



# Administration in wood procurement

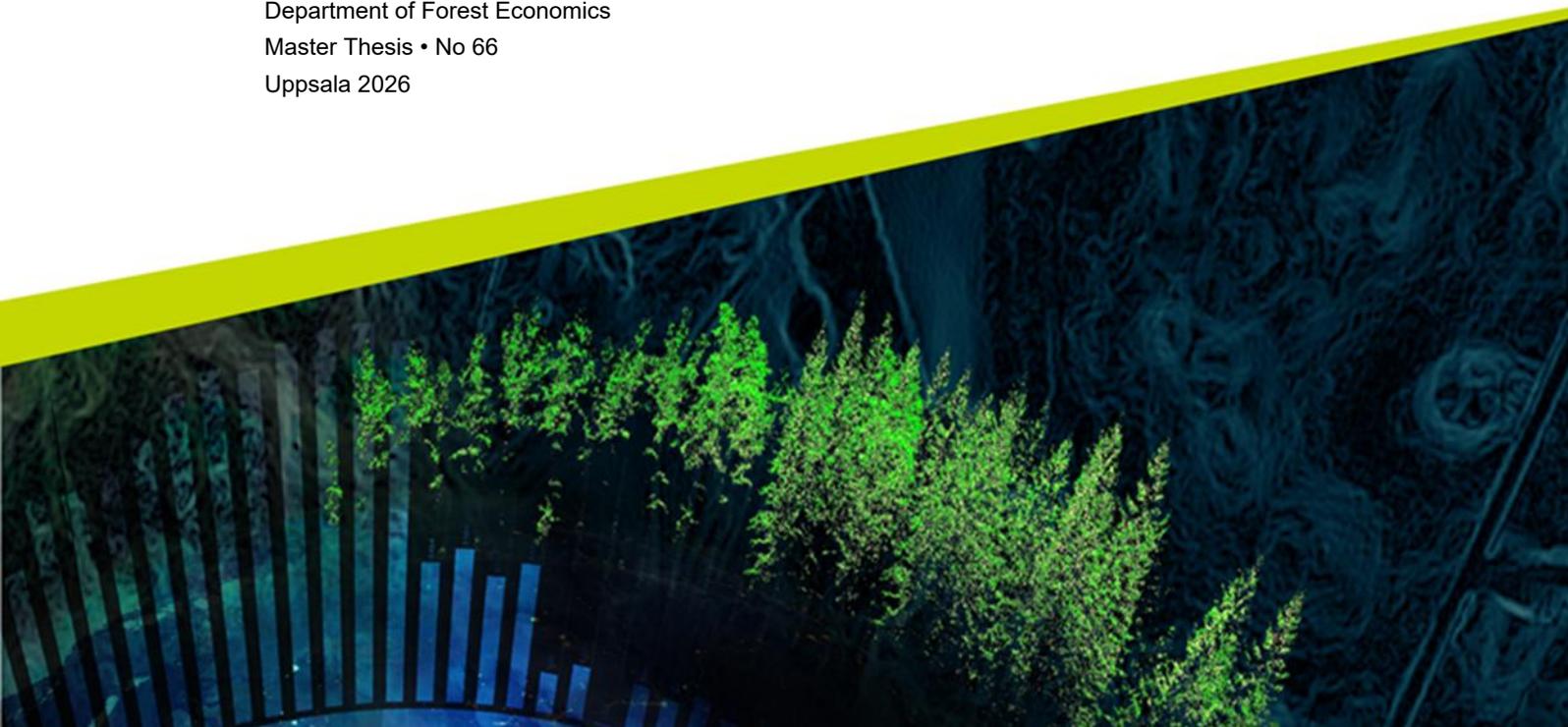
– A Nordic system comparison

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*Administration i virkesanskaffning: En jämförelse av nordiska system*

Eric Nystrand

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Swedish University of Agricultural Sciences, SLU  
Faculty of Forest Sciences  
Department of Forest Economics  
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# Administration in Wood procurement – A Nordic System Comparison

*Administration i Virkesanskaffning – En jämförelse av nordiska system*

Eric Nystrand

**Supervisor:** Torbjörn Andersson Swedish University of Agricultural Sciences,  
Department of Forest Economics

**Assistant supervisor:** Per Eriksson, Ecotype

**Examiner:** Anders Lindhagen, Swedish University of Agricultural Sciences,  
Department of Forest Economics

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Faculty of Forest Sciences  
Department of Forest Economics

# Summary

The transition to a circular bioeconomy places dual pressures on the Nordic forestry sectors; the internal necessity for operational efficiency and the external demand for rigorous legal compliance and transparency. While high-level governance differences are understood, the specific administrative realities at the operational level remain obscure. This study compares the administrative systems for wood procurement in Sweden, Norway, and Finland to identify workflow and documentation variations, explain their institutional drivers, and the key practices and hindrances.

Using a qualitative multiple-case research design, the study synthesized documentary analysis with semi-structured interviews, including 14 respondents from industrial corporations, forest owner associations, and regulatory bodies. The data were analysed through a conceptual framework of Business Process Management (BPM), Supply Chain Visibility (SCV), and Institutional Theory.

The results identify three distinct national models. Norway follows an Internal Trust Model characterized by linear workflows and high speed but low external transparency. Sweden utilizes a Public Transparency Model defined by mandatory harvest notifications that provide high transparency but create administrative friction. Finland employs a Digital Integration Model where automated data exchange integrates regulatory instructions directly into operational plans.

The study concludes that these variations are shaped by distinct institutional approaches to supervision versus trust. Because the documentation burden is not expected to diminish, the sector must move beyond viewing efficiency and compliance as a trade-off. To demonstrate trustworthiness through traceability and transparency while maintaining high operational efficiency, the sector must prioritize a system perspective that integrates robust IT systems, optimized workflows, and industry-wide data standardization. These improvements are essential to allow the sector to carry the ever-increasing administrative load during the transition to a circular bioeconomy.

*Keywords: administration, business process management, circular bioeconomy, institutional theory, Nordic forestry, supply chain visibility, transparency, traceability, wood procurement.*

# Sammanfattning

Omställningen till en cirkulär bioekonomi medför en intressekonflikt för de nordiska skogssektorerna: behovet av operativ effektivitet samt ökade krav på spårbarhet och transparens för att behålla tillit. Medan skillnader i styrning på hög nivå är kända, förblir de administrativa verkligheterna på operativ nivå okända. Denna studie jämför de administrativa systemen för virkesanskaffning i Sverige, Norge och Finland för att identifiera variationer i arbetsflöden och dokumentation, förklara deras institutionella drivkrafter samt identifiera hinder och god praxis.

Studien använde en kvalitativ, jämförande flerfalls-metodik som kombinerade dokumentanalys med semistrukturerade intervjuer med 14 respondenter från skogsindustriföretag, skogsägarföreningar och myndigheter. Data analyserades genom ett teoretiskt ramverk som förenar Business Process Management (BPM), Supply Chain Visibility (SCV) och institutionell teori.

Resultaten identifierar tre distinkta nationella modeller: Norge tillämpar en intern tillitsmodell som kännetecknas av linjära arbetsflöden och hög hastighet men låg extern transparens, där man förlitar sig på interna kontrollfunktioner snarare än statliga anmälningar före avverkning. Sverige följer en offentlig transparensmodell som definieras av obligatoriska avverkningsanmälningar, vilket skapar hög transparens men betydande administrativ friktion på grund av strukturella väntetider. Finland använder en digital integrationsmodell där anmälan utlöser ett aktivt datautbyte som integrerar bindande myndighetsinstruktioner direkt i de operativa planerna.

Studien drar slutsatsen att dessa variationer formas av tydliga institutionella tryck, särskilt den regulatoriska inställningen till tillsyn kontra tillit. Eftersom dokumentationsbördan inte förväntas minska måste sektorn röra sig bortom att se effektivitet och regelefterlevnad som en avvägning. För att bevisa trovärdighet genom spårbarhet och transparens, och samtidigt bibehålla hög operativ effektivitet måste sektorn prioritera ett systemperspektiv som integrerar robusta system, optimerade arbetsflöden och branschgemensam datastandardisering. Dessa förbättringar är avgörande för att sektorn lättare ska kunna bära den administrativa bördan under omställningen till en cirkulär bioekonomi.

*Nyckelord: administration, affärsprocesshantering, cirkulär bioekonomi, institutionell teori, nordiskt skogsbruk, spårbarhet, försörjningskedjehantering, virkesanskaffning*

# Förord

Detta självständiga arbete utgör slutet på fem års studier vid Skogsfakulteten, Sveriges lantbruksuniversitet (SLU). Arbetet genomfördes vid institutionen för skogsekonomi under höstterminen 2025.

Drivkraften bakom studien är mångbottnad. Efter fem år av akademiska studier väcktes en nyfikenhet kring vad som sker i praktiken ute i branschen. Hur omsätts teori till verklighet? Hur samspelar direktiv, lagar och certifieringar med den dagliga verksamheten? Och, hur gör man på andra ställen? Skiljer det sig åt? Kan man göra på andra sätt och lära av varandra?

Jag har också ett intresse för de utmaningar som den nordiska skogssektorn står inför. I takt med att EU ställer om till en cirkulär bioekonomi blir det allt viktigare att förstå hur vi kan bibehålla en hög effektivitet samtidigt som vi möter växande krav på spårbarhet och transparens. Hur kan skogsbruket vara en del av lösningen och inte problemet?

Jag vill rikta ett varmt tack till min handledare, Torbjörn Andersson, för pragmatisk vägledning och stöd under arbetets gång, samt till min biträdande handledare Per Eriksson på Ecotype för ditt outsläckliga engagemang. Ett stort tack riktas även till de 14 respondenter från olika delar av skogssektorn i Sverige, Norge och Finland som generöst delat med sig av sina insikter. Utan er hade denna studie inte varit möjlig.

Tack.

*Eric Nystrand*

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# Abbreviations

| <b>Abbreviation</b> | <b>Meaning</b>  | <b>Page</b> |
|---------------------|---|-------------|
| AA                  | Avverkningsanmälan (Harvest Notification, Sweden)                   | 18          |
| BPM                 | Business Process Management   | 5           |
| EEA                 | European Economic Area  | 37          |
| ERP                 | Enterprise Resource Planning  | 1           |
| EU                  | European Union  | 1           |
| EUDR                | European Union Deforestation Regulation                             | 1           |
| FUD                 | Forest Use Declaration (Metsänkätöilmoitus, Finland)                | 18          |
| FSC                 | Forest Stewardship Council  | 2           |
| GIS                 | Geographic Information System                                       | 2           |
| LULUCF              | Land Use, Land-Use Change, and Forestry                             | 1           |
| MiS                 | Miljøregistrering i skog (Environmental Values in Forestry, Norway) | 18          |
| NGO                 | Non-Governmental Organization                                       | 2           |
| NIPF                | Non-Industrial Private Forest (owner)                               | 1           |
| NVB                 | Naturvärdesbedömning (Nature Value Assessment, Sweden)              | 18          |
| PEFC                | Programme for the Endorsement of Forest Certification               | 2           |
| SCV                 | Supply Chain Visibility   | 6           |
| STP                 | Scott's Three Pillars (Institutional Theory)                        | 8           |

# 1 Introduction

---

*This chapter introduces the research topic by establishing the problem background and the specific challenges facing administrative workflows in the Nordic wood procurement. This is followed by a presentation of the study's aim, the research questions it addresses, and the delimitations set for the research. The chapter concludes with an outline of the thesis structure.*

---

## 1.1 Problem background

The European Union's push for a sustainable, circular bioeconomy, framed by policies like the EU Green Deal (European Commission 2019), has placed increasing demands on the forestry sector. This strategic direction is complemented by a suite of environmental legislation, such as the Birds and Habitats Directives and the LULUCF Regulation (EPCEU 2018). These policies aim not only to transition to a bioeconomy but also to protect biodiversity and ensure climate goals are met. This in turn mandates higher standards for documentation and transparency to prove that these operations are both sustainable and legally sound.

This creates a fundamental dual pressure for forestry companies. On one hand, the bioeconomy transition demands high operational efficiency to act as a viable, competitive alternative to fossil-based materials (European Commission 2025). While efficiency is an internal operational necessity, it is also an external market requirement; for the bioeconomy to succeed, wood-based products must remain economically competitive against global fossil-based alternatives. On the other hand, escalating environmental legislation, such as the new EU Deforestation Regulation (EPCEU 2023), mandates rigorous standards for legal compliance. This focuses on the output of the process, which is the documentation required to prove that all rules have been followed. Consequently, actors in the supply chain are caught between the economic need for efficiency and the compliance demand for traceability and transparency. This creates a significant and growing administrative burden.

Within this European context, the Nordic countries are cornerstone producers, accounting for a substantial portion of Europe's forest resources and industrial output (Nordic Forest Research 2021). The critical link between the region's sustainable forest management and its industrial sector is wood procurement, particularly from the large share of non-industrial private forest owners (NIPFs). This process can encompass all steps from initial contact with forest owners to the delivery of logs at the mill gate (Yrjölä 2002; Helstad 2006). Efficient administration in early phases is fundamental for the transition to a bioeconomy, as it ensures both legal compliance and operational readiness (European Commission 2025).

However, the wood procurement is heavily reliant on administrative tasks. While the specific boundaries of what constitutes administration can be interpreted in various ways, a recent study highlights the perceived scale of this workload, with some purchasers reporting that they spend up to 20 hours per week on system administration alone. (Modd & Pahleteg 2025). In the Nordic countries, this administrative system is shaped by a complex interplay of forces. It is dictated by national legislation, such as each country's Forestry Act (Yrjölä 2002), but is also heavily influenced by market-driven demands from voluntary certification schemes like FSC and PEFC. While these schemes are international, they are developed and adapted nationally, often imposing requirements that differ between countries and exceed legal minimums (Elbakidze et al. 2022).

Furthermore, administrative flexibility is limited by the intrinsic structure of the sector. Modern forestry relies heavily on Enterprise Resource Planning (ERP) systems for contract management and Geographic Information Systems (GIS) (Palander et al. 2024). These industry-wide systems for data and measurement include inherent operational complexities, such as the mixing of materials and potential data loss between process steps (Bäckman 2025).

Despite facing similar external pressures and sharing a common boreal forest biome (Esseen et al. 1992), the administrative systems for wood procurement in the Nordics might have evolved differently (Modd & Pahledeg 2025). While the administrative burden is a known challenge, the specific ways in which these countries organize their workflows to meet these demands remain unexplored, as does the resulting impact on administrative efficiency.

## 1.2 Problem

Despite this growing operational complexity, current literature on Nordic wood procurement remains fragmented and primarily focused on high-level strategy, economics, or logistics. Current research provides a solid grasp of high-level governance (Nebasifu et al. 2025), logistical optimization (Helstad 2006) and the potential of digitalization and new traceability technologies (Eriksson et al. 2023; Palander et al. 2024; Bäckman 2025). Furthermore, recent national studies have begun to explore the psychosocial effects of this digitized work environment for wood buyers (Hultman et al. 2024) and the gap between EU policy and national policy (Garg 2025)

While valuable, these studies analyse the system in distinct parts. Though high-level governance differences are increasingly understood (Nebasifu et al. 2025), a comprehensive understanding of how the administrative workflows are organized and executed in practice across the Nordics is still missing. This comparison is particularly significant as these nations face similar external pressures, including stringent EU regulations (European Commission 2019; EPCEU 2023), international certification standards (Elbakidze et al. 2022), and increasing scrutiny from NGOs (Johansson 2023), yet their institutional responses (Nebasifu et al. 2025) and administrative cultures appear to diverge (Modd & Pahledeg 2025).

This knowledge gap is significant. As noted, forestry companies face dual pressures: the demands for efficiency and compliance requirements for traceability and transparency. The research field itself has moved down a funnel; while the high-level policy is well-understood, the link to the day-to-day administrative realities at the operational level remains obscure. This lack of shared understanding regarding the national administrative systems may hinder cross-border learning and create an unnecessary heavy administrative burden. Thus, creating too much friction for the industry to provide its potential value. Due to the significance of the industries size in the Nordics, such an efficient loss may slow down entire economies.

### 1.3 Aim and delimitations

The aim of this study was to compare the administrative workflows involved in wood procurement within a Nordic context. To achieve this, the study analysed similarities and differences in national workflows and their inherent traceability and transparency, explained the institutional drivers behind these variations, and identified key hindrances and notable good practices. The broader goal was to provide insights that support both operational efficiency and legal compliance within the Nordic forestry sector in a transition to a circular bioeconomy.

To fulfil the aim, the study addressed the following research questions, which transition from descriptive mapping to institutional analysis and operational evaluation:

- RQ1.*     *What* are the key administrative workflows?
- RQ2.*     *How* is the work documented and shared?
- RQ3.*     *Why* are these workflows and documentation practices structured as they were?
- RQ4.*     Which *key* hindrances and notable good practices can be identified?

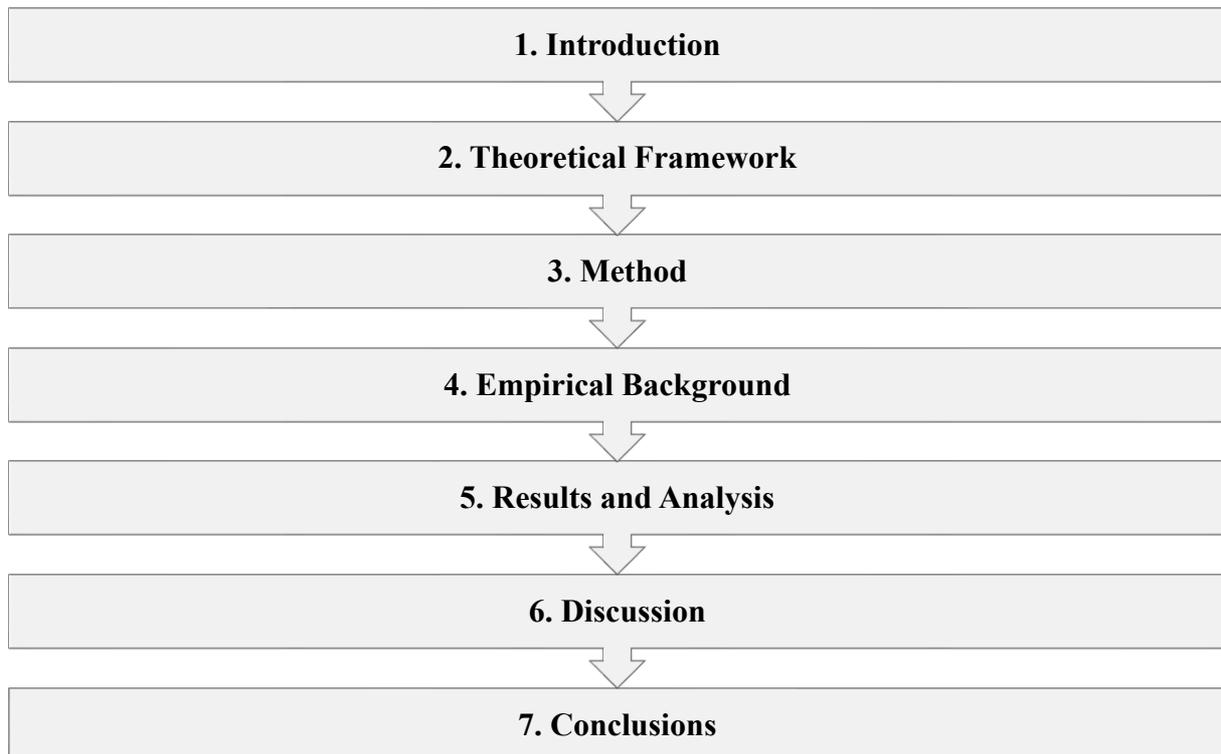
The study was subject to the following *delimitations*:

- *Theoretical*: The scope is limited to the pre-harvest administrative chain, from initial forest owner contact until harvesting prerequisites are met. It focuses exclusively on regeneration felling, excluding silvicultural measures like thinning, as regeneration felling triggers the most complex regulatory requirements and state notifications.
- *Empirical*: The study is geographically limited to Sweden, Norway, and Finland. These nations were selected due to their significance as cornerstone wood producers and their similar boreal biomes, allowing for a controlled comparison of institutional frameworks.
- *Methodological*: The study utilizes a qualitative approach based on expert interviews. Consequently, it excludes quantitative performance metrics, such as time studies or economic modelling, to focus on the qualitative themes of hindrances and practices.

## 1.4 Outline

The structure of the thesis is illustrated in Figure 1. Following this introduction, Chapter 2 presents the theoretical framework. Chapter 3 outlines the method, including the research design, data generation via interviews, and the analytical strategies used.

Chapter 4 provides the empirical background, offering a factual overview of the national systems, forestry acts, and certification landscapes in Sweden, Norway, and Finland. Chapter 5 presents the results and analysis based on the theoretical framework, organized by the four research questions. Chapter 6 discusses these findings in relation to previous research and the theoretical framework as well as reflections on the chosen method and theory. Finally, Chapter 7 presents the conclusions, limitations, and suggestions for future research.



*Figure 1. Illustration of the thesis outline, visualizing the flow from introduction to conclusions.*

As depicted in the figure 1, the thesis is structured to build cumulatively. The theoretical concepts defined in Chapter 2 provide the analytical tools used in Chapter 5 to answer the research questions. This structure strives to give a cohesive thread where the theoretical framework directly guides the empirical analysis and discussion. Finally ending with the distilled conclusions.

# 2 Theory

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*This chapter presents the theoretical framework used to compare wood procurement workflows in Sweden, Norway and Finland. The chapter begins with an overview of three theoretical perspectives and combines them to one conceptual model that will guide the analysis.*

---

## 2.1 Theoretical Approach

Wood procurement is often viewed primarily as a logistical challenge involving the physical movement of timber. However, purely logistical models fail to capture the increasing complexity of the modern bioeconomy, where the flow of information is as critical as the flow of wood. In this context, administration acts as the essential link between the physical operation in the forest and the regulatory compliance required by the market and the state.

For this study, *administration* is defined as the combination of two core components: (1) the sequence of operational tasks required to run a business process, and (2) the management of information that documents these tasks.

To understand this administrative layer, it is insufficient to view it as a simple checklist of tasks. It must be analysed as a complex system where the internal need for *operational efficiency* clash with external demands for *compliance*. Therefore, this study synthesizes three theoretical lenses: Business Process Management (BPM) to map the workflow, Supply Chain Visibility (SCV) to analyse documentation, and Institutional Theory to explain the underlying drivers as illustrated in Figure 2.

The following sections define these concepts individually before synthesizing them into the study’s conceptual model.

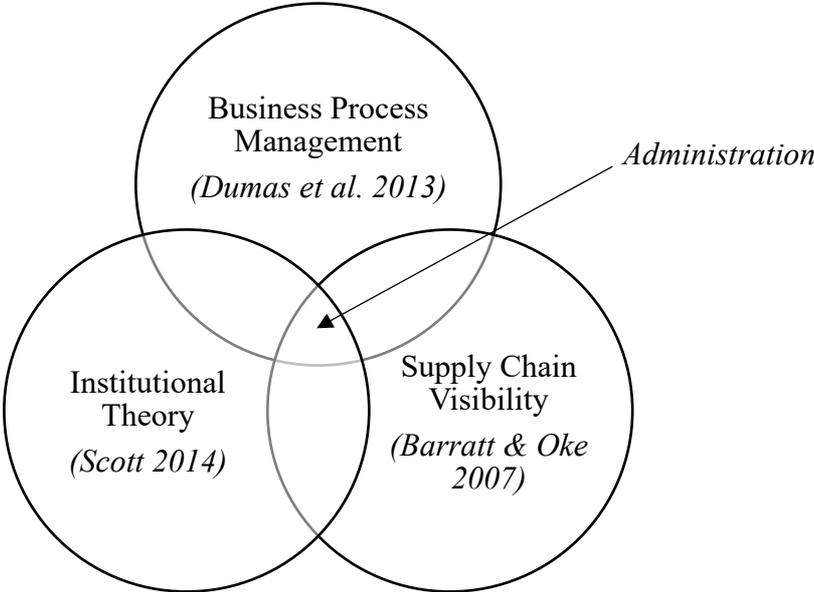


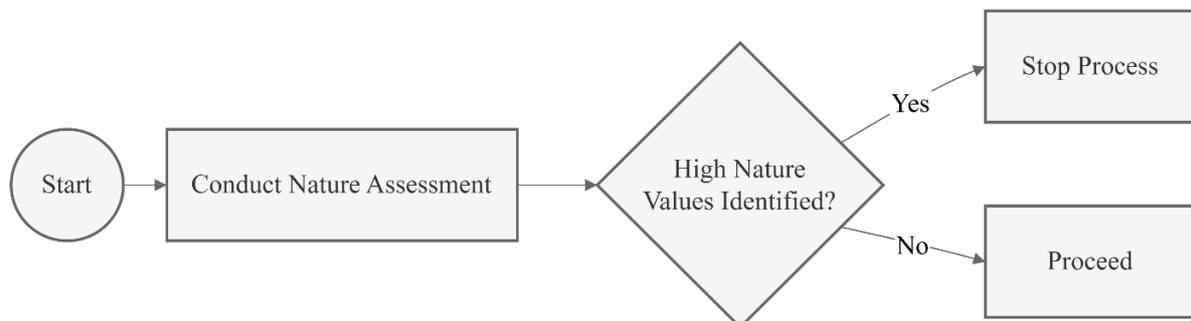
Figure 2. The conceptual framework combining Business Process Management (Dumas et al. 2013), Supply Chain Visibility (Barratt & Oke 2007), and Institutional Theory (Scott 2014).

### 2.1.1 Business Process Management (BPM)

One way to look at how work gets done is through the framework Business Process Management (BPM). Instead of seeing an organization as a set of separate departments, this approach focuses on the interconnected workflows that flow between them. A practical tool in BPM is Process Mapping, which offers a standardized method to create visual representations of workflows (Dumas et al. 2013).

A process map helps create an overview of a workflow by mapping its key components (Dumas et al. 2013). For example, it highlights the specific tasks that need to be done, like “Conduct a nature assessment”. It also shows the decision points, which are the moments where a choice sends the process down a different path (ibid). For example, if high nature values are identified then the response might be “stop the process”. Finally, it can also be used to identify the various actors, the people or systems responsible for executing each task (ibid).

Creating process maps for each country offers a structured way to document and compare their administrative workflows, which is the main goal of the first research question. This modelling approach is conceptually illustrated in Figure 3, showing how standardized BPM elements are applied to a forestry context to visualize the relationship between events, tasks, and decision points. While BPM is a specific theoretical lens, the use of process mapping to analyse flow and logistics is well-established in Nordic forestry research, for instance, by Helstad (2006) regarding timber procurement to sawmills, validating the utility of visual mapping for dissecting complex supply chains.



*Figure 3. A conceptual example of a Business Process Model (based on Dumas et al. 2013, p.79) applied to a forestry context. The model illustrates the relationship between a Start Event (Circle), a Task (Rectangle), and a Gateway (Diamond) which dictates the process flow.*

By applying this structured mapping to wood procurement, the operational logic of administration is visualized. As illustrated in Figure 3, a seemingly simple task like a nature assessment is not just an action but a critical gateway that determines the future of the workflow, either proceeding to harvest or stopping entirely.

### 2.1.2 Supply Chain Visibility (SCV)

Wood procurement is not merely a logistical operation. It is a supply chain linking independent actors, from the forest owner to the mill, who must align their internal operations with an increasingly complex external environment (Johansson 2023). Because these actors operate independently, the coordination of the system depends as much on the flow of information as it does on the flow of physical materials (Carter & Rogers 2008).

To analyse this information flow, this study employs the theoretical lens of Supply Chain Visibility (SCV). Barratt and Oke (2007) define SCV broadly as the ability of stakeholders to access relevant, accurate, and timely information regarding activities within the chain. In the context of the modern bioeconomy, this visibility is essential not only for logistics but for maintaining a "social license to operate". As noted by Johansson (2023) forestry is of interest to diverse groups, including government agencies and NGOs, who influence procurement through their legal and social mandates.

While Barratt & Oke (2007) provide an overarching definition of visibility, this study requires a framework that specifically addresses the sustainability demands of the sector. Therefore, the study adopts the perspective of Garcia-Torres (2019). In their analysis of "Traceability for Sustainability," they argue that managing complex supply chains requires distinct mechanisms to verify sustainability claims. Adapting this framework, this study operationalizes SCV through two distinct dimensions (Figure 4):

- *Traceability* (Internal Verification) refers to the ability to identify and verify the history of the product. In this study, it is defined as the internal documentation (e.g. saved map layers, signed contracts) that creates an audit trail. It enables the organization to answer: "Can we prove we followed the rules?"
- *Transparency* (External Disclosure) refers to the extent to which information is disclosed to stakeholders outside the firm. In the Nordic context, this specifically relates to transparency toward authorities and the public. It enables the organization to answer: "Who is allowed to see our documents?"

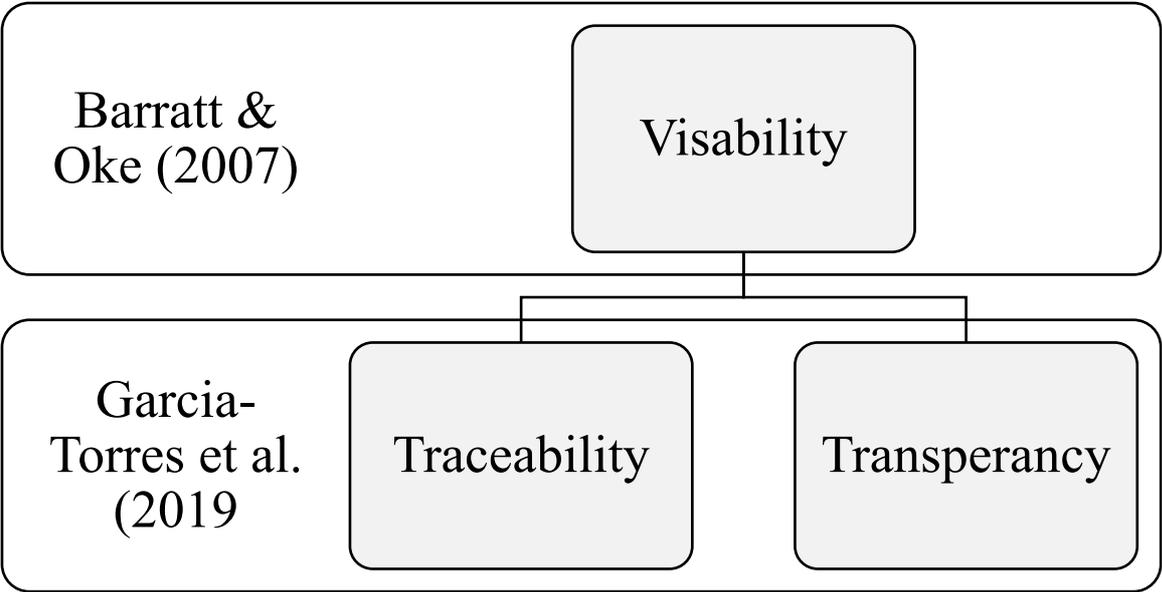


Figure 4. The analytical model for Supply Chain Visibility used in this study. The concept of Visibility (Barratt & Oke 2007) is operationalized into two flows: Internal Traceability and External Transparency (adapted from Garcia-Torres et al. 2019, p.96).

By structuring the theory this way, the analysis can identify tensions where a national system might have high internal *traceability* (excellent records) but low external *transparency* (no

public access), or vice versa. This distinction is crucial for addressing the sector's dual external pressures of proving operational efficiency and proving compliance.

### 2.1.3 Scott's Three Pillars (STP)

While BPM and SCV provide the tools to map how wood procurement is performed and the consequent documentation practices, they cannot fully explain why these systems are the way they are in Sweden, Norway, and Finland. To understand these variations, it is necessary to analyse the underlying pressures that shape organizational behaviour.

To explain why processes and information systems differ across national contexts, the analysis employs concepts from institutional theory. Specifically, it uses the framework of (Scott 2014) Scott's three pillars of institutions, which provides a systematic lens for analysing the forces that shape and constrain organizational practices in each country. The framework consists of the following three pillars (Figure 5):

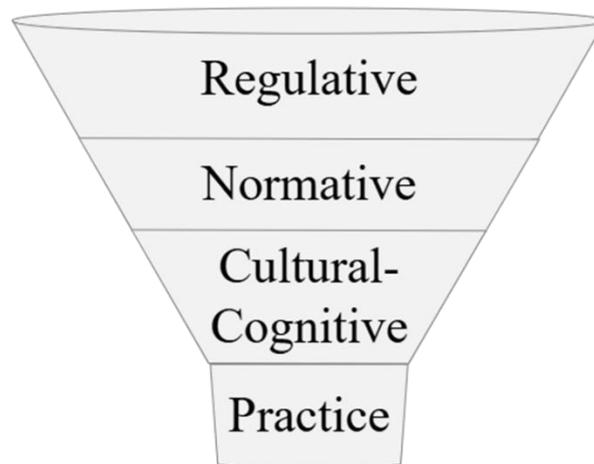


Figure 5. The three pillars of institutions act as a funnel that shapes organizational practice (adapted from Scott 2014, p. 60).

*Regulative:* This pillar consists of formal rules, laws, and sanctioning systems that force behaviour. In forestry, this is highly applicable and includes, for example, a nation's Forestry Act and environmental regulations that mandate specific actions or reports.

*Normative:* This pillar includes norms, values, and industry standards that guide behaviour through social obligation. This is directly relevant through voluntary programs like forest certification (FSC and PEFC), which define "responsible" forestry beyond legal minimums. Company codes of conduct and professional ethics for foresters also fall under this pillar.

*Cultural-Cognitive:* This pillar is composed of shared understandings and taken-for-granted assumptions that shape behaviour the unwritten "rules." While the regulative and normative pillars explain the formal requirements, the cultural-cognitive pillar helps explain the interpretations of these requirements and the logic of day-to-day operations. For a comparative study, this is crucial for understanding subtle, but significant, differences in *practice*.

These three institutional forces, shaped by the interests of various stakeholders Freeman (2010), act upon the multiple actors involved in wood procurement, including forest owners, contractors, forest companies, certification bodies, non-governmental organizations (NGOs) and regulatory authorities. This study distinguishes between Actors, who perform the specific administrative steps (e.g., planners, buyers), and Stakeholders, who have an interest in the outcome but do not execute the process (e.g., the general public). However, roles can shift; for instance, if an NGO is formally required to participate in a consultation process, they temporarily take on the role of an actor within that specific workflow.

## 2.2 Conceptual framework

The conceptual framework combines the three stated theories: Scott's Three Pillars, Business Process Management, and Supply Chain Visibility to evaluate wood procurement as a structured, information-generating, and context-dependent workflow. These perspectives is the formulation for the interview questions and the consequent analysis.

The relationship between an operational process and its enabling information flow can be conceptualized in several ways. A traditional process-centric view might argue that the workflow is designed first, and information systems are chosen later to support it (Orlikowski & Iacono 2001). Conversely, a technology-driven perspective might see the information system as the primary structure to which human processes must adapt (ibid).

However, this thesis rejects these linear models. Instead, it suggests that the operational process and the information flow are tightly coupled and co-produced. In the context of modern wood procurement, an administrative task and the informational recording of that task are inseparable; one cannot exist without the other. Therefore, the central argument is that the Institutional Context of each country acts as the primary governing force, simultaneously shaping the required tasks and the systems used to manage them (Figure 6).

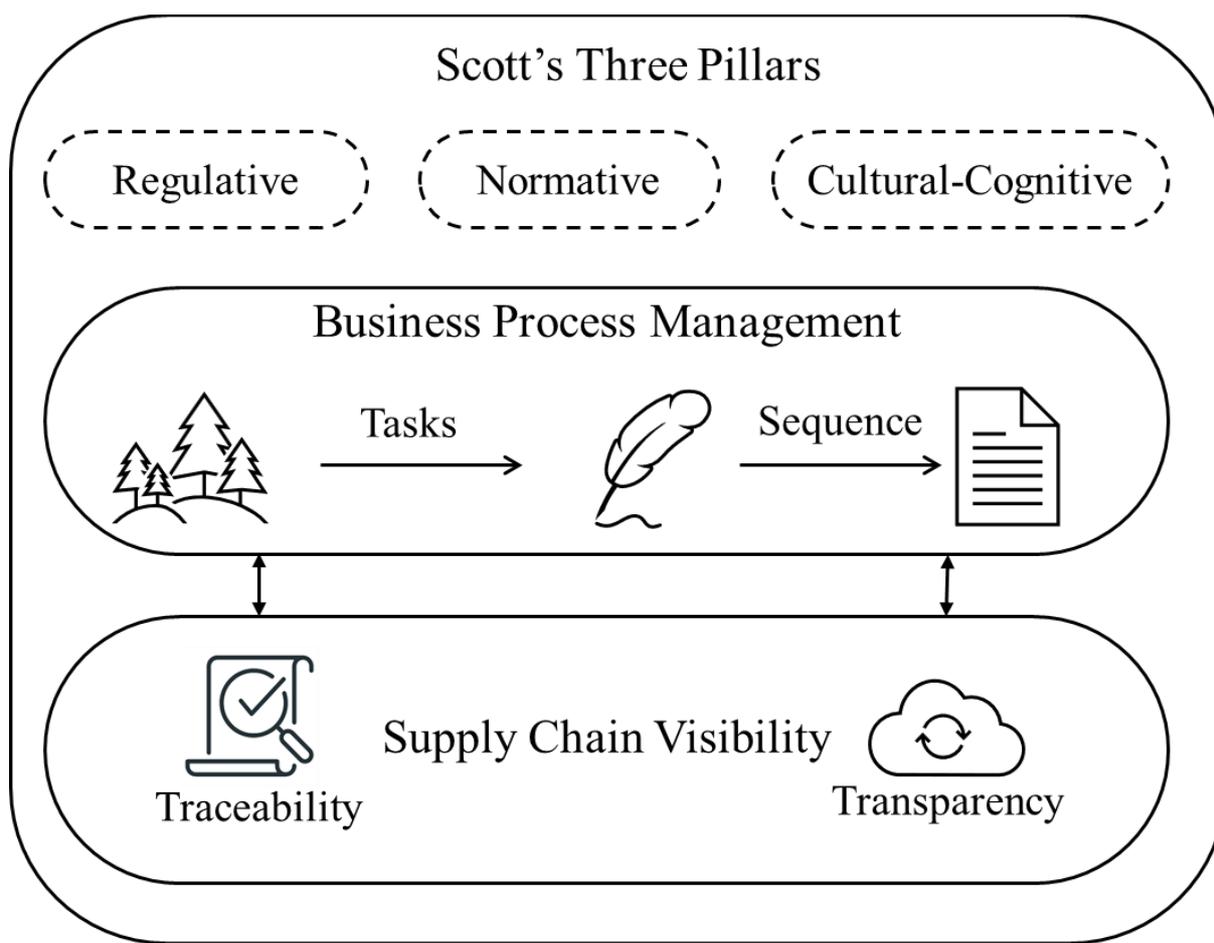


Figure 6. Theoretical Framework combining Business Process Mapping (What) with Supply Chain Visibility (How) with Scott's three pillars (Why).

As illustrated in the model, the framework posits that the Institutional Context acts as the primary governing force that simultaneously shapes the other two dimensions:

First, the Institutional Context (Scott's Three Pillars analysed via *Regulative*, *Normative* and *Cultural-Cognitive*) defines the workflow (Business Process Management analysed via *tasks* and *sequence*). For instance, a regulative pressure, such as a national forestry act (e.g. SFS 1979:429), creates a formal requirement. This legal mandate forces the organization to insert a mandatory "step" into the administrative workflow. Similarly, a normative pressure, such as a certification standard, often demands specific environmental checks, adding further steps and decision points to the process sequence.

Second, the Institutional Context dictates the documentation required (Supply chain visibility analysed via *traceability* and *transparency*). The same institutional pressure that mandates a process step also defines the data requirements. A legal mandate typically requires that proof of the action is recorded for audits (*traceability*) and often requires that this information is shared with authorities (*transparency*). Thus, the "administrative burden" is not just the task itself, but also the data generation required by the institutional environment.

Consequently, this framework enables the Comparative Analysis. By applying this model to Sweden, Norway, and Finland, the specific "Administrative Workflow" of each nation becomes

visible. This allows for a structured comparison of how each country balances the dual outcomes of the workflow: *Operational Efficiency* (the speed and flow of the process) and *Legal Compliance* (the quality and transparency of the documentation).

## 2.3 Justification of the Chosen Framework

This integrated framework was selected because a linear model fails to capture the complexity of the forestry sector. Much of the research on technology and organizational processes has been criticized for treating the technical and the social as separate, independent domains (Orlikowski & Iacono 2001). A purely process-centric view often overlooks the institutional forces that dictate *why* a process exists, while a purely technology-driven view can fail to capture *how* human actors adapt and shape systems in practice (ibid).

By treating the process, the information flow, and the institutional context as interconnected and co-produced, this framework avoids those pitfalls. It recognizes that process and information are two dimensions of the same activity, shaped by a combination of external institutional pressures and internal organizational demands for efficiency. This provides a foundation for comparing the wood procurement workflows in the three Nordic countries, allowing for an understanding of how their distinct institutional contexts create different administrative realities.

## 2.4 From Theory to Empirics

To conclude the theoretical framework, Table 1 illustrates how the three theoretical perspectives directly inform the study's research questions and have served as the basis for the design of the interview guide (see Appendix 1). This structure ensures that the "administrative realities" under study are captured through relevant theoretical lenses.

*Table 1. Connection between theory, research questions and interview questions*

| <b>Theory</b> | <b>Research Question</b> | <b>Interview Questions</b>                       |
|---------------|--------------------------|--|
| BPM           | RQ1: What?               | Operational steps and sequence                   |
| SCV           | RQ2: How?                | Documents, their traceability and transparency   |
| STP           | RQ3: Why?                | Drivers: Laws, certifications, and others        |
| Integrated    | RQ4: Key practices?      | Efficiency, bottlenecks, and strategic solutions |

In summary, these three theoretical perspectives constitute the analytical foundation of the study. By integrating them, a comprehensive framework is created where administrative processes are viewed not as isolated events, but as products of a complex interplay between operational logic, documentation requirements, and national institutional drivers. With this theoretical foundation in place, the following chapter proceeds to describe the methodological choices of the study and how these perspectives have been operationalized to generate and analyse the empirical material.

## 3 Method

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*This chapter explains the methodological choices that guided this study. The subsequent sections detail the research approach and the research design, the selection of participants, the methods for data generation the strategies employed to ensure research quality and the consequent analysis. The chapter concludes with ethical considerations and limitations.*

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### 3.1 Research approach

A *qualitative* method was selected as the most appropriate means to address the research questions, which seek an in-depth, contextual understanding of complex administrative processes (Creswell & Poth 2023). The inquiry follows an *abductive* mode of reasoning, involving an iterative process of moving between the empirical data (inductive) and the study's conceptual framework (deductive) to generate the most plausible explanation for the findings (Saunders et al. 2019). This approach is suitable as the research began with an established framework (BPM, SCV and STP) but remained exploratory in nature, seeking to explore the actual administrative workflow in each country.

### 3.2 Research design

The study applied a *qualitative, multiple-case comparative* research design. This design is preferred for gaining concrete and in-depth knowledge about real-world subjects where the boundary between a phenomenon and its context is not always evident (Yin 2018).

The cases are the national systems of wood procurement administration in Sweden, Norway, and Finland. The selection of these countries is purposeful, as they share similarities in their forest sectors but differ in their legal and institutional histories (Nebasifu et al. 2025) making them ideal for a "most similar systems" comparative approach (Yin 2018).

### 3.3 Participants selection

A non-probability, *purposive selection* strategy was used to select information-rich participants and organizations relevant to the research questions (Patton 2015). This strategy combined two techniques. First, expert selection was used to select participants based on their deep or hands-on experience with the administrative workflows, such as procurement managers. As initial contacts were established, *snowball selection* was also utilized. This is a technique where participants are asked to recommend other individuals with relevant knowledge, which is particularly effective for reaching specialized populations (Bryman et al. 2016).

The selection process proved to be highly iterative. In several cases, the initial contact person was not the correct operational expert but served as a gatekeeper who referred the study to a more suitable candidate. For example, within large organizations, up to three layers of contact were navigated to identify the specific process owners.

In total, approximately 32 individuals across 16 organizations were contacted during the recruitment phase. The final selection of 14 respondents represents a success rate of roughly 44%. It should be noted that data collection coincided with the moose hunting season, a significant cultural event in the Nordic forestry sector, which impacted the availability of some potential respondents.

As shown in Table 2 the study includes respondents from all three target countries, representing a mix of large industrial corporations, forest owner associations, and smaller private actors.

Table 2. List of respondents participating in the study

| <b>ID</b>         | <b>Country</b> | <b>Organization</b> | <b>Role / Area of Responsibility</b>          | <b>Duration</b> |
|-------------------|----------------|---------------------|---|-----------------|
| <b>R1- Pilot</b>  | Sweden         | Stora Enso          | Sustainability & Quality Specialist           | 55 min          |
| <b>R2</b>         | Norway         | Stangeskovene       | Wood Supply Manager (Virkeschef)              | 55 min          |
| <b>R3</b>         | Finland        | Stora Enso          | Sustainability Manager                        | 60 min          |
| <b>R4</b>         | Sweden         | Derome              | Business Developer                            | 57 min          |
| <b>R5</b>         | Norway         | SB Skog             | Wood & Operations Manager                     | 56 min          |
| <b>R6</b>         | Sweden         | Sydved              | Business Developer (Process & Systems)        | 44 min          |
| <b>R7</b>         | Finland        | Metsä Forest        | Wood Supply Process Owner                     | 72 min          |
| <b>R8</b>         | Norway         | Nortømmer           | Silviculture Manager / Contractor Coordinator | 51 min          |
| <b>R9</b>         | Finland        | Keitele Group       | Wood Buyer / Operational Planner              | 62 min          |
| <b>R10</b>        | Sweden         | Moelven             | Field Manager (Private Forest Procurement)    | 69 min          |
| <b>R11</b>        | Sweden         | Billerud            | Wood Supply Manager (Industry & B2B)          | 55 min          |
| <b>R12</b>        | Sweden         | Mellanskog          | Environmental Coordinator                     | 49 min          |
| <b>R13</b>        | Norway         | Glommen Mjøsen      | Forestry Chief (Procurement & Services)       | 50 min          |
| <b>R14- Final</b> | Sweden         | Skogsstyrelsen      | Supervision Specialist (Regulatory Authority) | 55 min          |

As shown above, four respondents were from Norway, seven from Sweden and three from Finland. This diversity ensures that the findings reflect the breadth of the sector rather than the perspective of a single organization type.

### 3.4 Data Generation

The study utilized two main sources for data.

First, a *documentary analysis* was conducted on legal texts, guidelines from national forest agencies, national forest certification standards, and industry reports. This provided contextual *secondary data* for each national case and was used to address the research questions concerning regulative and normative institutional factors. This is presented under Empirical background.

Second, semi-structured *interviews* were the method of *primary data* generation. This format provided a balance of structure, ensuring key topics were covered, while maintaining the flexibility to ask probing follow-up questions (Brinkmann & Kvale 2015). The interview guide was developed directly from the research questions and the conceptual framework (see Appendix 1 and Appendix 2). A pilot interview was conducted, leading to minor adjustments in the guide, such as removing a specific time-measurement question due to high ambiguity. A final interview was with a supervision specialist at the Swedish forest authority to conclude the data collection.

All interviews were audio-recorded and transcribed with Microsoft Teams with consent to ensure accuracy, supplemented by field notes taken during the conversation. To facilitate analysis and validation, the raw data was summarized and structured into a standardized

interview matrix. This matrix organized the data into specific categories: Process Step (1, 2... n), Actor, Document/System, Purpose, and Quotes.

To ensure credibility, a "member check" was performed (Lincoln & Guba 1985). A summary and the interview matrix were translated into the respondent's preferred language (Swedish, or English) to maximize understanding and sent back to them. Respondents were asked to review the process steps and correct any factual errors and remove sensitive information. This validation process was successfully completed by all 14 respondents.

### 3.5 Data Analysis

The analysis was conducted in two distinct phases to address the specific nature of the research questions, Table 3.

Table 3. Data Analysis in two phases relate to research questions and relevant tools and theories

| Analysis Phase          | Research Question            | Tools & Theory                    |
|-------------------------|------------------------------|-----------------------------------|
| Phase 1: Mapping        | RQ1 ( <i>Workflows</i> )     | Business Process Management (BPM) |
|                         | RQ2 ( <i>Documentation</i> ) | Supply Chain Visibility (SCV)     |
| Phase 2: Interpretation | RQ3 ( <i>Drivers</i> )       | Institutional Theory (STP)        |
|                         | RQ4 ( <i>Key practices</i> ) | Reflexive Thematic Analysis       |

First phase: To map *what* is done and *how* it is documented (RQ1 and RQ2), a Process Mapping approach was used. Validated interview matrices were consolidated to map the sequence of tasks and the information objects generated. To handle the complexity of the data, the analysis utilized a Business Process Management (BPM) perspective. The resulting maps were designed as "aggregated models" to visualize the critical administrative path rather than documenting every technical detail. This distinction was done to establishing a comparable workflow across the three national systems. These national workflow maps are presented under Result and analysis.

Second phase: To interpret *why* these workflows differ and to identify *challenges* and *good practices* (RQ3 and RQ4), a Reflexive Thematic Analysis (Braun & Clarke 2022) was applied. This phase utilized the full dataset including original transcripts, field notes and the validated data to interpret the underlying drivers and frustrations expressed by the respondents. This analysis supported by quotes is also presented under Result and analysis.

### 3.6 Quality

The quality of the study was established using the criteria of credibility, transferability, dependability, and confirmability (Lincoln & Guba 1985)

Credibility was ensured primarily through the member check validation process described in the data generation section. Providing respondents with a structured summary (narrative + matrix) rather than raw transcripts allowed for efficient and accurate validation of their views.

Transferability refers to the degree to which findings can be applied to other contexts. While qualitative findings are inherently context-specific, this study provides a "thick description" of

the institutional frameworks in Sweden, Norway, and Finland. This detailed context allows readers to judge the applicability of the findings to other bioeconomy sectors or similar administrative contexts in other regions.

Dependability and Confirmability were addressed by documenting the research process, including the development of the interview guide (Appendix 1 and 2) ensuring the study is logical and traceable. To mitigate researcher bias, the analysis relies on direct citations and validated material.

### 3.7 Ethical considerations

The research was conducted according to high ethical standards. All participants received information about the study prior and provided verbal informed consent before their interview (Bryman et al. 2016). No interview was started or recorded without consent. To ensure confidentiality, all respondents were informed that they can choose to revoke their contribution or be anonymous whenever they want (ibid).

### 3.8 Method limitations

This study has four main limitations. First, as a qualitative study with a purposive selection of participants, the findings are not statistically generalizable. Rather, the study aims for analytical generalization, contributing to the conceptual understanding of how institutions shape administrative workflows. While the study includes a wide range of market actors, from private forest owner associations to large industrial corporations, some specific limitations regarding the sample must be noted. While the study includes a wide range of market actors, the final selection of 14 respondents represents a success rate of roughly 44%. Some large industrial corporations and regional cooperatives were unable to participate within the timeframe.

Second, despite efforts to ensure confirmability, the interpretation of qualitative data is inevitably influenced by the researcher's perspective and the co-construction of meaning during interviews (Lincoln & Guba 1985).

Third, linguistic barriers posed a practical challenge during data generation. In Finland, the selection was constrained by the need for respondents fluent in Swedish or English. Since Swedish is not universally spoken in the field, this may have biased the selection toward larger, internationalized companies where English is the corporate standard, potentially excluding smaller local actors. In Norway, interviews relied on respondents speaking Norwegian while the interviewer spoke Swedish. While generally effective, this introduces a minor risk of misinterpretation regarding specific technical nuances compared to native-language interviews.

Finally, the study faced a practical limitation regarding quantitative metrics. Initially, the study aimed to measure the specific time spent on administrative tasks. However, the pilot interview revealed significant ambiguity and variability in how "lead time" versus "active administrative time" was defined by different actors. Consequently, quantitative time assessments were excluded from the scope to avoid inaccurate comparisons. Instead, the focus was shifted entirely to the qualitative themes of hindrances and good practices (RQ4).

### 3.9 Study Overview

To conclude the method chapter, Figure 7 provides an overview of the study’s research design, illustrating the logical progression from data generation to the final comparative synthesis. The research design was structured to ensure that every analytical step was supported by appropriate data sources. Secondary data, consisting of national legislation and certification standards, is presented in the empirical background in chapter 4 and provided the necessary context for the study. Primary data generated through semi-structured interviews served as the core empirical material used to address the research questions.

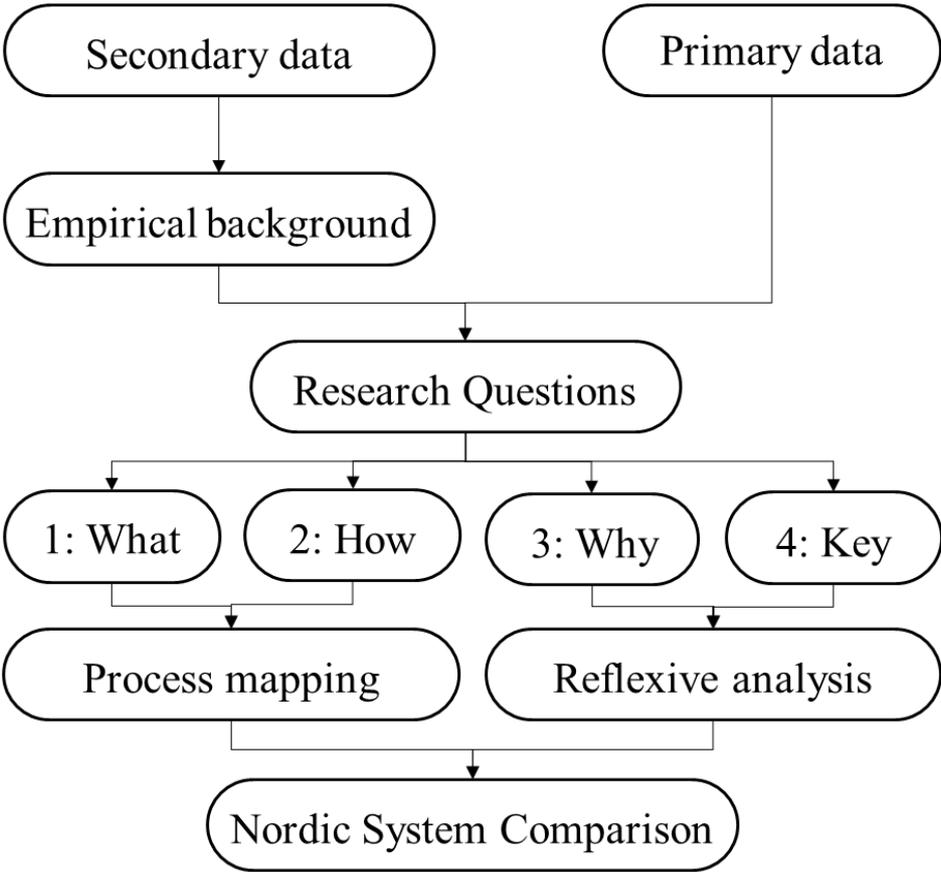


Figure 7. Overview of the study. Separating the secondary data and the primary data sources followed by the Research questions and their corresponding method for analysis.

The four research questions were processed through the two analytical phases established in section 3.5. While research questions 1 and 2 utilized a business process management and supply chain visibility lens for operational mapping, research questions 3 and 4 were addressed through reflexive thematic analysis to uncover institutional drivers and key practices. These streams culminated in a comparative analysis of the national systems, based on the workflows, the documentation, the institutional drivers and the key practices.

## 4 Empirical background

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*The following chapter provides the context for the empirical study by presenting a factual overview of the forestry sector in Sweden, Norway and Finland. The aim is to describe the realities that shape wood procurement in each country. This information will be used as a “backdrop” which the results of the study will be analysed and discussed.*

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The forest sectors of Sweden, Norway, and Finland have distinct characteristics with both similarities and differences. Sweden possesses the largest productive forest land area at 23.2 million hectares, followed by Finland with 20.3 million, and Norway with 8.6 million. All three are dominated by private, non-industrial forest ownership, making private individuals non-industrial private forest owners (NIPFs) the primary suppliers of wood to the industry (Lindstad, 2002). Economically, Sweden and Finland have large, highly export-oriented forest industries, whereas Norway's sector is smaller in scale. Table 4 provides a statistical snapshot of key indicators.

*Table 4. Key Forestry Indicators from the National Agencies*

| <b>Indicator</b>                                    | <b>Norway</b> | <b>Sweden</b> | <b>Finland</b> |
|---|---------------|---------------|----------------|
| Productive Forest Area (million ha)                 | 8.6           | 23.2          | 20.3           |
| Growing Stock (million m <sup>3</sup> )             | 1,010         | 3,705         | 2,553          |
| Net Annual Increment (million m <sup>3</sup> /year) | 24.1          | 120.5         | 103.2          |
| Annual Felling (million m <sup>3</sup> )            | 12.0          | 94.2          | 80.5           |
| Share of Private Ownership (%)                      | ~76%          | ~69%          | ~60%           |

Data adapted from (Natural Resources Institute Finland (Luke) 2025; Statistics Norway 2025; Swedish Forest Agency 2025)

As shown in Table 4, while the ownership structure is similar across the region (predominantly private), the intensity of forestry varies significantly. Sweden and Finland harvest a much larger volume annually compared to Norway, suggesting that their administrative systems must handle a significantly higher throughput of harvest notifications and timber contracts.

### 4.1 Governance, Forestry Acts and Harvest notifications

The systems of governance that oversee the forestry sectors reflect each nation's broader political culture. Sweden and Finland have adopted centralized, national agency-led models, while Norway has chosen a distinctly decentralized approach.

In Sweden, the Swedish Forest Agency (*Skogsstyrelsen*) is the national authority with a mandate to balance the dual policy objectives of economic production and environmental protection in accordance with the Swedish Forestry Act (*Skogsvårdslag* 1979). A forest owner must submit a mandatory notification for any final felling over 0.5 hectares. Crucially, operations cannot begin until a minimum of six weeks has passed. This waiting period provides the agency with a significant window to review the plan.

In Finland, the role is filled by the Finnish Forest Centre (*Suomen metsäkeskus*), which promotes sustainable forestry in accordance with the Finnish Forestry Act (*Forest Act*

1093/1996). Here, the required waiting period is significantly shorter, with the agency having just 10 days to intervene. The information also needs to be made publicly available.

Conversely, Norway operates on a decentralized model where the primary forestry authority is the local Municipality (*Kommune*). While the Norwegian Agriculture Agency provides national oversight, the responsibility for applying the national Forestry Act (*Skogbrukslova*, 2005) is delegated to the municipal level, creating a more local/fragmented regulatory landscape that is highly attuned to local conditions. It is only mandated in specific circumstances, such as in designated "protection forests" (*vernskog*).

While the timelines and authorities differ, the content of a harvest notification is broadly similar across the countries. It typically includes a map of the area, information about the landowner, the type of felling planned, and a description of the planned regeneration measures and environmental considerations. Under Table 5, is the corresponding information regarding the primary governance presented.

Table 5. Governance, Forestry Acts and Harvest notification

| Feature                  | Sweden                           | Finland                          | Norway                                 |
|--------------------------|----------------------------------|----------------------------------|--|
| Primary Authority        | Swedish Forest Agency (National) | Finnish Forest Centre (National) | Municipality (Local)                   |
| Primary Law              | Forestry Act (1979:429)          | Forest Act (1093/1996)           | Forestry Act (2005)                    |
| Harvest Notification     | Yes, for final felling >0.5 ha   | Yes, for most commercial felling | No general requirement                 |
| Submission Timeline      | 6-week waiting period            | < 10-day active period           | 3-week waiting period (where required) |
| Validity of Notification | 5 years                          | 3 years                          | 10 years                               |

Source: National Forestry Acts

Table 5 highlights the regulatory divergence in the region. While Sweden relies on a mandatory waiting period where the absence of a formal objection served as approval, Finland has 10 days where the authority is obliged to respond. Whereas, Norway relies on a system of trust and retrospective control, with no general notification for standard forests. This distinction creates different starting conditions for the administrative workflow in each country.

## 4.2 Certifications and nature assessments

Beyond legal requirements, wood procurement is heavily influenced by voluntary, market-driven forest certification schemes (Elbakidze et al. 2022) and differing national approaches to biodiversity assessment (Nebasifu et al. 2025). The two dominant certification schemes are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC).

In Finland and Norway, PEFC is the overwhelmingly dominant standard. In Sweden, the certified area is more evenly split, and dual certification (where a forest holds both FSC and PEFC certificates) is very common. View Table 6. This means the individual certified areas cannot be simply added together.

The approach to assessing nature values also varies. Norway uses a standardized biodiversity inventory called MiS (*Miljøregistrering i skog*, Environmental Values in Forestry) that is integrated into operational planning (Nebasifu et al. 2025). Finland uses the voluntary METSO programme, which compensates owners for conservation (ibid). In Sweden, the national key biotope inventory stopped in 2019, the responsibility to conduct site-specific nature value assessments (*Naturvärdesbedömning*) has largely shifted to the forest companies to meet certification demands (ibid).

Table 6. Share of forest land Certified by Consolidation information from the national FSC and PEFC organs

| Indicator                          | Norway | Sweden | Finland |
|------------------------------------|--------|--------|---------|
| FSC Certified Area (Mha)           | 0.6    | 13.3   | 1.6     |
| PEFC Certified Area (Mha)          | 7.3    | 16.8   | 19.9    |
| Total Certified Area (% of Forest) | ~50%   | ~85%   | ~90%    |

As illustrated in Table 6, the high degree of certification in Sweden and Finland (~85-90%) implies that normative standards effectively act as mandatory regulations for the majority of the market. Norway's lower percentage (~50%) suggests a slightly different market dynamic, though the PEFC standard remains the dominant normative force for industrial wood supply.

## 5 Results and analysis

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*This chapter presents the results and analysis of the administrative workflows in Nordic wood procurement, structured to address the four research questions sequentially. To provide a clear and logical flow, the analysis was organized into two distinct analytical phases derived from the dual methodological approach of the study.*

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The first part of the chapter maps the specific administrative *workflows* and the associated *documentation* practices within each national system. The second part presents a thematic analysis of the underlying institutional *drivers*, which is followed by an identification of *key practices*.

### 5.1 Mapping the Workflows

To maintain analytical clarity, the descriptions presented in this chapter function as aggregated models. They represent a generic sequence of essential administrative steps, rather than an exhaustive technical manual of every system.

The following sections present the aggregated process maps based on validated interview data. To avoid redundancy, it is noted that all three countries follow a generic baseline presented in Figure 8 below.

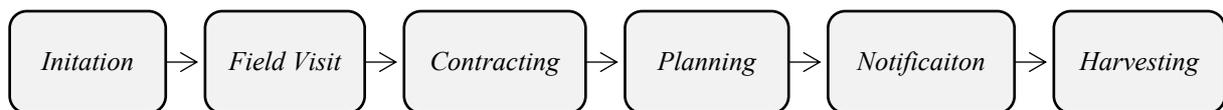


Figure 8. The General Phases.

In this generic model, *Initiation* refers to the first contact between buyer and seller; the *Field Visit* involves the physical inspection of the forest; *Contracting* establishes the commercial agreement; *Planning* involves the detailed operational instructions for contractors (including environmental considerations); *Notification* refers to the communication with authorities; and *Harvesting* is the execution phase. However, the presence, sequence, and legal significance of these steps and the interaction with authorities differ.

#### 5.1.1 The Norwegian Process

The Norwegian workflow is distinguished by the absence of a general pre-harvest state notification (as noted in Empiric Background). Instead, the process relies on a strict internal verification of environmental data prior to contracting. The critical path follows the sequence presented in the Figure 9.

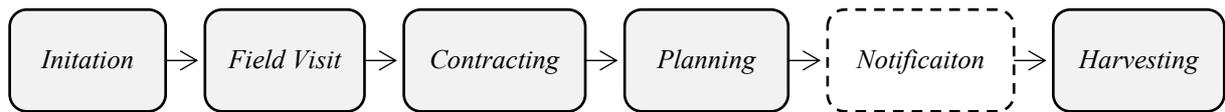


Figure 9. The Norwegian Phases with Notification missing.

### *Initiation and Field Visit (Befaring)*

The workflow typically begins proactively, with the local Wood Buyer (*Virkeskjøper*) contacting forest owners to coordinate operations within a specific geography. This initiation leads to a standard field visit, known as a “*Befaring*”. During this physical inspection, the buyer and forest owner discuss objectives, assess logistics such as road access, and agree on the proposed measure. At this stage, a "rough sketch" of the harvest area is often produced to guide subsequent administrative steps.

### *The Compliance Gatekeeper (MiS)*

Before the process can move to the contracting phase, it encounters a critical administrative "gatekeeper." The buyer must verify the existence of a valid Miljøregistrering i Skog (MiS) for the property. This is a mandatory PEFC requirement for any property larger than 5 hectares. As noted by respondents, if this registration is missing or outdated, the workflow halts immediately because the company "strictly speaking cannot buy timber" without it. In such cases, a "duty to investigate" is triggered, requiring the buyer to commission a biologist to perform a new inventory (*etterregistrering*) before the contract can be signed.

### *Contracting (Virkeskontrakt)*

Once the environmental status is verified via the MiS database, the commercial agreement is formalized via the Timber Contract (*Virkeskontrakt*). Crucially, the signing of this contract serves a dual purpose: beyond establishing price and terms, it automatically incorporates the forest owner under the buyer's "PEFC Umbrella". This administrative step effectively transfers the formal responsibility for certification compliance from the individual landowner to the forest company for the duration of the harvest.

### *Planning (Driftsplanlegging)*

Following the contract, the detailed Operational Planning (*Driftsplanlegging*) moves to the office. The planner performs a Management Analysis (*Forvaltningsanalyse*), which is a systematic check of the harvest geometry against national databases such as Kilden to identify cultural heritage sites, key biotopes, and recreation areas. The results of this analysis are consolidated into a document called the Environmental Check (Miljøsjekk). This is typically a GIS-based "snapshot" that documents the environmental status at that specific moment in time. It serves as the definitive internal juridical proof that due diligence was performed.

### *Harvesting (Arbeidsordre)*

The final output of this planning is the Work Order (*Arbeidsordre*), which combines the map, the Miljøsjekk and sometimes the Due Diligence Assessment (*Aktsamhetsvurdering*). The Due diligence assessment is essentially a list of considerations (e.g., cultural heritage, red-

listed species) that is explicitly entered into or attached to the Work Order. Because there is no general requirement to notify the state prior to harvest, the transition to harvest is seamless. Once the internal documents are in place, the entrepreneur is authorized to start harvesting. Operations can theoretically commence immediately after the planning is finalized, without any mandatory waiting period. The more detailed workflow is presented in Figure 10.

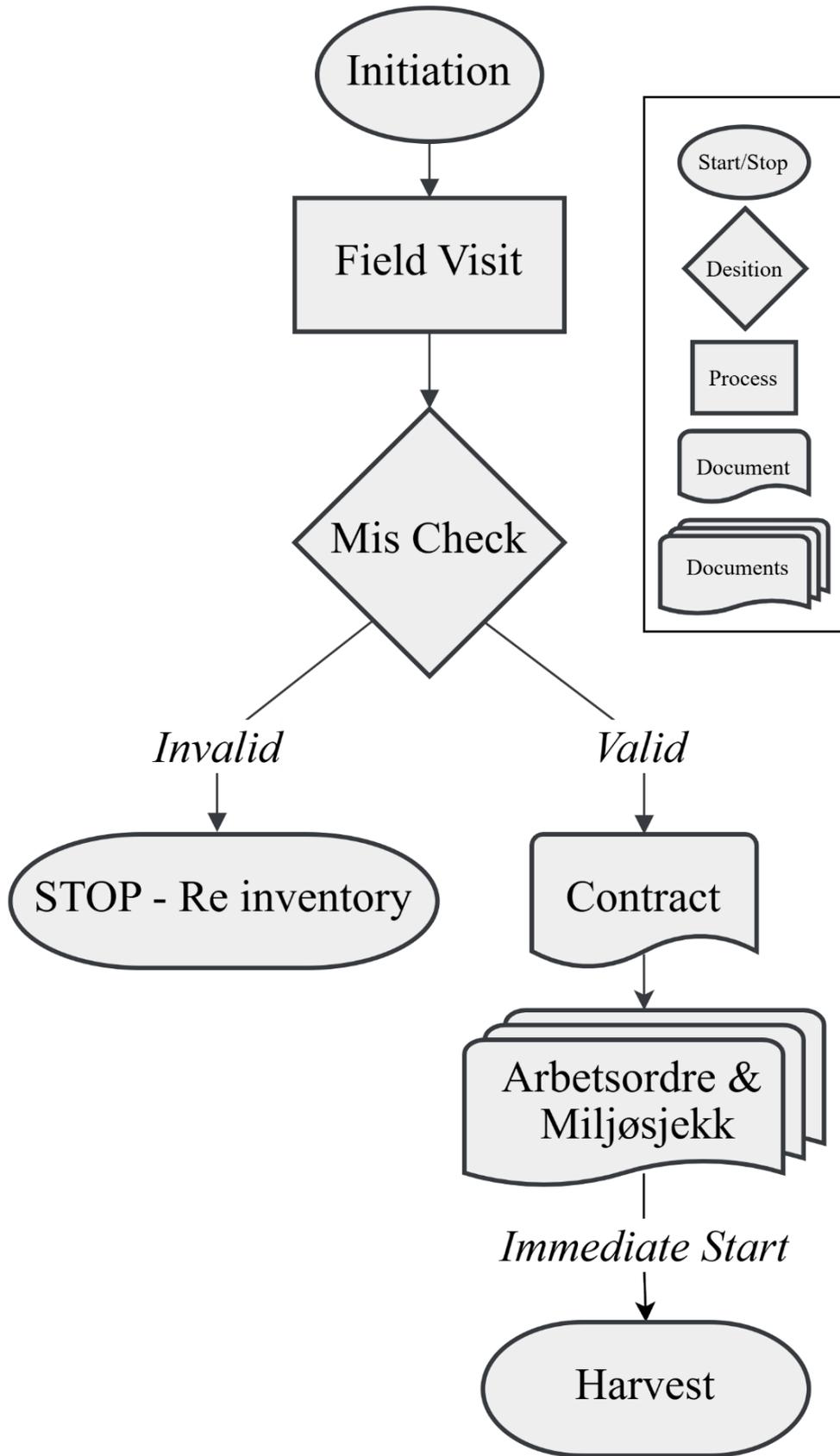


Figure 10. The detailed Norwegian Workflow.

### 5.1.2 The Swedish Process

The Swedish workflow is structurally defined by the dual requirement of the mandatory Harvest Notification (*Avverkningsanmälan*) to the state and the comprehensive Nature Value Assessment (*Naturvärdesbedömning*) required for certification. This creates a specific dynamic between the regulatory timeline and the operational planning. Leading to the emergence of two main orders of operation. As illustrated in Figure 11, the procurement process followed a standardized sequence through the initiation, field visit, and contracting phases, after which the administrative logic split into a theoretical and a practical path.

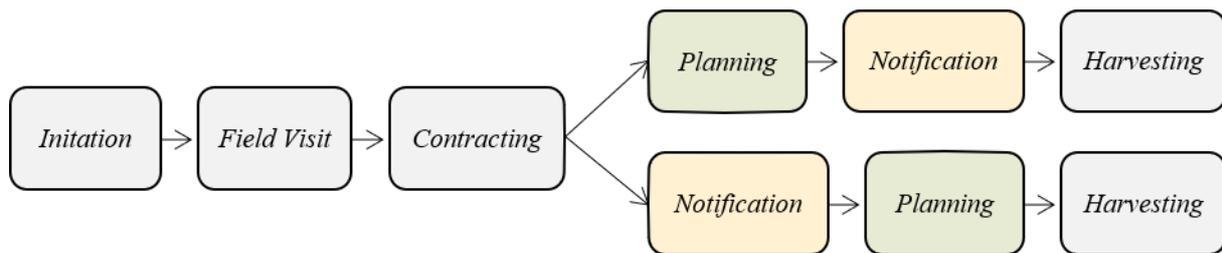


Figure 11. The Swedish administrative workflow showing the divergence between theoretical and practical sequences. The colour coding in the figure highlights the temporal swap of the planning and notification tasks.

The upper path in Figure 11 represents the *theoretical* ideal, which followed a linear logic where detailed planning and environmental assessments were completed entirely before the state was notified. In this model, the harvest notification was based on finalized operational data, ensuring that the regulatory body reviewed the true intent of the harvest as documented through the prior nature value assessment.

In contrast, the lower path illustrates the *practical* ideal where the mandatory six week waiting period created a structural incentive to start the administrative clock as early as possible. In this practical sequence, the harvest notification was submitted immediately after the contracting phase was finalized.

#### *Initiation and Field Visit*

The workflow begins with the initiation of contact, which respondents described as either proactive or reactive. While experienced buyers often rely on incoming calls from existing clients, others actively seek out business. Regardless of how contact is made, it typically leads to a field visit. While the primary objective is to build a relationship and assess wood volumes, a crucial preliminary environmental check is performed at this stage. Respondents described this as a “Simple” Nature Value Assessment (*Lättare naturvärdesbedömning*). This ocular check serves as a triage mechanism to identify obvious high nature values that might preclude harvesting entirely. This informal step has become increasing praxis to mitigate the risks associated with delaying the formal assessment until later in the process (The Planning step).

#### *Contracting and the Notification*

Once the parties agree on the measure, a contract is signed. Immediately following the contract, the workflow encounters a divergence between the theoretical ideal and the practical

reality. Theoretically, detailed planning should be completed before notifying the state. However, a common strategy is to submit the Harvest Notification (*Avverkningsanmälan*) relatively early in the process. This is done to trigger the mandatory six-week waiting period, allowing the administrative clock to run while the detailed planning is performed.

#### *Detailed Planning (Traktdirektiv)*

Consequently, the detailed operational planning can occur parallel to the waiting period. Depending on the organization's size and structure, this phase is executed by a dedicated planner or the wood buyer. It involves a formal Nature Value Assessment (*Naturvärdesbedömning*), driven by FSC/PEFC certification requirements rather than the Forestry Act. The output of this phase is the Harvest Instruction (*Traktdirektiv*). This step results in a decoupling of information streams: the public notification is based on preliminary geometry, while the internal instruction is based on detailed field inventory.

#### *Harvesting*

The final phase involves the handover of the *Traktdirektiv* to the entrepreneur, typically via digital platforms like *ForestLink*. A distinct feature of the Swedish model is the high degree of delegation; machine operators are often entrusted with making micro-decisions regarding retention in the field. Upon completion, the operator submits a self-declaration. The detailed Swedish workflow is presented in Figure 12 below.

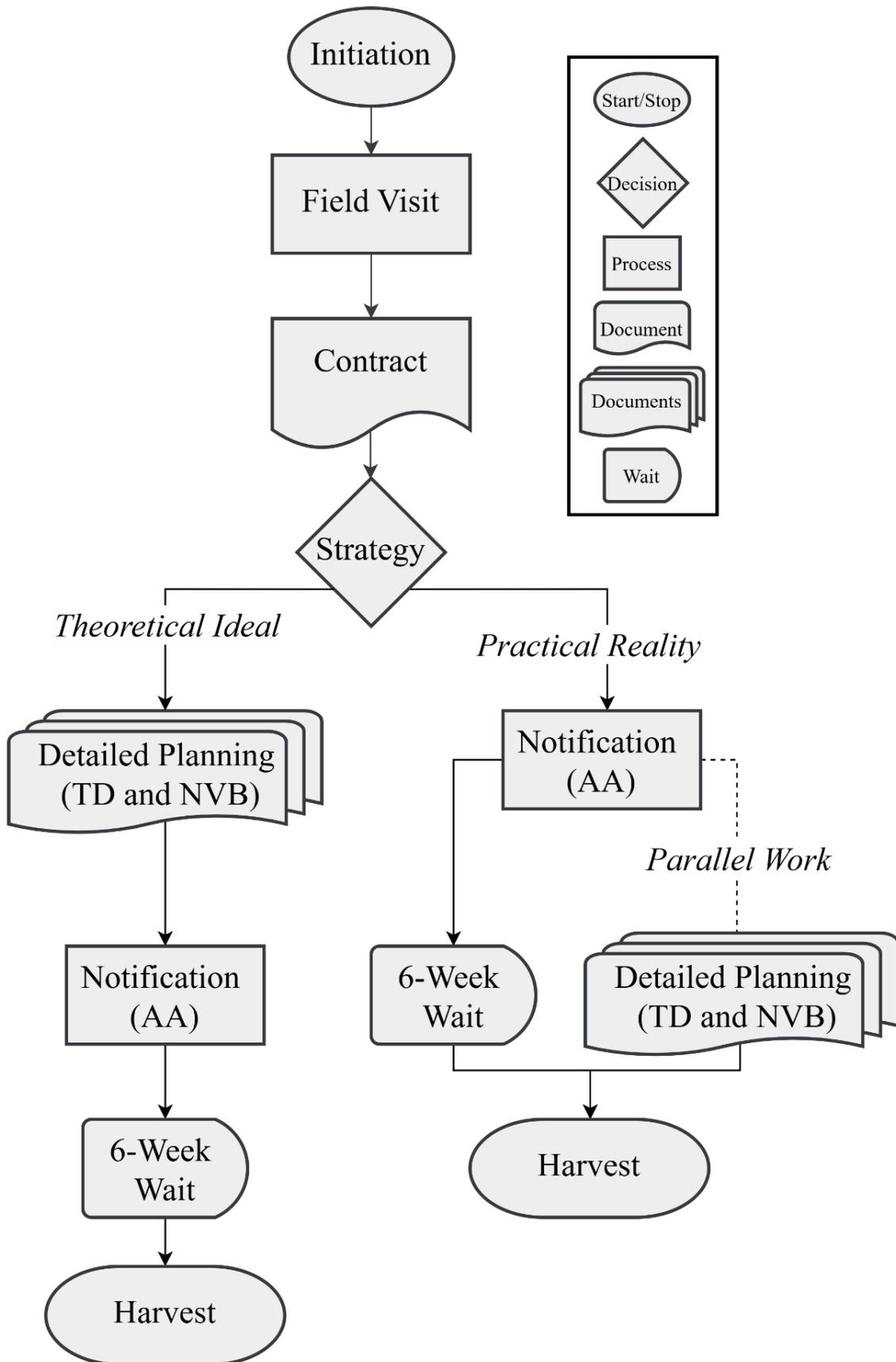


Figure 12. The detailed Swedish Workflow.

### 5.1.3 The Finnish Process

The Finnish workflow is characterized by high digitalization and interaction with authorities where the notification process functions as an active data exchange. The process relies on leveraging national forest data to triage sites, sometimes even removing the need for physical field visit. Figure 13 illustrates the phases.

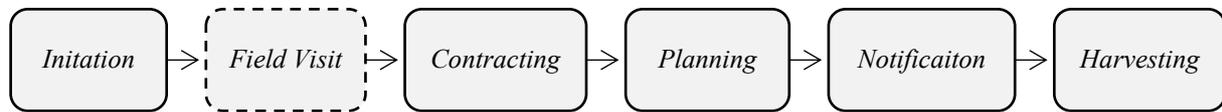


Figure 13. The Finnish Phases with non-mandatory Field Visit.

#### *Initiation and the Risk Matrix*

The process begins with contact between the buyer and forest owner, which can be initiated proactively based on forest plan data or reactively by the owner. A feature of the Finnish model is the triage mechanism employed at this stage. Experts frequently perform a desktop analysis using high-resolution data from national databases (e.g., Metsään.fi) to assess the site before visiting. This can even drive an "Internal Safety and Environmental Check" essentially a risk matrix. As noted by respondent (7), if the digital layers show no "extra important" features, such as rare species or unclear borders, the site is can be deemed a "clear case". In these instances, the planner may rely on the digital data and office preparation, skipping the physical field visit entirely.

#### *Contracting*

If the offer is accepted, a timber trade contract is signed. Respondents noted that this step is increasingly digital, with roughly half of all trades now concluded via electronic channels where owners can review proposals and tick boxes for specific biodiversity options. A critical administrative function of the contract is the authorization of data access; the forest owner controls their own data, and the contract legally grants the company the right to utilize the specific forest resource information in their own systems.

#### *Notification and the Authority Loopback*

Once the contract is signed, a Forest Use Declaration (*Metsänkätöilmoitus*) is submitted to the Finnish Forest Centre (*Metsakeskus*). This notification triggers a mandatory waiting period, typically 10 days, though a paid "fast track" license can reduce this to 1–2 days for urgent operations. Submission triggers a review by multiple authorities (e.g., the Centre for Economic Development), resulting in a "Loopback" effect. Authorities utilize the notification to check their own databases and send back binding instructions regarding ow to protect specific environmental values or other constraints found in the area.

#### *Planning*

The detailed operational planning involves consolidating these various data streams. The planner must integrate the initial risk assessment data with the binding instructions received from the authorities during the Forest Use Declaration loopback. This phase often involves an

internal "Safety and Environmental Check" or approval by a dedicated environmental expert in the company to ensure all external requirements are met.

### *Harvesting*

The final output is a set of *Operational Instructions*, which are transmitted to the entrepreneur via the common industry platform, *Woodforce*. This system serves as the operational hub, where the entrepreneur accepts the site and reports harvesting progress. Because the harvest *notification* process has already integrated the authority data, the instructions received by the machine operator are viewed as the "single source of truth," reducing the need for the operator to make complex discretionary decisions in the field. Although they can also choose to not accept the instruction if they deem them not good enough. Figure 14 illustrates the detailed workflow for Finland.

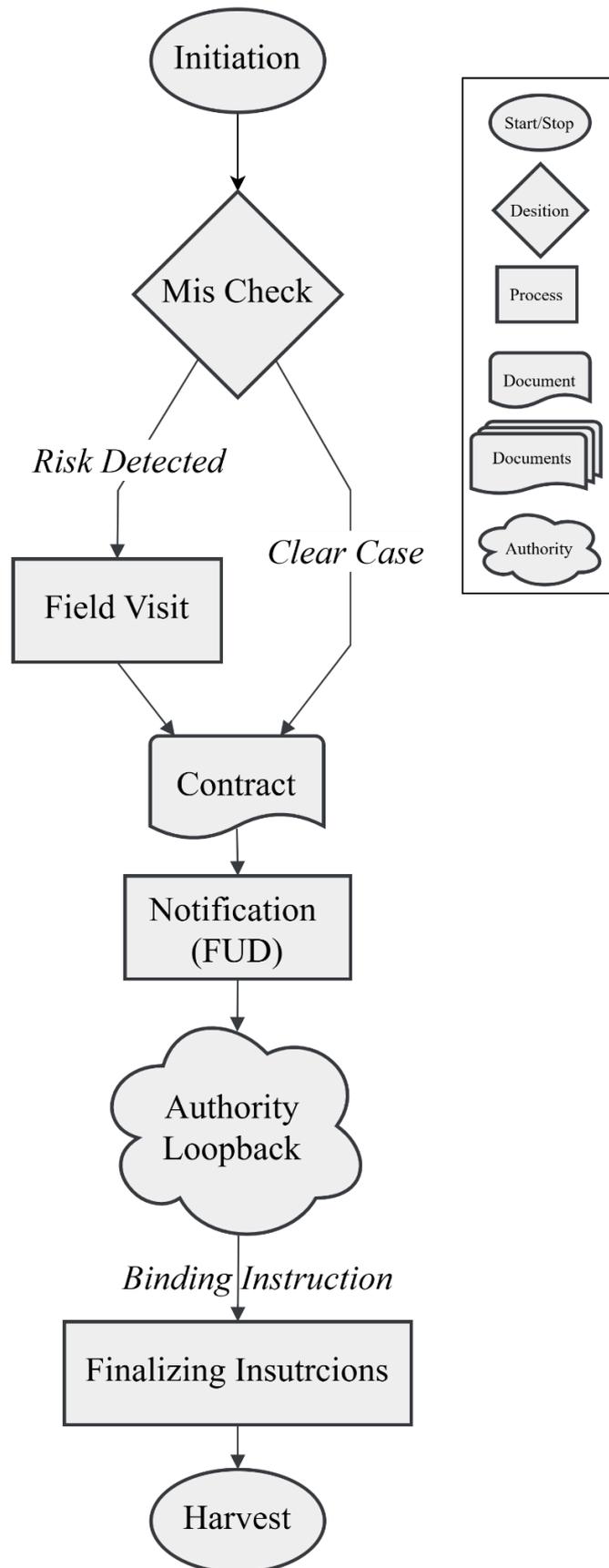


Figure 14. The Finnish Workflow.

### 5.1.4 Differences in Workflows

While all three countries share a common objective, the comparative analysis reveals several structural differences in the administrative workflows from initiation to harvest. On a general level, the steps appear similar, but their sequence and regulatory significance vary significantly, as visualized in Figure 15.

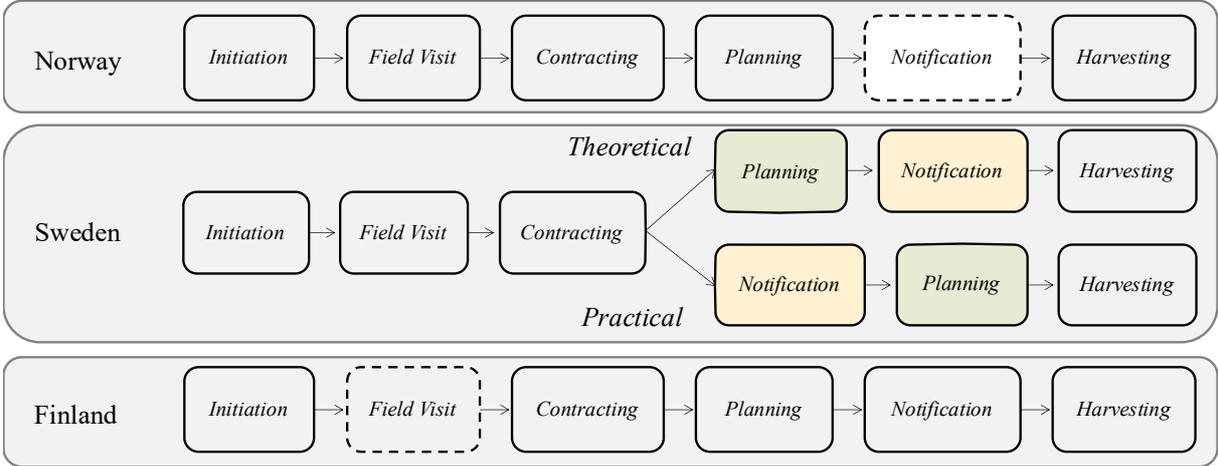


Figure 15. Comparison of the National workflows.

The process always began with initiation, though the underlying approach varied between the proactive buyer contact typical in Norway and the more reactive, owner driven model found in Finland. Sweden utilized a hybrid of these approaches. Field visits were mandatory in Norway and Sweden to verify volumes and biodiversity, whereas in Finland, these were observed to be optional in cases classified as low risk, allowing for a more streamlined initial phase.

The most significant divergence occurred in the sequencing of contracting and state interaction. In Norway, the environmental verification was completed before the contract was signed, whereas in Sweden and Finland, the formal state interaction occurred after contracting. Furthermore, the state notification requirement created entirely different temporal realities. Norway operated without a general notification requirement for standard forests, allowing for immediate execution after internal planning was finalized. In contrast, the Swedish system was defined by a mandatory six week pause, while Finland utilized a ten-day review period.

These variations demonstrate that while the physical steps of wood procurement remain largely consistent, the administrative "friction" is dictated by national institutional gatekeepers. The following section analyses how these workflow differences translate into specific documentation practices and information flows.

## 5.2 Analysing the Documentation

This section analyses how the administrative workflow is documented and shared by applying the theoretical lens of Supply Chain Visibility (SCV) to the documentation identified in the previous workflow mapping, Figure 16.

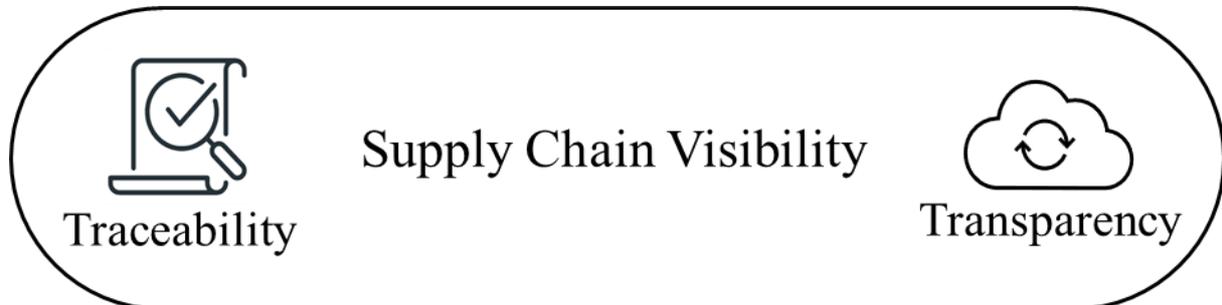


Figure 16. The analytical model for Supply Chain Visibility used in this study (Garcia-Torres et al. 2019).

The model evaluates documentation through two primary dimensions:

- **Traceability:** Focuses on the internal documentation used to verify compliance and create a robust audit trail, such as saving "snapshots" of map layers to prove the state of knowledge at the time of planning.
- **Transparency:** Determines the external availability of information and who has access to the documentation, contrasting public declarations (e.g., harvest notifications) with private internal records.

### 5.2.1 Traceability

Across all three countries, the primary function of internal documentation is to "lock in" the state of knowledge at the time of planning, ensuring that the company can retrospectively prove due diligence was performed.

#### *Norway*

In the Norwegian model, traceability is achieved starting at the contract and the certification agreement. Which in turn requires the Environmental registration (*Miljøregistrering*). Then the *Miljøsjekk* (Environmental Check). Respondents described this not just as a check, but as a digital artefact, a "screen dump" or saved static layer from the GIS system. This document records exactly which environmental databases were consulted and what they showed at the specific moment of planning. This serves as the definitive internal proof that the planner checked the *Miljøregistrering* (MiS) and *Kilden* and finally produced the harvest instructions (*Arbeidsordre*). The following table, Table 7, summarizes the required documentation in the Norwegian system and the specific operational roles they play in maintaining traceability.

Table 7. Required documentation Norway

| Document  | Operational Function & Traceability Role  |
|---|---|
| Contract & Certification Agreement                      | Legally binds the parties and brings the forest owner under the company's certificate.  |
| Environmental Registration ( <i>Miljøregistrering</i> ) | A formal, third-party biological assessment of the property's environmental values. The existence of this is the prerequisite for harvesting. |
| Environmental Check ( <i>Miljøsjekk</i> )               | An internal document that records all known map-based environmental values at the time of planning, serving as proof of due diligence.        |
| Harvesting Instructions ( <i>Arbeidsinstruks</i> )      | The detailed operational plan for the contractor, ensuring compliance with all documented environmental and operational constraints.          |

As shown in the table above, the Norwegian documentation chain is characterized by a binary environmental proof. The existence of an up-to-date MiS registration determines whether the process can advance, placing the burden of responsibility on the availability of existing database records. Because the Miljøsjekk functions as a static record of these databases, it effectively creates an internal audit trail

### Sweden

In the Swedish model, traceability is achieved through a decentralized chain of documents. Starting with the contract giving the company the right to harvest. While the Harvest instruction (*Traktdirektiv*) serves as the primary operational document for the contractor, the legal and environmental proof of due diligence often resides in the Nature Value Assessment (*Naturvärdesbedömning*) and harvest notification. The following table, Table 8, summarizes the required documentation in the Swedish system and the specific operational roles they play in maintaining traceability.

Table 8. Required documentation Sweden

| Document  | Operational Function & Traceability Role   |
|---|--|
| Contract  | Legally binds the forest owner and the company to the harvesting operation.  |
| Nature Value Assessment ( <i>Naturvärdesbedömning</i> ) | A field inventory recording biodiversity values. Serves as the proof of environmental consideration in the planning phase. |
| Harvest Notification ( <i>Avverkningsanmälan</i> )      | A public declaration of intent to harvest submitted to the Swedish Forest Agency.  |
| Harvesting Instructions ( <i>Traktdirektiv</i> )        | Provides the contractor with a detailed operational plan.  |

As shown in the table above, the Swedish system relies on multiple documents to establish a complete audit trail. A recurring challenge identified in the workflow is that detailed field observations from the *Naturvärdesbedömning* are seldom attached directly to the *Traktdirektiv* given to the entrepreneur. Swedish traceability relies on the organization's ability to link these separate layers, including the contract to the public notification, the

internal environmental inventory, and the work order, to provide a comprehensive audit trail for both state supervision and certification audits.

*Finland*

In Finland, traceability is characterized by data integration. The final Harvesting Instructions act as the single source of truth. Unlike the Swedish system, where the planner generates new data in the field, the Finnish instruction traces the integration of existing national data with the binding Authority Instructions received during the notification review. The traceability lies in the digital "handshake" where these external constraints are accepted and incorporated into the work order see Table 9 below.

*Table 9. Required documentation Finland*

| <b>Document</b>  | <b>Operational Function &amp; Traceability Role</b>  |
|--|--|
| Contract   | Legally binds the forest owner and the company.  |
| Forest Use Declaration ( <i>Metsänkäyttöilmoitus</i> ) | A mandatory notification to the Finnish Forest Centre that initiates the administrative review and data exchange.                  |
| Authority Instructions                                 | Consolidated, binding instructions from authorities regarding specific environmental or heritage sites.                            |
| Harvesting Instructions                                | The final operational plan for the contractor, which integrates the binding instructions from the authorities into the work order. |

As shown in the table above, the Finnish process represents a shift from manual data generation to an automated exchange of binding instructions. Because the harvest notification process has already integrated authority data, the instructions received by the machine operator are viewed as the primary source of truth, reducing the need for operators to make complex discretionary decisions in the field. This integration ensures that the audit trail is built directly into the digital workflow, linking regulatory requirements to operational execution.

## 5.2.2 Transparency

The comparative analysis reveals a fundamental divergence in transparency. While all countries require internal traceability, they differ significantly in who is granted access to that information. The following table, Table 10, summarizes the primary mechanisms and the resulting transparency levels for each country

Table 10. Summary of the main documents and national transparency level

| Country | Primary Mechanism  | Transparency Level |
|---------|--|--------------------|
| Sweden  | <i>Avverkningsanmälan</i> (AA) and <i>Naturvärdesbedömning</i> (NVB) | High               |
| Finland | Forest Use Declaration (FUD) and Final Instructions                  | Moderate           |
| Norway  | Contract + <i>MiS</i> + <i>Miljøsjekk</i>                            | Low                |

### *High Transparency*

Sweden exhibits the highest level of transparency. The Harvest notification (*Avverkningsanmälan*) is publicly available to authorities, NGOs, and the general public both available to download and view at the Forest Authority's webpage (Skogsstyrelsens hemsida). This openness allows for external monitoring, where third parties can scrutinize the planned harvest area against their own data. Consequently, the information flow is not just a regulatory formality but a public declaration that exposes the company to external appeals and criticism. The Nature Value Assessment (*Naturvärdesbedömning*) is completely internal.

### *Moderate Transparency*

Finland utilizes a model of administrative transparency. The Forest Use Declaration (FUD) is submitted to the Forest Centre and shared with relevant authorities (e.g., for environmental review). While the system ensures authorities have full visibility to provide binding instructions, the process is primarily designed as an administrative data exchange rather than a platform for broad public intervention. The Final Instructions to the entrepreneurs are not published.

### *Low Transparency*

The Norwegian system operates with low external transparency regarding specific harvest plans. Information is shared strictly between the contracting parties (forest owner and buyer) and the certification auditors. Because there is no general pre-harvest notification to the state, the specific geometry and timing of a harvest are generally not visible to the public or authorities prior to harvest, except in specific protected zones.

## Summary of Required Documentation

The administrative workflows rely on a specific set of documents that facilitate the transition between the operational phases. While all three countries utilize a Contract to bind the parties and Harvesting Instructions to guide the final operation, the intermediary documentation reveals a significant divergence in how environmental values and state communication are managed.

### *Internal vs. Public Transparency*

A primary difference lies in the visibility of the planning documentation. In Norway, the process is characterized by internal "Due Diligence" through the *Miljøsjekk*, which serves as a private record of environmental consideration. In contrast, the Swedish model centres on the Harvest Notification which transforms the private planning data into a public declaration of intent, triggering a transparent review phase. Finland occupies a middle ground where the Forest Use Declaration initiates an administrative review without the same level of public-facing visibility as in Sweden.

### *Passive vs. Active Authority Input*

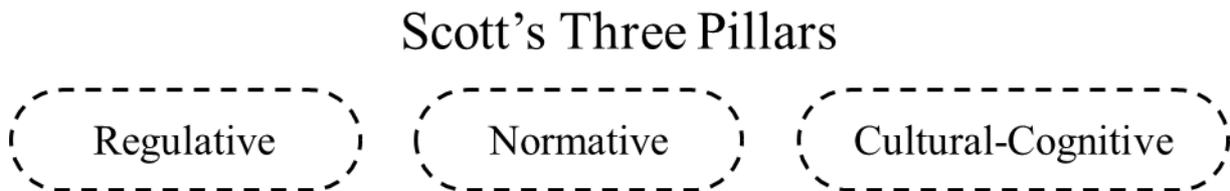
The nature of the information received from authorities also differs. In the Swedish system, the feedback loop is largely passive; the documentation is submitted, and the lack of a response after six weeks is treated as a "go-ahead". In the Finnish system, the documentation process is an active data exchange. The Forest Use Declaration results in Authority Instructions, binding digital directives that are subsequently integrated into the final Harvesting Instructions. Norway's system lacks a formal state feedback loop, relying instead on the *Miljøregistrering* as a third-party prerequisite verified prior to contracting.

### *Physical vs. Digital Environmental Proof*

Finally, the "proof" of environmental compliance varies between physical and digital objects. The Swedish system places high emphasis on the Nature Value Assessment as a field-verified physical document. Finland's Digital Integration model increasingly moves toward digital "Risk-Based Triage," where national forest data can replace certain physical field inventories in "clear cases". In Norway, the environmental documentation is binary; the existence of an up-to-date *MiS* registration determines whether the process can advance, placing the responsibility on the availability of existing database records.

## 5.3 Institutional Drivers

While the previous sections provided a descriptive mapping of what is done and how it is documented, this section interprets why these administrative systems have diverged. The comparative analysis revealed that the administrative differences between the countries are not random operational choices. Instead, they are shaped by distinct institutional pressures: *Regulative* (Laws), *Normative* (Market/Certification), and *Cultural-Cognitive* (Trust/Routines). These forces dictate why specific documents are required and how they are used to ensure compliance. Figure 17 illustrates the relevant part of the framework that guide the consequent analysis.



*Figure 17 The theoretical framework illustrating how institutional pillars shapes organizational practice.*

As shown in Figure 17, these three pillars pressure the specific day to day administrative realities found in Sweden, Norway, and Finland.

### 5.3.1 Regulative Drivers

The role of the state acts as the primary differentiator in the administrative workflow, creating distinct operational realities in each country.

In Sweden, the process is uniquely shaped by a shift toward the Environmental Code (Miljöbalken). Unlike the Forestry Act, where authorities dictate procedure, the Environmental Code imposes a "burden of proof" on the company. This necessitates "defensive documentation" to anticipate supervision.

*“One can say that under the Forestry Act it is a bit like it looks in Finland. The authority dictates how one should proceed, whereas under the Environmental Code the operator has to explain how they intend to proceed”. (Christoffer Gillström, Supervision Specialist, Swedish Forest Agency)*

This regulatory pressure creates a structural waiting period via the mandatory Harvest Notification. To minimize operational delays, companies are incentivized to submit this notification as early as possible. This practice of "starting the clock" was confirmed by multiple respondents.

*“The priority is submitting the notification as soon as possible so that those six weeks begin to run.” (Niklas Fogdestam, Forest Management Developer, Sydved)*

In Finland, the regulatory pressure functions differently. The mandatory Forest Use Declaration (FUD) triggers an active data exchange rather than a passive wait. Authorities are required by law to inform the logging right owner of specific considerations upon receiving

the declaration, forcing the organization to integrate binding instructions from multiple agencies directly into their operational planning.

In contrast, Norway operates under a decentralized model that prioritizes efficiency. The absence of a general pre-harvest state notification removes the regulatory friction found in the neighbouring countries.

*“So, if a forest owner rings me today, we could in principle start logging there tomorrow.” (Martin Bonnerud, Wood Responsibility, Stangeskovene)*

This efficiency is highly valued within the Norwegian sector. Respondents explicitly stated concern about ending up in a "model like you have in Sweden," arguing that mandatory notifications would make their process significantly more expensive without adding value. Despite these national differences, upcoming high-level EU legislation, such as the EU Deforestation Regulation (EUDR), acts as a growing universal driver. Confirmed that, despite Norway not being an EU member, compliance is mandatory due to the EEA (European Economic Area) agreement:

*“Yes, because we have the EEA agreement, and we are probably the country that is best in all of Europe at implementing EU directives” (Torgrim Fjellstad, Head of Wood Procurement, Glommen Mjøsen Skog)*

This highlights that despite divergent administrative paths, the regulative pillar increasingly imposes similar high-level pressures across the Nordic region.

### 5.3.2 Normative Drivers

Normative forces, particularly international certification schemes like PEFC and FSC, establish non-negotiable standards for sustainable forest management. For major actors, certification acts as a binary market gatekeeper rather than a voluntary choice.

*"Now all is actually certified timber approximately... we have no possibility to sell uncertified timber." (Inger-Helene Onsager, Silviculture Manager, Nortømmer)*

These standards often dictate requirements that exceed national law. A distinct friction was observed by some respondents between these normative standards and state authorities, particularly in Sweden, where authorities “often do not trust the certification”, layering similar but not identical requirements on top of the voluntary standards.

*"What doesn't work well is that the authorities don't trust the certification... they come with similar requirements but not exactly the same." (Niklas Fogdestam, Forest Management Developer, Sydved)*

In Finland, this normative pressure often manifests through field verification rather than document review. This forces companies to maintain detailed traceability systems to retrospectively prove compliance during site checks.

*"They send a drone to the forest and check themselves... They do not see documents, they do field visits." (Heidi Olin, Wood Buyer, Keitele Group)*

However, data from other Finnish respondents clarifies that this visual verification does not eliminate the need for documentation; rather, it changes its function. Janne Yrjönen (Stora Enso) explains that while external bodies perform spot-checks on the physical result, the companies themselves conduct massive internal audits, approximately 900 per year compared to 30 external ones, which remain heavily document-based. Thus, the administrative burden remains: the company must maintain a perfect digital trail to prove "intent" internally, while ensuring the physical "outcome" satisfies the drone during the external audit.

### 5.3.3 Cultural-Cognitive Drivers

Cultural-cognitive drivers relate to ingrained organizational routines, internal mechanisms for managing risk, and the underlying level of institutional trust present in the national system.

In Sweden, documentation serves a critical function of risk minimization, often described by respondents as "*defensive documentation*". Extensive records are necessary to counter the public perception that the industry harvests "without thinking."

*"People believe we just go there and harvest without thinking first... The entire documentation aims to show that we have... we do 1000 things. We think very much." (Jonas Karlsson, Field Manager, Moelven Skog)*

To ensure quality planning regardless of sales pressure, a distinct cultural routine involves structurally separating the roles of the Wood Buyer and the Planner. While initially identified as a strategy among Swedish forest owner associations (like Mellanskog) to "*separate the incentives*," this routine is spreading across the Nordic region. Heidi Olin (Keitele Group) confirmed that they separate the buyer from the machine operator, and Torgrim Fjellstad (Glommen Mjøsen Skog) noted that they are currently reorganizing to implement this division. However, this bureaucratic layering is not universal; smaller private actors often resist this trend, preferring a single point of contact to avoid "*middlemen*" and maintain a closer relationship with the forest owner.

Norway, conversely, relies on a higher degree of institutional trust. Criticism of forestry is often viewed as undeserved, as the industry has voluntarily imposed very strict routines and documentation on itself. Because of this confidence, transparency is often handled proactively to secure the "*license to operate*." Inger-Helene Onsager (Nortømmer) explained that rather than relying on mandatory state notifications, they use voluntary routines such as putting up signs and posting in local Facebook groups to inform the public.

*"We see it as our responsibility to inform... It is well received, we have nothing to hide." (Inger-Helene Onsager, Silviculture Manager, Nortømmer)*

In Finland, there appears to be a cultural acceptance of administrative complexity. The reliance on multi-agency reviews and national data triage is rooted in a context where high bureaucracy is viewed as a standard cost of doing business.

*"Finland loves its bureaucracy, so the same is noticed here in the forest industry as well. That the bureaucracy is enormous." (Heidi Olin, Wood Buyer, Keitele Group)*

Suggesting that the multi-agency review process is accepted as a standard cost of doing business in the Finnish forest industry.

### 5.3.4 Summary

These institutional pillars transform documentation from just task into a strategic response to external pressure. While regulative drivers define national timelines, normative certification acts as a force that mandates environmental due diligence. Table 11 summarises the drivers with some of the responses.

*Table 11. The institutional context affecting the national systems*

| <b>Content Focus</b>                           | <b>Application of Theory &amp; Sources</b>   |
|--|--|
| Regulative Drivers<br>(Laws)                   | <i>Focus on legal compliance:</i><br>The Forest Act requires the AA (Sweden) or FUD (Finland), creating structural difference. New, ambiguous high-level legislation like EUDR is forcing organizations to redesign internal processes.  |
| Normative Drivers<br>(Certification/Market)    | <i>Focus on Market Access:</i><br>Certification (FSC/PEFC) drives many administrative requirements, notably the need for environmental due diligence (NVB/Miljøregistrering). Market access is dependent on certification " <i>we can't sell the timber</i> ". Certification also demands detailed documentation to survive annual audits.   |
| Cultural-Cognitive<br>Drivers (Trust and Risk) | <i>Focus on Risk Minimization:</i><br>Documentation is driven by the internal need for <i>risk minimization</i> and responding to a perceived lack of external trust. Documentation serves to prove that " <i>we have thought before</i> " executing the harvest. The Norwegian system's high efficiency is largely enabled by an institutionalized trust that certified actors are compliant. |

The fundamental divergence is cultural-cognitive; the Norwegian model utilizes institutionalized trust to maintain internal efficiency, whereas the Swedish and Finnish models rely on high-visibility documentation to mitigate legal risk and address external scrutiny.

## 5.4 Key Challenges and Good Practices

The challenges generally stem from external regulatory and normative pressures manifesting as internal operational burdens, while good practices usually involve structural or technological solutions aimed at maintaining speed and efficiency.

### 5.4.1 Challenges

The most prominent hindrance across all countries is the escalating quantity and complexity of mandatory documentation, driven primarily by external environmental and sustainability pressures of compliance.

The administrative process is universally defined by increasing paperwork, which consumes time and distracts personnel from core field duties. This was identified not just as an efficiency loss, but as a direct threat to staff well-being. Janne Yrjonen (Stora Enso) noted that the administrative burden is now the "*number one complaint*" from field staff in internal job satisfaction surveys.

*"The drastically increased documentation requirements... create a work environment problem. It becomes a clash between the practitioner and the theoretician." (Marcus Sydh Göransson, Environmental Coordinator, Mellanskog)*

A major source of inefficiency is the lack of clarity in legal and certification texts. The introduction of new directives, such as the EUDR, contributes significantly to this burden. Respondents noted that although they are accustomed to the volume of work, the constant introduction of new, vague requirements creates a "fear" of what is coming next.

*"Uncertainty linked to this makes us incur unnecessary costs as far as that is concerned." (Torgrim Fjellstad, Head of Wood Procurement, Glommen Mjøsen Skog)*

In Sweden, this uncertainty praxis creates a system described by respondents as "messy" and unpredictable. Staff are often left struggling to determine the actual requirements for compliance.

*"Uncertainty regarding legal compliance and certification compliance. That is, we don't really know what applies in many cases." (Marcus Sydh Göransson, Environmental Coordinator, Mellanskog)*

Similarly, in Finland, authority instructions are frequently described as ambiguous. Staff are often forced to interpret official advice to determine if it represents a mandatory legal minimum or a voluntary recommendation.

*"There is too much room to try to understand what actually each law means... [whether to do] the minimum required by law or go far beyond the legal level." (Janne Yrjonen, Wood Supply Process Owner, Stora Enso)*

In Sweden, the regulatory pressure creates systemic inefficiencies regarding the sequence of work. The mandatory Harvest Notification in combination with the normative demand for nature value assessment creates a structural incentive to "start the six-week clock" immediately. Multiple respondents, including representatives from the Swedish Forest Agency, confirmed that in practice, the notification is often submitted before detailed planning is complete. This suboptimal order means that planning must sometimes be adapted or re-done later, generating extra administrative friction.

Furthermore, the complexity of these layered workflows creates "information silos." As projects are handed over between the Wood Buyer, the Planner, and the Contractor, critical details are at risk of being lost.

*"The fundamental problem is that information gets stuck somewhere, that from one layer to another, some information is missed in the transfer." (Anna Hallden, Sustainability Specialist, Stora Enso)*

These operational challenges illustrate how the regulative and normative pressures are translated into higher administrative friction, that plummets both the perceived work environment as well as the overall efficiency of the system.

#### 5.4.2 Good Practices

To resolve the need for high compliance with operational efficiency, respondents identified several strategic "good practices".

##### *Separation of Roles*

A highly praised organizational strategy to manage conflicting incentives is the structural separation of roles. While most common in forest owner associations, this trend was observed across the region. Marcus Sydh Göransson (Mellanskog) asserted that splitting the planning function from the consulting/buying function is key to functional quality management.

*"I think the whole setup, the whole idea of us splitting planning from consulting is good... just to separate the incentives." (Marcus Sydh Göransson, Environmental Coordinator, Mellanskog)*

This structure ensures that the planner remains objective, acting like a "judge" focused purely on creating a compliant plan, while the wood buyer focuses on sales volume. Torgrim Fjellstad (Glommen Mjøsen Skog) added that this separation has a secondary benefit: it increases *traceability*. Because the buyer hands over the project to a planner, information cannot simply "*stay in the head*" of one person; it must be documented explicitly to be transferable.

##### *Operator Delegation*

In countries relying on internal checks, *efficiency* is gained by delegating detailed technical decisions to the machine operator. This practice relies on a philosophy of "*freedom under responsibility*." Niklas Fogdestam (Sydved) explained that formal instructions can sometimes be minimal, trusting the operator's competence.

*"The formal Harvest Instruction may simply instruct the operator to 'thin as usual'. The operator then performs the detailed work." (Niklas Fogdestam, Forest Management Developer, Sydved)*

The operator confirms compliance via a short self-declaration report upon completion. This reduces the administrative burden on the planner but requires a high level of operator competence.

#### *Standardization*

Regarding technical systems, there was a consensus among the respondents that for future efficiency standardized for data exchange is key. Jonas Karlsson (Moelven Skog) introduced a metaphor to describe the need to solve system fragmentation.

*"Suitcases works at the airport, why can't it work in a harvest instruction? ... Today, forestry is garbage bags (proprietary formats)... no standard anywhere. The industry must agree on a format ("a suitcase"), so that one can focus on the unique content and not the format." (Jonas Karlsson, Field Manager, Moelven Skog)*

Respondents noted that establishing a common "good enough" minimum level of data format would not only reduce conflict but also improve productivity for new employees. With a standardized format, vocational training could focus on forestry content rather than teaching proprietary software quirks.

#### *Collaboration*

Interviewees in all countries identified a need for better data sharing regarding non-official, but highly valuable, site information. This includes details like locations of wells or retention trees, which are currently lost when forest owners switch between organisations.

*"We try to work on that now (more collaboration)... We try to draw on the map so that we remember and know where they are and so we know it in the future as well." (Heidi Olin, Wood Buyer, Keitele Group)*

By keeping records and sharing those records of company data the industry could be able to see both efficiency gains and better ability to protect these sensitive objects.

#### *Automation*

Finally, there was a broad consensus that the only way to handle increasing demands without adding headcount is to implement "better systems." Respondents defined "better" not just as digital, but as automated and integrated. Torgrim Fjellstad (Glommen Mjøsen Skog) suggested that the industry needs to "work smarter" by utilizing smart systems and AI to handle the documentation load.

*"We need to work smarter... utilizing smart digital systems and AI to handle the increasing demands for documentation without resorting to hiring more administrators." (Torgrim Fjellstad, Head of Wood Procurement, Glommen Mjøsen Skog)*

Janne Yrjonen (Metsä Group) similarly emphasized the need for "*more automation*" to process the volume of data required by modern governance. This suggests a shift from manual data entry to *smart digital systems* where compliance data is generated, transferred and validated automatically by the workflow itself.

### *Summary of Results*

The mapping and thematic analysis of the national systems illustrate how identical operational goals in wood procurement led to three distinct administrative models, each shaped by specific national institutional contexts. While the demand for traceability and transparency, is a universal institutional mandate, the results demonstrate that the high level of administrative friction is a direct consequence of the gap between these evolving regulatory requirements and the capabilities of existing technical systems.

## 6 Discussion

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*This chapter places the empirical results in relation to the theoretical framework and previous research to answer the study's aim. The discussion is structured into four main sections. First section interprets the underlying drivers of the models, the second section evaluates the trade-offs between efficiency and transparency, the third discusses the key hindrances. Finally, the fourth addresses the choices of the study.*

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### 6.1 The National Administrative Models

The mapping of the administrative processes in Sweden, Norway, and Finland reveals that while these nations share a similar operational baseline, their actual workflows (*RQ1*) have diverged into three distinct models. These differences are not merely procedural; they are fundamentally shaped by the specific institutional frameworks; regulative, normative, and cultural-cognitive of each country (*RQ3*).

The most significant finding regarding regulative forces is the impact of the state's role in the workflow. In Sweden, the shift toward a supervision model under the Environmental Code (*Miljöbalken*) has altered the administrative landscape. Unlike the more linear systems of Norway and Finland, the Swedish workflow is defined by a division between the theoretical and practical flow characterized by significant friction when aligning harvest notifications with nature value assessments and detailed planning.

As noted in the results, this shift away from the forestry act places the “*burden of proof*” on the operator, leading to the necessity of defensive documentation to prove due diligence. Nebasifu et al. (2025) describe Sweden's forest governance as maintaining a strong state role and regulatory emphasis compared to its Nordic neighbours, while also noting increased polarization and conflicts between economic and environmental interests.

In contrast, Norway's model prioritizes efficiency through delegation. The absence of a general pre-harvest state notification allows for a linear process, reducing the “*administrative friction*” that characterizes the Swedish system. This supports the observation by Lindstad (2002) that Norwegian forestry governance has historically favoured local decision-making over centralized control.

Interestingly, the normative drivers (certifications) act as a harmonizing force across the region, yet the study shows that this normative alignment often collides with divergent national regulative frameworks. In Finland, the “*active loopback*” of the Forest Use Declaration effectively integrates these demands into a unified data exchange. In Sweden, however, the “*dual timeline*” of the Harvest Notification and the Nature Value Assessment create a suboptimal workflow order.

The Finnish practice of “*Data-Driven Triage*” represents a significant efficiency gain, allowing the sector to carry an increasing administrative load without necessarily increasing headcount. It aligns with Palander et al. (2024), who suggest that the transition from isolated “*information silos*” to interoperable digital ecosystems is the primary driver for future supply chain efficiency. While Finnish bureaucracy remains “*enormous*” due to multi-agency reviews, the integrated nature of the digital workflow provides a level of predictability and a “*single source of truth*” that is currently missing in the more fragmented Swedish system.

## 6.2 The Efficiency-Transparency Trade-off

The choice of administrative model creates a distinct trade-off between operational speed and external visibility.

Norway's system is characterized by high operational speed enabled by institutionalized trust. Because the system relies on the assumption that certified actors are compliant, operations can commence almost immediately. This model reduces administrative lead times but relies heavily on the integrity of internal gatekeeper mechanisms like the *MiS* and the documentation of environmental values *Miljøsjekk*. While efficient, this low transparency model may face challenges as external demands for visibility increase, a trend noted by global supply chain scholars Carter and Rogers (2008). This thrust that enable the Norwegian model might not be viable in the future.

Conversely, Sweden's model prioritizes transparency through the public nature of the harvest notification. While this theoretically enhances democratic oversight, the results suggest it creates a transparency dilemma. The openness allows for external scrutiny and appeals, leading to what respondents described as a "messy" and "unpredictable system". This finding put another layer on the critique by Modd and Pahleteg (2025) who identified administration and bad IT systems as major time thieves in Swedish forestry. The study suggests that transparency without clear boundaries can become a source of conflict rather than legitimacy.

A potential resolution to this trade-off is identified in the Finnish practice of data driven and integrated systems, which represents a significant efficiency gain. By leveraging high resolution national forest data and regulatory loopbacks, the Finnish system allows for high regulatory visibility while maintaining the operational speed required for a competitive bioeconomy. This feedback and data integration approach suggests that to move from bureaucracy to efficiency, transparency must be integrated into automated digital ecosystems. By utilizing such systems can the industry prove its trustworthiness through traceability and transparency while protecting the efficiency necessary for the bioeconomy transition.

## 6.3 The Administrative Burden and Future Efficiency

The "*clash between the practitioner and the theoretician*" identified in this study represents a critical bottleneck for the bioeconomy. A primary cause of this burden is the ambiguity of legal and certification requirements. Janne Yrjönen (Stora Enso) noted that field staff often find it difficult to distinguish between mandatory laws and voluntary recommendations. This lack of clarity was echoed across the sector and forces organizations into a practice of risk-averse over-compliance, generating unnecessary paperwork to defend against potential liability. To conceptualize this, the analysis employs three analogies derived from the empirical data: The Airplane (representing the administrative burden and the systems caring the load), the Airport (representing the process friction in workflows) and the Suitcase (representing the potential with standardisation).

### *The Airplane Analogy*

To conceptualize the cumulative weight of the administrative load, one can view the forestry organization as an airplane (Figure 18). In this analogy, the lift represents the sector's operational efficiency, the power required to remain viable and competitive. The thrust is

provided by market demand and the societal push for sustainable materials, driving the aircraft forward.



Figure 18. Illustration of the Airplane Analogy (Image generated by AI based on the study's empirical findings).

However, the Institutional Drivers, specifically new regulations like the EUDR and increasing certification requirements, act as an ever-growing cargo or *administrative load*. While the airplane is built for operational speed, this accumulating cargo threatens to overload the vessel. The study indicates that without streamlining and improving these systems, the sector risks "*drowning in bureaucracy*," a concern explicitly raised by some respondents. In this scenario, the sheer weight of compliance could slow the sector to a halt, not letting it fly.

#### *The Airport Analogy*

While the airplane illustrates the *administrative load*, the Airport Analogy borrowed from a respondent (Figure 19) explains the structural inefficiency of the *workflow* itself. The goal of wood procurement, as a sully chain, is to get the passenger (the wood) to its destination safely and on time.

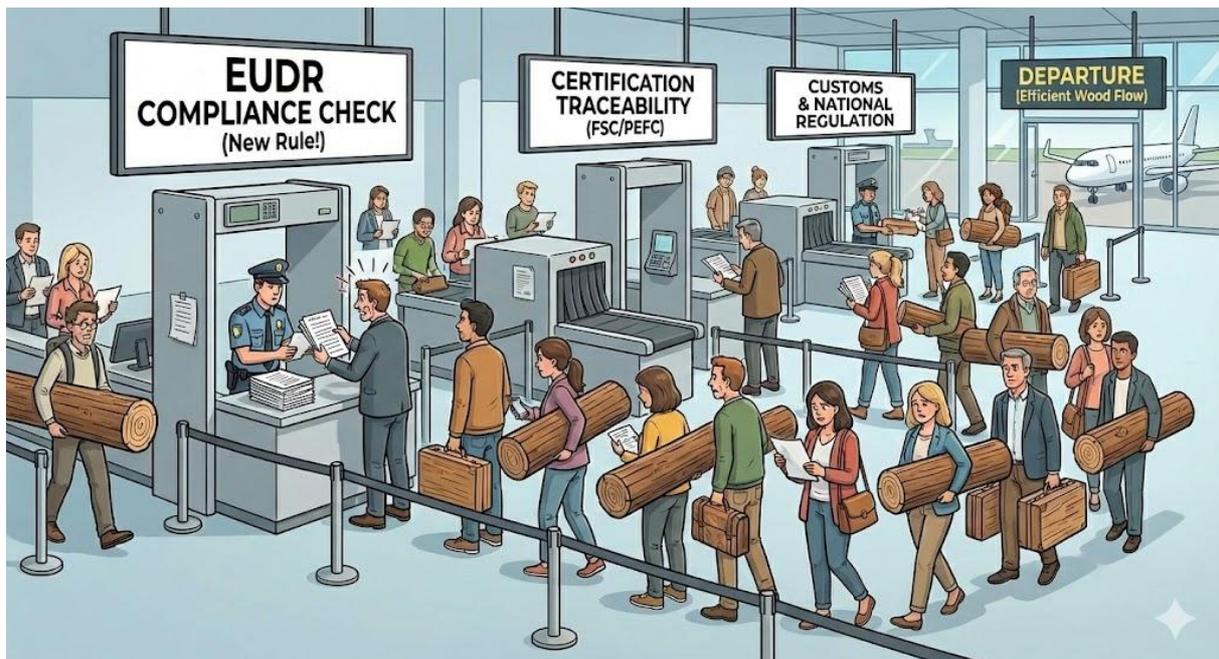


Figure 19. Illustration of the Airport Analogy, (Image generated by AI based on the study's empirical findings).

However, the Institutional Drivers act as the security rules and customs laws that require documentation (traceability). The challenges arise because every time a new "safety rule" is introduced, such as the EUDR, it is implemented as a new, disconnected checkpoint rather than updating the central system. This fragmentation turns a seamless process into an ordeal of delays and stress. This illustration highlights why the "Airplane" is at risk of stalling. The *administrative burden* is not just the weight of the regulations, but the *friction* caused by how they are handled.

A primary example of this friction is the Separation of the Wood Buyer and Planner roles. While this separation acts as a vital security check to "separate the incentives" and ensure quality, it functions as a mandatory handover point. This "internal checkpoint" necessitates explicit documentation to transfer knowledge, essentially adding a middleman to the security line. This explains the structural dilemma: decoupling commercial incentives strengthens the "gatekeeper" function but inevitably slows the flow of the "passenger."

### *The Suitcase Analogy*

Furthermore, the study identifies Standardization as the primary path to efficiency. As mentioned by respondents, the industry needs to agree on common "Suitcases" (unified data formats) to replace the current reliance on "Garbage Bags" (messy, proprietary formats) Figure 20. Currently, valuable administrative time is lost arguing over the format of the container-systems that cannot easily transfer data between actors.



Figure 20. Illustration of the Suitcase Analogy (Image generated by AI based on the study's empirical findings).

Every time data moves between a buyer, a planner, or an authority, it must be "*repacked*." Standardization offers a path to efficiency by replacing these garbage bags with "*Suitcases*" (unified data formats). By establishing industry-wide protocols, actors can stop focusing on the container (IT quirks) and instead focus on the content (the actual forestry data). This empirical finding aligns with Palander et al. (2024), who argue that the future of efficient forest supply chains lies in interoperable digital ecosystems rather than isolated, proprietary systems.

### 6.3.1 Efficiency and Compliance

The study suggests that the industry is currently navigating a fundamental tension between operational efficiency and the increasing demands of legal compliance. To maintain its license to operate while keeping the operational efficiency these three analogies suggest that: Improved systems (Airplane), smart workflows (Airport security) with high levels of standardization (Suitcases) systems are the good practices that allows for:

- Verifiable data: Enhancing transparency and traceability so that data can be audited and trusted by society.
- Professional dogmatism<sup>1</sup>: Ensuring the digital workflow efficiently matches the administrative tasks.
- Standardisation: Reducing manual "*unpacking*" so that professionals can focus on the content rather than the format.

In conclusion, for forestry to remain an effective part of the circular bioeconomy, the digital infrastructure must coevolve with the demands of both efficiency and compliance. The path forward lies in the combination of resilient systems to carry the load, optimized workflows to

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<sup>1</sup> Ensuring that digital workflows match the professional logic and daily routines of forestry experts. Instead of forcing the "practitioner" to adapt to a rigid IT system, technology should be tailored to the actual needs of the administrative task. The goal is for the digital flow to support the work, rather than adding to the administrative burden.

manage the process, and standardized protocols to ensure the data itself is a tool for collaboration rather than a source of friction.

## 6.4 Method and Theoretical Reflection

This study provides a qualitative, comparative snapshot of administrative workflows across the Nordics. While the findings offer analytical depth, the purposive selection of 14 respondents means the results are not statistically representative of all actors in the region.

### *Methodological Choices and Quality*

The qualitative approach was chosen to capture the "*administrative reality*" and psychosocial factors, such as staff well-being, which quantitative models often miss. The pilot interview was a critical turning point; it showed that definitions of "*administrative time*" were too inconsistent to measure accurately. Consequently, quantitative metrics were excluded to prioritize data validity and avoid misleading comparisons. To strengthen credibility, a "*member check*" was performed, where respondents validated the summaries of their own workflows.

### *Bias and Sources of Error*

Reflexive awareness is central to the study's confirmability. As a student at a Swedish university, my existing familiarity with the Swedish system likely influenced the analysis of "*defensive documentation*" more than the other models. Furthermore, while Scandinavian languages overlap, technical nuances in Finnish and Norwegian forestry terminology remain a potential source of minor interpretative error.

### *Theoretical Application*

The analysis followed an integrated framework combining Business Process Management (BPM), Supply Chain Visibility (SCV), and Scott's Three Pillars (STP).

This comprehensive lens was necessary because process, information flow, and institutional pressure are deeply connected and co-produced. By treating these as an interconnected system, the study avoids the common pitfall of viewing technology and social practice as separate domains. The study intentionally focused on the day-to-day administrative experience rather than technical software architecture.

While specific to forestry, the findings regarding the clash between digital workflows and professional routines may offer insights for other sectors undergoing a transition to a circular bioeconomy.

## 7 Conclusions

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*This chapter presents the conclusions of the study, structured to address the research aim and the four research questions posed in the introduction. The chapter begins by summarizing the administrative models and the institutional drivers behind them. It then identifies the key challenges and good practices before concluding with the study's theoretical contribution and suggestions for future research.*

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The aim of the study was to compare the administrative workflows in wood procurement in Sweden, Norway, and Finland. This involved identifying similarities and differences in workflow and documentation practices (RQ1 and RQ2), explaining the institutional logic behind these variations (RQ3), and identifying hindrances and notable good practices (RQ4).

### 7.1 The Nordics Administrative Models

The comparative analysis identifies that while Sweden, Norway, and Finland share a similar operational baseline from initiation to harvesting, their primary administrative differences lie in the presence, timing, and sequence of steps and their different *gatekeeper* mechanisms.

Norway operates on an *Internal Trust Model* where the workflow is streamlined and linear, distinguished by the absence of a general pre-harvest state notification. The gatekeeper is the internal verification of the *Miljøregistrering* (MiS). Documentation such as the “*Miljøsjekk*” functions primarily as *traceability*, providing retrospective proof of due diligence rather than serving as a prerequisite for state permission. This results in high operational speed but low external *transparency*.

Sweden operates on a *Public Transparency Model* where the workflow is structurally defined by the mandatory Harvest Notification (*Avverkningsanmälan*), which creates a six-week stop check. This necessitates a *transparency-first* approach, where the public disclosure of harvest plans sometimes places the Nature Value Assessment (*Naturvärdesbedömning*) and detailed planning to occur parallel to the waiting period. While this system maximizes external *transparency*, it creates the highest administrative friction among the three nations.

Finland operates on a *Digital Integration Model* based on active regulatory exchange. The *Forest Use Declaration* (FUD) triggers a loopback where authorities return “*binding instructions*”. Unlike the passive Swedish model, Finnish documentation aims to create a single source of truth by integrating authority data directly into the harvest plan, prioritizing regulatory efficiency and data exchange while also providing some public *transparency*. Because authorities provide specific constraints, the State and the Forestry Company share the responsibility.

### 7.2 The Institutional Logic: Why Systems Differ

The study concludes that these administrative differences are not random but are shaped by distinct institutional pressures.

Formal rules and sanctioning systems act as the primary differentiator in the administrative workflow. The shift in Swedish governance toward supervision under the Environmental Code places the “*burden of proof*” on the operator, necessitating “*defensive documentation*” to

prove compliance. In contrast, Norwegian governance relies on decentralized trust, while Finland utilizes legislation to mandate a digital data exchange between the state and the sector.

Second, Normative Pressure plays a critical role in market access. The ability to sell timber is highly dependent on certification schemes like PEFC and FSC. These standards enforce specific documentation demands that often exceed national law, such as the requirement for site-specific nature value assessments, exemplified by the Swedish *Naturvärdesbedömning* or the Norwegian *Miljøregistrering i skog*.

Finally, Cultural-Cognitive Pressure drives the internal volume of administration. The study found that the overwhelming need for documentation is often internally driven by a culture of risk minimization. Organizations produce defensive documentation to demonstrate that "*we have thought before*" acting, serving as a safeguard against potential legal trouble or public criticism.

### 7.3 From Bureaucracy to Efficiency

The primary hindrance identified across all three regions is the escalating administrative workload, described by one respondent as a "*clash between the practitioner and the theoretician*". While this specific sentiment was articulated in Sweden, the underlying cause is universal: the complexity of external requirements (driven by high-level policies like the EUDR and certification standards) has outpaced the capabilities of current IT systems. Forcing field staff to spend disproportionate time on manual data entry rather than forestry. This burden is further intensified by the "*uncertainty praxis*" caused by ambiguous legal texts. When laws leave "*room for interpretation*", organizations often default to *risk-averse* over-compliance, generating unnecessary paperwork to defend against potential liability.

To mitigate these challenges, the study identified standardization and better systems as the most critical technical good practice. Utilizing the "*Suitcase*" analogy, respondents argued that the industry must agree on a common data format and data exchange. Currently, efficiency is lost because of inefficient data exchange. A unified *standard* would allow the sector to focus on the content of the document rather than the format of the file.

Organizationally, the separation of the "*Planner*" (compliance focus) from the "*Wood Buyer*" (economic focus) was highlighted as a strong quality assurance mechanism. By "*separating the incentives*", companies ensure that nature values are not compromised by the pressure to close a deal. However, the study notes this is a trade-off: while it increases compliance reliability (acting as an internal gatekeeper), it introduces additional middlemen and requires handover protocols to prevent information loss. Finally, the Finnish practice of "*Data-Driven Triage*" represents an efficiency gain. By leveraging national forest data and "*Regulatory Loopbacks*", planners can perform desktop risk assessments, effectively prioritizing field visits for complex sites while streamlining the workflow for low-risk operations.

### 7.4 Contributions and Future Research

This study contributes to the field of forest governance by bridging the gap between high-level policy and operational reality. By providing a comparative, micro-level analysis of administrative workflows, it demonstrates that the Operational Process (BPM) and

Information Flow (SCV) are structured by the Institutional Context. Specifically, it reveals how differing national approaches to transparency and control result in distinct levels of conflict and efficiency.

Beyond the theoretical contribution, the study offers a practical "*System Perspective*" for the Nordic forestry sector. By mapping the Norwegian (Internal Trust), Swedish (Public Transparency), and Finnish (Digital Integration) models' side-by-side, the thesis exposes the inherent trade-offs of each system. It moves the industry dialogue from a general complaint about "*bureaucracy*" to a strategic choice about governance design.

Currently, actors often drift into these systems by default. This study provides the empirical baseline required to make conscious decisions about "*what system we want*" and to understand the operational consequences of those choices.

### *Future Research*

The long-term success of the Nordic forestry sectors depends on designing administrative systems that demonstrate trust through *traceability* and *transparency*, while remaining *efficient* enough to being part of a competitive circular bioeconomy. To achieve this balance, future research should focus on four key areas:

- *Operational Optimization*: A deeper investigation into the specific administrative steps identified in this study to further isolate where efficiency can be gained without compromising legal compliance.
- *Digital Ecosystems*: Quantitative studies to compare the cost-efficiency of different IT infrastructures and the impact of industry-wide data standardization (the "Suitcase" approach).
- *Uncertainty Praxis*: Research into how vague regulatory requirements drive risk-averse over-compliance, and how clearer legal frameworks could reduce this administrative friction.
- *Longitudinal Impact*: Studies tracking how the implementation of new EU directives, particularly the EUDR, will reshape national workflows and regional competitiveness over time.

## References

- Bäckman, C. (2025). *A traceable future – Opportunities and challenges in the Swedish forest industry in the context of EU requirements*. (Second cycle, A2E). Swedish University of Agricultural Sciences (SLU). <https://stud.epsilon.slu.se/21436/> [Accessed 2025-12-04]
- Barratt, M. & Oke, A. (2007). Antecedents of supply chain visibility in retail supply chains: A resource-based theory perspective. *Journal of Operations Management*, 25 (6), 1217–1233. <https://doi.org/10.1016/j.jom.2007.01.003>
- Braun, V. & Clarke, V. (2022). *Thematic analysis: a practical guide*. SAGE.
- Brinkmann, S. & Kvale, S. (2015). *InterViews: learning the craft of qualitative research interviewing*. Third edition. Sage.
- Bryman, A., Bell, E., Reck, J. & Fields, J. (2016). *Social research methods*. Oxford University Press.
- Carter, C.R. & Rogers, D.S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International Journal of Physical Distribution & Logistics Management*, 38 (5), 360–387. <https://doi.org/10.1108/09600030810882816>
- Creswell, J.W. & Poth, C.N. (2023). *Qualitative inquiry & research design: choosing among five approaches*. Fifth edition. Sage.
- Dumas, M., La Rosa, M., Mendling, J. & Reijers, H.A. (2013). *Fundamentals of Business Process Management*. Springer Berlin Heidelberg. <https://doi.org/10.1007/978-3-642-33143-5>
- Elbakidze, M., Dawson, L., McDermott, C.L., Teitelbaum, S. & Tysiachniouk, M. (2022). Biodiversity conservation through forest certification: key factors shaping national Forest Stewardship Council (FSC) standard-development processes in Canada, Sweden, and Russia. *Ecology and Society*, 27 (1). <https://doi.org/10.5751/ES-12778-270109>
- EPCEU (2018). *Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (Text with EEA relevance)*. OJ L. <http://data.europa.eu/eli/reg/2018/841/oj> [2025-12-04]
- EPCEU (2023). *Regulation (EU) 2023/1115 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation*. OJ L. <http://data.europa.eu/eli/reg/2023/1115/oj> [Accessed 2025-12-04]
- Eriksson, P., Roos, A. & Mark-Herbert, C. (2023). The role of harvester measurement in the wood supply chain. *International Journal of Forest Engineering*, 34 (2), 216–228. <https://doi.org/10.1080/14942119.2022.2123668>
- Esseen, P.-A., Ehnström, B., Ericson, L. & Sjöberg, K. (1992). Boreal Forests—The Focal Habitats of Fennoscandia. In: Hansson, L. (ed.) *Ecological Principles of Nature Conservation: Application in Temperate and Boreal Environments*. Springer US. 252–325. [https://doi.org/10.1007/978-1-4615-3524-9\\_7](https://doi.org/10.1007/978-1-4615-3524-9_7)
- European Commission (2019). *The European Green Deal (COM(2019) 640)*. (COM(2019) 640). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640> [Accessed 2025-12-04]
- European Commission (2025). *EU Bioeconomy Strategy*. [https://environment.ec.europa.eu/publications/bioeconomy-strategy\\_en](https://environment.ec.europa.eu/publications/bioeconomy-strategy_en) [Accessed 2025-12-04]
- Forest Act 1093/1996* (1996). *Statute Book of Finland*. <https://www.finlex.fi/en/legislation/translations/1996/eng/1093> [Accessed 2025-12-04]
- Freeman, R.E. (2010). *Strategic Management: A Stakeholder Approach*. 1. ed Cambridge University Press. <https://doi.org/10.1017/CBO9781139192675>
- Garcia-Torres, S., Albareda, L., Rey-Garcia, M. & Seuring, S. (2019). Traceability for sustainability – literature review and conceptual framework. *Supply Chain*

- Management: An International Journal*, 24 (1), 85–106. <https://doi.org/10.1108/SCM-04-2018-0152>
- Garg, A. (2025). *Tracing timber and testing governance: Exploring the gaps between Sweden's domestic forest policy and the EU deforestation regulation*. Chalmers. <http://hdl.handle.net/20.500.12380/310434> [Accessed 2025-12-19]
- Helstad, K. (2006). *Managing timber procurement in Nordic purchasing sawmills*. Växjö University Press.
- Hultman, H., Woxblom, L. & Nordström, M. (2024). Digitaliserad arbetsvardag i skogsbruket – en intervjustudie med virkesköpare och skogsinspektorer. *SkogForsk*,. [https://www.skogforsk.se/contentassets/fc41f1ed2c6a407b8c4594689dcb0a15/1210-2024-digitaliserad-arbetsvardag\\_240913.pdf](https://www.skogforsk.se/contentassets/fc41f1ed2c6a407b8c4594689dcb0a15/1210-2024-digitaliserad-arbetsvardag_240913.pdf) Accessed [2025-12-04]
- Johansson, M. (2023). Balancing the flow of wood and use of machinery in harvesting operations. *Acta Universitatis Agriculturae Sueciae*, (2023:29). <https://doi.org/10.54612/a.7jes1k1k1khm>
- Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Nachdr. Sage.
- Lindstad, B. Hauger. (2002). *A comparative study of forestry in Finland, Norway, Sweden, and the United States, with special emphasis on policy measures for nonindustrial private forests in Norway and the United States*. (PNW-GTR-538). U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. <https://doi.org/10.2737/PNW-GTR-538>
- Modd, R. & Pahleleg, T. (2025). *Kartläggning av virkesköpares arbetsflöde inom Holmen, Region Mitt : En enkätstudie om virkesköpare inom Holmen, Region Mitt*. <https://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-139883> [Accessed 2025-12-04]
- Natural Resources Institute Finland (Luke) (2025). *Statistics – Forestry. Natural Resources Institute Finland*. <https://www.luke.fi/en/statistics/forest-resources/forest-resources-by-region-8> [Accessed 2025-12-04]
- Nebasifu, A.A., D'Amato, D., Ekström, H., Pietarinen, N., Fridén, A., Harrinkari, T., Iliev, B., Brownell, H., May, W., Brockhaus, M., Thomsen, M. & Droste, N. (2025). Comparing Nordic forest governance: Key informant perspectives. *Forest Policy and Economics*, 170, 103368. <https://doi.org/10.1016/j.forpol.2024.103368>
- Nordic Forest Research (2021). *Nordic Forest Statistics 2020: Resources, industry, trade, conservation and climate*. <https://nordicforestresearch.org/wp-content/uploads/2021/03/Nordisk-skogsstatistik.pdf> [Accessed 2025-12-04]
- Orlikowski, W.J. & Iacono, C.S. (2001). Research Commentary: Desperately Seeking the “IT” in IT Research—A Call to Theorizing the IT Artifact. *Information Systems Research*, 12 (2), 121–134. <https://doi.org/10.1287/isre.12.2.121.9700>
- Palander, T., Tokola, T., Borz, S.A. & Rauch, P. (2024). Forest Supply Chains During Digitalization: Current Implementations and Prospects in Near Future. *Current Forestry Reports*, 10 (3), 223–238. <https://doi.org/10.1007/s40725-024-00218-4>
- Patton, M.Q. (2015). *Qualitative research & evaluation methods: integrating theory and practice*. Fourth edition. SAGE.
- Saunders, M., Thornhill, A. & Lewis, P. (2019). *Research methods for business students*. Eighth Edition. Pearson.
- Scott, W.R. (2014). *Institutions and organizations: ideas, interests and identities*. Fourth edition. Sage.
- Skogbrukslova (2005). *Lov om skogbruk (LOV-2005-05-27-31)*. LOV-2005-05-27-31. Lovdata. <https://www.regjeringen.no/en/documents/Act-relating-to-forestry-Forestry-Act/id87139/> [Accessed 2025-12-05]
- Skogsvårds lag (1979). *Skogsvårds lag (SFS 1979:429)*. SFS 1979:429. Sveriges riksdag. [https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/skogsvardslag-1979429\\_sfs-1979-429/](https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/skogsvardslag-1979429_sfs-1979-429/)
- Statistics Norway (2025). *Landsskogtakseringen – Official forest statistics of Norway, 2024*. Statistisk sentralbyrå. <https://www.ssb.no/en/jord-skog-jakt-og-fiskeri/skogbruk/statistikk/landsskogtakseringen>
- Swedish Forest Agency (2025). Skogsstyrelsens statistikdatabas. <https://pxweb.skogsstyrelsen.se/pxweb/en/Skogsstyrelsens%20statistikdatabas/?rxid=03eb67a3-87d7-486d-acce-92fc8082735d>

- Yin, R.K. (2018). *Case study research and applications: design and methods*. Sixth edition. SAGE.
- Yrjölä, T. (2002). *Forest Management Guidelines and Practices in Finland, Sweden and Norway*. (Internal Report No. 11). European Forest Institute.  
[https://efi.int/sites/default/files/files/publication-bank/2018/ir\\_11.pdf](https://efi.int/sites/default/files/files/publication-bank/2018/ir_11.pdf)

# Appendix 1 Thesis Framework

| <b>Theory / Section</b>                   | <b>Research Question</b>  | <b>Primary Interview Question</b>  |
|---|---|--|
| <b>Intro</b>                              | <i>Context</i>  | How long have you worked in your current role, and what are your main responsibilities?  |
| <b><u>Business Process Management</u></b> | <i><b>RQ1:</b> What are the key administrative workflows in wood procurement?</i> | Can you walk me through the main administrative steps, from the first contact with a forest owner to an approved harvest notification? |
| <b><u>Supply Chain Visibility</u></b>     | <i><b>RQ2:</b> How is information processed throughout these workflows?</i>       | What are the key pieces of information and documentation that need to be in place before a harvest can begin?                          |
| <b><u>Institutional Theory</u></b>        | <i><b>RQ3:</b> Why do these practices differ?</i>                                 | Why are these steps done in this particular way?   |
| <b>Evaluation</b>                         | <i><b>RQ4:</b> What are the hindrances and notable good practices?</i>            | What are the biggest administrative challenges or hindrances in this process?  |
| <b>Closing</b>                            | <i>Misc.</i>  | Is there anything else you think is important for me to know?  |

# Appendix 2 Interview Guide

## Interview guide English 2025-10-31

### Introduction

- How long have you worked in your current role and what are your main work tasks?

### The Administrative Workflow (RQ1)

- Can you describe the most important administrative steps, in order, from the very first contact with a forest owner until everything is ready for the harvest to begin?
  - How does the first contact usually happen? What happens next?
  - Do you do different things depending on whether it is delivery wood or a stumpage sale?

### Information & Documentation (RQ2)

- What information and which documents must be in place before a harvest can start?
- How is that information saved?
- Who has access to the information?
- Examples: contract, nature value assessment, consultation, harvest notification.
- Do you create harvest instructions that are linked to the harvest notification?

### Reasons & Drivers (RQ3)

- Why are these specific steps and documents necessary?
- Is it because of a law, certification, or the company's own routines?
- When you perform a certain step, can you determine if it is primarily due to a law, a certification rule, or the company's own internal process?
- Example: The Forestry Act requires a harvest notification for regeneration felling (>0.5 ha).

### Evaluation (RQ4)

- What are the biggest challenges in the administrative work?
- Is there anything that works particularly well?
- What could make the process smoother?

### Closing

- Is there anything else you think is important for me to know?

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