and social impacts were associated with both small-scale and large-scale investors, with the most negative impacts arising from large-scale investors.

In terms of ecological impacts, small-scale investors were perceived as harmful to biodiversity as they often clearcut to repay loans used to purchase the forest. Many stakeholders associated an increase in small-scale investors with the deregulation of the Swedish forest market in 1990 that allowed individuals to purchase land outside their resident municipality. This increase was thus associated with negative impacts on biodiversity, including a loss of old-growth forests in northern Sweden. One government agency stakeholder explained: "In the beginning it was very profitable to buy [forest] because the prices were low. Now it has increased a lot since the 90s due to the deregulation and because of the price increase, you have to cut trees to finance the loan (...). That's the main reason why I think the amount of old forest has decreased since then" (Government agency representative S-3).

NRFOs that invest in large areas of forests in northern Sweden were perceived to have the most significant ecological impacts as their management strategies were believed to prioritise economic gains from timber and pulpwood production. Large-scale investors were perceived to meet only the minimum requirements for biodiversity conservation set by forest certification standards and Swedish regulations, while managing the rest of the area intensively. One stakeholder from an FOA elaborated: "They have plans and they demand economic turn out in a way that many small forest owners do not. So more active care for the forests and they want a more black and white division – 'this part is set for nature conservation, and this part is production forests'" (Forest ownership association representative S-8). Some stakeholders also claimed that large-scale investors bypass government restrictions on clearcutting by splitting properties into smaller pieces located in different municipalities. For example, Roger Akelius, was cited by stakeholders as a controversial investor in northern Sweden using such a tactic to maximise profits from timber harvesting.

From a social perspective, clearcutting by small-scale investors to finance loans was perceived to have a negative impact on communities living near the forest because it was perceived to destroy aesthetics and recreational activities like mushroom and berry picking and hunting. However, the strongest social impacts were thought to be from large-scale investors and were especially a concern of forestry stakeholders. One stakeholder from a public forest administration commented on the impact of increasing NRFOs on private forest ownership "(...) In Sweden you can own forest in two different jurisdictions, in a company or as a private person (...) as a private person (...) I can have as much forest as I want (...) if you buy forest in the company context, they can only have a specific amount of forest and this was (...) to prevent the forest big forest companies to buy up all forests in Sweden. And of course, we see a little of the same when big private persons buy more and more forests. They act like a forest company. (...) if it continues in the future then we won't have so many small private forest owners, and that is a problem, I think" (Public forest administrative representative S-2).

With fewer PFOs and more investors purchasing large areas of forest land, stakeholders perceived that there would be less variation in management system alternatives across the landscape, ultimately weakening the traditions and cultural significance of forest ownership

in Sweden. For forestry stakeholders, this trend was also associated with increased financial risks for PFOs due to uncertain environmental regulations from the EU which investors were perceived to more easily navigate: "(....) we have discussions regarding the Species and Habitats Directive in Sweden right now, and if a small forest owner gets felling prohibited because of protected species that could be devastating for them in person, but the bigger forest owners, they can just move the machines somewhere else regardless of where they live" (Forest ownership association representative S-8).

An increase in investor NRFOs and the expansion of their forest holdings was also perceived by NGOs, government agencies, and community forest representatives to have negative impacts on indigenous Sami reindeer husbandry. Investors were thought to exclude the Sami from decision-making processes related to clearcutting that are required of certified forest companies: "(...) a large investment guy, there's another one [besides Roger Akelius] (...) and he's crazy, he's just clear cutting everything. He doesn't give a **** about the meetings [with the Sami]. And he has the [legal] right to do it. So that's a conflict and it's a bit weird. Because you have the certification, you have the law. And what is right?" (Community forest representative S-16). As a result, investor NRFOs were seen to be partially responsible for a significant reduction in grazing areas for reindeer.

With respect to the suggested solutions for impacts on biodiversity, representatives from NGOs, governmental agencies, and hunting associations called for changes to Swedish legislation to develop alternatives to financing loans through clearcutting as well as the development of carbon and biodiversity markets to create incentives for investors to manage the forest in alternative ways. Developing clear communication strategies between investor NRFOs and communities was perceived as important for reducing tensions after clearcutting. Finally, forestry stakeholders called for limits on the maximum area of forest that can be owned by a single person in Sweden to prevent a decrease in the number of small PFOs and the importance of private forest ownership.

Narrative 4: Focus on forest policy reform not ownership

This narrative was primarily expressed by governmental agencies, NGOs, and forestry stakeholders. Stakeholders subscribing to it argued against other narratives that suggest that NRFOs have an influence on forest management in Sweden and thought that a reform of EU and Swedish policy is needed for meaningful change towards more biodiversity friendly forest management and restoration. However, government agencies and NGOs differed from forestry stakeholders in their views on how policy reforms should be designed. Governmental agency and NGO representatives claimed that a transition to more sustainable forest management is dependent on changing the dominant forest management system in Sweden: "(...) in the 1950s, the forest management changed all over Sweden and clearcutting became the main position. The main way to manage the forest and most of the landowners think that this is the only way to be able to manage the forest. And to do something else, they think would be not profitable" (Governmental agency representative S-4). In addition, NGOs perceived Swedish policies promoting bioenergy to have significant trade-offs with conservation policies.

Meanwhile, forestry stakeholders advocated for financial incentives for PFOs to implement nature conservation measures and to reduce uncertainty associated with new EU regulations. They argued for granting PFOs more power to decide how to manage their forests and less legislative restrictions. However, some also argued that the state, particularly the Swedish Forest Agency, should take more responsibility for implementing these policies, as they thought PFOs do not have the capacity to respond. Additionally, stakeholders advocated that all PFOs should be financially incentivised to participate in biodiversity conservation and forest restoration and should not be penalised for pursuing economic objectives: "No matter if it's inherited or bought or whatever, you're running at some kind of - well, when you have cost, you need an income as well. And if everything you do leads to less income, that's not good business practice and that's just not how the world runs. So, the absolute minimum is, if the society wants you to not use the forest in an economically viable way, then society needs to pay for the privilege" (Forest ownership association representative S-8). According to forestry stakeholders, these incentive schemes should be profitable, voluntary, and adapted to the local context. Focus was also given to development of alternative revenue streams for PFOs including carbon and biodiversity credits. Finally, some perceived that most PFOs are willing to set aside some or all of their forest for conservation, but only if they are adequately compensated. While subsidies to promote forest conservation exist in Sweden, stakeholders thought they could not compete with profits made from rotation forestry.

KEY FINDINGS

Deregulation, inheritance, and investment thought to be responsible for an increase of NRFOs

All stakeholders perceived a steady increase of NRFOs in Sweden, particularly in Västerbotten and Norrbotten, over the past two decades. They identified three main drivers behind this shift: deregulation, inheritance, and investment. In 1990, the Swedish forest market was deregulated, allowing individuals to purchase forest land outside of their resident county, prompting a shift from predominantly local to more dispersed ownership. Inheritance was seen as the primary cause of an increase in NRFOs, driven by urbanisation and rural depopulation. Both domestic and international investors were thought to be acquiring forest land as a long-term economic asset.



Inheritor NRFOs seen as possible opportunity for forest conservation and restoration, while investor NRFOs raise concerns

Two types of NRFOs were identified: those who inherit the forest from their parents or relatives (inheritor NRFOs) and those that purchase forests as an investment (investor NRFOs). On the one hand, inheritor NRFOs were seen by all stakeholder groups – except forestry – to be a potential opportunity to shift towards more sustainable forest management, biodiversity conservation, and restoration in Sweden. However, they stressed that this depends on overcoming challenges such as NRFOs' limited forestry knowledge and their reliance on forest companies, which were thought to promote intensive, timber-focused practices. On the other hand, stakeholders associated investor NRFOs with negative ecological and social impacts. NGOs, government agencies, community forests, and hunting associations raised issues such as biodiversity loss from clearcutting, reduced forest heterogeneity, impacts on recreation and aesthetics, and the exclusion of Sami communities from decision-making processes. Forestry stakeholders (except community forest representatives) focused on how large-scale investors threaten the cultural tradition of private forest ownership.



Communication and outreach, financial incentives, and policy reform seen as strategies for overcoming challenges related to an increase in NRFOs

Stakeholders proposed a range of solutions to address the challenges associated with NRFOs. Across groups, there was a broad agreement on the need for tailored communication and support services for inheritor NRFOs, reflecting concerns about the distance from their land and varying levels of forestry knowledge. However, motivations for these services differed: While NGOs, government agencies, hunting associations, and community forests emphasised outreach to encourage conservation and restoration in forest management, forestry stakeholders focused on educating NRFOs to ensure continued timber production and reduce operational barriers for the forest industry. In addition to communication, stakeholders also suggested financial incentives and structural reforms. Those who viewed inheritor NRFOs as an opportunity prioritised financial incentives for biodiversity conservation and forest restoration. Stakeholders concerned about the risks posed by investor NRFOs called for biodiversity and carbon markets to encourage more sustainable forest management. In addition, stakeholders who downplayed the significance of NRFOs altogether emphasised the need for broader policy reforms and financial incentives for all private forest owners to shift the dominant forestry model in Sweden.



RECOMMENDATIONS

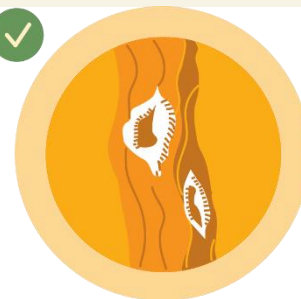
Need to distinguish between inheritor and investor NRFOs in forest management debates

Stakeholders distinguished between inheritor and investor NRFOs, associating each with different opportunities and challenges for sustainable forest management, biodiversity conservation, and restoration in Sweden. Future debates on NRFOs and forest management should recognise these distinctions and tailor responses accordingly to address specific challenges perceived by stakeholders.



Need for a neutral information broker on forests and forest management in Sweden

This study found that regardless of if a stakeholder perceived an increase in inheritor NRFOs as a potential opportunity for more sustainable forest management and restoration or threat to the forest industry, they agreed that more informational services are needed to educate inheritor NRFOs on forests and forest management. This calls for the development of neutral information brokers that can inform inheritor NRFOs (and PFOs in general) on the diversity of forest management strategies that are available to them. Since many inheritor NRFOs are not economically reliant on their forest, they may be interested in forest restoration and biodiversity conservation if given adequate and neutral information.



Need for financial incentives and alternative value chains for forest restoration and conservation in Sweden

This study found that all stakeholders, regardless of group, agreed that financial incentives to promote the uptake of forest restoration and forest conservation measures in privately owned forests (including those owned by non-residents) are needed. Stakeholders perceived that wood production is currently the only profitable forest management strategy, citing a lack of financial incentives and alternative value chains such as payments for ecosystem services and carbon and biodiversity credit. To transition to more sustainable forest management and promote forest restoration in Sweden, the development of financial incentives and alternative value chains should be prioritised.



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