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Global forest governance through the Plantationocene lens

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Academic dissertation

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ABSTRACT

Global forest governance today faces intensifying demands at multiple scales. In this doctoral dissertation I aim to answer the question: Why do forest governance interventions fail to produce transformational change in the forest sector despite ambitious commitments, extensive knowledge, and new policy instruments? I engage with critical institutionalism, discourse theory and the Plantationocene lens, and apply a qualitative research approach, to demonstrate how sustainable forest use is framed across forest arenas in the European Union, Southeast Asia, and the Congo Basin, yet often in ways that legitimise continuity rather than transformation. I argue that plantation logic delays change in forest governance and stabilises and expands business as usual practices.

I study this topic in diverse political, environmental, and socio-economic contexts. I first review literature of forest frontiers in the Congo Basin, to understand how forests are framed historically and today in the scientific literature. I then analyse through a discourse analysis, how climate and environmental ambitions are politically delayed in the Global North, using the adoption of EU Forest Strategy 2030 in Finland as a case study. Subsequently, I analyse how the globally spreading plantation ideal unfolds in a local landscape, using an industrial tree plantation in Sabah, Malaysia as a case study. Finally, I study the potential of climate finance to transform forest use, by using REDD+ in the province of Mai-Ndombe, in the Democratic Republic of Congo as a case study.

I find that colonial scientific framings underlie the contemporary forest policy initiatives that privilege large-scale, industrial, export-oriented forest uses. This legitimises land privatisation and dispossession, public-private control over forests, and marginalises alternative land uses. The embedded path dependencies and priorities reproduce persistent policy–practice gaps, dominant discursive framings shape political resistance to environmental ambitions and legitimise solutions that reproduce inequality and environmental degradation.

Keywords: forest policy; industrial tree plantation; climate finance; discourse; critical institutionalism

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"*You are going to be more than okay! You should be excited!*"
Anonymous

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18.6.2026, Helsinki

Niina Pietarinen

LIST OF ORIGINAL ARTICLES

This thesis is based on data presented in the following articles, referred to by the Roman Numerals I-IV. Articles I, II, and IV are reprinted with the kind permission from the publishers, while Article III is the author's version of the submitted manuscript.

I Wong G, Holm M, **Pietarinen N**, Ville A, Brockhaus M (2022) The making of resource frontier spaces in the Congo Basin and Southeast Asia: A critical analysis of narratives, actors and drivers in the scientific literature. World Development Perspectives, 27. https://doi.org/10.1016/j.wdp.2022.100451

II **Pietarinen N**, Pecurul-Botines M, Brockhaus M (2025) Politics of delay hinder the implementation of EU Forest Strategy in Finland, Ambio, 54. https://doi.org/10.1007/s13280-025-02207-8

III **Pietarinen N**, Wong G, Brockhaus M, Metaragakusuma AP, Stephen J. Unequal benefits and burdens: Analysis of discourses and finance around industrial tree plantations in the Global South. Manuscript.

IV Koh N, **Pietarinen N**, Ville A, Kengoum F, Wong G, Brockhaus M (2025) Follow the money: Can REDD+ finance compete with established and emerging land investments in Mai-Ndombe, Democratic Republic of Congo? Forest Policy and Economics, 181. https://doi.org/10.1016/j.forpol.2025.103664

Authors' contributions

I: Conceptualised by Grace Wong and Maria Brockhaus, who also developed the methodology, and led the analysis and writing. Niina Pietarinen reviewed the English literature in Congo Basin, Alizée Ville reviewed French literature in Congo Basin, and Minda Holm reviewed English literature in Southeast Asia.

II: Niina Pietarinen designed the research with support from Mireia Pecurul-Botines and Maria Brockhaus. Niina Pietarinen conducted investigation, formal analysis, and wrote the original draft. Niina Pietarinen, Mireia Pecurul-Botines and Maria Brockhaus collaboratively reviewed and edited the manuscript.

III: Conceptualised by Niina Pietarinen, with support from Grace Wong and Maria Brockhaus. Niina Pietarinen developed the methodology, carried out investigation and formal analysis and wrote the original draft. Niina Pietarinen, Grace Wong, Maria Brockhaus, Andi Patiware Metaragakusuma and Jeannet Stephen reviewed and edited the manuscript.

IV: Niina Pietarinen, Grace Wong and Maria Brockhaus conceptualised the research. Niina Pietarinen and Niak Sian Koh developed the methodology with support from Grace Wong and Maria Brockhaus, and did the investigation, formal analysis and data curation. Niina Pietarinen, Niak Sian Koh, Grace Wong and Maria Brockhaus wrote the original draft and reviewed and edited the manuscript with support from Alizée Ville and Félicien Kengoum, who also contributed to investigation and data curation.

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ABBREVIATIONS

BAU	Business as usual
DRC	Democratic Republic of Congo
DRC-MECNT	DRC Ministry of Environment, Conservation of Nature and Tourism
ERP	Emissions Reduction Programme
EU	European Union
EUFS	the New EU Forest Strategy for 2030
FAO	Food and Agricultural Organization
FCPF	Forest Carbon Partnership Facility
FSC	Forest Stewardship Council
GDP	Gross domestic product
IMF	International Monetary Fund
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPLC	Indigenous Peoples and Local Communities
ITP	Industrial tree plantation
MS	Member State
NGO	Non-Governmental Organisation
PEFC	Programme for the Endorsement of Forest Certification
PRI	Principles for Responsible Investment
REDD+	Reducing Emissions from Deforestation and forest Degradation
SAFODA	Sabah Forestry Development Authority
SDG	Sustainable Development Goals
TLAS	Timber Legality Assurance System
WTO	World Trade Organization
WWF	World Wildlife Fund

1 INTRODUCTION

The consumption of natural resources is on an unsustainable level, with climate change, biodiversity loss, and deforestation intensifying at alarming rates (Chan et al. 2020). Forests' role in solving the above issues is central – forests are positioned as carbon sinks, biodiversity reservoirs, and providers of substitutes for fossil fuels. At the same time, forests generate major economic profits to a wide range of businesses and provide livelihoods to local communities. Forests have thus garnered vast political attention globally and international forest governance has developed from addressing primarily the global deforestation, to becoming a means to tackle climate change and biodiversity loss (Kleinschmit et al. 2024). In recent years, a variety of new policy processes, actors and instruments have entered the forest governance arena to address the current challenges. For example, the Sustainable Development Goals (SDGs) aim at completely stopping deforestation, and the New York Declaration on Forests aims to reduce tropical deforestation by half. Industrial tree plantations (ITPs) are legitimised as a solution to the above issues, despite the growing evidence of negative outcomes, ranging from replacing diverse landscapes from small-scale farming to large scale monocultures (Malkamäki et al. 2018; Holl and Brancalion 2020; Wolford et al. 2024). Specifically, the expansion of agriculture and plantation forestry linked to international trade, are identified as key direct drivers of tropical deforestation (Pendrill et al. 2019a). While the earlier literature on large-scale land use mostly focuses on food production (Kröger 2014), this dissertation examines the development of ITPs (stands consisting of introduced, fast growing species) and planted forests (stands consisting of reforestation with native species) that produce timber, pulp, and biomass (Kanninen 2010). While timber is still primarily extracted from natural and planted forests, the share of ITPs is increasing globally (Paquette and Messier 2009; Kröger 2014). The area of primary and naturally regenerating forests has declined annually, whereas ITP area has expanded since the 1990s (FAO 2025).

To address the problems of climate change, biodiversity loss, and deforestation, scholars such as Geist and Lambin (2003), Humphreys (2006), and Pendrill et al. (2019a) call for attention beyond the direct drivers of land use change; the processes that directly change (forested) landscapes, such as agricultural and urban expansion, invasive species, logging, and mining. Indirect or underlying drivers are often structural drivers such as institutions (formal and informal), norms, values, rules, governance systems, sociocultural factors, and economic and technological factors (Chan et al. 2020, 695). Focusing on these underlying drivers allows for a more systemic understanding of land-use change, uncovering how policy frameworks, market incentives, and national or societal priorities create conditions that enable or delay sustainable practices. The analysis of such broader structural dynamics allows for designing interventions that do not only address the symptoms but also the root causes of environmental degradation and inequality. For example, in the case of inefficient climate action in Sweden, Marquardt and Nasiritousi (2022, 624), argue that "*To explain the motivation for change, or the lack thereof, we should elaborate more on the political conditions surrounding climate solutions and shift our attention to the different norms and world views attached to climate action*".

A starting point of this research is the definition of sustainable development as defined in the 1987 Brundtland report: "*Meeting the needs of the present without compromising the ability of future generations to meet their own needs*" (World Commission on Environment and Development 1987). This definition recognises the need for equitable and

environmentally and socially responsible practices. However, rather than responding to ecological or conservation concerns, forests are often defined and governed to serve or legitimise political and economic interests (Kröger 2014). Peluso and Vandergeest (2001) introduced the concept of political forests to illustrate how forests are not just ecological entities but are socially and politically constructed spaces shaped through institutionalised power. The current forest use paradigms often perpetuate business as usual (BAU), which is argued to be inherently unsustainable and unjust due to its tendency to reinforce existing power structures that favour large-scale business interests (Brockhaus et al. 2021). In the context of this dissertation, BAU refers to actions that directly or indirectly support deforestation and forest degradation, including policies that maintain the status quo (Brockhaus et al. 2014). Following Brockhaus et al. (2014), BAU can also mean inaction and avoidance, when policy processes or discursive practices refer to a problem without confronting the root causes directly. In contrast, transformational change, which includes shifts in power relations, discursive practices, and incentive structures that lead away from unsustainable and unjust exploitation of forests is necessary for achieving equitable forest governance (Brockhaus and Angelsen 2012). This would include a fundamental redistribution of power, authority and resource flows within institutions and policy frameworks (Brockhaus et al. 2021). It aligns with Galaz's (2022) argument that transformations require significant shifts in how power and resources exist and flow within social systems. Arts and Buizer (2009) argue that one of the structural constraints for transformational change is path dependency, a process where historical decisions constrain future options. In other words, "*history delineates the path we can follow today*" (Arts and Buizer 2009, 343). Path dependency highlights the challenges posed by institutional stickiness, often rooted in colonial land laws and in well-established power structures that limit change. While recognising those structural constraints, institutional change is essential to remove barriers and facilitate the transformation needed for sustainable forest use.

The concentration of power and wealth, alongside the prioritisation of short-term economic gains, have been identified as key underlying drivers of global environmental degradation (IPBES 2024). Political economies, related power structures, and entrenched interests are likewise recognised as major barriers to forest governance reform (Humphreys et al. 2019; McDermott et al. 2019; Arts 2021). Humphreys et al. (2019) and Kröger (2025) argue that political and economic power shape each other, forming a complex, inevitable, and iterative relationship. Kröger (2025) stresses the intertwined nature of economic sectors, politics, and power and highlight that transdisciplinary in-depth study of those is necessary to understand mechanisms that drive deforestation on a local-global scale. He highlights that deforestation studies typically fall on the opposite ends of a spectrum which are either broad and generalised, or specific with local-scale cases. Similarly, Wolford et al. (2024) call for research that connects in-depth, local case studies of land use change to analyses of the broader political economy. It is this precise gap that my research contributes to and aims to narrow. Kröger (2025) compared the political economies of extractive industries in Brazil, Peru, and Finland, demonstrating how global economic and political structures unfold in national and local contexts. My work similarly analyses diverse regions, with each case aiming to capture the interaction of the global mechanisms, such as discourses, financial flows, and knowledge systems, and their local manifestations in forest use and livelihoods, policy priorities and responses.

In this doctoral dissertation, I seek to explain why certain forest uses remain remarkably resilient despite growing social and environmental contestation. More specifically, I aim to answer the question: *Why do forest governance interventions fail to produce*

transformational change in forest use despite ambitious commitments, extensive knowledge, and new policy instruments? Scholars argue that "*plantation logics*", the reproduction of colonial land use ideals that prioritise large-scale, export-oriented production of raw materials for global markets, have significantly contributed to ecosystem destruction (Chao et al. 2024; Paprocki 2025). Yet these ideals continue to influence contemporary land use strategies (Chao et al. 2024; Paprocki 2025). I therefore argue that the plantation logic might hinder and delay transformative change in forest governance and uphold and expand BAU practices. I examine this topic through critical institutionalism (Cleaver and Whaley 2018) and discourse theory (Hajer 1995) approaches, and the analytical lens of the Plantationocene (Haraway et al. 2016). Critical institutionalism and discourse theory guide the analysis of how policy processes and governance systems emerge, how power is exercised to shape the systems, and how meaning is constructed to gain legitimacy and provide resilience within the systems. The Plantationocene lens in turn highlights the historical and ongoing impacts of plantation economies on ecosystems and societies and draws attention to their inherent inequalities and power imbalances.

I apply the Plantationocene lens to forested contexts in line with Chao et al.'s (2024, 543) definition of plantations as "*large-scale, mono-crop farm entities geared towards extraction for distant markets*" shifting the focus from product to production mode. I show that the plantation logic is found, in nuanced forms, in different forested contexts in the Global North and South: In privately owned monoculture forests in Finland (Article II), in ITPs in Malaysia (Article III), and in forest conservation sites in DRC (Article IV). Moreover, I find that the governance logic is based on colonial scientific framings of forests (Article I). Combined, these analytical underpinnings offer a unique framework to capture dominant narratives, institutional arrangements, and governance logics across forested contexts. Drawing from this theoretical approach, my aim is to assess whether and to what extent the plantation logic can explain forest governance failures in different regions. Responding to Wolford et al.'s (2024) call for research that connects in-depth, local case studies of land-use change to analyses of the broader political economy, I connect national and local forest use practices within wider institutionalised drivers and power relations that facilitate the persistence of the forestry BAU.

This dissertation consists of four articles that represent and engage with diverse political, environmental, and socio-economic contexts across global-local scales (Table 1). Through the sum of these articles, I make several contributions to the wider forest governance and specifically the Plantationocene literature. I employ the Plantationocene lens in explaining how the plantation logic shapes contemporary forest governance and highlight the inherent shortcomings. By studying the financial aspects of the Plantationocene and its unfolding at global-local level, I contribute to the theory and methodology regarding whose interests are reflected in the framing of plantations as solutions, and who benefits from plantation expansion. By applying the Plantationocene lens in both Global North and South contexts, I illustrate that a similar logic prevails in forest governance globally.

In the following section, I will define global forest governance and review literature on the dominant discourses within environmental governance.

Table 1 Overview of the original articles

	I	II	III	IV
Dissertation research question	Why do forest governance interventions, despite ambitious commitments, extensive knowledge, and new policy instruments, fail to produce transformational change in forest use?			
Type	Review	Empirical	Empirical	Empirical
Article research question	How problems in forest frontiers are framed in scientific and policy literature?	Which discursive practices are employed that respond to or resist the EUFS in Finland?	What are the institutionalized drivers and dynamics that facilitate ITP development and expansion?	Can REDD+finance lead to transformative forest and land-use decisions?
Lens	Political economy	Critical institutional policy analysis, policy transfer and policy delay frameworks	Political economy, the Plantationocene	Critical global political economy, telecoupling framework
Case	Democratic Republic of Congo, Cameroon, Malaysia	Finland, the European Union	Malaysia	Democratic Republic of Congo
Data	Systematic literature search	Key informant interviews, policy documents	Key informant interviews, open source data	Open source data
Method	Qualitative text analysis	Qualitative discourse analysis, document analysis	Qualitative discourse analysis, open source research	Open source research
Finding	Identified three dominant narratives that intersect and reinforce each other: 1) frontier regions as spaces that are "*idle*" or "*empty*", with unlimited possibilities; 2) the problematization of smallholder and shifting cultivation; 3) the legitimation of capitalist and market-based rationales as solutions.	While formally committing to various agreements and regulations, policy actors have employed the "*All talk, little action*", "*No sticks just carrots*", "*Redirect responsibility to individuals*", and "*Surrender*" strategies to delay a change from BAU.	A focus in climate change mitigation as a global good and a lack of transparency in large-scale land acquisitions and their financing benefits wealthy countries with expense of indigenous livelihoods and cultures, and little benefit for the local economy.	Climate finance incentives have limited influence in the presence of dominant interests and investments in extractive activities. REDD+ strategies in the DRC inadvertently reinforce historical inequalities by focusing on local interventions, overlooking persistent power relations that are visible in discursive practices, financial flows, and incentive structures centering around extractive land uses.

1.1 Global forest governance

Around one third of the global land area is forested (FAO 2025). The tropical forest region has the largest proportion of the world's forests (45 %), followed by the boreal forest (28 %) (FAO 2025). Globally, 29 % of the total forest area is managed to produce wood and non-wood forest products. Europe has the largest share of production forests, where more than half of the forested area is designated for production (FAO 2025). The discipline of forestry in its dominant form was born in Germany in the 18th century and spread globally as part of colonial expansion (Himes and Dues 2024). Throughout history, forest management has focused on timber production and sustained yield, with wider ecological considerations having become incorporated into forest management only in recent decades (Puettmann et al. 2009). Although new practices have emerged in the forest(ry) sector (Takala et al. 2019; Larsen et al. 2022), Himes and Dues (2024, 2) argue that the dominant institution of forestry (i.e. the norms and rules that influence forest use) is still based on four overlapping foundations: "*1) forests should be managed, 2) forests should be owned, 3) forest management should be based on science and 4) forests are a means to satisfying human ends".* While these foundations have contributed to the economic success of the forest sector, they have also excluded a myriad of worldviews and people, leading to socio-ecological injustices (Himes and Dues 2024).

Various policy processes aim at governing the global forest resources. Global governance as a concept refers to a shift away from state-cantered, intergovernmental regulation toward a more complex system involving diverse actors, such as international organisations, NGOs, and private actors, and applying a mix of public and private rules. It often emphasises "good governance" principles including transparency, participation, accountability, and effectiveness in managing global issues (Arts et al. 2010). Although forest policy and forest governance are sometimes used as interchangeable terms, policy programmes define what the aims are, while governance defines how the aims can be achieved in practice (Arts 2020). Arts (2020, 13) defines policy as "*a joint initiative of public and private actors – in networks, arrangements, or coalitions – to discuss and address societal problems and opportunities".* Governance in turn is defined as *"the formal and informal bundles of rules, roles, and relationships that define and regulate the social practices of state and non-state actors in international affairs*" (Slaughter et al. 1998, 371). More specifically, Campese (2016, 7) defines natural resource governance as "*the norms, institutions, and processes that determine how power and responsibilities over natural resources are exercised, how decisions are taken and how citizens – including women, men, youth, Indigenous peoples and local communities – secure access to, participate in, and are impacted by the management of natural resources*". Drawing from these definitions, forest governance then is not a technical challenge, but a political process where norms are set and power is distributed (McDermott et al. 2019).

1.2 Environmental discourses

This section briefly outlines key environmental meta-discourses. Scholars have identified several dominant global discourses that shape forest governance, laying the groundwork for many contemporary policy processes. Arts et al. (2010) distinguish dominant environmental meta-discourses that have gained prominence in the forest sector since the 1960s, namely

those of ecological modernisation; neoliberalism; modernity; limits to growth; sustainable development; and civic environmentalism. Ecological modernisation and neoliberalism centre market logics, and suggest market-based mechanisms, deregulation and private property as governance modes, while not fundamentally rethinking the existing institutions (Bäckstrand and Lövbrand 2006). Modernity suggests that a structural transformation is achieved through a shift from the agrarian sector to the industrial sector. The modernity discourse was most prominent in the mid-20th century and has then been critiqued to draw from western ideals that view tradition as a barrier towards progress (Arts et al. 2010). The limits to growth discourse sets its focus on planetary boundaries (Rockström et al. 2009), rejecting market-based forms of sustainable development. Although initially the discourse of sustainable development was seeking alternatives for the market and economic growth-oriented discourses (Arts et al. 2010), the term "*sustainability*" has been criticised as it is rather vague and can thus be "*manipulated to meet the concerns and interests of powerful actors, addressing some aspects of sustainability that are easier to meet while ignoring others that may challenge their business models*" (Kenney-Lazar et al. 2018, 97). Civic environmentalism stresses citizen participation through bottom-up approaches, and transparency in governance. Similarly, the environmental justice discourse is a more radical alternative to the capitalist system (Marquardt and Nasiritousi 2022). As the name suggests, this discourse places justice, fairness and power at the centre (Pülzl et al. 2024).

Still, new discourses have emerged in the forest sector. For example, a review by Pülzl et al. (2024) identifies the more recent discourse of climatisation, where forests are positioned as climate solutions, yet often tied to market logic in line with the ecological modernisation and neoliberalism, emphasising the role of market incentives and framing climate change mitigation as a business opportunity. The bioeconomy discourse is another example of a discourse where environmental considerations go hand in hand with economic growth. These latter discourses have been criticised to become equated to "green" economy, which rarely requires substantive changes to existing institutions and power structures (Gibbs 2020). Finally, the just sustainability discourse should be mentioned, which highlights inequality and colonial path-dependency as core problems and seeks for transformative and inclusive approaches to environmental governance (Pülzl et al. 2024).

In the next section, I will introduce the theoretical approach of my work, followed by a methods section where I detail the data collection and data analysis procedures. I will thereafter present my key findings, discuss those in light of the Plantationocene lens and end with conclusions.

2 THEORETICAL PERSPECTIVES

2.1 Critical institutionalism and discourse theory

My work builds on an interdisciplinary political economy perspective, where critical institutionalism (Cleaver and Koning 2015) and discourse theory (Hajer 1995) form the core theoretical foundation. This foundation covers the material, ideational, and structural dimensions of policy analysis and theory (Arts 2012) allowing an analysis of how material interests and resources interact with and reinforce beliefs and discourses within existing structures. I explore through critical institutionalism (Cleaver and de Koning 2015) how economic interests, resource allocation, and regulatory frameworks (the material dimension) support the continuation and expansion of BAU in the forest sector. I investigate through discourse theory (Hajer 1995), how the beliefs, frames and discourses (the ideational dimension) legitimise the BAU as a solution to evolving challenges, from deforestation to the climate change. The structure dimension suggests that political institutions, power hierarchies and cultural conventions have shaped the historical, social, and political outcomes (Arts 2012). I argue that a comprehensive understanding of the persistence and expansion of BAU in forest use requires the study of all these dimensions.

Critical institutionalism is an analytical framework for examining policy processes and governance systems, including how they emerge, how power is exercised to shape them in ways that benefit particular actors and groups, and how meaning is constructed to gain legitimacy and resilience (Cleaver and Whaley 2018). Cleaver and de Koning (2015, 1) define critical institutionalism as the analysis of "*how institutions dynamically mediate relationships between people, natural resources and society*". Within this framework, institutions are conceptualised as "*bundles of norms, practices and rules*", covering both formal and informal institutions (Cleaver and Whaley 2018, 49). From a critical institutionalist perspective, governance systems are understood as socially embedded structures that are shaped by historical and geographical contexts. Consequently, they can only be adequately understood through an analysis of the meanings, values, and power relations in which they are established, and continue to exist (Cleaver and Whaley 2018). The institutional setting in turn shapes the possible options for resource allocation and use, problem framing and proposed solutions through meaning-making and legitimation (Cleaver and de Koning 2015). Cleaver and Whaley (2018, 49) emphasise that "*power is exercised visibly and invisibly in multiple social spaces*", allowing powerful actors to allocate resources, set agendas, and legitimise adapted institutional arrangements. As power is often invisible, a critical institutional analysis may help reveal hidden processes that hinder change (Cleaver and Whaley 2018). However, as the name suggests, critical institutionalism focuses not only on the individual actors, but on the wider social structures where the power is embedded, reproduced, and exercised (Cleaver and Whaley 2018). According to critical institutionalism, marginalised groups often struggle to shape formal rules or negotiate informal norms, while they might experience the consequences of institutional arrangements differently compared to the more powerful groups (Cleaver and de Koning 2015). A critical institutionalist approach can hence shed light on inequality concerns within institutional structures.

Arts and Buizer (2009) argue that institutional change or stability can be explained through the study of institutionalised discourses. Discourse theory argues that human behaviour and choice is not driven by rationalism, but by the collective ideas, interpretations,

and meanings attached to the subject (Arts and Buizer 2009). As discourses have the power to normalise certain behaviours and advance selected interests over others (Arts and Buizer 2009), it is important to study what are the dominant discourses, and how those have historically emerged and shaped forest governance. Hajer (1995, 44) defines discourse as "*a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities*". In line with many scholars (Foucault 1994; Hajer 1995; Bäckstrand and Lövbrand 2006; Humphreys 2009), I understand discourse as a form of power. As Bäckstrand and Lövbrand (2006) argue, policy discourses are not merely descriptive; they actively shape whose knowledge counts, whose voices are marginalised, and which governance pathways become politically feasible. Similarly, following Arts and Buizer (2009), the framing of a problem legitimises specific strategies and interventions, whether they propose or support technological fixes, market-driven solutions, or plantation expansion, while obscuring alternatives. Indeed, rather than treating forest policy as neutral, I approach policymaking as a deeply political process in which representations of problems, and their proposed solutions, privilege some actors, interests, and forms of expertise over others (Bacchi, 2009). A discourse analysis alone can reveal renewed concepts and approaches to forest governance (Arts and Buizer 2009). However, discourses do not always reflect the reality on the ground. A change in terminology does not automatically imply changes in the "*rules of the game*", such as the norms, laws, and practices (Arts and Buizer 2009).

Building on this theoretical foundation, I use the analytical lens of the Plantationocene (Haraway et al. 2016), to help conceptualise specific mechanisms that sustain and legitimise BAU in forest use. I will complement the Plantationocene with literature on financialisation, to highlight how financial motives and discursive practices support and expand the Plantationocene and inequality across regions. Rather than viewing the Plantationocene as an all-encompassing, one-size-fits-all framework, I consider it as a valuable analytical lens and an entry point for examining, conceptualising, and comparing various phenomena within the forest sector. It allows for a nuanced understanding of how plantation systems operate in diverse contexts. Despite being a recently developed concept, the Plantationocene lens has been applied for instance in studies of climate change adaptation (Paprocki 2026), people-tree entanglements in New Zealand (Barbour et al. 2023) and sugarcane plantations in China (Wang and Xu 2024).

2.2 The Plantationocene

The Plantationocene is a lens for analysing the discourses, institutions, and structures that maintain and normalise unsustainable and inequitable management and use of natural resources. Thus, the Plantationocene as a concept has merit in critiquing the history of colonial extractivism, and as a metaphor for structural power relations (Wu and Xu 2024). The Plantationocene highlights how *plantation logic*, the systematic reorganisation of land, labour, and life around extraction, monoculture, and social hierarchy, has profoundly shaped modern social and ecological systems (Haraway et al. 2016). In my dissertation, I will apply the Plantationocene lens to structure the consolidated results from the case studies, combined with critical institutionalism and discourse theory. I am inspired by Pye (2019, 221) who poses a question relevant to the aims of this dissertation: "*Why the specific political economy of the industry leads to a particular way of organising and exploiting nature*?". I argue that

in the forest sector, this could be explained by the plantation logic, which defines the parameters to how the exploitation of forest resources is organised.

Anthropocene has been conceptualised as the current geological epoch in which the humanity is the driving force shaping the Earth system (Crutzen and Stoermer 2000). Some scholars, such as Moore (2017) argue for the Capitalocene, where planetary transformations are not caused by humans in general, but by the capitalist world system. Scholars such as Haraway et al. (2016), Ishikawa (2020) and Wolford (2021) have suggested that the modern epoch should be termed the Plantationocene, an era shaped by the expansion of large-scale monoculture plantations that dominate landscapes and promote an ideal of how life, labour, and the environment should be organised. Departing from the Anthropocene and the Capitalocene, Haraway et al. (2016) and Whitaker (2020) argue that the Plantationocene moves beyond the generalisation of all humanity as a culprit, and the narrow focus on capital accumulation. The Plantationocene literature especially highlights the historical and ongoing impacts of plantation economies on ecosystems and societies and draws attention to the inequalities and power imbalances that are inherent in these systems (Wolford 2021). It emphasises that the conversion of biodiverse landscapes into monoculture plantations to produce food, biomass, carbon, and other globally traded commodities is inherently inequitable due to its rootedness in colonial practices. Thus, the Plantationocene explores the historically uneven distribution of power and control which has led to some actors and regions disproportionately degrading the environment, while sustaining extractive economies that privilege some groups over others (Haraway et al. 2016). Central to the Plantationocene is the plantation as a unified, controlled, and orderly system that prioritises efficient and productive extraction (Wolford 2021).

The Plantationocene scholarship advances three interrelated claims about how plantations shape the modern world (Wolford 2021). First, the plantation is conceptualised as a social system, built on racialised and forced labour (Wolford 2021). Scholars (Wang and Xu 2022; Kenney-Lazar and Ishikawa 2019) recognise that the social relations are however context specific; contemporary commodity frontiers rely on a variety of labour settings, including smallholders who work within specific institutional arrangements, having formal independence, yet they are structurally embedded in a state or market-led system. A shift toward financialisation, characterised by market-based mechanisms, has also transferred the modalities of control: rather than direct coercion, power is increasingly exercised through the control of access to land, economic opportunities, and alternatives. Thus, the plantation as a social system works through subtle forms of legal, financial, and institutional control that align land and land users with the needs of extractive industries. Second, plantations are embedded in colonial practices that legitimised overseas resource extraction. European colonisers established large-scale, extractive monocultures in their colonies, to produce goods for the global market. These practices implied unequal exchange between the colony and the coloniser, leading to core-periphery relations (Wolford 2021). Today, the formal colonies are replaced by corporate and investor-led land acquisitions that reproduce colonial patterns (Li and Semedi 2021). After the 2008 food price crisis, institutional investors were encouraged to invest in what was labelled as unproductive arable land worldwide (Scoones et al. 2019). Private investments and public-private partnerships guaranteed access to land overseas, and forests and customary lands were converted into large-scale monocultures. Here, the plantation is a setting where export-oriented production for financial returns is prioritised over local land uses and ecological considerations. Third, the plantation landscape is positioned as a discursive ideal, that relies on the politically, economically, and scientifically constructed discourses that divide land uses into productive and wasteful and

defines problems and solutions. Wolford (2021) argues that these three claims: plantation as a social system, as a colonial mode of extraction, and as a discursive ideal, produce plantation logic that underlie and organise the modern world.

The plantation logic establishes clear boundaries around what is considered a legitimate problem and defines feasible solutions. This is similar to Humphreys' (2009) critique of neoliberal environmental discourse, which he argues has defined the limits for international forest policy by normalising deregulation, market-based mechanisms, and private property as the grounding rules. Political options are narrowed, and solutions are formulated inside the predefined boundaries, rather than rethinking the defining assumptions of the boundaries itself. Alternatives to the plantation logic are framed as inefficient or backward, economically unviable, or environmentally harmful. Yet, in line with Li and Semedi (2021), I argue that the boundary setting is a political process, where certain options are marginalised or excluded. Thus, a plantation may become an institutional boundary that limits options for action. This hinders meaningful critical reflection on the plantation system's implications and consequences, and alternatives. As a result, a plantation operates with a degree of invisibility (Wang and Xu 2022).

2.3 The financialisation of forests

Capital has always been fundamental to the Plantationocene, embedded in the colonial reorganisation of land and labour for commodity extraction (Wolford 2021). However, the rise of financialisation also transforms the internal logic of the Plantationocene. Where the classical Plantationocene literature centres on coerced and enslaved labour, more recent governance approaches are shaped by financial mechanisms that remove labour from the site of production altogether. Scholars (Li and Semedi 2021; Wang and Xu 2022) argue, that the colonial powers that used to drive the commercial exploitation of nature, are nowadays replaced with international corporations. Galaz et al. (2018) reveal that international institutional investors and asset managers have a disproportionate share of influence in large parts of the world's tropical and boreal forests, through their financing of extractive activities of companies. This development is likely to continue due to the financialisation of the forest sector. Financialisation is defined as "*the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of domestic and international economy*" (Epstein 2005, 3). The study of financialisation analyses how "*an increasingly autonomous realm of global finance has altered the underlying logics of the industrial economy and the inner workings of democratic society*" (van der Zwan 2014, 99). Both the Plantationocene and financialisation aim to explain how the modern political economies are organised, what logics dominate, to whose benefit, thus complementing each other. By situating financialisation in the critical institutionalism framework, finance can be analysed as a control mechanism and an expression of power. By highlighting the unequal distribution of financial power among social classes and regions, the study of financialisation can shed light on structural inequalities (van der Zwan 2014).

The origins of financialisation have been discussed by scholars. Some, such as Bichler and Nitzan (2010), Musthaq (2021) and Koddenbrock et al. (2022), attribute its origins to European colonial practices, where domestic surplus capital was invested in pre-capitalist regions, i.e. the colonies. Others, such as Gunnoe (2015), argue that the process stems from a more recent trend of centring of shareholder value as the guiding principle for corporations. Whether a colonial or a more contemporary project, financialisation affects the way natural

resources are valued and managed (Sullivan 2012). The maximisation of short-term profit for shareholders can potentially lead to unsustainable land use over long-term commitments to sustainability (Baines and Hager 2021). Profit from such financial actions frequently accumulate in one geographical area at the expense of social and ecological degradation in another, detaching investment decisions from local environmental and social realities (Kenney-Lazar and Ishikawa 2019; Wolford 2021; Chao et al. 2024). Recognising the connectivity of regions is crucial (Rulli et al. 2019) as the distant interconnections can come with unexpected risks and opportunities (Liu et al. 2013), posing challenges for resource governance (Oberlack et al. 2018). In financialised arrangements, profits are distributed back to shareholders as dividends, rather than reinvested in productive facilities. Thus, the examination of shareholders and the flows of finance can shed light on who controls and benefits from extractive operations.

Although much of the financialisation literature has focused on the USA corporate context, where shareholder value has been linked to job losses, diminishing wages and reduction of worker benefits (Lazonick and O'Sullivan 2000) the logic of financialisation is also observed in sectors and regions where such links are less direct. Musthaq (2021) argues that the contemporary financialised setting is not limited to domestic labour exploitation but expands to global financial exploitation, rooted in colonial relations. I suggest that the international and domestic financing of industrial (tree) plantations is a case of financialisation that manifests as losses of access and control over land and resources, culture, biodiversity, and livelihoods, leading to increasing inequality between groups and regions. Therefore, finance constitutes one of the forces that shape and enable the expansion of the Plantationocene.

Scholars have applied various approaches to study the political economies of forest governance. These include, for example, critical global political economy and the four I's framework (Brockhaus and Angelsen 2012; Arts et al. 2024), land grabbing literature (Edelman et al. 2016; Serrano et al. 2025), Global Extractivism (Chagnon et al. 2022) and experimentation and governance transformation (Korhonen-Kurki et al. 2017). I acknowledge that the theoretical approach I have selected builds on extensive work from previous scholarship. In this study context, the merit of the Plantationocene compared to other relevant analytical lenses is to recognise how history shapes the contemporary responses to crises (Wu and Xu 2024). By placing present land use strategies in a historic context of extraction, dispossession, and plantation development, the Plantationocene can provide insight into the structural barriers and suggest what should be avoided in future initiatives. It also highlights the elusive nature of a plantation as a logic underlying modern economies. Therefore, I find the Plantationocene lens to be meaningful when analysing the institutional and discursive contexts that hinder transformation in the forest governance.

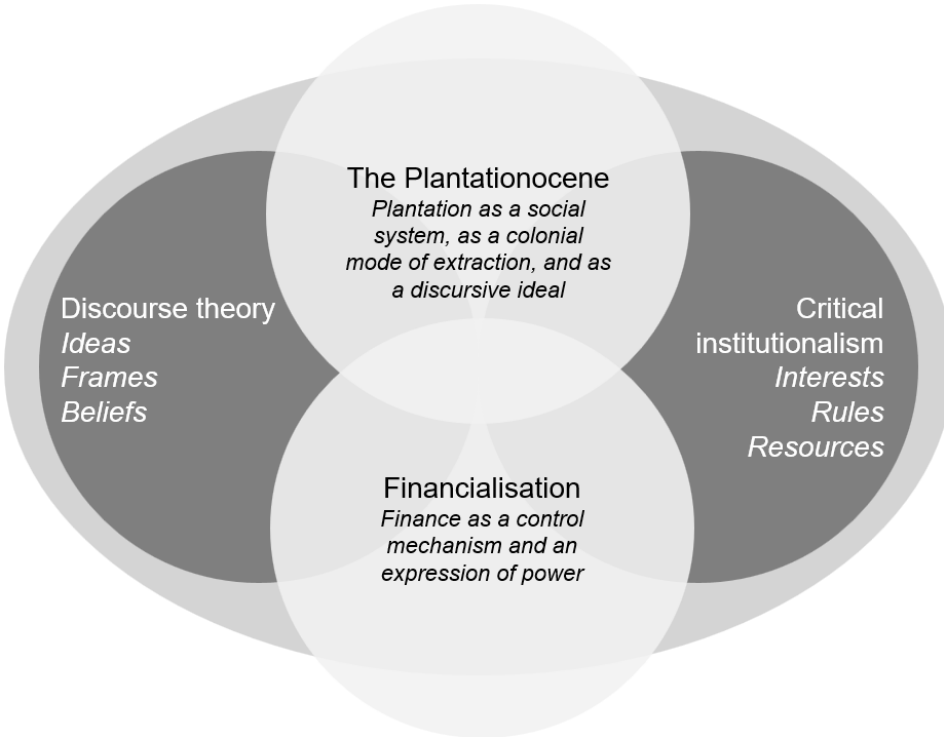

Figure 1 Analytical framework

3 MATERIALS AND METHODS

This dissertation adopts a qualitative research design, with some quantitative data. The empirical foundation of the study consists of a diverse data corpus, including transcribed interviews (Appendix 1), policy documents, scientific articles, and a range of organisational reports. The study aim, to identify norms, values, and beliefs that drive forest use and hinder change, is reflected in the choice of methods. In the following section, I introduce the case studies and describe the procedures for data collection and data analyses. I also discuss my positionality as an author, and the limitations of my study approach.

3.1 Case study selection: Finland, Malaysia, and the Democratic Republic of Congo

This research was conducted in diverse political, environmental, and socio-economic contexts: Finland, Malaysia (Sabah), and the Democratic Republic of Congo (Mai-Ndombe). Together they represent a spectrum of global forest governance. All three forest regions are subject to structural forces: the commodification of forest land, tension between industrial export-oriented extraction and conservation, and the growing influence of international

climate and biodiversity commitments. Furthermore, a common theme across all sites is the presence of unequal power relations, which manifest in various forms. Thus, each site is linked to global processes through established flows of finance, commodities, and ideas, which are reinforced by long-standing institutional arrangements. The selection of case studies was informed by the involvement in three research projects undertaken during my doctoral research: ForEqual (DRC), FairFrontiers (Malaysia), and European Forest Institute from Science to Policy (Finland). Participation in these projects facilitated access to field sites and primary research resources that would otherwise have been difficult to obtain.

Finland is a forested country in Northern Europe, with 23 million hectares (75 %) of the land area covered with forest (World Bank 2020a, 2020b). The forest is primarily boreal and dominated by conifer species, particularly pine and spruce. Deforestation rates are low because forests, 69 % of which are privately owned (European Commission 2021), are intensively managed and regenerated after harvesting rather than converted to other land uses. Commercial forestry for export-oriented pulp and paper, and production of domestic wood-based energy dominate economic forest use. The contribution of the forest sector to national GDP is the highest in the European Union, 4.22 % (Forest Europe 2020). Finland has a globally influential forest sector and is the home of some of the world's largest pulp and paper companies, including Stora Enso and UPM (Kröger 2025). The forest sector also applies considerable lobbying power in the European Union, influencing global climate politics (Winkel and Sotirov 2016; Toivanen 2021; Kukkonen and Malkamäki 2024; Begemann et al. 2025). Over the last two decades, bioeconomy has become a key political idea in Finland, reframing industrial forestry as inherently sustainable and at the core of the national economy (Kröger and Raitio 2017; Toivanen 2021; Pietarinen et al. 2023). This reframing has been challenged, and in 2021 the European Commission published the New EU Forest Strategy for 2030 (EUFS), that emphasises environmental considerations and forests' role as carbon sinks. While the EUFS is not a legally binding document, it comes with legally binding forest-related regulation, which provoked resistance in the forested MS (Pecurul-Botines et al. 2025). Finland's reaction towards the EUFS is under examination in Article II in this dissertation.

Sabah is one of the 13 states in Malaysia, located on Borneo Island. The Federal Constitution grants Sabah semi-autonomous status, which includes autonomy over natural resources with its own forestry laws and policies (Ng et al. 2022). Forests in Sabah consist mainly of tropical rainforests, but the region experienced historically high deforestation linked to commercial logging and conversion to oil palm plantations from 1973 to 2015 (Gaveau et al. 2016). During that time, Sabah lost about 1.9 million ha of forest, which represents 25 % of Sabah's land area (Gaveau et al. 2016). The deforestation rates have slowed down in recent years, but the remaining forest has become severely degraded. European-led land privatization and plantation development started in Sabah in the 1880's, when North Borneo (present-day Sabah) was administered by the North Borneo Chartered Company (NBCC) under the British colonial rule (Cleary 1992). After the independence in 1963, justifications of economic growth and national development were used by Malaysian institutions to continue the centralised control over natural resources in Sabah and further marginalised the native land uses (Doolittle 2004; Majid Cooke 2013). In the 1980's, Sabah Forestry Development Authority (SAFODA) selected the district of Pitas, located in the North of Sabah, as a location for development of a 25 000 ha industrial timber plantation, as part of the Afforestation and Resettlement Scheme for People in Bengkoka (SAFODA, 1980). Pitas has a population of 36,660 people consisting mainly of indigenous Rungus, Orang Sungai, the Bajau, Cagayan, Dusun, Kadazan, Suluk, Tambanuoh, and Ubian

(Department of Statistics Malaysia 2023). The communities have long inhabited the area and depend largely on traditional agricultural practices. Funded by a World Bank loan, the project was planned over five phases with 400 households involved in each phase. However, only 200 households were part of the project after the World Bank cancelled its funding after phase one (Ali and Varkkey 2023). Due to promises of future benefits of the scheme, villagers from 59 villages in the region agreed to participate with their customary land with a verbal promise they would get their land back after the first harvest. However, over four decades later, their land has not yet been returned (Majid Cooke and Toh 2012; Patrick 2019; Jude 2021), leaving unresolved contestations over land tenure. Between 2009 and 2022, American, Finnish, and Australian forestry funds entered as shareholders of the plantation in a joint venture with SAFODA. This investment period is the focus of Article III.

The Democratic Republic of Congo (DRC) hosts most of the Congo Basin, the second largest tropical forest after the Amazon, and one of the most biodiverse regions on Earth. Mai-Ndombe province covers 12.3 million ha (5 % of DRC), including 9.8 million ha of forested land. The province has 1.5 million inhabitants, making it the most sparsely populated province in DRC. Agricultural production of cassava and maize is the main source of income for 90 % of the households in the province (FCPF 2016). The entire province was selected as the site of the REDD+ Emissions Reduction Programme (ERP) by the World Bank in 2014 (World Bank 2018; Diaw and Franks 2019; Kengoum et al. 2020). The ERP is the first large-scale REDD+ programme in the Congo Basin, and the largest forest landscape conservation project in Africa. The programme was designed as a provincial-level model for green development, promising incentives to local communities to maintain and manage their forests (FCPF 2016). The programme is funded by the World Bank's Forest Carbon Partnership Facility (FCPF). The province has industrial livestock, mining, and timber concessions, the latter covering 3.5 million ha of the province (FCPF 2018), or about 30% of Mai-Ndombe's total area. Some of the 20 timber concessions were later converted into private carbon concessions. Despite these developments, forest loss continues in Mai-Ndombe (Global Forest Watch, n.d.). The potential of REDD+ to stop deforestation is examined in Article IV.

3.2 Data collection and analysis

The four articles in this dissertation all share an analytical foundation in discourse analysis (Hajer 1995), examining how language, narratives, and problem framing shape forest governance approaches across scales. Since policy discourses tend to favour certain actors depending on the problem framing and definition (Bäckstrand and Lövbrand 2006) and the framing of a problem validates the strategies and actions taken to tackle the problem (Arts and Buizer 2009), tracing these discursive constructions and their outcomes becomes an important part of studying power structures. I analysed how BAU practices are discursively stabilised, while hiding or ignoring the uneven power relations, enabling forms of delay in forest policy and governance initiatives.

Across the four articles, the textual data was analysed following the principles of document analysis (Bowen 2009) and qualitative content analysis (Kuckartz 2019). The general aim of these approaches was to identify themes in textual data. The themes were organised into categories (codes). Data analysis can be driven by theory or literature, being a deductive process to identify the codes, or an inductive, data driven process (Kuckartz 2019). Those two approaches can also be mixed, by first coding the data with deductively formed codes, and further extending the analysis with inductive coding. Coding of textual data was

supported by the qualitative analysis software Atlas.ti. I will next explain in more detail the data collection and analysis procedure for each article.

3.2.1 Article I

In Article I, a systematic literature review was conducted, focusing on two regions, Congo Basin and the Southeast Asia. The aim of this paper was to understand how science has portrayed forest frontiers in the Congo Basin and Southeast Asia. I conducted the literature review in English language in Congo Basin, identifying literature from 1950 to 2019. Two co-authors reviewed literature in French publications in Congo Basin, and in English publications in the Southeast Asia. The literature was identified through a set of pre-defined keywords and selection criteria related to the study aim. The final data set in both languages and regions included 296 articles, identified from Google Scholar, Scopus, and Web of Science databases.

The analysis was data driven. The literature selected for Article I was first organised and analysed in an inductive coding process, and then critically analysed to understand storylines put forward in science, paying particular attention to how the problem of deforestation is framed and how local people are portrayed.

3.2.2 Article II

Building on policy transfer (Stone 2004) and politics of delay literature (Karlsson and Gilek 2020; Lamb et al. 2020), Article II had two study objectives; first, to understand the outcome of policy transfer from EU to a member state by identifying the formal alignment of Finnish forest-related policy goals and measures with the EUFS through a document analysis (Bowen 2009; Pecurul-Botines et al. 2023). The data analysis for the first objective was based on earlier comparative work done by Pecurul-Botines et al. (2023), where the goals and measures of EUFS were mapped for the purpose of comparison between EU MS. The second objective was to examine and identify language and argumentation that expresses or legitimises delays in policy implementation, using critical discourse analysis with Hajer's approach to discourse (Hajer 1995), and the typology of delay strategies developed by Lamb et al. (2020). The aim was to identify language that expresses or legitimises delays in climate action.

The data corpus for Article II consisted of five expert interviews, ten Finnish forest-related policy documents, four policy evaluation reports and the State Budget of Finland for 2025. The interviewees represented organisations that had participated in forest policy processes in Finland, including two government ministries, one research institute, and two national forest-related associations (Appendix 1). All interviews were conducted in Finnish language. The analysis of both interview and document data was theory driven. The deductive approach helps to structure the data analysis, while leaving space for interpretation The semi-structured interviews added depth to my understanding on national policy priorities, as well as potential synergies and conflicts with EU's forest-related policy initiatives that might not be captured in the formal policy documents.

3.2.3 Article III

For Article III, I conducted 21 semi-structured interviews with key stakeholders in Sabah, Malaysia; in Kuala Lumpur, Malaysia; and in Helsinki, Finland (Appendix 1). The aim of

the study was to understand the underlying mechanisms that sustain the expansion of ITPs despite their contested impacts. Interviews were conducted with government employees in agriculture and forestry, with representatives of private companies, impact investors, environmental, indigenous, and human rights NGO's, researchers, independent consultants and local community members. All interviews were conducted in English language. Three published reports from Finer (2017), Viitala et al. (2022), and Ali and Varkkey (2024) were used as background material from where I started tracing the ownership and flows of finance related to the case study plantation. I acquired information on the plantation ownership, subsidiaries and shareholders using data from ORBIS database (information available from May 2017). I then searched the identified entities from Luxembourg Leaks (ICIJ 2014) and Paradise papers (ICIJ 2017) databases, to find more information about the company structures and investors. I used project reports, annual reports, and environmental and social impact assessments, and the Programme for the Endorsement of Forest Certification (PEFC), Forest Stewardship Council (FSC), and Timber Legality Assurance System (TLAS) reports, that I accessed online through the plantation owners' websites.

For data analysis, I used a mix of inductive and deductive approaches. The interview data was analysed deductively through the Plantationocene lens, identifying themes that legitimise, or delegitimise the development of large-scale plantations. With the interviews, as well as when reading related scholarly and organisational literature, the aim was to understand what the perceived socio-economic impacts of ITPs are, who benefits from the ITP development, and what the future of ITP development may look like in Sabah and elsewhere. The aim was also to better understand whose knowledge and needs count when decisions are made around land use. Inductive data analysis was used for the secondary data for Article III, and the data for Article IV. In both cases, I followed the principles of an open-source research method (Murray et al. 2022). The method has been used for human rights investigations but is also found useful for tracing flows of finance and commodities, especially in cases where the area under study is remote, or inaccessible to the researcher. The method can also help to identify potential interviewees and future research avenues (Murray et al. 2022).

3.2.4 Article IV

Article IV was entirely based on open-source research (Murray et al. 2022), drawing upon information publicly available on the internet. The aim was to study inequality through the examination of flows of finance and potential benefits into and out of Mai-Ndombe. I searched for REDD+ documents related to the Mai-Ndombe REDD+ pilot project, letters of intent between REDD+ funders and DRC, and scholarly reports and literature. I accessed various land use databases, such as MOABI database (2015), Interactive Forest Atlas (WRI 2023), Land Matrix, and Open Land Contracts, and a list of forest concession titles published by the Ministry of Environment and Sustainable Development of the DRC to identify timber and other companies operating in the region.

I reviewed REDD+ documents to understand which deforestation drivers REDD+ finance aims to mitigate in Mai-Ndombe. To understand the competing financial flows, I mapped the different companies operating in Mai-Ndombe, their shareholders, subsidiaries, and countries of origin. I searched public media content and NGO reports in English and French to supplement the findings. After mapping the different aspects, the findings were complemented and triangulated with the various data sources to ensure their validity.

3.3 Positionality

Understanding the positionality of the author is important for the interpretation and transparency of the findings and arguments that I present in this dissertation. I strive to engage with diverse perspectives and acknowledge the limitations of my own viewpoints. This commitment is particularly important given my background as someone born and raised in Finland, a western welfare state. My academic and professional experiences, including prior education in international business and forest sciences, shape how I engage with research. These backgrounds may facilitate rapport and shared understanding with certain worldviews and interviewees, especially where similar forms of knowledge or institutional frameworks are valued. At the same time, they may also create blind spots, especially when engaging with perspectives that challenge dominant western paradigms and sources of information. As Meijaard and Sheil put it: "*While different views arise in many ways, western interests often believe that theirs is the only true and objective approach*" (2011, 525). This belief has prompted me to reflect on my own assumptions, prejudices, and the importance of humility and willingness to confront the sometimes uncomfortable notion of one's privileged position in the world.

During my doctoral research, I had the opportunity to travel to Cameroon and Malaysia, where I engaged with indigenous communities such as the Baka in Cameroon and the Rungus in Sabah. These communities practice farming, fishing, hunting and gathering to sustain their livelihoods. At the same time, in scientific and policy literature, these communities are often depicted as driving deforestation, accused of engaging in unsustainable and wasteful practices. The commonly proposed solutions, originating from western ideologies, advocate for transforming the rich, biodiverse landscapes into monoculture plantations of rubber, palm oil, and acacia or eucalyptus. Paradoxically, shifting cultivation, where land is periodically cleared and then left to regenerate naturally, is classified as deforestation, whereas industrial even-aged forestry, which involves large-scale clear-cutting followed by monoculture replanting, is not. How can the traditional, low-impact lifestyles of indigenous communities be deemed unsustainable, while the resource-intensive, high-carbon footprint of west is sustainable? These observations prompted me to unlearn the assumption that objective and neutral "*facts*" exist, and instead regard information as constructed, interpretive, and embedded within particular social, cultural, and epistemological contexts.

For these reasons, I adopted a constructivist perspective, which allowed me to move beyond an analysis of forest governance from a realist position, that assumes the world's existence independently from our knowledge (Arts 2012). Rather, the constructivist perspective allows an analysis of the various forest-related processes as a constantly evolving assemblages of ideas, emerging in specific social and historical settings. This perspective allows the examination of forest policy and governance as a fundamentally political process, rather than a rational solution-oriented process (Bacchi 2009). While I aim to critically examine evidence that challenges my own beliefs, I recognise the tendency to favour data that confirms one's existing views (Arts 2021). This awareness is essential, since constructivist perspectives suggest that what we consider facts are often shaped by our beliefs, theories, and discourses (Arts 2021). Consequently, I commit to reflexivity and transparency in my theoretical and methodological choices, and am aware of their limitations, questioning the underlying assumptions and strive for a comprehensive understanding of the research topic. Finally, despite my critical approach to studying forest governance, I aim to represent all participants' perspectives with accuracy and respect.

3.4 Limitations

My study approach comes with several limitations. Firstly, my research builds on separate case studies, studied with different methodologies. The selection of case studies was driven by an attempt to capture variation across forest governance contexts. The methodological approaches were then shaped by the availability and accessibility of data in each context. Secondly, the focus of this dissertation is on analysing the political construction of reality, and the related discursive practises, with only limited analysis of on the ground transformations, which are covered mainly in Article III.

There are also limitations with the empirical data. My empirical material is based on a limited number of interviews. The limitation stems from a common problem for all researchers; limited time and funds for field research. To mitigate this limitation, the samples in Articles II and III include representatives from a variety of organisations to capture a range of perspectives. This supports the overall study aim, which is to identify various patterns, discourses, and ideas. Moreover, I triangulated interview data with textual sources and corporate reports, and I discussed emerging interpretations with scholars who are familiar with the specific country contexts. I also presented tentative findings in various workshops and conferences for peer feedback. These steps helped refine contextual understanding and reduce the risk of misinterpretation.

Articles III and IV utilise corporate data, which involves some common limitations. Corporate datasets are characterised by restricted accessibility, selective content, and uneven quality, as companies and government agencies may not publish sensitive information, nor publish data in ways that align with strategic or reputational interests (Galaz et al. 2018; Liao and Agrawal 2024). Furthermore, corporate self-reporting might be biased, particularly regarding topics such as sustainability, responsibility, or governance of natural resources. As a result, the available material may be incomplete, lack standardisation, or lack relevant details. The geographical scope also limits data availability, as most corporate data sets focus on Global North countries, and data, for instance on DRC, is scarce. This creates structural constraints concerning the scope of analysis.

My work is grounded in a qualitative research design. Although some financial data are analysed, this analysis is guiding, rather than comprehensive. I do not employ e.g. statistical techniques nor other quantitative methods. This is a deliberate methodological choice as the central objective is to examine policy processes and discursive practices. The findings should still provide sufficient in-depth, context-sensitive insights into how BAU is constructed and upheld in forest governance initiatives. Although different forms of bottom-up resistance towards the BAU are frequently discussed in land use literature (Borras and Franco 2013; Hall et al. 2015; Henriet 2015; Sändig 2021) and observed in the empirical data collected for all the case studies, analysis of different resistance strategies falls out of the scope of this dissertation.

I present my key findings in the next section.

4 RESULTS

In this results section, I will summarise the results of the four articles included in this dissertation. I will show how forest use across study contexts is shaped by historically entrenched narratives that support the construction of the plantation ideal, how forest-related problems and solutions are framed and enacted, whose voices are heard and formalised into policy, and whose needs are acknowledged. I present my key findings in line with the conceptualisation of the Plantationocene: as a social system, set of colonial practices, and discursive ideal. I start from critically examining the colonial history and the path dependencies and resource structures that follow, and move on to analysing the discursive ideals, and finally to questioning the power relations in the financial and social systems.

4.1 Plantation as a set of colonial practices

In the Plantationocene thinking, plantation development builds on colonial practices, where large overseas areas were acquired to produce agricultural goods for distant markets. The findings of this dissertation highlight that similar logic operates across the case studies, indicating that the (colonial) plantation logic has shaped the way natural resources are managed in the Global North and South alike. All case studies in this dissertation reveal that forest land is preferably used for export-oriented, industrial production of raw materials. Whether the resources are framed as sites to be conserved (Articles I and IV), or sites to be taken into productive use (Articles I, II and III), the benefits are primarily geared towards actors in the Global North, and the subsequent processes for land use change often rule out the earlier land users.

4.1.1 The colonial framings and their path dependencies

Understanding how forest use was described and organised in the past, and the path dependencies that followed, is essential in order to analyse the current forest governance and the potential future directions. The early literature reviewed in Article I was concerned about Congo Basin countries' responsibility to provide the western countries with agricultural goods. In 1950, Klopstock stressed the need of Africa to supply Europe with agricultural produce, especially vegetable oils which were in shortage in Europe. This framing has persisted when new commodities have emerged; more contemporary scholars have framed the Congo Basin as a region with a potential to mitigate climate change and protect biodiversity, through appropriate resource governance and conservation (e.g. Kotto-Same et al. 1997; Nijmeijer et al. 2018). Here, colonial powers are replaced with transnational land-based corporate investments, supported by various development programmes. Simultaneously, the commodity changes from tangible products to carbon credits. Similarly in the scientific literature focusing on Southeast Asia, the region was imagined as a space of unused resources. Here, the demand for forest commodities and conservation is built on old narratives of available excess, empty or idle land and justified by the narrative of scarcity, as observed by Scoones et al. (2019) and White et al. (2012). The narrative of empty land often intersects with, and reinforces, the problematisation or sometimes even erasure of local populations using the land. Shifting cultivation is particularly identified in scientific literature as the driver of forest loss and degradation in Congo Basin and Southeast Asia (Kadoya et

al. 2022, Hepp et al. 2026). The supposed problem of shifting cultivation is then resolved by land titling and modernisation of agriculture by both colonial and post-colonial governments and actors alike (Articles I, III, and IV).

Article I demonstrates that colonial forest and land codes have significantly shaped post-colonial policy trajectories. For example, the post–World War II framing of shifting cultivation and smallholders as environmentally destructive by the Food and Agriculture Organization (FAO) has persisted to the present day. It is reflected in contemporary ITP development projects as found in Article III, and REDD+ policy documents, as observed in Article IV. A 2020 report from World Wildlife Foundation (WWF 2020, 120) describes that in Sabah "*human settlements combined with mixed horticulture*" have led to biodiversity loss and a "*more sustainably managed plantation*" is presented as a solution. Although the State of Sabah has been a leader in developing sustainable forest management methods in Malaysia (interview with a government official; Ng et al. 2022), the local competence in the forest sector is undermined, and European forestry competence and the modernity of large-scale agribusiness was instead highlighted by interviewees. Despite the evidence (Pendrill et al. 2019a) that large-scale extractive and commercial activities account for a substantial share of forest loss, REDD+ strategies in the DRC primarily depict smallholders as drivers of deforestation (Article IV). In Mai-Ndombe, the REDD+ approach included planting acacia trees to reduce pressure from natural forests, and according to World Bank the programme *"improves the livelihoods of very poor farmers, sequesters carbon and reduces carbon emissions by reducing slash-and-burn agricultural practices*" (World Bank 2018). In the REDD+ project documents that were reviewed (DRC-MECNT et al. 2015; the World Bank 2016; FCPF 2020), deforestation in Mai-Ndombe is identified as primarily driven by shifting cultivation, artisanal logging, fuelwood collection, population growth and migration. Thus, REDD+ interventions, funded by western donor governments, mostly focus on changing the behaviour of local populations. Allowing industrial countries to offset their carbon emissions, REDD+ is complicit in maintaining the unsustainable lifestyles of the Global North without any incentives, or expectations, for change. At the same time, local needs are sidelined and framed in a way that requires state intervention and external administration (see also Doolittle 2004). Bichler and Nitzan (2010, 6) illuminate the continuation of colonial land use by stating: "*The absence of formal colonies is largely a matter of appearance. Remove this appearance and you'll see the imperial impulse pretty much intact: the core continues to exploit, dominate and violate the periphery for its own capitalist ends*".

4.1.2 Structures of capital and resources

Policy measures such as certification and environmental, social, and governance (ESG) metrics have so far fallen short in effectively considering human rights, environmental values and climate change mitigation, and been criticised for creating an "*illusion of change*" without an actual change away from BAU (Brockhaus et al. 2024, 74). This situation is also seen in the Articles II, III and IV, where actual transformation does not follow suit despite new financial instruments towards sustainable forest management, forest-based investments, and climate finance.

Article II shows how the allocation of finance often determines which aspirations become the reality, despite symbolic commitments to climate and biodiversity action. In Finland, substantial amounts of government funding were steered towards supporting export-oriented pulp wood production in even-aged forests, and production of wood chips for domestic energy. At the same time, funding for forest conservation in private forests ran out due to

high demand from private forest owners, signalling a high willingness to forest protection. The 2023 Climate Plan for the Land Use Sector (Ministry of Agriculture and Forestry 2023) includes effective methods for climate change mitigation, yet the implementation did not receive funding from the government.

The evidence in Article III shows that sustainable forestry funds generate profit through financialised arrangements, rather than productive output, leaving behind socio-environmental destruction. The financial system currently operates in ways that allow hiding the unequal benefit and burden sharing. In the financialised setting, globally spread investors invest in what is labelled as "*sustainable forestry*" by transnational standardisation, such as the EU Taxonomy for Sustainable Investment, the UN Principles for Responsible Investment (PRI), and FSC and PEFC certification. As forests are increasingly positioned as carbon sinks, investments in forestry activities present ways for governments, companies and investors to signal environmental consciousness and responsibility. The analysis of financial flows reveals that Finnish and Australian forest funds which owned 70% of the plantation in our case study in Sabah were registered in Luxembourg and the Cayman Islands to take advantage of the favourable tax laws. Ownership structure and financial arrangements allowed 99% of the plantation's profits to be classified as intra-corporate costs, flowing back to investors primarily in Europe, while only 1% remained as taxable income in Sabah – which align with the findings by Finer (2017). It was also found that the fund managers' reporting on the investment outcomes was inadequate, due to limitations of sustainable finance frameworks and certification standards that focus on carbon accounting and employment-related metrics. Consequently, the social impacts from the investment on the ground were inappropriately reported. In effect, these arrangements legally divert income streams from production sites to global investors, who are not made aware of the local outcomes of their investment due to inadequate social impact reporting frameworks. The results further show that the application of transnational standards, certifications, and metrics for sustainable finance and forest management has not succeeded in mitigating local and environmental harms. The study of REDD+ in Article IV, Mai-Ndombe in the DRC, reveals that various economic land-use activities and conflicting goals overlap in the targeted area, including logging, mining, cattle concessions, and oil exploration permits. With its focus on local interventions, REDD+ is not equipped to compete with the existing extractive land uses. A benefit sharing plan for REDD+ was developed by the FCPF (2022) for the Mai-Ndombe ERP, allocating only 4 % of net REDD+ funds to Indigenous Peoples and local communities (IPLC).

4.2 The plantation landscape as a discursive ideal

In the case study of Finland's response to the EUFS (Article II), I find an enduring narrative that traditional, industrial forest management can address evolving challenges. This reflects significant path dependency rooted in forestry knowledge systems and persisting institutional arrangements. I argue that the political resistance towards environmental ambitions observed in Finland is not country specific but reflects a broader governance pattern. The implementation of new policy frameworks is hindered by limited political ambition and perceived institutional misalignment. In the EU, this is further reinforced by an ideational forestry-environmental divide (Sotirov et al. 2021; Pecurul-Botines et al. 2025). Export-oriented pulp forestry in Finland continues to be politically and financially prioritised over growing concerns about biodiversity loss and a declining forest carbon sink. The EU's

attempts to promote a paradigm shift, from even-aged forest management towards continuous cover forestry and higher value-added forest products, have not translated into tangible changes in Finnish forest policy. Instead, political priorities remain aligned with industrial forestry priorities towards initiatives that frame old tools as climate friendly; active forest management, forest fertilising, and replacing fossil fuels with biomass. Reflecting the large-scale ideal of plantation logic, Finnish policy making encourages private, non-industrial forest owners to consolidate private forest holdings, even though the average private forest holding in Finland (30 ha) is more than double the European average of 13 ha (European Forest Institute 2021). Larger holdings are seen as facilitating a stable supply of raw materials for the forest industry compared to small and parcelled forest holdings. This policy also encourages sales of holdings to investors and production-oriented forest owners. An examination of policy documents suggests that while there is rhetorical recognition of the EU's call for a paradigm shift in forest use, this has not resulted in any substantive systemic change or reconsideration of the existing policy framework. Instead, EU's attempts to regulate forest use in MS are viewed as harmful and threatening, as expressed by one Finnish interviewee. Neo-liberal, and more recently ecological modernisation and bioeconomy discourses prioritise economic growth, thereby delaying transformative change in the forest sector.

Similarly, in Article III, despite the challenges to make ITPs profitable or resistant to disease and fires in Sabah, they are promoted by the State and international investors as an inevitable development trajectory. In this view, ITPs will simultaneously support climate mitigation, protect natural forest, replace fossil-based materials, and to a lesser extent, bring local development. The European investors reported the plantation in Sabah as "*a good example*" of forestry activities that generate "*significant development outcomes: combating climate change and deforestation, as well as creating jobs and well-being in areas that are often poor and left behind in terms of development*" (a press release from a Finnish public development fund) and "[the investment] *should reduce the pressure on clearing standing forests and contribute generously to the reduction of CO2 emissions*" (a press release from a Dutch public-private development bank). There seems to be a remarkable disconnect between the (public) communications of investors and fund managers, relative to the local lived experiences. These narratives align with the colonial legitimation for land acquisition as found in Article I. The local interviewees in Sabah reported only low-level, small-scale activity in the 25 000ha tree plantation. An interviewee who performed socio-economic impact assessments for timber companies seeking certification in Sabah, saw that the only way to make tree plantations beneficial to local communities would be to allow the community to plant and own the plantation, and develop either carbon forestry or ecotourism on site. Overall, communities were more inclined to planting cash crops such as oil palm: "*Because in Pitas you have highest numbers of poverty…This is the poorest district in Malaysia. So, a tree plantation…not on the top of their list".* This view was supported by a government official: "*Because most of the villages like planting oil palm, why? Because it's quick money. For example, oil palm can be harvested after three years. But with rubber, have to wait another seven years. Even worse if planting trees. Have to wait around 15 to 20 years*". An interviewee from an indigenous NGO described their first visit to a logging site in the 1990's as the beginning of "*unlearning*". They recalled how during their formal education in a university in Kuala Lumpur, they had learned to think of development in terms of national gross domestic product (GDP). That time, forestry was a significant contributor to State revenue: *"I was so glad that Sabah is the producer, contributor. I was quite proud. That time we were not yet labelled as the poorest part in Malaysia. Later we became. I don't*

know, the poorest in what way? But, that's a lot of you know, definitions. But when I went there [in the logging area], the people were devastated. The area, forest, all taken". For the local communities, land was the most important well-being factor, outscoring clean water, money, public facilities, health, and freedom in the household survey conducted by one of the authors of Article III during fieldwork in 2024. These findings highlight that the framing of ITPs as an ideal development trajectory is not rooted in local reality, but on the western ideal for the profit-driven, large-scale, extractive land use.

4.3 Plantation as a set of social relations

Earlier Plantationocene scholars highlighted how plantations have often relied on the control, coercion or exploitation of labour to produce commodities efficiently for global markets (Haraway et al. 2016; Wolford 2021). I find that in financialised and conservation landscapes, power is exercised less through direct labour control and more through regulating access to land, resources, and economic opportunities. In the study contexts, various socio-economic settings emerge. The plantation logic can work through political and financialised arrangements, that incentivise forest owners to produce raw material for forest industry (Article II), or diminish labour needs, and push locals off the land due to the shift from production to accumulation (Article III). In Article IV, the produced commodity changes altogether from timber to intangible forest carbon.

Finnish forest policy firmly rejected EU's initiatives towards shared carbon sink, conservation, and restoration obligations among the MS (Article II). Arguments used alluded to national sovereignty, private property rights, demand for wood and individual's right to "*sell or not sell*" wood (interview with a government official). At the same time, private forest owners are steered through financial incentives, legislation, and advisory services to produce an even-aged supply of wood to the forest industry. Toivanen (2021, 134) termed the close relationship between forest owners and the forest industry a "*symbiosis*", that has formed the political and economic ground for Finnish forestry. Despite their formal freedom, forest owners operate within predefined boundaries. For example, the Finnish Forest Act prohibited any other practice than clear-cut forestry in privately owned forests until 2014. "*Although there is a lot of talk that forest owners can use forests however they want, the methods of forest management are very uniform throughout the country*" explained one government official when asked about the challenges in the Finnish forest sector.

In Sabah (Article III), interviewees from an indigenous NGO and from a human rights organisation highlighted some negative impacts of the ITP development. A majority of the impacts were related to challenges concerning water resources and land access and tenure. The loss of access to land for cultivation and disputes over land ownership negatively impacted food security and household income of local communities. According to the interviewees, the locals had mostly benefited from improved road and internet infrastructure supporting their social connectivity, but at the cost of traditional livelihoods, culture, and food security. When asked if ITPs have brought development to Sabah in terms of job opportunities, an interviewed government official pondered for a moment and replied: "*Well because most of them [forestry companies] are not really concerned about their community. They want to build up themselves and get rich themselves, then only the second one will be the community. So talking about over all, no*".

There is also an imbalance in whose vision becomes formalised as a policy. In all the study cases, there is an unequal capacity of involved actors to participate in forest governance

processes. Although the Finnish forest policy process appears participatory (Article II), three interviewees saw that the inclusion of objectives beyond forest industry interests constitute merely "*a spray of perfume*" as one interviewee from a forest-related association termed it. Objectives such as climate change mitigation, recreation and berry and mushroom picking, or the societal health benefits from simply spending time in forests, were seen as a superficial addition to the industry-focused agenda. When asked about the selection of tree species in plantations in Sabah (Article III), the interviewees from State-affiliated research centre and a government official agreed that the ITP development was driven by investor demand for fast growing tree species. In Article IV, the premise of REDD+ is, that it incentivises the industrial countries to pay developing countries to reduce deforestation. With its focus on local interventions, REDD+ has failed to address and transform the existing power-relations, political-economic structures, and dominant narratives that drive deforestation. Similar findings were also made by Salvini et al. (2014) and McDermott (2017).

I have highlighted in this section how the plantation logic organises forest use across Global North and South. While each case study has its own nuances, the core ideology follows the Plantationocene conceptualisation of a plantation as a set of colonial practices, a discursive ideal, and a social structure. Financialised arrangements further induce inequality and effectively hide the benefit and burden sharing. As a result, BAU in forest sector becomes stabilised and expanded, and alternative approaches are rejected or delayed. Therefore, outcomes of the forest governance strategies can be expected to benefit only a few actors, while casting burdens on others.

5 DISCUSSION

In this section, I will interpret my findings and discuss their broader implications and relevance in the context of existing literature.

5.1 It is politics; Convenient transformational change

> *"It is not agronomy or productive efficiency that dictate plantation dominance, it is politics"* (Li and Semedi 2021, 2)

A transformational change requires political support (Chan et al. 2020). As established earlier, a shift of discourses, incentive structures and power relations within institutions and policy actors is necessary for reaching lasting and equal outcomes in the global forest governance (Brockhaus et al. 2021). Such shift is yet to come; I observe a remarkably stagnant set of discourses upholding the old extractive practices, idealisation of plantation logic as the solution to evolving challenges, supported by longstanding institutions, knowledge, and new financial instruments. This path dependency is enforced by the lack of political imagination, where alternatives are only discussed within the existing frameworks and structures (see also Serrano et al. 2025). In Finland, monoculture forestry is presented as a solution to evolving challenges, supported by neoliberal arguments that emphasises private property rights. Industrial tree plantations that produce biomass for global consumption are framed by investors as inevitable and simultaneously claimed to produce global carbon benefits and to a lesser extent, local development. In DRC, external institutions finance forest

protection for offsetting carbon footprints of industrialised countries, while framing the actions of local populations as the problem to be tackled. Simultaneously, the other extractive activities and flows of commodities remain in the landscape, and the Global North lifestyles remain unchallenged.

As found in Article I, and observed in the consecutive case studies, forests are often framed as underutilised resources, where a primary challenge is inefficient or inappropriate use. This framing is deep-rooted in colonial practices and continues to structure how problems and solutions are defined. In the Congo Basin and Southeast Asia, scientific and policy narratives have historically constructed forest landscapes as "*empty*", "*idle*", or poorly managed, while positioning smallholders and shifting cultivators as drivers of deforestation. In parallel, market-based mechanisms, technological fixes, and externally designed governance solutions are legitimised as rational and necessary responses. The analysis shows that the same narratives endure in contemporary forest governance initiatives, ranging from biomass production to conservation, in Global North and South alike. These findings echo the resurgence of the Modernity discourse that was prominent in forest governance in the 1960s to 1970s, where a structural transformation is achieved through industrialisation of land use, supported through the western ideals of progress, and where traditional practices are framed as barriers to development (Arts et al. 2010). As Li and Semedi (2021, 2) argue: "*It is not agronomy or productive efficiency that dictate plantation dominance, it is politics*", emphasising the political convenience of plantation logic as a solution to the past, present, and future challenges.

5.2 "A therapy based on a wrong diagnosis"

"Many environmental policies have been inefficient or even had perverse effects simply because they applied a therapy based on a wrong diagnosis." (Geist and Lambin 2003, 64)

The persisting view that poverty drives deforestation might have led to inefficient allocation of resources and unsuitable policies that have not been able to halt deforestation and the conversion of natural forests to plantations (Geist and Lambin 2003). Kates and Haarman (1992) argue that the impoverishment of nature is likely driven by the Global North countries, who depleted their forests during their own economic growth. Consequently, environmental responsibility has been disproportionately shifted toward the remaining forests of the Global South. Cleary (2012) further argues that unequal power relations significantly influence forest policy arrangements and outcomes, suggesting that the rules, norms, and processes governing these policies are not at all rational but are shaped by social structures and historical contexts.

The concentration of wealth and power has been recognised as an underlying cause of biodiversity loss, with power imbalances in international monetary and financial systems deepening structural inequalities (IPBES 2024). In their assessment of the current state and trends of international forest governance, Brockhaus et al. (2024) highlight the increasing role of private finance and financialisation as a response to the weak performance of the contemporary forest governance processes. In contrast to long-term commitments to sustainable practices, the market-based forest-related finance is typically aimed towards BAU forestry, with short-term, productivity-oriented goals, and more recently the carbon market (Brockhaus et al. 2024). This situation is evident in Article III, where financial actors legally divert income streams away from the sites of destruction to international investors in

the name of sustainable forestry. Humphreys et al. (2019) further argue that international economic and financial institutions, such as the World Bank, the International Monetary Fund (IMF) and the World Trade Organization (WTO), are built on a neoliberal normative framework that continues to favour the interests of Global North corporations and states. REDD+ has also been criticised; after the initial call for transformational change, it has been fitted into the existing neoliberal economic order, which is also the source of the problem (Duchelle et al. 2017; Brockhaus et al. 2021). Within this framework, the rights of corporations and economic growth are prioritised over environmental and social considerations. I find the study of financialisation as a meaningful addition to the Plantationocene scholarship, to analyse and uncover who benefits from the current forest use. The examination of shareholders and the flows of finance can shed light on who controls decisions and benefits from extractive operations (see also Daniels et al. 2026). In line with financialisation that emphasises the generation of shareholder value, and the inequality in financial systems, examining organisational structures and flows of capital is key to understanding who controls, and who benefits from the operations. Moreover, in financialised landscapes, power is exercised less through direct labour control and more through regulating access to land, resources, and opportunities.

Referring to Brundtland's definition of sustainable development, Li (2017) argues that this definition is incompatible with large-scale plantations that accumulate wealth to companies, politicians, investors, and others in already powerful positions. As concluded in Article II, despite policy commitments to sustainable forest use, competing interests, power imbalance and arguments of national sovereignty allow governments to selectively mobilise sustainability framings that best serve their objectives. Thus, sustainable development is not achieved with the existing frameworks (Humphreys et al. 2019, Ville 2025).

5.3 A tree plantation hiding in plain sight?

"Rather, the concept should be used to generate place-based and globally situated research on the ongoing struggle for land and livelihood in a world where the plantation hides in plain sight, shaping our everyday sustenance, norms, beliefs, aspirations, and material possibilities" (Wolford 2024, 2179)

The Plantationocene scholarship suggests a reconsideration of what is viewed as a plantation. Beyond the conventional image of plantation as a monoculture, industrial tree or crop stand, a plantation can also be understood as a constructed governance system that orchestrates smallholders into a coordinated group of raw material producers for extractive industries and global consumers (Kenney-Lazar and Ishikawa 2019; Wang and Xu 2024). In the plantation system, biomass is primarily used for low value-added products such as pulp, paper, or energy, rather than locally processed, high-value goods, or subsistence. I argue that the Finnish forest sector is a manifestation of such a system; Although Finland's forests consist of native species and are thus formally categorised as non-plantation forests, private forest owners are strategically advised, and financially incentivised, to manage their private holdings in ways that align with the needs of the pulp and paper industry, ensuring a steady, standardised supply of wood. The forests are politically made into "*the pulping–energy wood complex*" (Kröger 2025, 25). Shifts in forest owners' preferences for alternative management objectives (Takala et al. 2023) calls from the EU for forest management reforms (Pecurul-Botines et al. 2025), and scientific evidence on the decline of forest carbon sink and the

biodiversity (Mönkkönen et al. 2022; Soimakallio et al. 2022), are politically framed as either potential threats, or their legitimacy is contested (Sivonen and Syväterä 2023; Kukkonen and Malkamäki 2024). Political decisions and instruments support and stabilise the plantation system.

Plantation systems are deeply embedded in the modern society. This often renders these systems nearly invisible. Tsing (2012) argues that plantations have organised landscapes in such a way that people find it difficult to envision alternative possibilities. Wu and Xu (2024, 10) refer to this phenomenon as a "*general amnesia*" where the extensive monocultures characteristic of plantation economies, and the consequent losses of biodiversity, cultural diversity, and alternative ways of living, have become so normalised that individuals fail to recognise the plantation system's existence. It is often forgotten (or left unsaid) that forest use is based on political decisions. In the political process, forest estate sizes are actively enlarged, holdings are sold to institutional and global investors, and forest owners are advised and incentivised to grow pulp wood in ways that meet the minimum criteria for sustainability (Kuuluvainen et al. 2019). From this perspective, the Finnish forestry model does not entirely beat the plantation allegations; rather, it is a unified production system that operates through governance, advisory services, and private forest owners, making it, in fact, "*a plantation hiding in plain sight*" (Wolford et al. 2024, 2179).

5.4 Embracing the friction

"We are no longer in a culture of unity where we sit around the campfire and everyone blows into the same charcoal, but it is a fact that people have different desires and goals related to forests. And that should not be feared, nor should it be avoided, but should be accepted as part of this society." (a Finnish interviewee from a research institute)

Tsing (2004, 3) argues that cross-cultural, long-distance encounters, "*the productive friction of global connections*", can inform us in meaningful ways and potentially lead to new ideas. She suggests that instead of looking for harmony, we should lean towards the frictions (Tsing 2004). This approach was also brought forward by an interviewee from a Finnish research institute, who advocated local democracy and participation as central to reconciling forest-related conflicts. Similarly, according to Korhonen-Kurki et al. (2017), collaborative networks with alternative ideologies and knowledge systems have the potential to destabilise existing regimes, encouraging transformative alternatives. Himes and Dues (2024) also call for an institutional shift towards including diverse worldviews and relational values to unlock the potential of forests to respond to climate change and biodiversity loss.

In the empirical data collected for this dissertation, various frictions emerged that challenge the hegemonic plantation logic. When I inquired with a Finnish government official about the primary conflict in the Finnish forest sector, there was a notable silence of 22 seconds, a significant pause even in the Finnish culture that values silence. Finally, they replied: "*Well, it's related to these... there's a lot of talk about logging volumes, so...*". An interviewee from a Finnish research institute saw that the greatest potential for the sustainable future in the Finnish forest sector is the approximately 600 000 private forest owners, provided they are supported and enabled to pursue versatile and multifunctional forest uses. Impact investors interviewed for Article III claimed that timberland investment comes with inherently high risks, a time span that is not attractive for investors, and a relatively low return. A government official from Sabah said that a change towards more sustainable forest

use should start from within the State government. An interviewee from an indigenous NGO, one researcher, and an independent consultant in Sabah saw potential in tree plantations, but only if the development plans were more inclusive of the local communities.

In the studied cases of forest governance, the dissemination of new norms, ideas, and knowledge, has thus far been limited due to unequal opportunities of groups to genuinely participate in decision making and design. This indicates that the participatory policy processes have led to only a limited inclusion of diverse voices and aims. These findings are in line with Kengoum et al. (2026, 9), who concluded that in the context of REDD+ in the DRC, "*participation in REDD+ processes may resemble limited consultation rather than meaningful engagement*". The case studies highlight that there is often an intention or at least a symbolic commitment to new practices or innovative tools. However, after the initial push towards transformation, the tools often morph in the process to fit the existing economic order, as also observed by Ville (2025). New coalitions in forest governance have not yet overcome BAU driven deforestation (Duchelle et al. 2018). Soft transfer is a collaborative, rational and knowledge-driven processes which, according to Stone (2004) is often initiated by new knowledge, uncertainty and crises. Echoing her work, this thesis suggests soft transfer as a necessary process to complement the state-led hard transfer of policy instruments and structures, that is often restrained by institutional path dependency and the prevalent norms and power structures.

6 CONCLUSION

This empirical work demonstrates that the forest governance shortcomings are often political outcomes, stemming from the idealisation of plantation logic. Following Cleaver and Koning (2015) and Hajer (1995) this dissertation applies critical institutionalism and discourse theory approaches to forest governance. Through the case studies, I show that discourses and institutions are intertwined and together produce, reproduce and reinforce historical patterns. As the plantation logic benefits the already powerful groups, such as corporations, investors, and politicians, they are not incentivised to innovate outside the plantation boundaries. Instead, forests continue to be governed in ways that reproduce inequality and hinder meaningful transformation whether through the discursive making of forest frontiers, the silencing of local needs, customary rights, and alternatives, the implementation of climate finance, or delayed action. The articles in this dissertation are individual cases which all exhibit similar mechanisms at work. My research hence contributes to the analysis of globally employed narratives and power dynamics in global forest governance. The comparative approach has allowed me to identify nuanced patterns of BAU and the potential and shortcomings of transformational change across the diverse governance settings.

The Plantationocene is an appropriate lens to explain why forest governance has not led to transformational change in the Global North and South. Through industrial plantations and smallholder assemblages, perfumed with the narrow sustainability rhetoric that stabilises current practices, the plantation logic is fundamentally linked to the way societies are historically organised and continue to operate today. Transformations in this context then require a rethinking and awareness of the politically and financially built structures that sustain and expand the Plantationocene. I add the dimension of financialisation to the Plantationocene framework as a control mechanism, and for examining power structures, which I find a necessary step in shedding light on who shapes and benefits from the

contemporary forest governance and finance initiatives. I argue that in the financialised forest sector, labour is effectively excluded from landscapes due to the shift from production to accumulation. This, coupled with the idealisation of a plantation landscape, controls and limits land uses and livelihoods. The emphasis on short-termism and productivity, together with longstanding power structures, excuses political delay from urgent climate and conservation action, as well as sidelines the rights of marginalised groups and activities.

Through the diverse case studies, I have shown that across governance contexts and geographies, powerful discursive and financial tools normalise neoliberal approaches to forest use and hide unequal benefits and burdens. My analysis is a critical re-evaluation of the BAU in the forest sector. It reveals who benefits from the current definitions of sustainable practices, and more importantly who loses and what is lost when global forest policy frameworks are made. In Finnish, Malaysian, or Congolese forests, sustainability is used to legitimise continuity rather than transformation. My findings highlight that the processes are not new, but part of a long-standing project of land privatisation, nature commodification, and unequal benefit and burden sharing. Addressing climate change, biodiversity loss, and deforestation requires moving beyond the BAU practices and symbolic commitments. I plea for confronting the underlying political–economic arrangements, path dependency, and discursive frames that continue to normalise, legitimise, and stabilise unsustainable forest use.

Further comparative research across diverse regional contexts, such as forest governance in the Amazon basin or critical examinations of forest restoration and afforestation initiatives, would enrich the Plantationocene scholarship. Meaningful study of forest governance necessitates cross-regional knowledge exchange between the Global North and South. As I have argued, the Plantationocene functions through a degree of structural invisibility, operating as an underlying logic that shapes governance arrangements. Addressing this, future research that brings into light the financial, social, and discursive structures underlying forest governance, and thereby enhances transparency in these processes, is both necessary and overdue.

REFERENCES

Ali S, Varkkey H (2023) When distal flows meet local realities: A history of Acacia and Eucalyptus plantations in Pitas, Sabah. http://www.fairfrontiers.sakura.ne.jp/home/wp-content/uploads/2023/11/FairFrontiers-Research-Brief_1.pdf. Accessed 10 June 2026.

Arts B, Buizer M (2009) Forests, discourses, institutions: A discursive-institutional analysis of global forest governance. For. Policy Econ., 11 (5–6), 340-347. https://doi.org/10.1016/j.forpol.2008.10.004.

Arts B (2012) Forests policy analysis and theory use: Overview and trends. For. Policy Econ., 16, 7-13. https://doi.org/10.1016/j.forpol.2010.12.003.

Arts B (2021) Forest Governance: Hydra or Chloris? Cambridge: Cambridge University Press.

Arts B, Brockhaus M, Giessen L, McDermott CL (2024) The performance of global forest governance: Three contrasting perspectives. For Policy Econ., 161. https://doi.org/10.1016/j.forpol.2024.103165.

Bacchi C (2009) Analysing Policy: What's the Problem Represented to be? Frenchs Forest, NSW, Pearson Education.

Bäckstrand K, Lövbrand E (2006) Planting trees to mitigate climate change: contested discourses of ecological modernization, green governmentality and civic environmentalism. Glob. Environ. Polit., 6(1), 50–75. https://doi.org/10.1162/152638006775991911.

Baines J, Hager SB (2022) Commodity traders in a storm: financialization, corporate power and ecological crisis. Rev. Int. Polit. Econ., 29(4), 1053–1084. https://doi.org/10.1080/09692290.2021.1872039.

Barbour K, Barbour M, Maxwell TK, Pohipi D (2023) People-Tree Entanglements: Pine in Aotearoa New Zealand. The Global South 16(2), 135-160. https://dx.doi.org/10.2979/gbs.2023.a908606.

Begemann A, Dolriis C, Onatunji A, Chimisso C, Winkel G (2025) The Politics of Sustainable Finance for Forests: Interests, beliefs and advocacy coalitions shaping forest sustainability criteria in the making of the EU Taxonomy. Glob. Environ. Change, 92, 103001. https://doi.org/10.1016/j.gloenvcha.2025.103001.

Bichler S, Nitzan J, (2010) Imperialism and Financialism: A Story of a Nexus. J. Crit. Global. Stud., 42–78. http://bnarchives.yorku.ca/329/.

Borras S, Franco J (2013) Global Land Grabbing and Political Reactions 'From Below', Third World Q., 34(9), 1723-1747. https://doi.org/10.1080/01436597.2013.843845.

Bowen G (2009) Document analysis as a qualitative research method. Qual. Res. J., 9, 27–40. https://doi.org/10.3316/QRJ0902027.

Brockhaus M, Angelsen A (2012) Seeing REDD+ through 4Is: A political economy framework. In Analysing REDD+: Challenges and choices, 15-30. CIFOR, Bogor, Indonesia
Brockhaus M, Di Gregorio M, Mardiah S (2014) Governing the design of national REDD+: An analysis of the power of agency. For Policy Econ., 49, 23-33. https://doi.org/10.1016/j.forpol.2013.07.003.

Brockhaus M, Di Gregorio M, Djoudi H, Moeliono M, Pham TT, Wong G (2021) The forest frontier in the Global South: Climate change policies and the promise of development and equity. Ambio, 50, 2238–2255. https://doi.org/10.1007/s13280-021-01602-1.

Campese J (2016) Natural resource governance framework assessment guide: Learning for improved natural resource governance. IUCN/CEESP NRGF Working Paper, Gland, Switzerland: IUCN and CEESP.

Chagnon CW, Durante F, Gills BK, Hagolani-Albov SE, Hokkanen S, Kangasluoma SMJ, … Vuola MPS (2022) From extractivism to global extractivism: the evolution of an organizing concept. J. Peasant Stud., 49(4), 760–792. https://doi.org/10.1080/03066150.2022.2069015.

Chao S, Wolford W, Ofstehage A, Guttal S, Gonçalves E, Ayala F (2024) The Plantationocene as analytical concept: a forum for dialogue and reflection. J. Peasant Stud., 51(3), 541-563. https://doi.org/10.1080/03066150.2023.2228212.

Chan KW, Boyd DR, Gould RK, Jetzkowitz J, Liu J, Muraca B, Naidoo R, Olmsted P, Satterfield T, Selomane O, Singh GG, Sumaila R, Ngo HT, Boedhihartono AK, Agard J, Aguiar APD, Armenteras D, Balint L, Barrington-Leigh C, Cheung W… Brondizio ES (2020) Levers and leverage points for pathways to sustainability. People Nat., 2(3), 693–717. https://doi.org/10.1002/pan3.10124.

Cleary MC (1992) Plantation Agriculture and the Formulation of Native Land Rights in British North Borneo c. 1880-1930. Geogr. J., 158(2), 170–181. https://doi.org/10.2307/3059786.

Cleaver F, de Koning J (2015) Furthering critical institutionalism. Int. J. Commons, 9(1), 1–18. https://www.jstor.org/stable/26522813.

Cleaver F, Whaley L (2018) Understanding process, power, and meaning in adaptive governance: a critical institutional reading. Ecol. Soc. 23(2), 49. https://doi.org/10.5751/ES-10212-230249.

Crutzen PJ, Stoermer E (2000) The Anthropocene. IGBP Newsletter, 41, 17–18.
Daniels A, Kohonen M, Covaro B (2026) Financial Secrets of the Forests: How secrecy fuels deforestation in Brazil and Cameroon. Financial Transparency Coalition. https://financialtransparency.org/wp-content/uploads/2026/05/EN-Financial-Secrets-of-the-Forests-26-May-2026.pdf. Accessed 10 June 2026.

Department of Statistics Malaysia (2023) Kawasanku: Pitas, Sabah. OpenDOSM. https://open.dosm.gov.my/dashboard/kawasanku/Sabah/district/Pitas. Accessed 29 May 2026.

Diaw MD, Franks P (2019) Production Alimentaire, Expansion Agricole et d´eforestation Au Mai-Ndombe, RDC. International Institute for Environment and Development (IIED), London. Working Paper. https://pubs.iied.org/pdfs/1765 2IIED.pdf. Accessed 10 June 2026.

Doolittle A (2004) Powerful persuasions: the language of property and politics in Sabah Malaysia (North Borneo), 1881-1996. MODERN ASIAN STUDIES, 38, 821-850. https://doi.org/10.1017/S0026749X04001222.

DRC-MECNT, FCPF, UN-REDD (DRC Ministry of Environment, Conservation of Nature and Tourism, Forest Carbon Partnership Facility and UN-REDD) (2015). Strat´egie- cadre nationale REDD de la R´epublique D´emocratique du Congo. Version 3. https://www.forestcarbonpartnership.org/sites/fcp/files/2015/March/Strategie-cadre% 20nationale%20REDD%20de%20la%20RDC.pdf. Accessed 20 March 2026.

Duchelle AE, Seymour F, Brockhaus M, Angelsen A, Moeliono M, Wong G, Pham TT, Martius C (2018) REDD+: Lessons from National and Subnational Implementation: Ending Tropical Deforestation: a stock-take of progress and challenges. Working paper - World Resources Institute, no. June/2018, World Resources Institute, Washington, DC.

Dutta S (2020) Plantationocene and Environmental crisis: Discussing cultivation and neo-colonialism in the Global South. New Literaria, 1(2), 93–99. https://doi.org/10.48189/nl.2020.v01i2.005.

Edelman M, Oya C, Borras SM Jr. (Eds.). (2016) Global land grabs: History, theory and method. Routledge.

European Commission (2021) New EU Forest Strategy for 2030, COM(2021) 572 Final, Available online: https://eur-lex.europa.eu/resource.html?uri=cellar:0d918e07-e610-11eb-a1a5-01aa75ed71a1.0001.02/DOC_1&format=PDF. Accessed 10 June 2026.
European Forest Institute (2021) Who owns the forests and how are they managed? European Forest Institute. https://efi.int/forestquestions/q2. Accessed 10 June 2026.

FAO (2020) Global Forest Resources Assessment 2020. Rome.

FAO (2025) Global Forest Resources Assessment 2025. Rome.

FCPF (Forest Carbon Partnership Facility) (2016) Emission Reductions Program Document (ER-PD). https://www.forestcarbonpartnership.org/sites/fcp/files/20 16/Dec/20161108%20Revised%20ERPD_DRC.pdf. Accessed 20 March 2026.

FCPF (Forest Carbon Partnership Facility) (2020) Annual report. http s://www.forestcarbonpartnership.org/system/files/documents/FCPF%202020%20 Annual%20Report_Web_update.pdf. Accessed 20 March 2026.

FCPF (Forest Carbon Partnership Facility) (2022) Benefit Sharing Plan. Mai-Ndombe Emissions Reduction Program Democratic Republic of the Congo. https://pubdocs.worldbank.org/en/740301657967569768/Final-Benefit-Sharing-Plan-June-2022_-DRC.pdf. Accessed 20 March 2026.

Finer S (2017) Verovälttelyä kehitysyhteistyövaroilla – Finnfund ja metsärahaston verojärjestelyt Luxemburgissa. https://finnwatch.org/images/pdf/Finnfund_Dasos_Final_report.pdf. Accessed 29 May 2026.

Foucault M (1994) [1981] So is it important to think? In: Faubion, J.D. (Ed.), Power: Essential Works of Foucault 1954–1984, vol. 3. Penguin, London. Hurley, R. and others (trans.).

FOREST EUROPE (2020) State of Europe's Forests 2020. https://foresteurope.org/wp-content/uploads/2016/08/SoEF_2020.pdf. Accessed 10 June 2026.

Galaz V, Crona B, Dauriach A, Scholtens B, Steffen W (2018) Finance and the Earth system – Exploring the links between financial actors and non-linear changes in the climate system. Glob. Environ. Change, 53, 296–302. https://doi.org/10.1016/j.gloenvcha.2018.09.008.

Galaz V (2022) Global environmental governance in times of turbulence. One Earth 5(6), 582-585. https://doi.org/10.1016/j.oneear.2022.05.018.

Gaveau DLA, Locatelli B, Salim MA, Yaen H, Pacheco P, Sheil D (2018) Rise and fall of forest loss and industrial plantations in Borneo (2000–2017) Conserv. Lett., 12, e12622, https://doi.org/10.1111/conl.12622.

Geist H, Lambin E (2003) Is poverty the cause of tropical deforestation? Int. For. Rev., 5(1), 64–67. http://www.jstor.org/stable/43739304.

Gibbs D (2020) Green Economy, in: Morin, J.-F., Orsini, A. (Eds.), Essential Concepts of Global Environmental Governance. Routledge, London.

Global Forest Watch (n.d.) Democratic Republic of the Congo: Deforestation rates and statistics. https://www.globalforestwatch.org/dashboards/country/COD/. Accessed 6 March 2026.

Gunnoe A (2015) The Financialization of the US Forest Products Industry: SocioEconomic Relations, Shareholder Value, and the Restructuring of an Industry. Social Forces, 94(3), 1075–1101. https://doi.org/10.1093/sf/sov108.

Hall R, Edelman M, Borras S, Scoones I, White B, Wolford W (2015) Resistance, acquiescence or incorporation? An introduction to land grabbing and political reactions 'from below'. J. Peasant Stud., 42, 467-488. https://doi.org/10.1080/03066150.2015.1036746.

Hajer MA (1995) The politics of environmental discourse. Oxford University Press, Oxford, p. 344.

Haraway D, Ishikawa N, Gilbert SF, Olwig K, Tsing AL, Bubandt N (2016) Anthropologists Are Talking – About the Anthropocene. Ethnos, 81(3), 535–564. https://doi.org/10.1080/00141844.2015.1105838.

Henriet B (2015) "Elusive natives": escaping colonial control in the Leverville oil palm concession, Belgian Congo, 1923–1941. Can. J. Afr. Stud., 49(2), 339-361. https://doi.org/10.1080/00083968.2015.1057855.

Hepp CM, Kurien AJ, Tong X, Bech Bruun, T (2026) Shifting cultivation as a driver of deforestation: Misinterpreted data, misguided conclusions, and misplaced blame, One Earth. https://doi.org/10.1016/j.oneear.2026.101706.

Himes A, Dues K (2024) Relational forestry: a call to expand the discipline's institutional foundations. Ecosyst. People, 20(1). https://doi.org/10.1080/26395916.2024.2365236.

Holl K, Brancalion P (2020) Tree planting is not a simple solution. Science 368, 580-581. https://doi.org/10.1126/science.aba8232.

Humphreys D (2006) Logjam: deforestation and the crisis of global governance. Earthscan.

Humphreys D (2009) Discourse as ideology: Neoliberalism and the limits of international forest policy. For. Policy Econ, 11(5-6), 319-325. https://doi.org/10.1016/j.forpol.2008.08.008.

Humphreys D, Singer B, McGinley K, Smith R, Budds J, Gabay M, … Satyal P (2019) SDG 17: Partnerships for the Goals – Focus on Forest Finance and Partnerships. In P. Katila, C. J. Pierce Colfer, W. de Jong, G. Galloway, P. Pacheco, & G. Winkel (Eds.), Sustainable Development Goals: Their Impacts on Forests and People (pp. 541–576). chapter, Cambridge: Cambridge University Press.

International Consortium of Investigative Journalists (ICIJ) (2014) Luxembourg Leaks database. https://www.icij.org/investigations/luxembourg-leaks/. Accessed 10 June 2026.

International Consortium of Investigative Journalists (ICIJ) (2017) Paradise Papers database. https://www.icij.org/investigations/paradise-papers/. Accessed 10 June 2026.

IPBES (2024) Summary for Policymakers of the Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. O'Brien, K., Garibaldi, L., Agrawal, A., Bennett, E., Biggs, R., Calderón Contreras, R., Carr, E., Frantzeskaki, N., Gosnell, H., Gurung, J., Lambertucci, S., Leventon, J., Liao, C., Reyes García, V., Shannon, L., Villasante, S., Wickson, F., Zinngrebe, Y., and Perianin, L. (eds.). IPBES secretariat, Bonn, Germany. https://doi.org/10.5281/zenodo.11382230.

Ishikawa N (2020) Into a New Epoch: Capitalist Nature in the Plantationocene. In: Ishikawa, N., Soda, R. (eds) Anthropogenic Tropical Forests. Adv. Asian Hum.-Environ. Res. Springer, Singapore. https://doi.org/10.1007/978-981-13-7513-2_28.

Jude W (2021, April 29) Give back our ancestral land, demand residents in 59 Sabah villages. Free Malaysia Today. https://www.freemalaysiatoday.com/category/nation/2021/04/29/give-back-our-ancestral-land-demand-residents-in-59-sabah-villages. Accessed 20 March 2026.

Kadoya T, Takeuchi Y, Shinoda Y, Nansai K (2022) Shifting agriculture is the dominant driver of forest disturbance in threatened forest species' ranges. Commun Earth Environ 3, 108. https://doi.org/10.1038/s43247-022-00434-5.

Kanninen M (2010) Plantation forests: global perspectives. In: J. Bauhus et al., eds. Ecosystem goods and services from plantation forests. London: Earthscan, pp. 1–15.

Karlsson M, Gilek M (2020) Mind the gap: coping with delay in environmental governance. Ambio 49, 1067–1075. https://doi.org/10.1007/s13280-019-01265-z.

Kates RW, Haarmann V (1992) Where the Poor Live: Are the Assumptions Correct? Environ. Sci. Policy, 34(4), 4–28. https://doi.org/10.1080/00139157.1992.9932557.

Kengoum F, Pham TT, Sonwa DJ (2020) A decade of REDD+ in a Changing Political Environment in the Democratic Republic of Congo. Infobrief No. 3188. Center for International Forestry Research (CIFOR), Bogor, Indonesia. https://doi.org/10.17528/cifor/007893.

Kengoum F, Di Gregorio M, Ntirumenyerwa Mihigo BP, Brockhaus M (2026) Power and inclusion in REDD+ policy networks in the Democratic Republic of Congo. For. Policy Econ., 189, 103846, https://doi.org/10.1016/j.forpol.2026.103846.

Kenney-Lazar M, Wong G, Baral H, Russell AJM (2018) Greening rubber? Political ecologies of plantation sustainability in Laos and Myanmar, Geoforum, 92, 96-105. https://doi.org/10.1016/j.geoforum.2018.03.008.

Kenney-Lazar M, Ishikawa N (2019) Mega-plantations in Southeast Asia. Environ. Soc., 10(1), 63–82. https://doi.org/10.3167/ares.2019.100105.

Kleinschmit D, Wildburger C, Grima N, Fisher B (eds.) (2024) International Forest Governance: A Critical Review of Trends, Drawbacks, and New Approaches. IUFRO World Series Volume 43. Vienna. 164p.

Klopstock F (1950). Agricultural development in tropical Africa. Social Research, 17(2), 168-187. http://www.jstor.org/stable/40969220.

Koddenbrock K, Kvangraven IH, Sylla NS (2022) Beyond financialisation: the longue durée of finance and production in the Global South. Camb. J. Econ., 46(4), 703–733. https://doi.org/10.1093/cje/beac029.

Korhonen-Kurki K, Brockhaus M, Muharrom E, Juhola S, Moeliono M, Maharani C, Dwisatrio B (2017) Analyzing REDD+ as an Experiment of Transformative Climate Governance: Insights from Indonesia. Environ. Sci. Policy, 73, 61–70. https://doi.org/10.1016/j.envsci.2017.03.014.

Kotto-Same J, Woomer PL, Appolinaire M, Louis Z (1997) Carbon dynamics in slash-and-burn agriculture and land use alternatives of the humid forest zone in Cameroon. Agriculture Ecosystems and Environment.

Kröger M (2014) The political economy of global tree plantation expansion: a review. J. Peasant Stud., 41(2), 235–261. https://doi.org/10.1080/03066150.2014.890596.

Kröger M Raitio K (2017) Finnish forest policy in the era of bioeconomy: a pathway to sustainability? For. Policy Econ., 77, 6–15. https://doi.org/10.1016/j.forpol.2016.12.003.

Kröger M (2025) Clearcut: Political Economies of Deforestation. Cambridge: Cambridge University Press.

Kukkonen A, Malkamäki A (2024) A cultural approach to politicization of science: How the forestry coalition challenged the scientific consensus in the Finnish news media debate on increased logging. Society and Natural Resources 37, 91–112. https://doi.org/10.1080/08941920.2023.2259326.

Kuuluvainen T, Lindberg H, Vanha-Majamaa I, Keto-Tokoi P, Punttila P (2019) Low-level retention forestry, certification, and biodiversity: case Finland. Ecol. Process. https://doi.org/10.1186/s13717-019-0198-0.

Kuckartz U (2019) Qualitative Text Analysis: A Systematic Approach. In Kaiser G., and Presmeg, N. (eds.), Compendium for Early Career Researchers in Mathematics Education, ICME-13 Monographs. https://doi.org/10.1007/978-3-030-15636-7_8.

Lamb WF, Mattioli G, Levi S., Timmons Roberts J, Capstick S, Creutzig F, Minx JC, Müller-Hansen F, et al. (2020) Discourses of climate delay. Glob. Sustain., 3, e17. https://doi.org/10.1017/sus.2020.13.

Larsen JB, Angelstam P, Bauhus J, Carvalho JF, Diaci J, Dobrowolska D, Gazda A, Gustafsson L, Krumm F, Knoke T, Konczal A, Kuuluvainen T, Mason B, Motta R, Pötzelsberger E, Rigling A, Schuck A (2022) Closer-to-Nature Forest Management. From Science to Policy 12. European Forest Institute.

Lazonick W, O'Sullivan M (2000) Maximising Shareholder Value: a New Ideology for Corporate Governance. Econ. Soc., 29, 13 –35. https://doi.org/10.1057/9780230523739_2.

Li T (2011) Centering labor in the land grab debate. The Journal of Peasant Studies, 38(2), 281–298. https://doi.org/10.1080/03066150.2011.559009.

Li T (2017) Intergenerational displacement in Indonesia's oil palm plantation zone. J. Peasant Stud., 1–19. https://doi.org/10.1080/03066150.2017.1308353.

Li TM, Semedi P (2021) Plantation life: Corporate occupation in Indonesia's oil palm zone. Duke University Press. https://doi.org/10.2307/j.ctv1zn1t03.

Liu JQ, Hull V, Batistella M, DeFries R, Dietz T, Fu F, Hertel TW, Izaurralde RC, Lambin EF, Li S, Martinelli LA, McConnell W, Moran EF, Naylor R, Ouyang Z, Polenske KR, Reenberg A, de Miranda Rocha G, Simmons CS, Verburg PH, Vitousek PM, Zhang F, Zhu C (2013) Framing sustainability in a telecoupled world. Ecol. Soc., 18(2), 26. http://dx.doi.org/10.5751/ES-05873-180226.

Malkamäki A, D'Amato D, Hogarth N, Kanninen M, Pirard R, Toppinen A, Zhou W (2018) A systematic review of the socio-economic impacts of large-scale tree plantations, worldwide, Glob. Environ. Change, 53, 90-103. https://doi.org/10.1016/j.gloenvcha.2018.09.001.

Majid Cooke F, Toh SM (2012) Indigenous Peoples and Access to Customary Lands: A Question of Rights in Contemporary Sabah. Background paper for the SUHAKAM National Inquiry on Land Rights for Indigenous Peoples.

Majid Cooke F (2013) Constructing rights: Indigenous Peoples at the public hearings of the national inquiry into customary rights to land in Sabah, Malaysia. Sojourn, 28(3), 512–537. https://www.jstor.org/stable/43186979.

Marquardt J, Nasiritousi N (2022) Imaginary lock-ins in climate change politics: the challenge to envision a fossil-free future. Environ. Polit., 31(4), 621–642. https://doi.org/10.1080/09644016.2021.1951479.

McDermott CL (2017) Whose forests, whose gain? Nat. Clim. Chang. 7 (6), 386–387. https://doi.org/10.1038/nclimate3300.

McDermott CL, Acheampong E, Arora-Jonsson S, Asare R, de Jong W, Hirons M, … Setyowati A (2019) SDG 16: Peace, Justice and Strong Institutions – A Political Ecology Perspective. In P. Katila, C. J. Pierce Colfer, W. de Jong, G. Galloway, P. Pacheco, & G. Winkel (Eds.), Sustainable Development Goals: Their Impacts on Forests and People (pp. 510–540). chapter, Cambridge: Cambridge University Press.

McDermott C, Burns SL, Brockhaus M, Bong IW, Hafferty C, Hirons M, Mensah Kumeh E, Koh NS, Moeliono M, Pietarinen N, Ville A, Sahide MA, Wong G. (2024) A Political Ecology and Economy of Key Trends in International Forest Governance. In D. Kleinschmit, C. Wildburger, N. Grima, & B. Fisher (Eds.), International Forest Governance: A Critical Review of Trends, Drawbacks, and New Approaches. A Global Assessment Report (Vol. 43, pp. 19-56). (IUFRO World Series). IUFRO, Vienna.

Meijaard E, Sheil D (2011) A Modest Proposal for Wealthy Countries to Reforest Their Land for the Common Good. BIOTROPICA 43(5), 524–528. https://doi.org/10.1111/j.1744-7429.2011.00802.x.

Meyfroidt P, Lambin EF, Erb KH, Hertel TW (2013) Globalization of land use: Distant drivers of land change and geographic displacement of land use. Current Opinion in Environmental Sustainability, 5(5), 438–444. https://doi.org/10.1016/j.cosust.2013.04.003.
Ministry of Agriculture and Forestry (2023) Government Report on the Climate Plan for the Land Use Sector. Publications of the Ministry of Agriculture and Forestry 2023:12. http://urn.fi/URN:ISBN:978-952-366-592-7 Accessed 10 June 2026.

Moore JW (2017) The Capitalocene, Part I: on the nature and origins of our ecological crisis. J. Peasant Stud., 44(3), 594–630. https://doi.org/10.1080/03066150.2016.1235036.

Mönkkonen M, Aakala T, Blattert C, Burgas D, Duflot R, Eyvindson K, Kouki J, Laaksonen T. et al. (2022) More wood but less biodiversity in forests in Finland: a historical evaluation. Memoranda–Societatis pro Fauna Et Flora Fennica. 98: 1–11.

Newell P (2008) The political economy of global environmental governance. Rev. Int. Stud., 34, 507–29. https://doi.org/10.1017/S0260210508008140.

Ng JSC, Chervier C, Ancrenaz M, Naito D, Karsenty A (2022) Recent forest and land-use policy changes in Sabah, Malaysian Borneo: Are they truly transformational?, Land Use Policy, 121. https://doi.org/10.1016/j.landusepol.2022.106308.

Nijmeijer A, Lauri PÉ, Harmand JM, Saj S (2018) Carbon dynamics in cocoa agroforestry systems in Central Cameroon: afforestation of savannah as a sequestration opportunity. Agroforest Syst 93, 851–868. https://doi.org/10.1007/s10457-017-0182-6.

Oberlack C, Boillat S, Brönnimann S, Gerber JD, Heinimann A, Speranza CI, Messerli P, Rist S, Wiesmann U (2018) Polycentric governance in telecoupled resource systems. Ecol. Soc., 23(1). https://www.jstor.org/stable/26799071.

Ostrom E (1992) Governing the Commons. The Evolution of institutions for collective action: Cambridge University Press, Cambridge.

Paprocki K (2026) Adaptation in the Plantationocene. J. Peasant Stud., 1–26. https://doi.org/10.1080/03066150.2025.2601963.

Patrick T (2019, March 30) Sabah villagers wage 40-year battle over land after trick by forestry authority. Free Malaysia Today. https://www.freemalaysiatoday.com/category/nation/2019/03/30/sabah-villagers-wage-40-year-battle-over-land-after-trick-by-forestry-authority. Accessed 20 March 2026.

Peluso N, Vandergeest P (2001) Genealogies of forest law and customary rights in Indonesia,Malaysia, and Thailand. J. Asian Stud., 60(3), 761–812.

Pecurul-Botines M, Secco L, Bouriaud L, Giurca A, Brockhaus M, Brukas V, Hoogstra-Klein MA, Konczal A, et al. (2023) Meeting the European Union's Forest Strategy goals: A comparative European assessment. From Science to Policy 15. European Forest Institute. https://doi.org/10.36333/fs15.

Pecurul-Botines M, Giurca A, Pülzl H, Niedzialkowski K, Brockhaus M, Bouriaud L, Brukas V, Hajtmarova S, Hoogstra-Klein MA, Konczal A, Marcinekova L, Øistad K, Pezdevšek Malovrh Š, Pietarinen N, Secco L, Roux JL, Wolfslehner B, Winkel G (2025) Conflicts and policy priorities drive differences in the EU Forest strategy implementation: Insights from 15 European countries. For. Policy Econ., 181, 103652. https://doi.org/10.1016/j.forpol.2025.103652.

Pendrill F, Persson UM, Godar J, Kastner T, Moran D, Schmidt S, Wood R (2019a) Agricultural and forestry trade drives large share of tropical deforestation emissions. Glob. Environ. Change. 56, 1–10. https://doi.org/10.1016/j.gloenvcha.2019.03.002.

Pendrill F, Persson UM, Godar J, Kastner T (2019b) Deforestation displaced: Trade in forest-risk commodities and the prospects for a global forest transition. Environ. Res. Lett., 14(5), 055003. https://doi.org/10.1088/1748-9326/ab0d41.

Pietarinen N, Harrinkari T, Brockhaus M, Yakusheva N (2023) Discourses in Finnish forest policy: Cherry-picking or sustainability? For. Policy Econ., 147. https://doi.org/10.1016/j.forpol.2022.102897.

Pitzén S, Lukkarinen J, Primmer E (2023) Coherent at face value: Integration of forest carbon targets in Finnish policy strategies. Ambio 52, 1861–1877. https://doi.org/10.1007/s13280-023-01923-3.

Puettmann KJ, Coates KD, Messier CC (2009) A critique of silviculture: managing for complexity. Washington, DC, USA: Island press

Pülzl H, Wydra D, Obeng Odoom F, Arts B, Edwards P, Kleinschmit D, Giurca A, Burns SL, Nurrochmat D, Park MS, Mijailoff JD (2024) Current forest-related discourses. In D. Kleinschmit, C. Wildburger, N. Grima, & B. Fisher (Eds.), International forest governance: A critical review of trends, drawbacks, and new approaches (pp. 83–117). International Union of Forest Research Organizations.

Pye O (2019) Commodifying sustainability: Development, nature and politics in the palm oil industry, World Dev., 121, 218-228. https://doi.org/10.1016/j.worlddev.2018.02.014.

Reenberg A, de Miranda Rocha G, Simmons CS, … Zhu C (2013) Framing sustainability in a telecoupled world. Ecol. Soc., 18(2), Article 26. https://doi.org/10.5751/ES-05873-180226.

Rockström J, Steffen W, Noone K, Persson Å, Chapin FS, Lambin E, Lenton TM, Scheffer M, Folke C, Schellnhuber HJ, Nykvist B, de Wit CA, Hughes T, van der Leeuw S, Rodhe H, Sörlin S, Snyder PK, Costanza R, Svedin U, Falkenmark M, Karlberg L, Corell RW, Fabry VJ, Hansen J, Walker B, Liverman D, Richardson K, Crutzen P, Foley J, (2009) Planetary Boundaries: Exploring the Safe Operating Space for Humanity. Ecol. Soc. 14.

Rulli MC, Casirati S, Dell'Angelo J, Davis KF, Passera C, D'Odorico P (2019) Interdependencies and telecoupling of oil palm expansion at the expense of Indonesian

rainforest. Renew. Sustain. Energy Rev., 105, 499–512. https://doi.org/10.1016/j.rser.2018.12.050.

SAFODA (1980) The afforestation and settlement scheme for the people in Bengkoka (pp. 1–13). Press and Publication Division, Chief Minister's Department.

Salvini G, Herold M, De Sy V, Kissinger G, Brockhaus M, Skutsch M (2014) How countries link REDD+ interventions to drivers in their readiness plans: Implications for monitoring systems. Environ. Res. Lett., 9(7), 074004. https://doi.org/10.1088/1748-9326/9/7/074004.

Scoones I, Smalley R, Hall R, Tsikata D (2019) Narratives of scarcity: Framing the global land rush. Geoforum, 101, 231-241. https://doi.org/10.1016/j.geoforum.2018.06.006.

Serrano A, Hall R, Dell'Angelo J, Kay S, Coronado S (2025) The 'return' of land grabbing? J. Peasant Stud., 52(7), 1393–1408. https://doi.org/10.1080/03066150.2025.2557012.

Sivonen MH, Syväterä J (2023) Formal commitments versus actual practices? Narratives as tools of epistemic governance in the debate over Finnish forestry. Acta Sociol., 66, 239–253. https://doi.org/10.1177/00016993221099618.

Slaughter AM, Tulumello AS, Wood S (1998) International Law and International Relations Theory: A New Generation of Interdisciplinary Scholarship. Am. J. Int. Law 92, 367–397.

Soimakallio S, Böttcher H, Niemi J, Mosley F, Turunen S, Hennenberg K.J, Reise J, Fehrenbach H (2022) Closing an open balance: The impact of increased tree harvest on forest carbon. GCB Bioenergy, 14, 989–1000. https://doi.org/10.1111/gcbb.12981.

Sotirov M, Winkel G, Eckerberg K (2021) The coalitional politics of the European Union's environmental forest policy: Biodiversity conservation, timber legality, and climate protection. Ambio 50, 2153–2167. https://doi.org/10.1007/s13280-021-01644-5.

Steffek J (2009) Discursive legitimation in environmental governance. For. Policy Econ., 11(5–6), 313–318. https://doi.org/10.1016/j.forpol.2009.04.003.

Stone D (2004) Transfer agents and global networks in the 'transnationalization' of policy. J. Eur. Public Policy, 11, 545–566. https://doi.org/10.1080/1350176041000169429 1.

Sullivan S (2012) Banking Nature? The Spectacular Financialisation of Environmental Conservation. Antipode, 45, 198–217. https://doi.org/10.1111/j.1467-8330.2012.00989.x.

Sändig J (2021) Contesting Large-Scale Land Acquisitions in the Global South. World Dev., 146. https://doi.org/10.1016/j.worlddev.2021.105581.

Takala T, Tanskanen M, Brockhaus M, Kanniainen T, Tikkanen J, Lehtinen A, Hujala T, Toppinen A (2023) Is a sustainability transition possible within the decisionsupport services provided to Finnish forest owners? For. Policy Econ., 150. https://doi.org/10.1016/j.forpol.2023.102940.

Toivanen T (2021) A Player Bigger Than Its Size: Finnish Bioeconomy and Forest Policy in the Era of Global Climate Politics. In: Backhouse, M., et al. Bioeconomy and Global Inequalities. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-68944-5_7.

Tsing A (2012) Unruly Edges: Mushrooms as Companion Species. Environ. Humanit., 1(1), 141–154. https://doi.org/10.1215/22011919-3610012.

Vandenberg J (2024) Plastic politics of delay: how political corporate social responsibility discourses produce and reinforce inequality in plastic waste governance. Glob. Environ. Polit., 24, 122–145. https://doi.org/10.1162/glep_a_00745.

van der Zwan N (2014) Making Sense of Financialization. Socio-Econ. Rev. 12. 99-129. https://doi.org/10.1093/ser/mwt020.

Viitala EJ, Finér S, Hietanen S, Korhonen O, Nykänen P, Urpilainen M, Valonen M (2022) Metsärahastot: Oikeudelliset rakenteet, verotusasema ja toiminta Suomessa. Luonnon-vara- ja biotalouden tutkimus 99/2022. Luonnonvarakeskus. Helsinki. 161 s.

Wang C, Xu, Y (2024) Reflecting on the Plantationocene: the political economy of sugarcane plantations in Guangxi, China. J. Peasant Stud., 51(3), 564–585. https://doi.org/10.1080/03066150.2022.2087180.

Ville, A 2025. Through a glass darkly: Shedding light on silences in forest policy and knowledge. [Väitöskirja, Helsingin yliopisto]. HELSINKI UNIVERSITY. http://urn.fi/URN:ISBN:978-951-651-824-7.

Winkel G, Sotirov M (2016). Whose integration is this? European forest policy between the gospel of coordination, institutional competition, and a new spirit of integration. Environ. Plan. C Gov. Policy, 34(3), 496-514. https://doi.org/10.1068/c1356j.

Whitaker JA (2020) Strategic alliance and the Plantationocene among the Makushi in Guyana. Soc. Anthropol., 28(4), 881-896. https://doi.org/10.1111/1469-8676.12784.

Wolford WW, White B, Scoones I, Hall R, Edelman M, Borras SM (2024) Global land deals: what has been done, what has changed, and what's next? J. Peasant Stud., 1–38. https://doi.org/10.1080/03066150.2024.2325685.

World Bank (2016) Forest Carbon Partnership Facility (FCPF) Carbon Fund Emission Reductions Program Document (ER-PD) Mai-Ndombe Emission Reductions Program, Democratic Republic of Congo. https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Dec/20161108%20Revised%20ERPD_DRC.pdf. Accessed 20 March 2026.

World Bank (2018) Fact Sheet: Mai-Ndombe REDD+Initiative in DRC. Brief. March 16, 2018. https://www.worldbank.org/en/country/drc/brief/fact-sheet-mai-ndombe-redd-initiative-in-drc. Accessed 20 March 2026.

World Bank. (2020a). Forest area (sq. km). https://data.worldbank.org/indicator/AG.LND.FRST.K2. Accessed 20 March 2026.

World Bank. (2020b). Forest area (% of land area). https://data.worldbank.org/indicator/AG.LND.FRST.ZS. Accessed 20 March 2026.

World Commission on Environment and Development. (1987). Our common future. Oxford University Press.

Wu E, Xu Y (2024) Plantationocene: A Framework For Understanding the Links Between Ecological Destruction and Social Inequalities. J. Agric. Environ. Ethics, 37, 1. https://doi.org/10.1007/s10806-023-09919-5.

Zoomers A (2010) Globalisation and the foreignisation of space: seven processes driving the current global land grab. J Peasant Stud., 37(2), 429–447. https://doi.org/10.1080/03066151003595325.

APPENDICES

Appendix 1. List of interviewees

Interviewee affiliation	Number of interviewees
Article II Government official (2), Research (1), Recreational association (1), Forest owners association (1)	N = 5
Article III In Malaysia: Indigenous NGO (3), Environmental NGO (1), Human rights organisation (1), Community member (1), Researcher, State-affiliated (3), Researcher, academia (5), Government official (1), Independent consultant, forest certification (1), Private sector, business development (1), Private sector, timber company (1) In Finland: Public development fund (3)	N=21