CONIFER

Journey to the Center of Additionality

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Key takeaways:

1. Finnish Forest Act is flexible, involves active decision making, and provides a solid foundation for creating additionality.
2. Monetizing biodiversity and carbon sequestration is at infant stage, but with promising outlook.
3. Institutional professional forest ownership benefits from movement on the Efficient Frontier of Forest Investments by applying nature care- approach.

Case for additionality in Finland.

Roughly 1½ years ago I visited forests in the Northern part of Finland with a client. After walking for just a quarter of an hour we saw two grouses, a hare, and heard plenty of birds singing. Suddenly our guests spoke out: "there is so much more biodiversity here compared to our planted forests." I realized I'd become so accustomed to seeing wildlife in forests that I didn't make much of the encounter. Still, the comparison made was intriguing. The pine dominated forests we walked do not fit FAO's description of natural forests as they had been planted after final felling some 70–80 years ago, but certainly nobody felt we were touring a fast-growing monoculture plantation. The current condition of the forests is not given, however. Forest owners must take action to safeguard and improve biodiversity and carbon sequestration.

The case for additionality is intriguing in Finland. The Finnish Forest Act is surprisingly flexible. As an example, the Forest Act does not require buffer zones alongside water bodies such as lakes or rivers. One can also final fell stands completely without retention trees, and there is no minimum diameter or age limitation. Put differently, one can implement forest management policies that do not fully take into account nature's well-being. However, the Forest Act and Nature Conservation Act impose limitations to commercial use of forests.

Nearly half of Finnish forestland is owned by some 600,000 private forest owners. The average property size is approximately 20–40 hectares dependent on the geography. Majority of the forestland has been managed under even aged rotation forestry, stemming from efficiency first mindset implemented after the second world war. The final felled stands are typically only a few hectares in size. Thus, the forests are a mosaic of plots with variance in age structure and species.

While private forest owners can receive subsidies to carry out certain silvicultural activities, professional forest owners do not. Institutional professional forest owners recognize that incremental requirements to the Forest Act are required to safeguard biodiversity and create additional carbon sequestration. According to estimates, institutional professional forest owners spend up to two times more silvicultural input on area compared to private forest owners, and they also fare better on set-a-side areas and conservation. Institutional professional forest owners therefore create additional biodiversity and carbon sequestration, while balancing economics and recreational values of forests.

About forest management hierarchy.

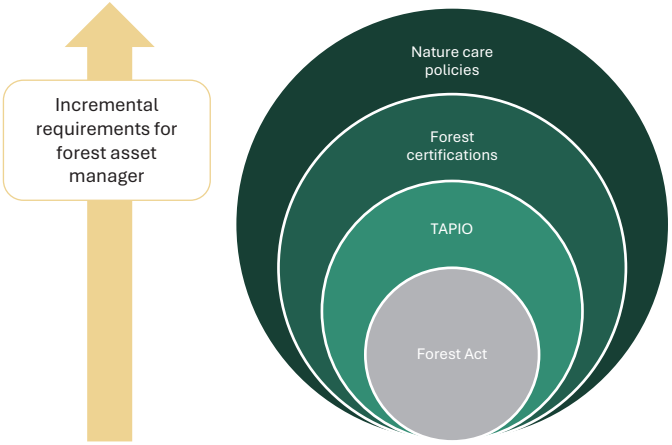
The Forest Act forms the first layer of hierarchy in Finnish forest management. As an example, it mandates one must regenerate forest after final felling. Chapter 10§ of the Forest Act protects valuable habitats such as springs, and certain mires and bogs from harvesting operations.

The second layer of the hierarchy is based on TAPIO[1] recommendations, which is a government owned independent forest management body. The recommended practices are backed by scientific research and are updated periodically based on new research and evidence. Examples of the recommendations include promoting broadleaves as retention trees, buffer zones to rivers and lakes, and management of forests on peatland soils. Additionally, TAPIO recommends basal areas for thinnings and diameter ranges for stands to be final felled. The recommendations make first steps on expanding forest management to nature care.

The third layer is made of forest certifications. 90 % of Finnish forests are managed according to the Programme for Endorsement of Forest Certification (PEFC). Only about 10 % of the Finnish forestland is Forest Stewardship Council (FSC) certified, which imposes additional requirements to PEFC certification in retention trees and set-a-side areas. As the wood buying industry requires certified wood, the shift from recommendations to obligations is clear. The third layer is mostly compliant to EU Closer to Nature guidelines.

The wood buying industry together with forest operators plays a crucial role in the management of the forests. The most common sales method is stumpage sales, in which the buyer organises logging, hauling, and logistics. The implementation of certifications and nature care policies is

Figure 1 Forest Management Hierarchy



therefore delivered by the wood buyer and contracted silviculture providers. The operators must be knowledgeable with various certification demands when marking stands to be felled, while the harvester operators must make hundreds of decisions within short time frame, which should deliver the desired outcomes.

The fourth layer is made of independent nature care policies, such as AARI+, which go beyond the forest certifications on certain topics in specific geographies. Such programmes typically emphasize additional retention trees, increasing share of mixed forests, prolonging rotations, and favouring continuous cover forestry especially on peatland soils to minimize carbon leaks from harvesting. All in all, institutional professional forest owners should be prepared to think of the 1st and 2nd layer as de minimis- requirements, but aim considerably higher.

Monetizing biodiversity and carbon sequestration.

Currently the key monetized ecosystem service in Finland is the sales of roundwood. Monetization of other ecosystem services including biodiversity and carbon sequestration are possible but are currently at an early stage.

The CO2 market in Europe faces the challenge of double-counting: The European Union claims base-case carbon sequestration of forests on a member-wide basis, leaving private and institutional professional forest owners unable to monetize the forests' growth. One can still monetize carbon sequestration by creating additionality compared to a base case. In fact, voluntary carbon market projects or initiatives, measured in thousands of hectares, took place in 2025, which is a positive signal.

Improved Forest Management projects are certifiable due to recently developed methodologies, tailored to the European forest management context. The dilemma for institutional professional ownership is whether to record the additional carbon sequestration on annuals or to monetize the incremental growth while surrendering the incremental carbon sequestration.

European Union has a development programme for carbon removals dubbed as the Carbon Removal Certification Framework (CRCF). The programme was formally adopted as a regulation in 2024 and currently the methodologies are being reviewed. Should the CRCF methodologies be accepted, then the case for monetizing carbon sequestration becomes more appealing for institutional professional forest owners.

Finnish government created an Ecological Compensation registry for biodiversity projects in 2024, which bypasses the double-counting issue present in carbon sequestration. On paper monetizing biodiversity looked appealing as market participants anticipated the biodiversity market had the potential to learn from the lessons on formation of CO2 markets. Essentially one can originate habitat hectares, based on scientific research, which can be used to offset land-use change caused loss of biodiversity. However, there is no mandatory framework for compensation of ecological loss. The market activity has been weak, partly due to economic climate in Finland, partly due to the government's sluggish pace of evaluating and processing projects, and partly due to the detailed code required to close Ecological Compensation projects.

Currently the habitat hectares are not interchangeable across biotopes. As an example, land-use change on forestland must be offset with a project on forestland. This rule limits larger scale market making. In our view the market would benefit from allowing interchangeability across biotopes. As an example, re-wetting decommissioned peatland production areas or poorly productive forests on peat soils would be sensible levers to accelerate the monetization of biodiversity. On a positive side the biogeographical regions permit compensation in a neighbouring region, which is not a market limitation. One should not be discouraged with the challenges of an emerging market which aims to monetize biodiversity but rather participate in the market and seek to improve it.

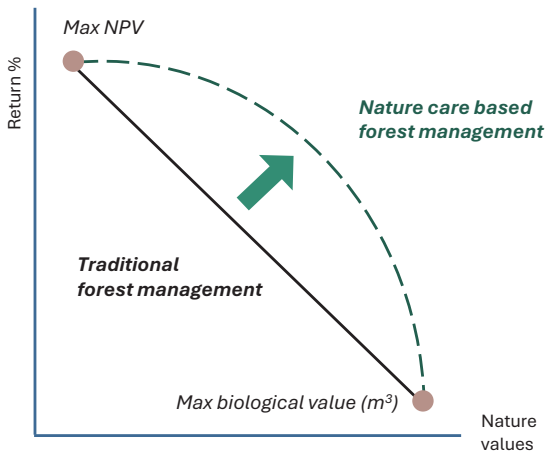
There are efforts on multiple fronts to make biodiversity more measurable. The most promising solutions use a combination of aerial imagery to track change in forest composition over time on plot level. For reference, Finland possesses high quality open-source forest data, in which forests are scanned every 6 to 9 years under the Ministry of Agriculture and Forestry. This dataset is complimented by additional scans from private participants when required to supplement the open-source data. Such solutions allow tracking biodiversity over time on an index basis with potential to reward those who apply nature care philosophy to forests.

Putting it all together.

In our view, the shift of moving from traditional efficiency only- forest management to nature care regime benefits forest owners in multiple ways. The risk profile of forest assets is mitigated in various ways: mixed forests are more resilient to bark beetle and other insect outbreaks. Applying continuous cover forestry where sensible minimizes carbon leaks. Setting aside additional retention trees improves landscaping and provides habitats for wildlife. Institutional professional owners have numerous tools to apply nature care, but active management is required.

From an institutional professional ownership point of view, we do not see downside on returns. As a base case one should sell certified timber and be at minimum compensated for certification requirements in wood trade. Following at minimum forest certification requirements will reduce the risk profile of forests. If monetization of carbon sequestration and biodiversity become mainstream, then the no downside transposes into upside. The elasticity between return and nature's wellbeing is high, which can be interpretated as in yielding some return (third and fourth layer of forest management hierarchy) will result in proportionally larger gains from reduced risk profile and increased wellbeing of forests.

Figure 2 Efficient Frontier of Forestland Investments. Illustration by Conifer Consulting.



We illustrate the shift from traditional forest management nature care-based approach as a movement along the 'Efficient Frontier on Forestland Investments[2]'. The concept is similar to what Dr. Harry Markowitz introduced in 1952 on Modern Portfolio Theory, but the means to diversify are not on securities level, but on plot level decisions which require active decisions based on nature care.