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Between a rock and a hard place? Investigating the international and domestic sources of Finnish forest policy

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Academic Dissertation

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ABSTRACT

Forests are essential for maintaining the living conditions on Earth, providing livelihoods and wellbeing for a significant proportion of humanity, while also having the potential to address the existential challenges we are facing. This study explored the composition of the Finnish forest policy subsystem and analyzed the type of policies it has produced under different national and international political influences within a 22-year time frame, from 1994 to 2015. The main aims were to identify the predominant coalitions involved in the policy processes and to analyze the role of international influences and discourses in the Finnish forest policy subsystem. Furthermore, the study examines the related sustainability framings and discusses the implications of the analyzed forest policies for the sustainability of forestry and social equity.

The analytical approach was guided by three main policy process-related theories. Firstly, the Advocacy Coalition Framework (ACF) was used to unpack and critically examine the composition and value basis of the Finnish forest policy subsystem. Secondly, the ACF was combined with the Four Pathways of International Influences framework to analyze and identify how international influences affect the Finnish policy subsystem. Finally, Critical Discourse Analysis was applied to discover how Finnish forest policies are formulated, which influences guide them, and how international sustainability discourses are reflected in them. These theories also guided the data collection and analysis. The data consisted of expert interviews and policy documents and was examined using qualitative content analysis.

Based on the analysis, the Finnish forest policy subsystem consists of three coalitions: the private forestry coalition, the forestry administration coalition, and the environmental coalition. The first two derive their policy core beliefs from the forestry paradigm and promote the economic utilization of timber, whereas the environmental coalition derives its beliefs from the environmental paradigm and promotes the safeguarding of forest nature. The results of the dissertation indicate that Finnish forest policy has been inclined to favor the approach adopted by the private forestry and forestry administration coalitions by emphasizing the economic utilization of timber resources. This approach seems to stem from the importance of the export-dependent Finnish forest industry to the national economy. In addition, the results show that international influences have diffused into the Finnish forest policy development process through three different pathways, namely international rules, international norms and discourse, and markets. More specifically, legally binding international rules and non-legally binding international norms and discourse were regarded as equally important. In the 1990s, the rise of environmental consciousness and related regulation gave the environmental coalition the leverage to influence Finnish forest policy. However, the influence of the environmental coalition was only temporary. In the 2010s, the bioeconomy narrative applied by the private forestry coalition and the forestry administration coalition re-emphasized the economic utilization of forests to the detriment of environmental aspects.

The future of the Finnish forest sector depends on how it will reconcile – or fail to reconcile – the contradictory paradigms of environmental protection and forest utilization.

Policy changes toward a sustainable future would require changes in the discourse and the discursive space, together with more open public discussion.

Keywords: Sustainability, Sustainable development, Advocacy Coalition Framework, Critical Discourse Analysis, International influences

Harrinkari T (2024) Between a rock and a hard place? Investigating the international and domestic sources of Finnish forest policy. [Puun ja kuoren välissä? Tutkimus Suomen metsäpolitiikan kansainvälisistä ja kansallisista vaikutteista.] 70 p. Dissertationes Forestales 357. https://doi.org/10.14214/df.357.

TIIVISTELMÄ

Metsät ovat välttämättömiä elinolojen ylläpitämiseksi maapallolla. Ne tarjoavat toimeentuloa ja hyvinvointia merkittävälle osalle ihmiskuntaa ja ovat avainasemassa ihmiskunnan kohtaamiin eksistentiaalisiin haasteisiin vastaamisessa. Tässä tutkimuksessa analysoidaan Suomen metsäpolitiikkajärjestelmän koostumusta ja millaista politiikkaa se on tuottanut erilaisten kansallisten ja kansainvälisten poliittisten vaikutteiden alaisena 22 vuoden ajanjaksolla vuosina 1994–2015. Tutkimuksen päätavoitteina oli tunnistaa metsäpolitiikassa toimivat eturyhmittymät eli koalitiot, analysoida metsäpolitiikan prosesseja sekä kansainvälisten vaikutusten ja diskurssien roolia Suomen metsäpolitiikassa. Lisäksi tutkimus tarkastelee sitä, kuinka kestävyys ja kestävä kehitys ymmärretään Suomen metsäpolitiikassa.

Tutkimuksen analyyttistä lähestymistapaa ohjasi kolme politiikan tutkimuksen teoriaa. Advocacy Coalition Frameworkin (ACF) avulla tutkittiin kriittisesti Suomen metsäpolitiikan osajärjestelmän koostumusta ja arvopohjaa. Toisessa vaiheessa ACF yhdistettiin Four Pathways of International Influences -kehykseen, jonka avulla analysoitiin miten kansainväliset vaikutteet vaikuttavat Suomen metsäpolitiikkaan. Lopuksi diskurssianalyysin avulla tarkasteltiin Suomen metsäpolitiikan muotoiluja, mitkä vaikutteet ohjaavat näitä muotoiluja ja miten kansainväliset kestävän kehityksen diskurssit heijastuvat niissä. Tutkimuksen aineisto koostui haastatteluista ja politiikka-asiakirjoista, joita analysoitiin kvalitatiivisella sisältöanalyysillä.

Tutkimuksen perusteella Suomen metsäpolitiikkajärjestelmä koostuu kolmesta eri näkökulmia painottavasta koalitiosta. Yksityismetsätaloutta ja metsähallintoa painottavat kaksi koalitiota perustavat näkökulmansa metsätalousparadigmalle ja edistävät metsistä saatavan puuraaka-aineen taloudellista hyödyntämistä, kun taas ympäristönäkökulmia painottava koalitio perustaa näkökulmansa ympäristöparadigmalle ja pyrkii edistämään metsäluonnon suojelua.

Tutkimuksen tulokset osoittavat, että Suomen metsäpolitiikka on suosinut yksityismetsätalouden ja metsäteollisuuden etuja korostamalla puuvarojen taloudellista hyödyntämistä ja siitä kansantaloudelle saatavaa hyötyä. Tämän painotuksen on mahdollistanut metsähallinnon suuntautuminen metsien talouskäytön edistämiseen. Lisäksi tulokset osoittavat, että kansainväliset vaikutteet ovat levinneet Suomen metsäpolitiikkaan kolmen eri kanavan, kansainvälisten sääntöjen, kansainvälisten normien ja diskurssien sekä markkinoiden, kautta. Tutkimuksessa haastatellut vuoden 2014 metsälakiuudistuksen valmisteluun osallistuneiden organisaatioiden edustajat pitivät oikeudellisesti sitovia kansainvälisiä sääntöjä ja ei-oikeudellisesti sitovia kansainvälisiä normeja ja diskursseja yhtä tärkeinä. Ympäristötietoisuuden nousu 1990-luvulla ja siihen liittyvä kansainvälisen sääntelyn kehittyminen antoivat ympäristökoalitiolle vaikutusvaltaa Suomen metsäpolitiikkaan. Ympäristökoalition suhteellinen vaikutus kuitenkin väheni 2010-luvulle tultaessa, jolloin metsien taloudellista hyödyntämistä tukevaa metsäpolitiikkaa vahvistettiin ympäristönäkökohtien kustannuksella. Tässä kehityskulussa biotalouden narratiivilla on ollut keskeinen merkitys.

Suomen metsäsektorin ja metsien tulevaisuus riippuu siitä, kuinka hyvin metsäpolitiikassa pystytään yhdistämään keskenään ristiriitaiset ympäristönsuojelun ja metsien käytön paradigmat. Niiden yhdistäminen vaatisi muutoksia vallalla oleviin diskursseihin ja nykyistä ennakkoluulottomampaa julkista keskustelua.

Asiasanat: Metsäpolitiikka, kestävyys, kestävä kehitys, Advocacy Coalition Framework, Diskurssianalyysi, kansainväliset vaikutteet

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I started this doctoral dissertation project in 2013, and I am grateful to see that the year 2024 finally marks the end of this challenging journey. I conducted the first two publications of this thesis in the KILPO-project under the supervision of Professor Heimo Karppinen, and Dr Pia Katila. During that time, I learned the fundamental basics for conducting research, and I am sure, that I will always build on those principles whenever I am doing any research. I warmly thank you both. I also thank Professor Anne Toppinen as the leader of the KILPO-project, and Professor Lauri Valsta as my official supervisor during that time for supporting my dissertation project. I also thank the members of the steering committee of the KILPO-project, chaired by Mr Ilpo Tikkanen, for providing valuable insights and inspiration for the ongoing research. I am also grateful to those persons representing various organizations who agreed to be interviewed for this study.

After working on another field for a couple of years, I started the second phase of this dissertation project under the main supervision of Professor Maria Brockhaus, who, during those years had established an excellent and inspiring research community, namely International Forest Policy research group at the Department of Forest Sciences. I thank all the previous and current members of that research group for providing inspiration and encouragement. The master's thesis of Niina Pietarinen served as the starting point for my third publication of this thesis, which was written in cooperation between me, Niina Pietarinen, Professor Maria Brockhaus, and Dr Natalya Yakusheva. I thank you all for the wonderful writing process of that article. Professor Maria Brockhaus has always been as inspiring and supportive for me and my project, as anyone could ever imagine. Maria, thank you so much!

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Helsinki 10.10.2024

Teemu Harrinkari

LIST OF ORIGINAL ARTICLES

I Harrinkari T, Katila P, Karppinen H (2016) Stakeholder coalitions in forest politics: revision of Finnish Forest Act. Forest Policy Econ. 67: 30–37. https://doi.org/10.1016/j.forpol.2016.02.006.

II Harrinkari T, Katila P, Karppinen H (2017) International influences in the revision of Finnish Forest Act. Scandinavian Journal of Forest Research 32: 6–18. https://doi.org/10.1080/02827581.2016.1183702.

III Pietarinen N, Harrinkari T, Brockhaus M, Yakusheva N (2023) Discourses in Finnish forest policy: Cherry-picking or sustainability? Forest Policy and Economics 147, article id 102897. https://doi.org/10.1016/j.forpol.2022.102897.

AUTHOR'S CONTRIBUTION

This section lists the author's contribution to this work. **Articles I and II** were written in cooperation between Teemu Harrinkari, Pia Katila, and Heimo Karppinen. Harrinkari developed the approach in cooperation with Katila and Karppinen, planned the collection of the data in cooperation with Katila and Karppinen, Harrinkari collected the data, carried out formal analysis, wrote the first draft of the articles, and wrote the revised version of the manuscripts in cooperation with Katila and Karppinen. Katila and Karppinen supervised the work. **Article III** was developed based on the master's thesis of Niina Pietarinen. Teemu Harrinkari, Niina Pietarinen, Maria Brockhaus and Natalya Yakusheva conceptualized the approach, and designed the methodology, Harrinkari wrote the first draft of the article, deepened the analysis by developing the classification of the policy goals under different categories, and developed the representation of the strengths of discourses, and Harrinkari, Pietarinen, Brockhaus and Yakusheva wrote and revised the second version of the article, Pietarinen, Harrinkari and Brockhaus developed the visualizations of the article, and Brockhaus, Yakusheva and Harrinkari supervised the work.

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1 INTRODUCTION

Forests are vital for maintaining the currently threatened living conditions of humanity on Earth (Rockström et al. 2009; Raworth 2012; FAO and UNEP 2020b). Globally, a third of the human population is closely dependent on forests and forest products, and forests provide a habitat for most of the known terrestrial plant and animal species (FAO and UNEP 2020a; FAO and UNEP 2020b). Forests continue to be the most significant natural resource of Finland, providing different sources of materials and livelihoods alongside other ecosystem services (Kotilainen and Rytteri 2011; Ristioja 2018; Räty and Vaahtera 2023). Approximately two thirds of the Finnish land area is forest land, and of this, 59% is owned by non-industrial private forest owners (Räty and Vaahtera 2023). Forest land area has remained rather stable over the last decades but has increased when compared to the 1920s (Räty and Vaahtera 2023). The current volume of growing stock (2,500 M m3) is 1.7 times greater than the volume in the 1920s and the annual volume increment (107.8 M m3) is double the increment estimated in the 1930s (Korhonen et al 2021).

Forests serve an important role in the national economy of Finland. The value added to the national economy produced by forest sector was 4.3% (equaling EUR 9.3 billion) in 2021 (Uotila and Sauvula-Seppälä 2023). The corresponding figure in Europe was 0.7% in 2015 (Olschewski et al. 2020). Within the 9.3 billion euros in Finland, the share of forestry was 4.27 billion, wood-products industries 2.01 billion, and pulp and paper industries 3.05 billion (Uotila and Sauvula-Seppälä 2023). The average annual profitability of forest industries between the years 1994–2021 was 5.3% of the operating income, and the corresponding figure for pulp and paper industries was 6.3%, whereas the corresponding figure for all manufacturing industries was 6.6% (Vaahtera 2023b). In addition to timber, forests provide goods and services with significant market and/or non-market values for the society. These include berries, mushrooms, collectible plants, game, reindeer-related products, landscape and cultural values, opportunities for tourism, fuelwood, recreational opportunities, forest management opportunities in leisure time, fishing, hunting, hiking, backpacking, cross-country skiing, leisure home stays, and nature excursions (Torvelainen 2014; Ristioja 2018). Nonetheless, the relative significance of forests in the Finnish national economy has declined during the last four decades (Uotila and Sauvula-Seppälä 2023). Similarly, the ability of the forest sector to employ people has decreased considerably. In the 1980, forestry employed 63,000 persons and forest industries employed another 120,000 persons (Vaahtera 2023c). In 2021, the forest sector employed only 61,000 people in total of which 25,000 persons were employed in forestry, 20,000 in wood-products industries, and 16,000 in pulp and paper industries (Vaahtera 2023c). Still, Finland ranks globally among the leading producers and exporters of forest-based products, such as sawn softwood (3% of global production, 6% of exports in 2021), wood pulp (6% of global production, 7% of exports in 2021), and paper and paperboard (2% of the global production, 7% of exports in 2021) (Sauvula-Seppälä 2023).

Additionally, nature products sector, consisting of primary production, such as cultivation and collection, groceries, well-being and cosmetics, tourism, chemical compounds, artisans, and consulting, employs approximately 3,000 work years annually (Ristioja 2018).

However, the significant industrial utilization of forests has caused negative impacts, transforming natural forests to fragmented forest holdings with less biological diversity compared to natural forests (Uuttera et al. 1996; Uotila et al. 2001; Kniivilä et al. 2020; Korhonen et al. 2021; Pecurul-Botines et al. 2023; Räty and Vaahtera 2023). The current rate

of biodiversity loss has been estimated to equal 100–1000 times the pre-industrial rate (Raworth 2012). Globally, this means that approximately half of the forest plant, fungi and animal species are categorized either as critically endangered or endangered, and a third as vulnerable (IUCN 2019). These changes in forest ecosystems weaken the resilience of forests (Pohjanmies et al. 2021). To compensate for the effects of forestry on forest nature, globally 18% of the world's forest area is legally protected on areas, such as national parks, conservation areas and game reserves (FAO 2020). In Finland, 42% of all known species are forest species (Hyvärinen et al. 2019). Forests provide primary habitat for approximately 30% of the threatened species in Finland (Hyvärinen et al. 2019). These species typically depend on old-growth forests and decaying wood that are scarce in commercial forests due to intensive forestry or (suffer from) forest regeneration and other management practices (Hyvärinen et al. 2019). To protect forests and its species and the environment, 13% of the total forest area of Finland is conserved, consisting of 2.3 million hectares which are left completely outside forestry (Niinistö and Torvelainen 2023). Most of these protected forests are in the northern half of Finland, whereas a large proportion of all species and threatened species are located in the southern half of Finland (Hyvärinen et al. 2019; Niinistö and Torvelainen 2023). Sustainable forest management was defined in the Second Ministerial Conference on the Protection on Forests in Europe (MCPFE 1993a). Despite thirty years of sustainable forest management with the redefined concept, forestry remains as the main cause of biodiversity loss in Finland (cf. MCPFE 1993a; Hyvärinen et al. 2019). It appears that forest policy is shaped and influenced by contradictory expectations, which lead to unsatisfactory results considering the sustainability principles.

The use and management of Finnish forests is guided and controlled through legislation, economic means, and informational means, as well as various national and international policies. Prior research has analyzed the value positions of different stakeholders, and institutional adaptation of forestry organizations in conservation of biodiversity (Rantala and Primmer 2003; Primmer 2010; Takala et al. 2021). Although previous literature describes the developments of Finnish forest policy (e.g., Palo and Hellström 1993; Ollonqvist 1998), there is still little knowledge on how national and international interests affect the formulation of Finnish forest policy. Therefore, the main purpose of this thesis is to investigate the role of forest policy in combining different goals and needs set for forests by separate stakeholders. Specifically, the thesis aims to discover how forest policies are formulated, which sources and parties have most influence on the development of content and structure of the policies and whose interests are ultimately served with the resulting forest policies.

Policy can be defined as *"a set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party"* (Cambridge Dictionary 2024a). Thus, policy can be understood as discourse (Bacchi 2005). Discourses are socially produced forms of knowledge, which define what can be thought about a given social object or practice (McHoul and Grace 1993; Foucault 1994). Cambridge Dictionary defines politics as *"the activities of the government, members of law-making organizations, or people who try to influence the way a country is governed"* (Cambridge Dictionary 2024b). Discourses occur at the interface of politics, science, values, and knowledge, and are used by actors to comprehend the physical and social worlds, and to gain political power to adjust policies (Arts et al. 2010; Bacchi and Goodwin 2016; Dryzek 2021). The study of discourses provides a way to understand how different actors perceive different phenomena of physical and social realities, and the study of policy enables the discovery of the dominating discourses in a

policy system, and revelation of whose interests matter the most (Arts et al. 2010; Bacchi and Goodwin 2016).

Generally, forest policy can be defined as the combination of public regulatory, economic, and informational means, which are used to govern the protection and utilization of forests (Krott 2005; Capano and Howlett 2020). However, it is important to notice, that actors have formal and informal goals, and, therefore, there are also formal and informal policies (Krott 2005; Davenport et al. 2010). Forest policy is a very polarized policy field, and the paradigmatic division of the actors between a coalition supporting the utilization of forests and the coalition supporting forest conservation has been identified at different regions globally, and at the European and national levels, including Finland (Kennedy 1985; Weber and Christophersen 2002; Rantala and Primmer 2003; Sotirov and Memmler 2012; Winkel and Sotirov 2016; Wolfslehner et al. 2020; Takala et al. 2021; Heder Brandt et al. 2023; Pecurul-Botines et al. 2023). In Finland, the major forest enterprises and their interest organizations formally advocate for neoliberalism and free market economy, but informally have been establishing and engaging, for example, in long-term hard-core cartels in domestic timber markets and export markets of cartonboard and newsprint, (Evenett 2001; Humphreys 2009; Viitala 2011; Jensen-Eriksen 2017; Finnish Forest Industries Federation 2023). The formal goals of the actors may also be incoherent; therefore, an interest organization of Finnish non-industrial private forest owners publicly advocate for neoliberal market order and forest owners' decision-making freedom regarding their forest properties, but simultaneously also demand governmental subsidies for timber production, which cannot be justified based on economic theories, or the neoliberal discourse (Humphreys 2009; National Audit Office of Finland 2023; Central Union of Agricultural Producers and Forest Owners 2024).

Thus, forest policy faces contradictory demands for maintaining and increasing the extraction of economic utility from the forests, and increasing the carbon sequestration of forests, while safeguarding biodiversity and the forest nature. The European Union and Finland present bioeconomy as a solution to the existential global challenges (Finnish Government 2022; European Commission 2022; Ramcilovic-Suominen et al. 2022; Ministry of Agriculture and Forestry of Finland 2023). However, since the forests are already utilized efficiently, the potential of forests in responding the increasing demands should not be exaggerated (Blattert et al. 2023). Forest-rich Finland depends economically, environmentally, and socially on its forests, and claims to be a front runner in forest management and forest-based bioeconomy (Ministry of Agriculture and Forestry of Finland 2014a; Ministry of Agriculture and Forestry 2023). Nevertheless, Finnish forest policy faces forces from inside and outside of the policy subsystem that steer the policy priorities towards different directions (Ministry of Agriculture and Forestry of Finland 2014a; Ministry of Agriculture and Forestry 2023). Therefore, it is necessary to understand the basic structure and characteristics of the Finnish forest policy subsystem in detail, as it a) allows predictions on the direction of policy changes, and b) provides a new understanding of the mechanisms that shape how national and international influences affect national policy processes and policies in Finland and the type of interests represented.

Thus, this study aims at identifying and analyzing the main attributes of Finnish forest policy, namely the actors who have most influence on the development of Finnish forest policies, the process through which policies are produced, and parties that gain to benefit from the policies (Figure 1). This thesis focuses on a 22-year period between 1994–2015, covering the most significant revisions of the Forest Act since 1928, and addresses the following research questions:

1) What kind of advocacy coalitions and policy core beliefs existed in Finnish forest policy between 1994–2014?

2) What kind of values, discourses, and international influences were incorporated into Finnish forest policy between 1994–2014?

3) What kind of sustainability framings could be identified in forest policies created or maintained in 1994–2015, and to whose benefit?

Finally, based on the findings presented across the different papers and research questions, the following is discussed as an overall objective of this study:

4) What are the implications for sustainability of the Finnish Forest sector, Finnish forests, and the whole society, if the Finnish forest policy subsystem continues to address domestic and international influences based on the identified dominating policy core beliefs and discourses?

These aims are achieved by applying Advocacy Coalition Framework (ACF), Four Pathways of International Influences framework, and Discourse theory to inform qualitative content analysis of expert interviews and policy documents dealing with the study period (cf. Sabatier and Weible 2007; Bernstein and Cashore 2012; Fischer and Gottweis 2013). This thesis contributes to theory development by adding a Finnish case to the growing ACF literature as a thorough and well-documented application. The overall case builds on three different articles, is centered on the ACF, originally created by Sabatier and Jenkins-Smith (Sabatier 1988; Sabatier and Jenkins-Smith 1993). It identifies advocacy coalitions and applies the framework for studying policy change within a time frame of 22 years of forest policy and policy change. Further, this study contributes to the development of the ACF in consideration of international influences by combining Four Pathways of International Influences framework by Bernstein and Cashore (2010; 2012) with the ACF. The applicability of New Environmental Paradigm scale is tested in the identification of advocacy coalitions in environmental policy research (Dunlap et al. 2000; Matti and Sandström 2011). Finally, this study contributes to the discourse studies by analyzing how Finnish forest policy has addressed and valued different dimensions of sustainability.

The rest of this thesis is organized as follows. Chapter 2 presents the three main theoretical approaches used in the thesis and defines relevant terminology. Chapter 3 explains the research design, provides the historical overview of the evolution of Finnish forest policy, and describes the data and methods used in the empirical studies. Chapter 4 reports the results of the empirical studies. Finally, Chapter 5 discusses the findings, provides suggestions for further research, and summarizes main conclusions of the thesis.

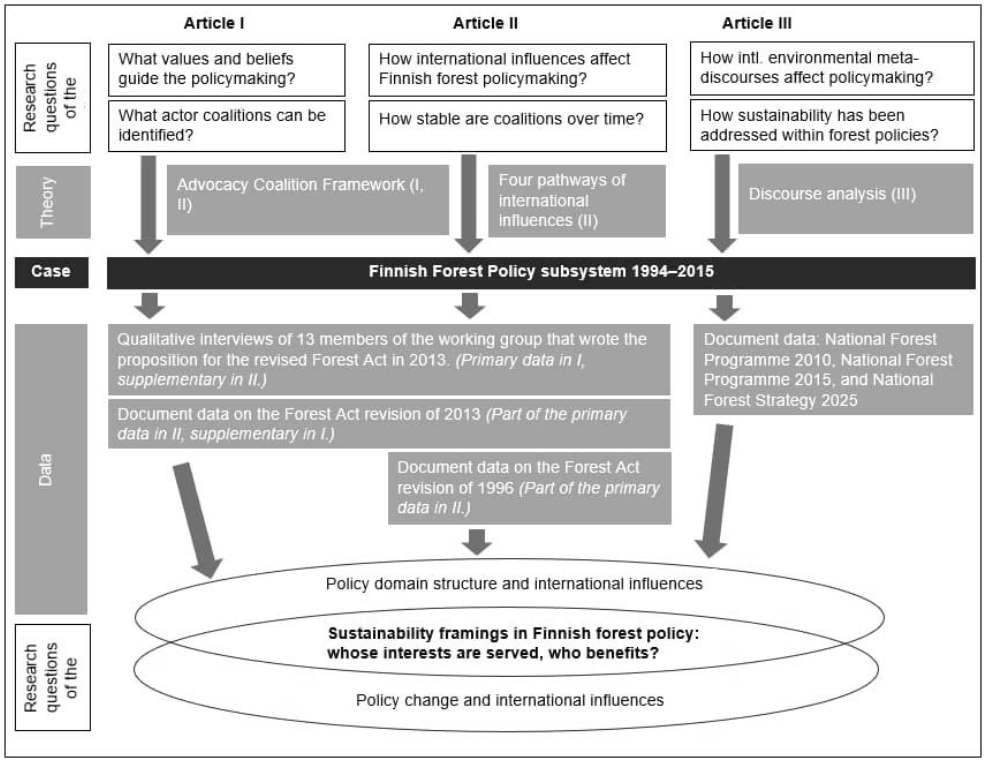

Figure 1. The research approach of this thesis: research questions, applied theories, and data in the articles I–III.

2 THEORETICAL APPROACH

2.1 Advocacy Coalition Framework

This chapter reviews the theoretical frameworks used to examine the composition of Finnish forest policy subsystem and investigate the produced policies and their sources of influence and implications for the sustainability of Forest policy. Section 2.1 presents the Advocacy Coalition Framework. Section 2.2 describes the Four Pathways of International Influences framework and its merging with the ACF. Section 2.3 presents the Discourse theory. Section 2.4 presents the evolution of the concepts of sustainability and sustainable development.

The Advocacy Coalition Framework (ACF) was developed for studying policy processes that typically involve substantial goal conflicts and numerous actors from different levels of government and other sectors of the society (Sabatier 1988; Sabatier and Jenkins-Smith 1993). The ACF has been widely applied in different policy contexts around the world, and many of the applications consider policy subsystems dealing with the environment and natural resources (Weible et al. 2009; Arts 2012; Sotirov and Memmler 2012; Henry et al. 2022). In Finland, forest policy involves numerous stakeholders from different levels, and it is a very contested policy field (Hellström and Palo 1993; Ollonqvist 1998; Hellström 2001;

Rantala and Primmer 2003; Siiskonen 2007; Kotilainen and Rytteri 2011; Siiskonen 2013). The ACF provides significant abilities for researchers in mapping policy domains i.e., unpacking the different values and views of different stakeholders, identifying actor coalitions, and explaining policy changes (Sabatier and Weible 2007). Therefore, the ACF was chosen as the main component of the theoretical approach of this thesis. The ACF has been revised several times to meet the needs of studying different political systems and societies (Sabatier 1998; Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007; Jenkins-Smith et al. 2018; Henry et al. 2022).

The ACF builds on the following premises (Figure 2): 1) policymaking related to a certain policy domain in specific region occurs within a policy subsystem which is formed by actors representing different levels of government, private sector, non-governmental organizations, science, and media, and the policymaking within that subsystem which is influenced by factors stemming from the broader political and socioeconomic contexts; 2) the actors' behavior is based on heuristics in decision making defined by the actors' tri-partite belief systems, and thus, policies and programs produced within a subsystem are considered as translations of those beliefs; 3) actors are considered to cooperate within advocacy coalitions with other actors who share similar values (policy-core beliefs) related to the policy domain; 4) policy change can occur either through a process of policy learning based on new knowledge, or as a response to external or internal shocks affecting the subsystem, and the identification of policy changes requires a time perspective of at least ten years (Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007; Jenkins-Smith et al. 2018; Henry et al. 2022).

The belief structure of each actor comprise three levels: *a) deep core beliefs* consisting of fundamental normative beliefs, which are typically very stable, *b) policy core beliefs*, which are fundamental beliefs related to a certain policy domain, and *c) secondary beliefs*, including technical aspects related to a certain policy domain, which are the most easily adjusted based on new information (Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007).

Actors working in a policy subsystem are considered to form coalitions by engaging into intensive long-term cooperation with actors sharing similar policy core beliefs (Sabatier and Weible 2007). Sotirov and Memmler (2012) discovered five ACF studies on forest policy which had identified three advocacy coalitions. These studies focused on the forest policy subsystems in the United States (Sabatier et al. 1995; Burnett and Davis 2002), Bulgaria (Sotirov 2009), Indonesia (Elliott 2000), and Philippines (Villamor 2006). In the setting of three coalitions, a coalition representing the traditional scientific forest management approach typically oversees the forest policy, accompanied by an economically oriented and an environmentally oriented coalition. Additionally, a coalition concerned with social development related to forest use has been found in Chile (Arnold 2003) and Philippines (Villamor 2006). By contrast, two competing coalitions were identified in Austria, Canada, Germany, Sweden, South Africa, and Europe as a whole (cf. Sotirov and Memmler 2012). In the latter cases, a forestry-oriented coalition competed with an environmentally oriented coalition. Nevertheless, Elliott and Schlaepfer (2001) found that the coalition composition in Sweden had changed due to external events and policy learning, which had led to a development of a sustainable forestry coalition, including all the actors, except the forest owners' associations.

Advocacy coalitions' abilities to influence policy processes depend on their resources, which entail the ability to engage *formal legal authority* to advance certain views, to affect *public opinion*, to possess and produce *information*, to mass *mobilizable troops*, which can compensate for the lack of financial resources, to assert *skillful leadership*, which can attract

support and help to navigate successfully in various circumstances, and to collect *financial resources* (Sabatier and Weible 2007).

In the ACF, policy changes (i.e., changes in legislation) may occur because of argumentative competition within the subsystem actors and events occurring either outside or inside the subsystem (Sabatier and Weible 2007). There are four pathways to policy change: 1) change in the policy core beliefs of the determinant actors through policy-oriented learning, which is also a necessary condition for any major policy change, 2) external events or changes in relatively stable parameters beyond the subsystem, such as changes in socio-economic conditions, 3) internal events within the policy subsystem, such as environmental problems, and 4) negotiated agreements with the support of previously contentious coalitions, when there may not be any external or internal events-induced needs for policy change (Sabatier and Jenkins-Smith 1999; Sabatier and Weible 2007; Hysing and Olsson 2008; Jenkins-Smith et al. 2018; Wilkes-Allemann et al. 2020). Obviously, in a major policy change several of the abovementioned pathways need to operate simultaneously to produce a critical mass towards the change; for instance, external or internal events alone are usually not sufficient factors to generate policy change. Instead, they can generate policy learning, which later leads to a policy change. According to the ACF, policy changes should be studied over a period of a decade since the actors' policy core beliefs are considered to remain relatively stable over time (Sabatier and Weible 2007). Nohrstedt and Heinmiller (2024) characterize advocacy coalitions as political organizations and describe four aspects to be studied to shed light into the mechanisms of policy change: coalition *strategies* to alter the behavior of governmental organizations, coalition *resources* to affect policy processes, coalition *influence* on policy processes, and *awareness* of advocacy coalitions.

It is worth noticing that usually actors have both formal and informal goals which affect the intensity of implementation of official policies as well as organizations' intrinsic stance towards enhancing their own position in the subsystem (Krott 2005; Sivonen and Syväterä 2023). Herzberg (1986) describes how blocking coalitions in a political system apply tactics, such as active obstruction (defeating or delaying policy proposals) and inaction. Since major policy changes typically require consensus within the policy subsystem, this may lead into slow and incremental policy changes, which may not be sufficient, for example, in addressing major challenges, such as environmental degradation or climate crisis. Similarly, the policy-oriented learning within the ACF has been found to be slow and incremental (Jenkins-Smith et al. 1999; Sabatier and Weible 2007; Jenkins-Smith et al. 2014; Jenkins-Smith et al. 2018). This affects the consistency and congruence of the policy, which further affects the effectiveness of the policy (cf. Howlett and Rayner 2013).

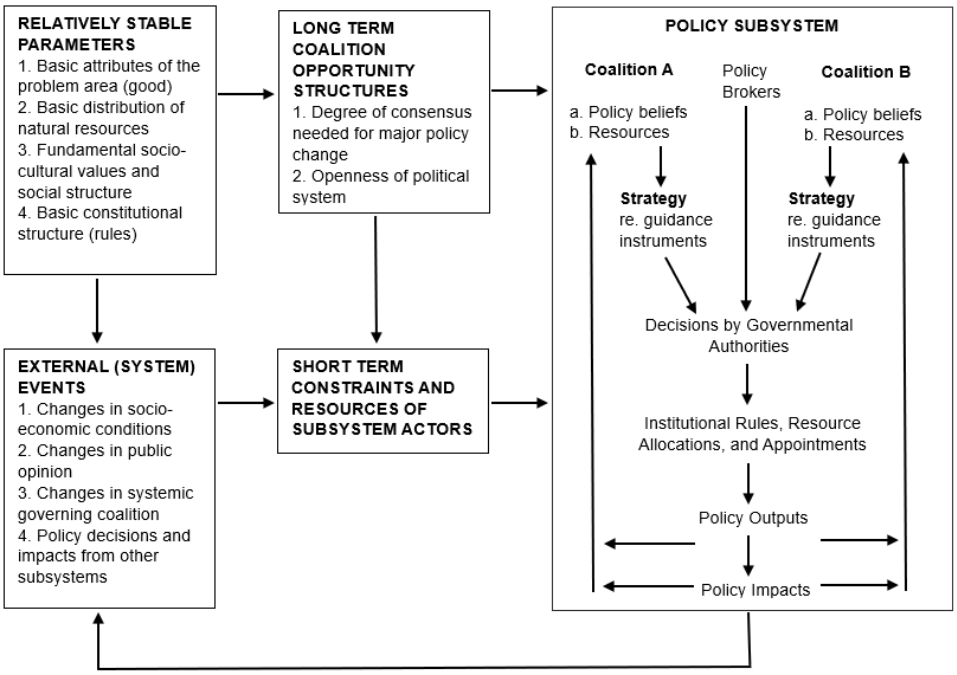

Figure 2. Advocacy Coalition Framework (Sabatier and Weible 2007).

2.2 Four Pathways of International Influences

International environmental governance has been developed in stages from the 1960s onwards (Andresen 2013). Especially since the 1990s, the effects of international influences on national policymaking have considerably increased, and the interest on the effects of international environmental regime on national level has grown (Bernstein et al. 2010; McDermott et al. 2010; Falkner 2013). The Four Pathways of International Influences framework was developed for studying the diffusion of international influences on national level (Bernstein and Cashore 2000; 2012; Bernstein et al. 2010). It comprises four pathways through which international influences affect domestic policy processes, namely 1) international rules, 2) international norms and discourse, 3) markets, and 4) direct access (Bernstein and Cashore 2000; 2012). In this thesis (Article II), the ACF is supplemented with the Four Pathways framework by considering that international influences affect the relatively stable parameters and/or may occur as external system events, which may affect the long-term coalition opportunity structures and/or short-term constraints and resources of subsystem actors (cf. Fig. 2). In this thesis, the combination of the ACF and the Four pathways framework enables the systematic identification of internationally induced policy changes on national level.

International rules pathway regards legally binding international treaties and agreements as potentially having national importance on account of their enforceability, legitimacy of the rule-making authority, or fear of losing international reputation or credibility (Bernstein and Cashore 2012). The instruments in this category include the UN conventions and treaties, such as Convention on Biological Diversity (CBD), United Nations Framework Convention

on Climate Change (UNFCCC, KP, PA), Convention on International Trade in Endangered Species and Wild Fauna and Flora (CITES), International Tropical Timber Agreement (ITTA), United Nations Convention to Combat Desertification (UNCCD) (Sotirov et al. 2022). Until 2010, the EU legislation did not contain forest-focused legally binding instruments, but several forest-related legally binding instruments were already in use, such as EU Birds Directive (1979), the EU Fauna and Flora Habitats Directive (1992), the EU Water Framework Directive (2000), European Climate Change Programme, the EU Emission Trading Scheme (2003), the Europe 2020 Strategy (2009), the Directive on the Promotion of Biofuels, the Directive on the Promotion of the Use of Energy from Renewable Sources (2009) and the EU Timber Regulation (2013) (Glück 2000; Winkel et al. 2013). By 2023, the situation had changed as several EU initiatives had been introduced under the European Green Deal, and the EU Biodiversity Strategy for 2030.

International norms and discourses pathway includes non-legally binding international agreements, instruments, and discourses which can define and regulate what is suitable behavior at national level (Bernstein and Cashore 2012). Such tools have potential to affect domestic constraints and resources of actors and contribute to policy changes (Bernstein et al. 2010). International non-legally binding rules and norms include International Arrangement on Forests (IAF) (Chapter 11 Agenda 21, Forest Principles; Definition of Sustainable Forest Management Criteria & Indicators (the Forest Europe Process, previously MCPFE); the United Nations Intergovernmental Panel on Forests (IPF), that continued as the United Nations Intergovernmental Forum on Forests (IFF), which was followed by the United Nations Forum on Forests (UNFF); the Non-legally binding instrument on all types of forests (UN-NLBI), the United Nations forest instrument (UN-FI), the United Nations Strategic Plan for Forests 2017–2030 (UN-SPF) (Sotirov et al. 2022). At the European level, the EU Forest Strategy created a joint framework for forests and forest sectors, and the new Forest Strategy for 2030 for the European Union (2021) has boosted forest policy making in the EU countries (European Commission 2013; Winkel et al. 2013; Pecurul-Botines et al. 2023).

Previous studies have identified four international environmental meta-discourses, three political-ideological discourses, and ten forest discourses that shaped the international, European Union, and national level forest policymaking between the years 1960 and 2014 (Arts et al. 2010; Pülzl 2010; Pülzl et al. 2014; Pülzl et al. 2018). Environmental meta-discourses have changed from the 1960s' ideas of industrialization, abilities to control natural resources and maintaining permanent economic growth (modernity discourse), via a critical consideration of the limited economic growth potential due to the limited natural resources (limits to growth discourse) in the 1970s, to attaining economic growth and considering environmental aspects simultaneously (ecological modernization discourse) in the 1980s. Sustainable development discourse evolved during the 1980s, became popular after the Brundtland report in 1987, was strengthened in the UNCED in 1992, and was identified as the prevailing international environmental meta-discourse in 2014 (Pülzl et al. 2014). The above-mentioned three political-ideological discourses were categorized as neo-liberalism discourse, global governance discourse and civic participation discourse (Arts et al. 2010). The neo-liberalism discourse, deriving from the 1980s, has prevailed as the dominant political-ideological discourse ever since (Humphreys 2009). The main aims of this discourse include promotion of market expansion, deregulation and privatization of state-owned enterprises and services, and simultaneously extending the influence of non-state actors (Jessop 2002; McCarthy 2006). The global governance discourse covers six basic features: the rule of law, accountability and transparency, participation, effectiveness, and efficiency

(Arts et al. 2010). This form of discourse aims to develop practices for good governance. The civic participation discourse (also known as civic environmentalism) was presented in the UNCED in 1992 as an approach to nurture stakeholder participation and bottom-up approaches in governance which were needed to respond to the harmful effects of human actions on the environment (Bäckstrand and Lövbrand 2006). The ten forest discourses identified in prior research are directly connected to global forest policy, relate to various aspects of forest use, including industrial forestry (later bioeconomy), wood fuel (later biofuel), deforestation, conservation (forest parks), forest decline, sustainable forest management, forest biodiversity, forest-related traditional knowledge, forests and climate change, as well as illegal logging (Arts et al. 2010; Pülzl et al. 2014).

In a more recent study, Pülzl et al. (2018) identified different dominating discourses which have been key factors in shaping specific aspects of forest-related issues regulated by the EU from the 1950s to the present. First, the production discourse dominated the field from 1958 to the mid-1970s, and then production and protection discourse dominated from the mid-1970s until the end of the 1990s. From the end of the 1990s until the present, the multiple purpose discourse has been the dominant discourse.

Falkner and Treib (2008) analyzed the diffusion of international influences on national level and distinguished four different worlds of compliance within the EU policy implementation, ranging from World of Law observance (including Denmark, Finland, and Sweden) to World of Transposition Neglect (including France, Greece, Luxembourg, and Portugal). Between these two opposite approaches, two additional categories were found: World of Domestic Politics (Austria, Belgium, Germany, Netherlands, Spain, and United Kingdom) and World of Dead Letters (Ireland, Italy, Czech Republic, Hungary, Slovakia, and Slovenia). The findings of Falkner and Treib (2008) seem to indicate that Finland might tend to comply with the EU regulations to a greater extent than many other EU countries. Additionally, Aggestam and Pülzl (2020) studied the interchange of ideas and influences between the national and EU level. They highlighted three different approaches to the development and application of the legally non-binding EU forest action plan. The Forest Action Plan had different impacts on the member states, ranging from significant impacts (especially Eastern and South-Eastern member states), indirect impacts (e.g., Finland and Germany), and no impacts (e.g., Sweden, France, and Spain) (Aggestam and Pülzl 2020). Finland, Germany, and Austria were identified as active in uploading their priorities to the development of the Forest Action Plan (Aggestam and Pülzl 2020).

2.3 Discourse theory

Discourse theory became a mainstream research method especially from the 1990s onwards with the argumentative turn when policy scholars started to consider the role of ideas and discourses in political processes alongside the interests and institutions (Fischer and Forester 1993; Fischer 2003; Schmidt 2005; Arts et al. 2010; Arts 2012; Winkel 2012; Fischer and Gottweis 2013; Leipold 2014). Discourse theory examines the power of language with a variety of approaches ranging from discourse as text to discourse as social practice (Foucault 1994; Fischer 2003; Van den Brink and Metze 2006; Arts 2012; Vainio and Paloniemi 2012; Winkel 2012).

Discourses are understood as social knowledge, formed of different frames and heuristics of thinking, which are necessary in thinking, speaking, writing and actions (Foucault 1994; Bacchi 2009; Bacchi and Goodwin 2016). Hajer (1995, 45) defines discourses as *"specific*

ensembles of ideas, concepts and categorization that are produced, reproduced and transformed in a particular set of practices". Consequently, policies have several meanings rather than one; these are embedded in various ways in policies (Yanow 1995). The purpose of this thesis was to identify the primary values in Finnish forest policy. Therefore, discourses were considered as manifestation of politics, and the prevalence of different discourses in the analyzed policies was explored to identify the dominating discourses of the policy subsystem (cf. Bacchi 2005; Bacchi and Goodwin 2016).

Hajer (1995) presented the concept of discourse coalitions for explaining policy change. Discourse coalitions allow the inspection of policy change in a more detailed level, compared to the ACF (Fischer 2003). Instead of considering individuals' value positions as the foundation for creating coalitions, as described in the ACF, discourse coalitions are formed around the *"ambiguous storylines"* which as *"condensations of facts and values"* guide the action of the coalitions by intermediating the interaction of the actors in creating webs of meaning, which the actors use to interpret the complex reality (Fischer 2003, 113). When the ACF builds on the empirical-deductive logic of identifying discourses as manifestation of political power, the discursive-analytic approach applies informal logic to reveal how certain actors apply discourses selectively to define how the issues are framed, and who is benefitting from them (Fischer 2003, 113). Nevertheless, the black arrows depicted in the ACF diagram (cf. Fig. 2) can be seen to illustrate the interfaces where discourses operate. This means that policy outputs are developed within the policy subsystem based on various ideas, concepts, and categorizations which are applied to interpret each situation and required actions. When a policy output is produced, different actors within the policy subsystem try to lobby their primary discourses as a basis for defining the basic characteristics of the produced policy. In this thesis, discourse theory is regarded as a supplementary part of the ACF analysis, which adds another level for explaining the policy change described in the ACF. This type of approach has been applied also in another study dealing with energy and climate policy (von Malmborg 2023). The Article III explored the expressions in the analyzed forest policies, rather than how policies were formulated, to investigate the origins of policy change.

Different discourses have been identified to affect the forest governance, and their prevalence highlights the battle between different paradigms well (e.g., dominating economic utilization of natural resources vs. nature protection) (Arts et al. 2010; Leipold 2014; Pülzl et al. 2018; Edwards et al. 2022; Pecurul-Botines et al. 2023). These discourses appear in the formal and informal levels of policymaking, covering national, the EU, and international levels (Arts et al. 2010; Leipold 2014; Pülzl et al. 2018; Pecurul-Botines et al. 2023). This battle of paradigms has been described in several forest policy studies applying different approaches, e.g., in Finland and internationally (Palo 1993; Hellström 2001; Arts and Buizer 2009; Humphreys 2009; Vainio and Paloniemi 2012; Takala et al. 2017a; Takala et al. 2017b; Takala et al. 2019; Takala et al. 2021; Toivanen 2021; Takala et al. 2022; Pecurul-Botines et al. 2023; Kukkonen and Malkamäki 2024). For instance, Arts et al. (2010) identified three types of discourses which affected both international and national forest policymaking from the 1960s onwards: 1) meta discourses dealing with economics, politics, and culture, 2) regulatory discourses, and 3) forest discourses.

Several studies have identified the economic orientation of Finnish forest policy (Palo 1993; Ollonqvist 1998; Siiskonen 2007; Primmer 2010; Kotilainen and Rytteri 2011; Siiskonen 2013; Katila 2017; Kröger and Raitio 2017). Despite the strong commitments made in favor of sustainable development and sustainable forest management since the 1990s, a change towards stressing pure economic aspects of forest utilization while denying the resulting negative effects on the forest nature and the climate targets has been identified

in several recent studies. Kukkonen and Malkamäki (2024) studied the Finnish news media debate on increased logging between 2015–2020 and found that forestry coalition politicized science by disclaiming the negative effects of the increased utilization of forests. The study found that Forestry coalition conscientiously undermined scientific concensus by questioning the negative effects of forestry on forest biodiversity. Vesa et al. (2020) found that in Finland, the pro-economy lobbying against strong climate policy occurred mainly inside the policy processes rather than publicly through gaining visibility in the media. However, Sivonen and Syväterä (2023) found three discourses (narratives) in relation to the EU Land Use, Land Use Change and Forestry (LULUCF) Regulation which were used in Finnish media articles to justify the national goal of increasing the logging, while claiming to commit to the climate change mitigation efforts and be a front runner in carbon neutrality efforts.

Bioeconomy has been identified as a mixed source discourse which has enabled the reframing of forest discourses, such as industrial forestry discourse and wood fuel crisis discourse (Pülzl et al. 2014). Ramcilovic-Suominen et al. (2022) remarked significant shortcomings in the logics of the EU bioeconomy visions in responding to the multidimensional and intertwined global challenges, such as overconsumption, extractivism, and global socioecological inequalities and injustices. They also highlighted future needs for policy research, including self-reflexivity in identifying policy problems and solutions (Ramcilovic-Suominen et al. 2022). Winkel et al. (2022) emphasized the potential of the EU Green Deal in transforming the EU forest policy towards incentivization of multiple ecosystem services. Lindahl et al. (2023) stressed the argument by Cejudo and Trein (2022) that policy integration occurs during the policy processes, not only at a single moment. In addition, they requested for more research on interpreting the outcomes on the policy level by analyzing the role of actor coalitions and subsystems in developing and enforcing policies. This thesis aimed to respond to this need.

2.4 The concepts of sustainability and sustainable development

Sustainability and sustainable development have become central concepts of environmental governance and management, guiding also scientific research on those issues (Ruggerio 2021). Although these concepts are often referred to as synonyms, they have profound differences which affect their applicability (Ruggerio 2021). Therefore, this chapter defines this terminology, presents its sources, and justifies its use in this thesis.

Globally, the environmental problems caused by the industrialization and industrial utilization of natural resources resulted in a slowly rising environmental consciousness especially from the 1960s onwards. This development has influenced forest policies around the world especially through the redefined concept of sustainability in the 1990s. Publications that have contributed most to the definition of sustainability include *Silent Spring* by Rachel Carson et al. in the 1960s, Club of Rome's report *Limits to Growth* and *Stockholm resolution* in the 1970s, Brundtland commission's report *Our Common Future* in the 1980s, the resolutions produced in the United Nations Conference on Economic Development (UNCED) held in 1992, and the resolutions produced in the consequential process of Ministerial Conferences on the Protection of Forests in Europe (MCPFE, later Forest Europe) (Carson et al., 1962; Meadows et al., 1972; World Commission on Environment and Development, 1987; Ministerial Conference on the Protection of Forests in Europe (MCPFE) 1993a, 1993b, 1993c, 1993d, 1993e; Ministerial Conference on the Protection of Forests in Europe (MCPFE) 1994; Vehkamäki, 2005; Arts et al., 2010; Davenport et al. 2010;

McDermott et al. 2010; Rayner et al. 2010). The increased environmental consciousness and redefined concept of sustainability required changes also to the Finnish forest policy.

The emergence of the sustainable development concept dates to the early 1970s (Mitlin 1992; Mebratu 1998; Ruggerio 2021). Several works advised of the risks related to the Western development model which was based on the rationale of economic growth (Meadows et al. 1972; Ruggerio 2021), including descriptions of negative environmental impacts of agriculture (Carson et al. 1962) and industrial pollution (Bertazzi 1991; Harada 1995). The 1972 United Nations Conference on the Human Environment held in Stockholm acknowledged the connection between environmental challenges and industrialization and technological development and called for actions to preserve and enhance the human [sic] environment (United Nations 1973). By the 1980s, a repertory of existential global challenges had been identified which were caused by failures in global development and environmental management (Meadows et al. 1972; World Commission on Environment and Development 1987; Mitlin 1992; Mebratu 1998; Ruggerio 2021). To address these challenges, a concept of sustainable development was created. This approach required the economic development to be built within the ecological limits (World Commission on Environment and Development 1987).

Sustainable development was defined in 1987 in the report *"Our Common Future"* as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs"* (World Commission on Environment and Development 1987, X). When referring to this definition, often only the first sentence is presented without the latter definitions (cf. Ruggerio 2021). According to Ruggerio (2021), this definition was internationally accepted as the new paradigm for development (Gore 2015; Alvarado-Herrera et al. 2017), but the flaws of this ambiguous definition were also soon identified (Van den Bergh 1996; Ruggerio 2021). These flaws included, for example, ignorance of the physical laws of nature, such as the principles of thermodynamics (Onisto 1999; Ruggerio 2021).

To address the issues, the United Nations Conference on Environment and Development (UNCED) continued the work started in the United Nations Conference on Human environment in 1972 and the report of the World Commission on Environment and Development in 1987 (United Nations 1992a; United Nations 1993). The UNCED considered environment and development and established the following documents: Rio Declaration on Environment and Development, Agenda 21, Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, and a legally binding agreement on conservation of biodiversity, and Convention on Biological Diversity (CBD) (United Nations 1992b; United Nations 1993; Boisson de Chazournes 2009). The CBD recognizes the intrinsic value of biological diversity and defines the guidelines for its conservation (United Nations 1992b). The CBD defines sustainable use as *"the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations"* (United Nations 1992b, 4).

The concept of sustainable forest management was introduced already in 1713 when sustainable yield forestry was presented as the opposite of neglectful forest management (von Carlowitz 1713; Vogt and Weber 2019). In Finland, the concept of sustainable yield forestry

was first applied from the 1850s onwards to guide the management of forests in state-owned forests (Palo 1993). Sustainable management was expected from private forests after Finland gained independence in 1917, which marked the beginning of the gradual development of national forest policy (Palo 1993). Sustainable management of European forests was defined in the Ministerial Conference on the Protection of Forests in Europe held in Helsinki in 1993 as "*the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems"* (MCPFE 1993b, 1). This basic definition was incorporated into the Finnish forest policy and has since been used (cf. Ministry of Agriculture and Forestry of Finland (2023). In addition, the original resolution H1 stressed the need to avoid harmful human actions on forest nature by providing the following guidelines "*Human actions must be avoided which lead, directly or indirectly, to irreversible degradation of forest soils and sites, the flora and fauna they support and the services they provide"* (MCPFE 1993b, 3). Moreover, the following precautionary principle was highlighted in relation to sustainable forest management *"Where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat"* (MCPFE 1993c). However, these latter two specifications were not included in the Finnish forest policy.

The sustainable development concept rests on the idea of continuous economic growth (World Commission on Environment and Development 1987). Nevertheless, it has been criticized for the fact that infinite economic growth is impossible on a finite planet (Beckerman 1992; Spaiser et al. 2017). To respond to the criticism, some have argued based on the Kutznets hypothesis that economic growth is necessary for achieving the means to cure environmental damage caused by the economic development (Ruggerio 2021). However, no conclusive empirical evidence has been found to support the Kutznets hypothesis (Cole et al. 1997; Dinda 2004; Stern 2017; Leal and Marques 2022). It is also worth noticing that, in practice, the sustainable development concept is applied to prioritize the economic interests of the Western world, while ignoring the equity and environmental considerations regarding the priority needs of the population in the developing world and limits in the utilization of natural resources, which are complex and interlinked ecosystems supporting life on Earth (cf. World Commission on Environment and Development 1987). This practice is in direct contrast with the original description of the concept of sustainable development (cf. World Commission on Environment and Development 1987).

Ramcilovic-Suominen and Pülzl (2018, based on Thatcher, 2014) present eight different ways to visualize the concept of sustainability. One feature common to all those models is the balance of economic, environmental, and social dimensions. A common feature missing from all the models, except the *"two-tiered sustainability equilibria model"*, is the time dimension. The main inconsistency in the sustainable development concept lies in the premises of economic growth and consumption as a means for development (Spaiser et al. 2017). This inconsistency and the ensuing debate led to the revision of the concept, covering now the different interrelated dimensions of development, such as social, political-institutional, economic, and ecological dimensions illustrated in Figure 3 (Munasinghe 1993; Ruggerio 2021). Ruggerio (2021) describes the conceptual developments based on which the concepts of weak and strong sustainability were introduced.

Weak sustainability builds on neoclassical economic theory. It assumes that *"energy and commodities circulate in a virtually closed system of unlimited resources (inputs) and infinite*

capacity for processing wastes (outputs, ['negative externalities'])" (Ruggerio 2021, 7). Considering nature as an *"inexhaustible pool of resources"* is a biased conception, since it is known, de facto, that resources are finite as is also the capacity of nature to assimilate contaminants (Ruggerio 2021). The irreversible negative effects of economic development on nature are scientifically proven; this undermines the credibility of the neoclassical economic theory which claims that the economic development will overcome the environmental challenges it has produced (Ruggerio 2021). Another misconception that stems from the neoclassical economic theory relates to the natural capital concept which ignores all values of nature which do not have market value (Dasgupta 2021; Ruggerio 2021). As a result, weak sustainability concept considers nature in decision making only partly, and the most important aspects in relation to maintaining the living conditions on Earth are disregarded (Dasgupta 2021; Ruggerio 2021).

The most recent conceptual proposals that build on the weak sustainability approach are bioeconomy, circular economy, and green economy (Ramcilovic-Suominen and Pülzl 2018; Ruggerio 2021). Bioeconomy has provided a prominent narrative for the forest sector within the EU and national level in Finland. However, it has been criticized for not being able to deliver true transformations towards strong sustainability because it relies on the colonial and neocolonial logics of domination and extractivism instead of adopting decolonial, degrowth and feminist perspectives (Ramcilovic-Suominen and Pülzl 2018; Ruggerio 2021; Ramcilovic-Suominen et al. 2022). The concepts of circular economy and green economy have been used less in forest sector. Weak sustainability does not require direct actions to reverse the deteriorating situation, only need to compensate for the damage somehow.

Strong sustainability derives its basis from ecological studies, which first concentrated on studying nature in its most pristine forms, but later started to consider the interaction between society and nature, namely socio-ecological systems (Ruggerio 2021). Ecological economics considers human economy as part of socio-ecological systems, rather than as separated from nature as in neoclassical theory (Ruggerio 2021). More importantly, strong sustainability acknowledges the principles of thermodynamics and the fact that certain characteristics cannot be substituted by artificial capital (Kriebel et al. 2001; Ruggerio 2021). Because of the uncertainty associated with the functioning of the socio-ecological systems, the *"precautionary principle"*, presented already in the report *"Our Common Future"* in 1987, needs to be prioritized over economistic logic of the neoclassical theory (World Commission on Environment and Development 1987; Kriebel et al. 2001; Ruggerio 2021). According to the strong sustainability, the application of the precautionary principle refers to a situation in which the increasing deterioration of environments is reversed, rather than purely conserved (very strong sustainability) (Ruggerio 2021). Concepts, such as *Degrowth* and *Buen vivir* ('living well'), build on strong sustainability by calling for the need to reverse the planetary deterioration through the dematerialization of the economy (Latouche 2010; Kallis et al. 2012; Escobar 2015; Ruggerio 2021). This refers to economizing and diminishing the consumption of materials and energy (Latouche 2010; Kallis et al. 2012; Escobar 2015; Ruggerio 2021).

In a more recent study, Ramcilovic-Suominen and Pülzl (2018, based on Hector et al. 2014) created two categories to perform an analysis of the meaning and various approaches to concepts of sustainability and sustainable development. Within these categories, Ramcilovic-Suominen and Pülzl identified four extreme value positions. Two of the value positions focused on addressing sustainability in terms of *Weak sustainability position*, which considers wide substitution possibilities between natural, and human made (produced) capital, and *Strong sustainability position*, which considers no substitution possibilities

between natural, and human made (produced) capital. The other two extreme value positions described different approaches to sustainable development: *Prudentially conservationist position* regards humans as superior to other species and nature as a resource for fulfilling the needs of humankind and containing economic value and *Environmental-preservationist position* regards humans as living in harmony with nature and other species which are acknowledged as having intrinsic value. These value positions are considered useful tools in analyzing the effectiveness of the concepts of sustainability and sustainable development in policymaking. Therefore, they were applied in this thesis to analyze and explain the success (or failure) of the concepts of sustainability and sustainable development when addressing global challenges on national level in Finland (cf. Rockström et al. 2009a; Rockström et al. 2009b).

This chapter has focused on describing sustainability and sustainable development on a global level. However, since local and regional actions may impact the functioning of the biosphere and the whole planet, sustainability needs to be studied at local subsystems (Ruggerio 2021). Consequently, it is important to define sustainability in sufficient detail by acknowledging the local circumstances (Ruggerio 2021). This approach enables a critical analysis on the use of the concepts of sustainability and sustainable development on local level, illustrating whether the systems are developing towards sustainability or unsustainability (Ruggerio 2021). This thesis analyses the sustainability of Finnish forest policy on national level, which can serve as a starting point for further studies on local level.

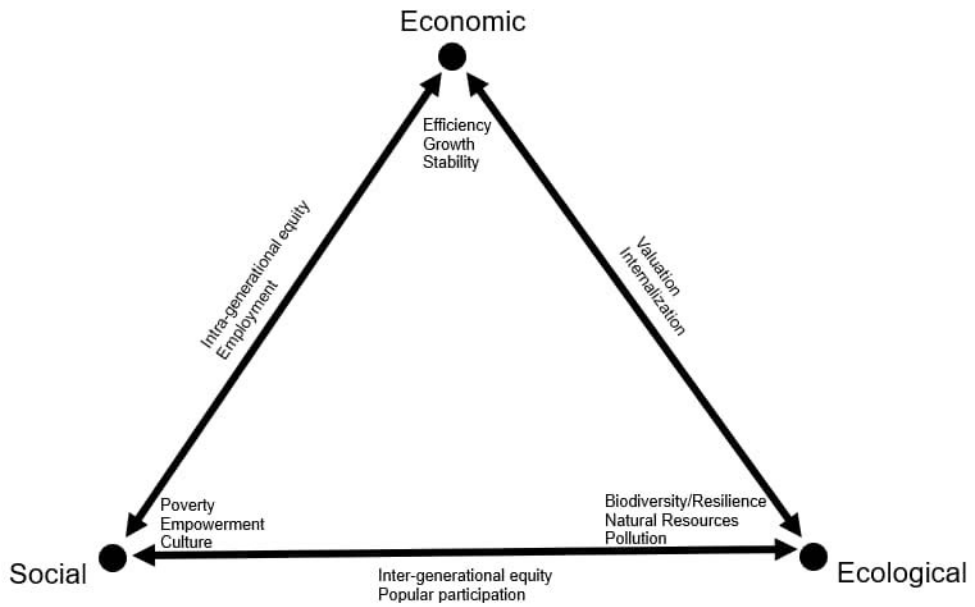

Figure 3. Graphical representation of sustainable development (Adapted from Munasinghe 1993 by Ruggerio 2021).

3 RESEARCH DESIGN

3.1 Epistemological positioning of the researcher

The positivist tradition, originally developed for the study of natural phenomena, builds on three main premises: 1) reality exists independently of our knowledge (the realist position), 2) natural and social sciences are analogous in principle (the naturalist position), and 3) science should explain phenomena as much as possible, generalize findings and distinguish facts from norms and values (the objectivist position) (Crotty 1998; Arts 2012). However, in relation to the study of social phenomena, this position has been challenged in the social sciences by interpretive theory, which understands social reality as a subjective human construction shaped by different normative assumptions and orientations (Crotty 1998; Arts 2012). Thus, the normative assumptions and orientations of the researcher influence scientific research and how the world is interpreted on the basis of the findings, since the selection of scientific assumptions and applied theories already influences what kind of scientific facts are produced (Crotty 1998; Arts 2012).

I share the constructivist rather than the realist position because I believe that the world as we perceive it through language is a social construction, interpreted by people with more or less shared meanings. Therefore, scientific research is also influenced by the conscious and unconscious normative assumptions and choices of researchers, which leads me to support the anti-objectivist position as well. Finally, I share the anti-naturalist position because I believe that the successful study of the mechanisms behind a certain social action requires careful analysis of the interpretations, understandings, and meanings shared by people. Social science aims to reveal the qualities of relations and interactions between different actors, which can only be generalized to a certain extent.

As a social researcher, I respect and strive for the integrity of knowledge, honesty, objectivity, and openness, which are the main principles of scientific research (cf. Arts 2012). However, I am aware that objectivity can be partial at best, since each person interprets their surroundings and social world based on their own values, beliefs, and biases, and therefore makes normative assumptions and choices at conscious and unconscious levels of thinking (Foucault 1994; Kahneman and Tversky 2013; Nofsinger 2017). Utility theory, drawing on the naturalist and positivist paradigms, is based on assumptions about rational human action and maximizing individual utility, and has been shown to be biased (Kahneman and Tversky 2013; Nofsinger 2017). Nevertheless, the currently dominant views on world politics and policies are based on these assumptions, which seem to lead to the accumulation of wealth for a very limited number of people, and to wicked environmental and social problems for most of the human population (Rockström et al. 2009; Raworth 2012; Riddel et al. 2024). I find the traditional naturalist and positivist positions detrimental to the study of social phenomena when the true intention is the revelation and explanation of human action in the social world. Although the ACF builds on the positivist approach to science, I regard it, along with other constructivist researchers, as a highly developed framework suitable for analyzing social constructions, such as political systems (Jones and McBeth 2010; Shanahan et al. 2011; von Malmborg 2023). It is evident that many people, including scientists, and organizations may have other, less virtuous goals (Krott 2005). Nevertheless, honesty is required if one wants to identify one's own fundamental values. Humbleness, self-empathy, and mercifulness are required if one wants to succeed in analyzing and developing one's own values and actions in order to become a better person. Rather than hiding behind the false

declarations of, for example, being an objective researcher and conducting positive research, I contend that the best way to achieve honesty and objectivity in my research is to first explore my own fundamental values (described above) and actions, and to analyze whether they are consistent, coherent, and congruent (cf. Howlett and Rayner 2013).

Doctoral research is a learning journey that is influenced by the material and cognitive resources that are available to the researcher. I started my own journey from scratch since I had no previous experience or knowledge of policy studies. My aim in the pre-planned project was to analyze how international political influences affect the Finnish forest sector. I soon realized that in order to be able to answer that question, I would first have to identify, describe, and analyze what the Finnish forest sector is at the political level – later referred to as the Finnish forest policy subsystem. My first task was to familiarize myself with the relevant subjects and develop the research approach. In my literature review, I came across the book *Theories of the Policy Process*, edited by Professor Paul A. Sabatier, which described eight different approaches to studying policy processes that were prominent at the time (Sabatier 2007). The choice of the Advocacy Coalition Framework (ACF) as the main analytical framework for my dissertation was mainly based on a comparison between the different approaches presented in that book.

Since the ACF was suitable for analyzing the Finnish forest policy subsystem, I was able to develop the next step with my supervisors, one of whom had connections with those involved in developing and applying the Four Pathways of International Influences framework. Since the ACF did not explicitly cover international influences, we thought it would be useful to try to develop the framework in that direction by combining the two above-mentioned frameworks. A dissertation project also involves networking and finding opportunities for collaboration among scholars, which might be useful during the project, but also afterwards. The third part of my dissertation project was planned as a research collaboration with international scholars, which, despite serious efforts, did not lead to a publication. At this point, the dissertation project came to a standstill, which was only resolved after the pragmatic decision to write the third article based on Niina Pietarinen's master's thesis. Hence, the third article of this dissertation has a different scientific orientation than the first two, but as shown in this dissertation and in other studies, it complements the analysis by offering a different perspective (cf. von Malmborg 2023). Based on my previous experience in policy research, I also felt that a critical constructivist approach is more appropriate than a realist approach.

To conclude, I have striven for transparency in my methodological and theoretical choices, and my research is motivated by the quest for the most complete picture of the phenomena under study. These premises have been my guiding principles in conducting this research and they have also influenced the choice of theories applied in this dissertation. In terms of the study and its findings, I have analyzed the different viewpoints of various actors using the ACF theory, which appeared to be a perfect fit for the analysis because of the above-mentioned fundamental premises for my research, and the Discourse Theory, which offered a useful constructivist viewpoint for revealing the finer elements behind the different values that guide the actions of the actors within the policy subsystem (cf. von Malmborg 2023). The application of these two theories also allowed the application of the triangulation principle, which should generally increase the validity of the results. Combining different theories may potentially contribute to the production of new perspectives and innovative research agendas (Cairney 2013; Gabehart et al. 2022; von Malmborg 2023). Finally, the findings are discussed from multifaceted evidence-based perspectives, aligning with my guiding values.

3.2 Evolution of Finnish Forest policy

Finnish Forest policy has evolved under international and national influences. The first forest policies affecting Finland date back to the 14th century when Finland was a part of Sweden (Palo 1993). Forest policy was first developed for addressing deforestation, which was due to intensive exploitation of forests for domestic needs, such as household use, and swidden agriculture, and for production of tar and timber mainly for the export markets, as well as forest fires (Siiskonen 2007; Kotilainen and Rytteri 2011). In the first phase, the use of timber was regulated, and from 1851, also the forest management was addressed through regulation (Palo 1993; Ollonqvist 1998). From the 1920s onwards, data on forests was systematically collected in the form of National Forest Inventories which began to form the basis for the policy recommendations (Pohtila 1999; Korhonen et al. 2021). After the Second World War, a national forest policy approach to industrial utilization of forests was developed (Palo and Hellström 1993; Ollonqvist 1998). The main goal was to increase the forest resources to guarantee the sufficient timber supply for the industries (Palo and Hellström 1993; Ollonqvist 1998). Consequently, forest programs from the 1960s onwards provided economic incentives and guidance to forest owners about forest management practices (Pohtila 1999; Korhonen et al. 2021). Until 2014, the management of forests was strictly regulated with legislation, allowing only periodic cover silviculture in which forest management operations follow the cycle of clear-cut, regeneration, thinnings, which is followed another cycle starting from clear-cut (Ministry of Agriculture and Forestry of Finland 2014b).

Environmental effects of forestry have been addressed in Finnish Forest policy especially from the 1990s onwards (Palo and Hellström 1993; Ollonqvist 1998; Primmer 2010; Siiskonen 2013). The Finnish Forest Act was revised during the years 1994–1996 to consider environmental aspects by defining habitats of special importance and their management in the Section 10 (Ministry of Agriculture and Forestry 1995; Ministry of Agriculture and Forestry of Finland 2014b). In addition, national forest programs were internationally developed as a sustainable forest management tool (Pülzl and Rametsteiner 2002; Howlett et al. 2010). The first National Forest Programme 2010 of Finland, published in 1999, aimed to assure the international markets that Finnish forests are sustainably managed (Ministry of Agriculture and Forestry of Finland 1999). Nature management (e.g., leaving retention trees in fellings and preserving key habitats) was also developed from the 1990s onwards to mitigate the negative effects of forestry in commercial forests (Siitonen et al. 2020). Nature management is guided by the legislation, recommendations, and certification schemes (Siitonen et al. 2020). Certification schemes contributed to the increase in the volume of retention trees especially in the late 1990s, but the proportion still remained (approximately 5–10 times) below the recommendations, thus failing to compensate for the loss of old trees in the old-growth forest fellings (Korhonen et al. 2020; Siitonen et al. 2020). During the 2010s, the quality of nature management had declined by 20% on average in quantitative variables when compared to the 2000s (Siitonen et al. 2020). The volume of decaying wood in commercial forestland has increased in the southern Finland and decreased in the northern Finland, but the volumes remain at low levels when compared to natural forests (Korhonen et al. 2020).

Another round of forest legislation revisions was completed during the years 2010–2013 when the governmental forestry supervision system was judged by the European Commission to be in contradiction with the EU Competition regulation. On the other hand, the strictly regulated forest management practices defined in Forest Act were seen to require liberation

(Finnish Government 2013). The ensuing changes in Forest Act were made based on two main reasons: strong societal demands and enough utilizable forest resources (Finnish Government 2013). Nevertheless, the revisions seemed to compromise the protection of forest biodiversity. Once the revised Forest Act came into force in 2014, the area of habitats of special importance was categorically diminished by 27,000 hectares, which seemed to indicate a direct negative impact on forest biodiversity conservation (Kniivilä et al. 2020). Furthermore, a decreasing trend in the quality of water protection activities in non-industrial private forests between the years 1996–2021 was identified (Niinistö and Torvelainen 2023). A similar trend of intentional weakening of the environmental standards set in the 1990s has been identified also in relation to the market based PEFC certification scheme, which is the main certification scheme in Finland (covering approximately 92% of commercial forests, whereas FSC covers only around 10% of commercial forests) (Ihaksi and Etholén 2021; Kuuluvainen et al. 2021). As mentioned above, the weakening standards of the certification are reflected in the declining status of the nature management in commercial forests (Korhonen et al. 2020; Siitonen et al. 2020). It also appears that by following the neoliberalist discourse, forestry work in Finland has been outsourced to a great extent for companies employing international (disadvantaged) forestry workers with poor working conditions, leading to situations which can be defined as deprivation (Pelli 2024).

More recently, evaluations on how Finnish forest-focused and forest-related policies address climate change have been conducted, and discussions and considerations on how to better address climate change mitigation targets are currently ongoing (cf. Hynynen et al. 2023; Ministry of Agriculture and Forestry 2023a; Ministry of Agriculture and Forestry 2023b; Ministry of Agriculture and Forestry of Finland, Ministry of the Environment of Finland 2023; Silfver et al. 2024).

Internationally, and on the EU level, serious efforts have been taken to respond to the global challenges, such as climate crisis, and environmental degradation, but the achievements remain modest (Rockström et al. 2009; Raworth 2012; Sotirov et al. 2020; Pecurul-Botines et al. 2023). Wolfslehner et al. (2020, 7) urged "a strategic and coordinated [European forest] policy direction to support the implementation of globally agreed policy targets such as the SDGs, the Paris Climate Agreement and CBD". However, Winkel and Sotirov (2016) analyzed how the European Forest policy is characterized by a (dis)integration paradox – a request for policy integration from certain actors, but refusal for integration from other actors – mainly due to the economic interests and sectoral and institutional competition. The division of views is clearly visible in the position statements of representatives of the forest paradigm vs. representatives of the environmental paradigm in Europe (cf. Hyvärinen et al. 2019; Swedish Environmental Protection Agency 2021; Bioenergy Europe et al. 2021; Confederation of European Forest Owners 2021; Confederation of European Paper Industries 2021; Finnish Forest Industries, 2023). Typically, the representatives of forestry paradigm consider forestry being sustainable, and call for increased utilization of forests, whereas representatives of environmental paradigm consider forestry as the major cause of environmental degradation in forests, calling for lessening the utilization of forests.

3.3 Empirical studies: data and methods

This dissertation is based on three articles. In Article I, I applied the ACF theory in the Finnish context to identify advocacy coalitions in the Finnish forest policy subsystem and analyzed their belief structures and coordination by including the ten fundamental normative precepts in the ACF theory (cf. Sabatier 1998; Sabatier and Weible 2007). In addition, the New Ecological Paradigm (NEP) scale was applied to test its potential to support the identification of actors' values in environmental policy research (Dunlap et al. 2000). Article II built theoretically on Article I, as the ACF theory was again applied to explore the stability of advocacy coalitions in Finnish forest policy by comparing two major Forest Act revision processes, the first in 1994–1996 and the second in 2011–2013. As a new theoretical feature, the four pathways of international influence framework by Bernstein and Cashore (2000; 2012) was combined with the ACF approach to identify how international forest governance influences have diffused into Finnish forest policy. The data consisted of stakeholder comments on the revisions, and interviews in which experts were asked to identify international influences affecting the revisions. Article III applied Discourse Theory to explore how the sustainability-related meta-discourses identified by Bäckstrand and Lövbrand (2006) were reflected in the Finnish National Forest Programs established between 1999 and 2014. The study analyzed how the concept of sustainability is framed and translated into forest policy objectives, what kind of ambitions are promoted when defining challenges and problems, what specific actions are proposed to address them, and how these actions are prioritized.

In Article I, qualitative semi-structured interviews were the primary data collection method for identifying advocacy coalitions (cf. Sabatier 1998; Wengraf 2001; Bryman and Bell 2007; Sabatier and Weible 2007). The first eight interview questions were based on the ACF theory and developed to identify the components of actors' policy core beliefs (cf. Sabatier 1998; Appendix 1). An additional 11 questions referred to cooperation between actors and specific qualities of the revision process and the revised Forest Act. The interviewees were selected from the list of participants in the working group that drafted the proposal for the revised Forest Act in 2013. Seventeen organizations were represented in the working group, including the key members of the different coalitions, either directly (e.g., UPM-Kymmene Oyj), or indirectly through lobby organizations representing their members (e.g., Finnish Forest Industries Federation). Most of the organizations had one representative, but the Ministry of Agriculture and Forestry had three representatives and the Finnish Forest Research Institute had two. The representative of the Finnish Wildlife Agency refused to participate in the research due to its minor role in the revision. Representatives from Metsähallitus (managing state-owned forests) and Pellervo Economic Research PTT could not be reached. After 13 representatives had been interviewed between September 2013 and April 2014, the data appeared to be saturated, as no new aspects emerged in relation to the main categories of interest (cf. Strauss and Corbin, 1998). In addition to the interview data, the Article I data comprised official documents produced during the revision process in 2011–2013, consisting of 50 comment documents on the proposal for the new Forest Act from forest policy stakeholders, materials produced by the revision working group, and the Environmental Impact Report (Kostamo et al. 2012). The document data were analyzed to gain an understanding of the policy process and also to support the conduct and analysis of the interviews.

The data in Article II largely consisted of the document data produced in relation to the revisions of the Finnish Forest Act between 1994 and 1996, and 2010 and 2013. The

document data were complemented with the interview data described above. The document data concerning the 1996 revision of the Forest Act included the proposal for the new Forest Act, including one complementing opinion and eight dissenting opinions by eight different members of the committee that wrote the proposal (Ministry of Agriculture and Forestry 1995), and 56 comment documents on the proposal from different actors. The document data concerning the 2013 revision included the proposal for the new Forest Act, including three dissenting opinions by members of the working group (Ministry of Agriculture and Forestry 2012), 50 comment documents from different actors, material produced in the meetings of the revision working group, and the Environmental Impact Report evaluating the environmental impacts of the proposal (Kostamo et al. 2012).

The data for Article III consisted of the following formal written policy documents: the Finnish National Forest Programme 2010 (Ministry of Agriculture and Forestry of Finland 1999), the National Forest Programme 2015 (Ministry of Agriculture and Forestry of Finland 2008), and the National Forest Strategy 2025 (Ministry of Agriculture and Forestry of Finland 2015b), which was based on the Government Report on the Forest Policy 2050 (Ministry of Agriculture and Forestry of Finland 2014).

3.4 Data analysis

In general, qualitative content analysis aims to discover elemental themes in the data (Bryman and Bell 2007). Hsieh and Shannon (2005) describe three different approaches to qualitative content analysis, namely conventional, directed, and summative content analysis. These approaches differ mainly in terms of coding schemes, origin of codes, and threats to reliability (Hsieh and Shannon 2005). The coding categories of conventional content analysis are derived directly from the text data, whereas in directed content analysis, the original codes are developed based on a theory or relevant previous findings (Hsieh and Shannon 2005). Summative content analysis typically begins by counting and comparing keywords or content, followed by interpretation of the underlying context (Hsieh and Shannon 2005).

Directed content analysis, also known as theory-driven qualitative content analysis, was applied to analyze the interview and document data in Articles I, II, and III (cf. Wengraf 2001; Hsieh and Shannon 2005; Bryman and Bell 2007; Myers 2013). In practice, the coding and analysis of the data in the three articles were conducted using qualitative data analysis software, ATLAS.ti. In Articles I and II, the same coding was used to identify the actors' policy core beliefs and cooperation based on the ACF theory (cf. Appendix 2). For the analysis of international influences, the coding followed the Four Pathways of International Influences and included the following codes: international rules, international norms and discourse, markets, and direct access to policymaking. These were considered to have the potential to influence the relatively stable parameters and/or to appear as external system events described in the ACF (cf. Appendix 1; Sabatier 1998; Bernstein and Cashore 2012). Strauss and Corbin (1990) present three levels of coding, open, axial, and selective. In Articles I and II, open coding was applied to sort, explore, compare, and finally conceptualize and categorize the data. Axial coding was then applied to combine the data in new ways by linking codes to contexts, consequences, patterns of interaction and causes. Finally, selective coding was utilized to integrate selected core categories (e.g., a specific coalition) with other relevant categories. In Article I, the identification of underlying themes focused on topics related to the identification of advocacy coalitions based on the actors' policy core beliefs (Table 1) and cooperation between actors. In Article II, in addition to identifying advocacy

coalitions, international influences were also identified based on the Four Pathways of International Influences framework. The extracted themes were illustrated with quotations from the data.

In Article I, the interviewees' general environmental beliefs were measured with the New Ecological Paradigm (NEP) scale to complement the identification of the actors' policy core beliefs (cf. Matti and Sandström 2011; Appendix 1). The NEP scale is a measure of people's tendency to be pro-environmental. It consists of 15 statements that can be treated as an internally consistent summated rating scale (Dunlap et al. 2000). The scores on the scale correlate with membership in environmental organizations and other pro-environmental behaviors (Matti and Sandström 2011). The minimum score on the scale is 15 and the maximum 75, where higher scores indicate more pro-environmental attitudes.

In Article III, a code book for identifying environmental meta-discourses was developed based on Bäckstrand and Lövbrand (2006) (Appendix 3). The coding entailed four rounds, proceeding from general topics to more detailed and less apparent ones. The first level of coding involved identifying the descriptive information of each document, such as the name of the document, publication date, and type. The second level of coding entailed identifying the content of each document, covering goals and measures. The goals were categorized into economic, environmental, and social groups (Table 3) based on the following criteria: economic goals comprised market-driven goals and themes, such as industry, marketization and new products, trade in forest-based commodities, employment, efficiency, innovations, and the energy sector; environmental goals included ecological and 'green' goals and related themes, such as the enhancement of biodiversity, soil, water systems, carbon, conservation and protection of natural habitats, and climate change mitigation; and social goals included goals and themes related to the lifestyle and culture of Finnish citizens, such as traditions, recreation, consumption habits, participation in decision-making, education, level of income, employment, and gender equality. Forest-based livelihoods and employment were regarded as both an economic and a social theme in the policy documents and were therefore coded as social and economic goals in this study. The next step was to determine the strengths of the goals by assessing which were prioritized and oriented toward action, and which were set without an implementation plan. This was done by examining the goal setting to identify the reference and target levels, the monitoring and evaluation procedures, and the funding allocated to each goal. The goals/target levels set in terms of numerical values were coded as 'specific', and those that lacked numerical value, or where the variable itself was missing, were coded as 'rhetorical'. This procedure was designed to identify the degree of integration of economic, environmental, and social ambitions in the policy documents as follows: 1) Prioritized – Prioritized over other dimensions of sustainability, 2) Equal – Equal to other dimensions of sustainability, 3) Integrated – Integrated into goals with a partial implementation plan, 4) Rhetorical – Integrated into goals without an implementation plan, 5) None – Not integrated at all. A deductive coding procedure was applied to identify which of the three meta-discourses was the most prominent by coding each document with a set of predetermined keywords describing the core themes of each meta-discourse (Table 3). The temporal changes in the existence of the meta-discourses over time were also investigated using the cross-tabulation function of ATLAS.ti by comparing the code occurrences between the documents.

4 RESULTS OF THE EMPIRICAL STUDIES

4.1 Advocacy coalitions and their policy core beliefs

Finnish forest policy stakeholders' policy core beliefs and cooperation were identified based on the qualitative analysis of semi-structured interviews and documents containing the written statements of stakeholders regarding the revisions of the Finnish Forest Act in 1994–1996 (documents) and 2011–2013 (interviews and documents) (Table 1). The 2011–2013 revision of the Forest Act was studied first, and three coalitions were identified based on the interviews and documents. The analysis was extended to the Forest Act revision of 1994–1996, and the findings of both analyses were compared, confirming that the three identified coalitions existed in both the 1994–1996 and the 2011–2013 revisions. These coalitions were categorized as the private forestry coalition, the forestry administration coalition, and the environmental coalition.

The private forestry coalition, formed mainly by representatives of forest owners and forest industries, aimed to maintain forestry and forest industries as profitable businesses. The members of the coalition regarded poor investment prospects and a lack of entrepreneurial forest owners as the basic problems of the sector. These problems were seen as a result of low forest utilization, fragmented forest ownership, communication failures, and changes in socio-cultural values. The private forestry coalition considered the welfare of forest owners and forest industry shareholders to be the top priority. Furthermore, the private forestry coalition cooperated with polarized blocks within the coalition: forest owners and their organizations co-operated with each other, while forest companies co-operated within the Forest Industries Federation, and with the Central Union of Agricultural Producers and Forest Owners.

The goal of the forestry administration coalition was the sustainable development of the forest sector for the benefit of the whole nation. The coalition consisted of governmental organizations dealing with forest issues, such as the Ministry of Agriculture and Forestry, the Finnish Forest Centre, the Finnish Forest Research Institute (now called the Nature Resources Institute Finland), and the Forestry Development Centre Tapio. According to the coalition, the basic problems of the sector included maintaining forests as a source of sustainable livelihoods, and the challenges of combining different forest uses. The root causes of the problems included societal and technological changes, which had led to a decline in the demand for traditional paper products. The members of the coalition perceived the lack of new innovative products and cliquish relations within the forest sector as the main causes of the problems. The forestry administration coalition considered the welfare of society as a whole to be of paramount importance. Due to the brokering role of the coalition, the members worked with all actors interested in co-operation.

The environmental coalition consisted of environmental governmental and non-governmental organizations and considered the welfare of present and future generations to be the most important goal. The coalition regarded environmental degradation as the main problem of the sector and blamed intensive forestry for causing it. The situation was regarded as serious, but it was highlighted that Finland was committed to halting biodiversity loss by 2020. Members of the environmental coalition included the Ministry of the Environment, WWF Finland, and the Finnish Association for Nature Conservation, all of whom cooperated intensively with each other. The average NEP value of the private forestry coalition

representatives was 46. The average NEP value of the forestry administration coalition representatives was 54, and that of the environmental coalition representatives 62.

Table 1. Policy core beliefs and coordination of the coalitions from 1996 to 2013 based on qualitative analysis of expert interviews and policy documents.

Policy core beliefs	Private forestry coalition	Forestry administration coalition	Environmental coalition
Orientation to basic value priorities	Maintaining forestry and forest industry as lucrative businesses	Sustainable economic development of the forest sector	Environmental protection
Identification of groups or other entities whose welfare is of greatest concern	Forest owners, forest industry shareholders	The whole society	Present and future generations
The basic problem of the sector	Poor prospects of industrial and productive investments Not enough entrepreneurial forest owners	Maintaining forests as a source of sustainable livelihoods in Finland, Challenges in combining different aspects of forest use	Forestry has an adverse effect on the forest biodiversity
Overall seriousness of the problem	The situation is serious, but if changes are made quickly, the sector will recover	Changes were needed to respond to the demands of stakeholders, but now the situation looks better	Very serious, but Finland is committed to halt the loss of forest biodiversity by 2020
Basic causes of the problem	Low utilization rate of forests, fragmented forest ownership, failures in communicating the status of the sector, changes in socio-cultural values	Globalization and technological development, which have led to a reduction in the demand for traditional paper products, lack of new products, changes in socio-cultural values, cliquish relations inside the sector	Intensive forestry
Coordination of actions	Polarized cooperation: forest owners and their organizations cooperate with each other, forest industries cooperate through the Finnish Forest Industries Federation, and the Central Union of Agricultural Producers and Forest Owners cooperates with the Forest Industries Federation	Cooperation with all actors interested in cooperation	Intensive coordination of actions between all environmentally oriented actors
Central coalition members that participated in the revisions	Finnish Forest Industries Federation, UPM-Kymmene Oyj, Forestry Experts' Association, the Central Union of Agricultural Producers and Forest Owners, Finnish Forest Owners' Association, Forestry Associations	Ministry of Agriculture and Forestry, Forestry Development Centre TAPIO, the Finnish Forest Centre, the Finnish Forest Research Institute	Ministry of the Environment, WWF Finland, the Finnish Association for Nature Conservation (FANC)

4.2 Values and discourses incorporated into policies

Articles I and II shed light on the paradigmatic struggle between representatives of the forest paradigm, consisting of members of the private forestry and forestry administration coalitions vs. representatives of the environmental paradigm from the environmental coalition. In the 1994–1996 revision of the Forest Act, the private forestry coalition argued that forest management practices were already in line with international rules and norms, and that the environmental aspects of forestry were overemphasized in the revised Forest Act. Meanwhile, the environmental coalition stated that even the revised Forest Act did not comply with international commitments. Moreover, some members of the forestry administration coalition pointed out that the revised Act would only cover two out of six criteria for sustainable forest management defined in the MCPFE process. However, the Ministry of Agriculture and Forestry sanctioned the policy change by stating that after the revision, the Forest Act would be in line with international commitments. In the 2010–2013 revision of the Forest Act, the private forestry coalition advocated reducing state regulation, stating that diminishing the area requirements for important habitats would improve their preservation. In contrast, the environmental coalition felt that there were no ecological premises for categorically defining these areas as small. The views of the forestry administration coalition members diverged, as some organizations did not accept the weakening of the status of habitats of special importance, but the Ministry of Agriculture and Forestry again sanctioned the revision. In both revisions, the MCPFE definition of sustainable forest management was regarded as central to defining national practices.

The findings of Article III indicate that although the language used in the policies generally refers to sustainability, the various dimensions of sustainability are not given equal consideration, with economic goals being particularly valued, and more detailed measures proposed to achieve them (Table 2). Articles I and II support this finding. NFP 2010 considered three dimensions of sustainability (economic, environmental, and social) by presenting the economic and social dimensions with more detailed and numerical goals, whereas the environmental goals were presented qualitatively and left for later clarification. The main objectives of the program, with numerical targets, included increasing the industrial use of roundwood, wood-based energy production, and the value of forest industry exports. Improving opportunities for local livelihoods was another focus of the program, which was addressed through the goal of increasing the use of roundwood. The discourse of ecological modernization dominated the program's economic and social goals, whereas green governmentality manifested itself in relation to environmental goals. Civic environmentalism was identified in relation to the preparation and follow-up of the program, but not in its content. According to the program, a tentative assessment of its environmental impacts was carried out; it did not find any significant effects on forest biodiversity but identified a positive effect on carbon sequestration.

NFP 2015 continued to prioritize economic goals over environmental and social goals, with the main objective being to secure a competitive operating environment for the forest industry and forest management. The discourse of ecological modernization dominated the program. Of the 27 targets to be reached by 2015, 15 were economic (12 numerical, 3 rhetorical), 9 social (6 numerical, 3 rhetorical), and 3 environmental (2 numerical, 1 rhetorical). The economic and social impacts of the program were explained in a positive and detailed manner, whereas the environmental impacts of the program were only vaguely described. The program's biodiversity conservation goal relied on the implementation of the

Forest Biodiversity Programme for Southern Finland 2008–2016 (METSO Programme), a voluntary program targeting private forest owners.

NFS 2025 was based on the Government Report on Forest Policy 2050 and was closely linked to the Bioeconomy Strategy, the Energy and Climate Policy Strategy, and the National Biodiversity Strategy. The program aimed to attain economic growth by maintaining and increasing the utilization of forest resources through traditional and new means. The forest resources to be utilized were understood to include ecosystem services, such as landscape preservation, carbon sinks, water, and biodiversity. The program was the most advanced and detailed in its formulation of the programs studied, with 28 objectives and a strategic portfolio of 11 projects. Monitoring was based on 11 economic, 10 environmental, and 6 social indicators, amounting to 27 altogether. Two of the economic indicators, seven of the environmental indicators and none of the social indicators were numerical. The remaining indicators monitored trends but lacked numerical goals and were therefore regarded as rhetorical. NFS 2025 was dominated by the discourse of ecological modernization, which was supported by the discourse of green governmentality.

The strengths of the economic, environmental, and social goals expressed in the analyzed programs are presented in Table 3. The strengths of the goals appeared to vary between being prioritized over other dimensions of sustainability (economic goals) and being integrated into goals with a partial implementation plan (environmental and social goals). While goal-setting starts with seemingly balanced intentions, such as ‘supporting sustainable development’, or ‘economically, ecologically and socially sustainable use’, the economic goals are typically more detailed and more versatile than the environmental and social goals. These findings highlight the uneven consideration of different dimensions of sustainability, which directly affects both policy implementation and outcomes in forests.

To summarize, in the programs analyzed, the discourse of ecological modernization appeared to be the main environmental meta-discourse, supported by the discourse of green governmentality. The civic environmentalism discourse was the most apparent in NFP 2010, but from then on it was diluted in the analyzed programs (Fig. 4). When considering the forest policy subsystem, it appears that the industrial forestry discourse, which reflects the central formal and informal aims of forest industries and economically oriented forest owners, along with the discourses on the forest fuel crisis, have been reframed through the ecological modernization and bioeconomy discourses into a storyline that suggests the economic utilization of forests can be increased while preserving carbon sequestration and forest nature. The ecological modernization discourse, together with the bioeconomy storyline, appears to have been successful in promoting the economic utilization of forests, which was identified as the main goal of the private forestry coalition. This dominant discourse has also limited the influence of other prominent discourses, such as the green governmentality discourse, which would have allowed the forestry administration coalition greater influence, and the civic environmentalism discourse, which would have required a fundamental reorientation of forest policy and allowed the environmental coalition greater influence.

Table 2. The main policy goals of the three Finnish National Forest Programs, established between 1999 and 2015, classified into economic, environmental, and social categories. The numbering of the goals follows the numbering applied in the documents.

	Goals		
Policy	**Economic**	**Environmental**	**Social**
NFP 2010	1. Forest sector supports sustainable development. 2. Opportunities for growth in the forest industry. 3. Forestry should be profitable and provide employment. 5. Forests should be well-managed. 7. Strengthening forest know-how. 8. Finland is active in international forest policy.	1. Forest sector supports sustainable development. 4. Securing ecological sustainability. 5. Forests should be well-managed.	1. Forest sector supports sustainable development. 3. Forestry should be profitable and provide employment. 6. Forests for recreation and natural products. 7. Strengthening forest know-how;
NFP 2015	1. Securing a competitive operating environment for the forest industry and forest management. 2. Enhancing the climate- and energy-related benefits of forests. 5. Strengthening skills, expertise of forest professionals, and acceptability of the forest sector. 6. Promoting sustainable forest management in international forest policy arenas.	2. Enhancing the climate- and energy-related benefits of forests. 3. Protecting the biological diversity and environmental benefits of forests.	4. Promoting the use of forests as a source of culture and recreation. 5. Strengthening skills, the expertise of forest professionals, and acceptability of the forest sector.
NFS 2025	1. Finland is a competitive operating environment for forest-based business. a. Forest sector grows, enterprises and business are renewed, and new and growth enterprises are developed. b. Supply of raw materials allows for increased use of forests and new investments. c. EU and international forest policy promote sustainable use, acceptability, and competitiveness of forests and wood. 2. Forest-based business and activities and their structures are renewed and diversified. a. Forest-based business and activities are diverse and responds to changing needs. b. Administration is flexible, effective and customer oriented. 3. Forests are in active, economically, ecologically, and socially sustainable and diverse use. a. Forestry is active and business oriented.	1c. EU and international forest policy promote sustainable use, acceptability, and competitiveness of forests and wood. 3. Forests are in active, economically, ecologically and socially sustainable and diverse use. b. Forest biodiversity and ecological and social sustainability are reinforced.	2. Forest-based businesses and activities and their structures are renewed and diversified. a. Forest-based business know-how and activity are diverse and responds to changing needs. 3. Forests are in active, economically, ecologically and socially sustainable and diverse use. b. Forest biodiversity and ecological and social sustainability are reinforced.

Table 3. Strengths (ranging from integrated to prioritized) of economic, environmental, and social goals expressed in the three policies, and related discourses, based on qualitative document analysis.

	Goals		
Policy	**Economic**	**Environmental**	**Social**
NFP 2010	***Prioritized*** Ecological modernization, Green governmentality	***Integrated*** Green governmentality	***Integrated*** Ecological modernization, Green governmentality, Civic environmentalism
NFP 2015	***Prioritized*** Ecological modernization, Green governmentality	***Integrated*** Ecological modernization, Green governmentality	***Integrated*** Green governmentality
NFS 2025	***Prioritized*** Ecological modernization, Green governmentality	***Integrated*** Ecological modernization, Green governmentality	***Integrated*** Ecological modernization, Green governmentality

Degree of integration: 1. Prioritized – Prioritized over other dimensions of sustainability; ***2. Equal*** – Considered equally among other dimensions of sustainability; ***3. Integrated*** – Integrated into goals with a partial implementation plan; ***4. Rhetorical*** – Integrated into goals without an implementation plan; ***5. None*** – Not integrated at all.

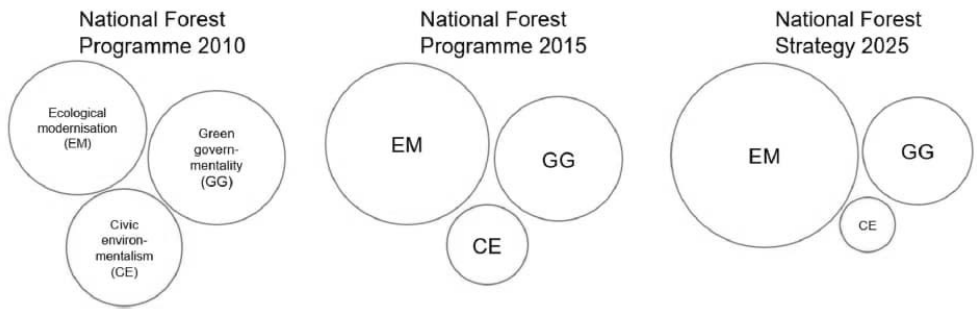

Figure 4. Frequency of references to different environmental meta-discourses in NFP 2010, NFP 2015, and NFS 2025 represented by the size of the circles.

4.3 International influences in the Forest Act revisions

During the 1994–1996 revision, the private forestry coalition regarded the recently introduced international rules for the protection of forest nature and forest biodiversity (the

CBD, 1992; the EU Fauna and Flora Habitats Directive, 1992) as the most influential components of the international influences contributing to changes in the forest sector's operating environment (Table 4). Nevertheless, international rules were considered just as important as international norms and discourses, such as the UNCED Forest Principles, Agenda 21, Chapter 11, and the General Declaration and Resolutions H1, H2, and H4 of the second MCPFE. The coalition aimed to create forest legislation that would assure markets that forests were being managed in accordance with international commitments. However, the coalition felt that the draft act restricted forestry for environmental and biodiversity conservation reasons. Instead, the coalition would have preferred voluntary means of conserving biodiversity and the environment rather than regulation.

During the 2010–2013 revision, the private forestry coalition regarded markets as the most important pathway, and the main goal of the coalition was to avoid turmoil in forest product markets (Table 5). Therefore, compliance with international rules and international norms was considered important, but according to the coalition, this should be achieved through voluntary measures rather than restrictive regulations. The nationwide PEFC certification scheme was highlighted as the most influential instrument for addressing biodiversity.

Contrary to the private forestry coalition, the environmental coalition maintained in both revisions that the proposed acts did not adhere sufficiently to international rules and consumer market demands. In the 1994–1996 revision, the environmental coalition gave detailed examples of what it regarded as drawbacks in the proposition, such as the harmful effects of forestry on bird protection (based on the EU Birds Directive) and the status of the Sámi people (based on the CBD and Agenda 21), the lack of connectivity between important areas for forest biodiversity conservation, and the lack of guidance addressing the management of old-growth forests. The environmental coalition also pointed out that, under the commitment made to the CBD, a lack of scientific certainty is not a valid reason for postponing or avoiding actions to minimize or avoid threats of a significant reduction in or loss of biological diversity. In the 2010–2013 revision, the coalition criticized the proposal to remove sections dealing with minimum age and size requirements for harvesting, and for defining habitats of special importance as small in area, which would decrease the level of biodiversity protection to which Finland is committed under international rules, such as the CBD, the EU Birds Directive, the EU Fauna and Flora Habitats Directive, the Nagoya Convention, and international norms and discourses, such as the UNCED Forest Principles, Agenda 21, Chapter 11, and the General Declaration and Resolutions H1, H2, and H4 of the second MCPFE. Moreover, according to the coalition, the rights of the Sámi people should have been protected in the Act in accordance with the United Nations Declaration on the Rights of Indigenous Peoples (2007). The coalition highlighted international markets as the most influential pathway of international influences, although Finland's membership in the EU was also recognized as contributing to the consideration of environmental issues in Finland. The coalition regarded forest certification, particularly the FSC certification scheme, as a more significant policy instrument than the Forest Act for strengthening the conservation of forest biodiversity. The coalition highlighted how Sweden had successfully boosted its forest product exports by promoting its revised environmentally friendly forest legislation. However, the coalition stressed that without addressing their criticisms, the proposed Finnish Forest Act would not assure environmentally conscious international customers.

The forestry administration coalition appeared to be the most polarized in its views, but the most influential organizations, which also formulated the legislation, supported the view in both revisions that after the revision(s) the legislation complied with international rules

and international norms and discourse. During the 1994–1996 revision, the coalition acknowledged that the pressure deriving from international agreements and consumer market behavior had led to the need to consider the environmental effects of forestry in the legislation. International rules mentioned by the coalition included the CBD, the EU Fauna and Flora Habitats Directive, and the EU Birds Directive. Influential international norms and discourses that were mentioned included the UNCED Forest Principles, Agenda 21, Chapter 11, and the General Declaration and Resolutions H1, H2, and H4 of the second MCPFE. International norms and discourses were deemed as important as international rules. In 1996, some members of the coalition representing research organizations criticized the proposal for disregarding social sustainability issues and carbon- and water-related environmental issues. During the 2010–2013 revision, the EU Biodiversity Strategy and the CBD (especially the Nagoya Protocol to the CBD on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization) were seen as important and influential international rules. The coalition favored the allowance for uneven-aged forest management, as it was considered to improve forest biodiversity conservation and increase the flexibility of forest management options. However, some coalition actors noted that it would decrease the protection of environmental aspects and timber production in certain forest types. The risk of forest damage was also expected to increase. In both revisions, the markets pathway appeared to be the most important pathway for the coalition. In 1996, the coalition stressed the importance of the forest sector for the national economy and the nation as a whole. Guaranteeing sustainable timber production was therefore the dominant national goal, surpassing the needs of individual forest owners. Accordingly, the coalition considered it important to take environmental aspects into account, but only if they did not cause significant difficulties for forest owners and forest industries. In 2013, the coalition emphasized the need to guarantee timber resources for the industries for the next 30–50 years, and the need to allow more flexibility in forest management operations. The coalition considered forest certification to be the most important instrument for ensuring the production of forest products that were less harmful to the environment.

Table 4. Argumentation of the coalitions regarding international influences during the 1994–1996 Forest Act revision from a qualitative analysis of expert interviews and policy documents.

	Private forestry coalition	**Forestry administration coalition**	**Environmental coalition**
International rules	The legislation needs to follow international rules. Forestry practices are already in accordance with international rules. Environmental aspects are overemphasized in the revised Forest Act. Focus should have been on voluntary efforts, that is, recommendations instead of restrictions. *The most important rules: CBD, EU Fauna and Flora Habitats Directive.*	After the revision, Finnish forest legislation follows the international and European legally binding instruments. With diminishing capacities of forestry boards there is a threat of weakening forestry practices that would make the consideration of environmental aspects more difficult => may threaten compliance with international agreements. *The most important rules: CBD, EU Fauna and Flora Habitats Directive, EU Birds Directive.*	The new Forest Act does not fulfil international commitments. Forest biodiversity is not adequately protected. The evaluation of environmental effects is not adequately considered. Climate change and water issues should be better incorporated. *The most important rules: CBD, EU Birds Directive, EU Fauna and Flora Habitats Directive.*
International norms and discourse	The legislation needs to follow international agreements. Forestry practices are already in accordance with international agreements. Environmental aspects are overemphasized in the revised Forest Act. *References were made to: UNCED Forest Principles, Agenda 21 Chapter 11, the General Declaration and Resolutions H1, H2, and H4 produced and agreed in the Second MCPFE.*	After the revision, Finnish forest legislation follows the international and European agreements. The new act covers only two out of six criteria of sustainable forest management. (Criteria and indicators for advancing sustainable forest management in Europe were agreed in the follow-up work of the Helsinki process in 1994.) The new Forest Act neglects the social dimension of sustainability. The significance of social and non-market benefits of forests is increasing in the future. *References made to: UNCED Forest Principles, Agenda 21, Chapter 11, the General Declaration and Resolutions H1, H2 and H4 of the Second MCPFE.*	The new Forest Act does not fulfil international commitments. Forest biodiversity is not adequately protected. The evaluation of environmental effects is not adequately considered. Climate change and water issues should be better incorporated. *References made to: UNCED Forest Principles, Agenda 21, Chapter 11, the General Declaration and Resolutions H1, H2 and H4 of the Second MCPFE.*
Markets	The significance of forest industries for the Finnish national economy is high at present and will be in the future. Therefore, it is important to guarantee an adequate timber supply in all situations. Important to assure international consumers. that Finnish forestry practices are environmentally sustainable.	The significance of forest industries for the Finnish national economy is high at present and will be in the future. Therefore, it is important to guarantee an adequate timber supply in all situations. Important to assure international consumers that Finnish forestry practices are environmentally sustainable.	International reputation of Finnish forest industries is in danger due to the revision as environmental issues are not being adequately addressed. Therefore, there is a serious risk of a diminishing market share for Finnish forest industries.

Table 5. Argumentation of the coalitions regarding international influences during the 2010–2013 Forest Act revision, derived from a qualitative analysis of expert interviews and policy documents.

	Private forestry coalition	**Forestry administration coalition**	**Environmental coalition**
International rules	International and EU agreements guided the revision by setting the base line for standards for forestry practices. EU competition law triggered the revision. International aspects were already considered in the previous revision. *Important agreements: CBD, EU Fauna and Flora Habitats Directive, FLEGT, Kyoto Protocol.*	EU policies related to climate issues and energy. It is important that Finnish Forest legislation follows international agreements. *Important agreements: CBD, EU Birds Directive, EU Fauna and Flora Habitats Directive, Durban Platform, FLEGT, Kyoto Protocol.*	The loss of biodiversity needs to be halted. Sustainability of forestry needs to be guaranteed. Mainstreaming of environmental issues is important. *Important agreements: CBD, EU Birds Directive, EU Fauna and Flora Habitats Directive, Nagoya Convention, UNCCC, Kyoto Protocol.*
International norms and discourse	Legislation and practices need to follow international norms and standards. There were no new pressures arising from international norms and discourse since the influences had already been diffused in the previous revision. *References were made to: UNCED Forest Principles, Agenda 21, Chapter 11 on Combating Deforestation, the General Declaration and Resolutions H1, H2 and H4 of the Second MCPFE.*	All dimensions of sustainability (economic, environmental, social, and cultural) need to be considered. Committed to criteria and indicators of sustainable forest management. Deregulation of forest management practices would enhance forest-related livelihoods. Net loss of total forest area. *References were made to: FAO definition of forests, Criteria and indicators [Lisbon Resolution L2 on Pan-European criteria, indicators and operational level guidelines for SFM 1998.]*	EU competition law triggered the revision. The loss of biodiversity needs to be halted. Sustainability of forestry needs to be guaranteed. Mainstreaming of environmental issues is important. EU Biodiversity Strategy *References were made to: UNCED Forest Principles, Agenda 21, Chapter 11 on Combating Deforestation, the General Declaration and Resolutions H1, H2 and H4 of the Second MCPFE.*
Markets	If sustainability issues are not addressed, impossible to sell forest products, as ENGOs would start to campaign against Finnish forest companies. Forest products exports comprise one fifth of the total exports. Certification is a way to gain consumer acceptance. Certification standards need to be considered; they exceed the level that is demanded in the Forest Act.	Important to assure international consumers that Finnish forestry practices are environmentally sustainable.	A good reputation in sustainability issues is vital for the forest industries. If a serious weakening of the environmental aspects occurs, the environmental coalition will apply the same methods as in the1990s during the 'forest wars'.

4.4 Sustainability framings in Finnish Forest policies

Based on Articles I, II, and III, from the 1990s to 2015, several policy changes affected the sustainability framings of Finnish forest policy. The incorporation of the consideration of environmental aspects of forestry in 1997 was the most important change in Finnish forest policy in 70 years. The change increased the environmental sustainability of forestry, which benefitted society as a whole, enabled forest industries to maintain access to environmentally conscious export markets, and enhanced the consideration of environmental aspects in forests. Forest owners had to bear part of the costs of preserving habitats of special importance. The policy change was prompted by international influences, resulting from increasing environmental consciousness in response to environmental problems caused by the industrial utilization of natural resources. Interestingly, representatives of the private forestry coalition considered that forest management practices were already in accordance with international rules and norms prior to the revision and advocated voluntary efforts rather than restrictive regulations in relation to environmental protection. The private forestry coalition considered that environmental aspects were overemphasized in the revised Forest Act. Thus, the private forestry coalition framed the sustainability of forest policy and forest management through modernization discourse, neo-liberalism, and industrial forestry discourse. The forestry administration coalition considered that the revised act was in line with international commitments. The sustainable forest management discourse was the main discourse applied in supporting and problematizing the revision. Modernization and industrial forestry discourses were also applied to justify the strong position of the forest sector in the Finnish national economy. The environmental coalition argued that even with the proposed revision, the Act did not comply with international commitments since forest biodiversity was not adequately protected and environmental effects were not sufficiently considered. The coalition also felt that climate change and water issues were not sufficiently incorporated into the revised Act. Thus, the environmental coalition framed the sustainability of forest policy and forest management through the limits to growth discourse, sustainable development discourse, global governance discourse, state regulation and hard law discourse, forest biodiversity discourse, and forests and climate change discourse. To summarize, the private forestry coalition framed the sustainability of forest management through the economic dimension, whereas the environmental coalition considered that the main sustainability challenge was related to the environmental effects of forestry. The forestry administration coalition also highlighted the need to consider social sustainability.

Another major policy change occurred in 2014, when the freedom of forest owners to make decisions was increased by allowing continuous cover silviculture, and by removing the previously mandatory membership of forest owners in forest management associations. However, the legislation-based protection of habitats of special importance was weakened by categorically defining such habitats as small in area. The private forestry coalition based its argumentation on ecological modernization, and sustainable forest management discourses, which were supported by neo-liberalism, global governance, de-regulation, self-regulation and soft law discourses. The environmental coalition framed sustainability mainly through forest biodiversity discourse, forest and climate change discourse, sustainable forest management discourse, state regulation and hard law discourse, and global governance discourse.

In relation to the NFPs, when considering the occurrence of civic environmentalism, the discourse of reformist civic environmentalism was, relatively speaking, the most influential in NFP 2010 along with the green governmentality discourse, highlighting the more

important role of the forestry administration coalition in the development of NFP 2010, but both discourses were diluted in the later programs. This might also reflect the changed roles and/or attitudes of the members of the forestry administration coalition.

The different views on the framing of the sustainability of the forest policy culminate in divergent views on whose benefit should be the main concern, and in perceptions of the main problems of the sector. The private forestry coalition regarded forest owners and forest industry shareholders as the main beneficiaries, and the poor prospects for the forest industries, due to the low utilization rate of forests, as the main problems of the sector. This reflects a weak sustainability approach. The forestry administration coalition saw the whole nation as the main beneficiary, and the challenges of maintaining forests as a source of sustainable livelihoods as the main problem of the sector. This also reflected a weak sustainability approach. The environmental coalition regarded present and future generations as the main beneficiaries, and the negative impact of intensive forestry on forest nature as the main problem facing the sector. This reflected a strong sustainability approach.

Despite the expressed concerns on sustainability of forestry, it would appear that the private forestry coalition supported by the forestry administration coalition has been able to maintain the political direction with the bioeconomy storyline. The emerging bioeconomy discourse, building on the ecological modernization discourse, has allowed the private forestry coalition to reformulate the underlying industrial forestry discourse into a more attractive form that requires the intensification of forestry while claiming simultaneous environmental benefits for nature.

5 DISCUSSION AND CONCLUSIONS

This dissertation identified and explored advocacy coalitions within the Finnish forest policy subsystem (RQ 1) in relation to two major revisions of the Finnish Forest Act in 1994–1996 and 2010–2013, based on the Advocacy Coalition Framework (ACF) originally developed by Sabatier and Jenkins-Smith (Sabatier 1988; Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007). Furthermore, it examined forest policy outputs in the form of national forest programs produced between 1999 and 2015 to determine how different forest policy goals were promoted during this period (RQ 2). The study also investigated the mechanisms through which international influences affected the Finnish forest policy subsystem in two major revisions of the Finnish Forest Act (RQ 2) by combining the ACF and the Four Pathways of International Influences framework by Bernstein and Cashore (2000; 2012). Lastly, it analyzed the sustainability framings adopted by different coalitions and assessed whose interests were served by the resulting policies (RQ 3).

Advocacy coalitions within the Finnish forest policy subsystem were explored and compared over a 20-year period, which provided sufficient perspective according to the theory (Sabatier and Weible 2007). Three coalitions were identified: the private forestry coalition, the forestry administration coalition, and the environmental coalition, all of which appeared to remain stable throughout the period. A potential weakness affecting the generalizability of these results relates to the stability of the identified coalitions in Article II. Since the coalitions were identified based on two snapshots from similar types of policy processes, it is possible that different coalitions might emerge in other policy processes. However, since the basic composition of the coalitions was determined based on the identified policy core beliefs and cooperation among actors, the findings can be considered

representative of the basic constellation of actors. This constellation reflects the basic value positions (forest vs. environment) identified, for example, in Finland (Rantala and Primmer 2003; Takala et al. 2021), Sweden (Elliott and Schlaepfer 2001; Hysing and Olsson (2008) and in the EU (Edwards et al. 2022; Winkel et al. 2022). The identification of three coalitions, rather than two (forestry vs. environment), can be justified based on the ACF theory, which presupposes that members of the coalitions cooperate over the long term with actors sharing similar policy core beliefs (Sabatier and Weible 2007). As Table 1 shows, the perspectives of the three coalitions differed considerably, which was also indicated by the NEP values of the interviewed representatives of different organizations. It is worth noting that the aims of key actors within the forestry administration coalition are defined by legislation. Similarly, three coalitions were discovered in previous studies of different forest policy subsystems, such as those in the United States (Sabatier et al. 1995; Burnett and Davis 2002), Bulgaria (Sotirov 2009), Indonesia (Elliott 2000), and the Philippines (Villamor 2006). However, when the outputs of the policy subsystem were analyzed, it became evident that the Finnish forest policy subsystem, led by the forestry administration coalition, prioritized the goals set by the private forestry coalition. This suggests the potential need to include a third criterion in the ACF theory regarding the identification of coalitions. This additional criterion could be based on a comparison between the actors' policy core beliefs and their perceptions of policy outputs. Due to the formal and informal goals of actors, this type of comparison would allow for a more accurate identification of the prioritized policy core beliefs, thereby increasing the accuracy of identifying advocacy coalitions (cf. Krott 2005).

The identified stability of the coalitions between 1994 and 2014 also supports the first hypothesis of the ACF, which states that *"on major controversies within a mature policy subsystem when policy core beliefs are in dispute, the lineup of allies and opponents tends to be stable over periods of a decade or so"* (Sabatier 1998, 114). This dissertation provides a nuanced and previously unexamined description and analysis of the coalitions and their significance in Finnish forest policymaking, which can be applied to different policy subsystems.

Different coalitions prioritized the welfare of different groups, leading to notable consequences. Although the forestry administration coalition includes actors officially responsible for the formulation and implementation of Finnish forest policy, the most influential coalition appears to be the private forestry coalition, which primarily advocates the welfare of private forest owners and forest industry shareholders. On the other hand, the forestry administration coalition and the environmental coalition consider much broader audiences, such as society as a whole, or even future generations. The results suggest that the power of coalitions stems from their effective utilization of discourses to pursue their goals. This reflects the propositions of the ACF theory, which state that the resources available to coalitions significantly affect their abilities to influence the policy subsystem (Sabatier and Weible 2007; Henry et al. 2022). This also justifies the decision to complement the neo-positivist ACF approach, which focuses on actors, with constructivist discourse analysis, which emphasizes relations and therefore allows another level of understanding the finer elements of the core beliefs (cf. von Malmborg 2023). This approach also supports the argument by Cairney (2013), Gabehart et al. (2022), and von Malmborg (2023) that combining different theories or concepts in policy studies may yield new perspectives.

Different loops of decision-making are characteristic of forest policy and became visible in the responses to the abovementioned question on the most important beneficiaries of the forest sector. Actors in the private forestry coalition consider the benefits for forest owners and forest industry shareholders, with a time perspective ranging typically from one year to

several decades. Government officials consider the national economy annually and within a time frame of electoral terms, but also with a perspective of several decades for attracting investments. Environmentalists consider the status of nature, aiming to preserve it for current and future generations. These findings are consistent with previous studies (Rantala and Primmer 2003; Takala et al. 2021). This raises the question of what kind of policy can be produced from a value basis where current economic gains are compared with irreversible ecological losses. There is a risk that if the use of forests continues to lean toward the pursuit of short-term gains for a narrow group of people, it could lead to far-reaching negative consequences for society as a whole (cf. Pohjanmies et al. 2021; Ruggerio 2021; Heder Brandt et al. 2023; Lindahl et al. 2023).

Polarized cooperation blocks were identified within the private forestry coalition, since forest owners cooperate with each other through forest owners' organizations, and forest companies work together under the Finnish Forest Industries Federation. In addition, cooperation occurs between the Finnish Forest Industries Federation and the Central Union of Agricultural Producers and Forest Owners. Distrust between the members of the private forestry coalition has been identified in other studies (Haltia et al., 2017). This divide between actors may potentially affect the coalition's ability to influence policy processes and to cooperate with each other in forestry activities, which could, in turn, affect the supply of timber. The forestry administration coalition seeks to cooperate with all actors interested in collaboration. However, its primary focus in policy processes is on advancing forest-based livelihoods and combining different forest uses. The members of the environmental coalition work closely together but have the least resources among the coalitions. The polarization of actors' views within coalitions provides an interesting avenue for future research, particularly given the global trend of increasing polarization, and its significant impacts on policymaking.

Major policy changes were identified in both revisions of the Finnish Forest Act. In the 1996 revision, the identified changes in the relatively stable parameters included the changed distribution of natural resources (biodiversity loss, well-growing forests), and a shift in the fundamental socio-cultural values (the rise of environmental consciousness). External system events also contributed to the policy change, including changes in public opinion (e.g., the rise of environmental consciousness) and policy decisions made at the international level, for example in the UNCED, and in its derivative processes addressing environmental issues, and forests in particular (e.g., MCPFE/Forest Europe). The 2013 revision was also influenced by changes in relatively stable parameters, such as the basic distribution of natural resources (forest resources were deemed sufficient to meet the current and future needs of the forest industry), and in the basic constitutional structure (the EU antitrust legislation), as well as by external events, such as shifts in public opinion (regarding the need for more versatile forest management options). The pace of implementation of international influences at the national level aligned with the estimation made by Falkner and Treib (2008). The abovementioned external events and changes in relatively stable parameters affected the discursive space and the options considered feasible, enabling previously denied options, such as increasing forest owners' decision-making freedom regarding their forest management decisions and membership in forestry associations. The analysis of factors influencing policy change in Finnish forest policy, as described above, is novel and contributes to the understanding of policy change within the ACF.

Thus, when considering the research agenda proposed by Nohrstedt and Heinmiller (2024), shifts in public opinion emerged as a key resource for the coalitions in both Forest Act revisions. When comparing the two revisions and the relative influence of the private forestry coalition and the environmental coalition, two conclusions can be drawn: the relative

influence of the environmental coalition was greater in the 1996 revision, whereas the private forestry coalition was relatively more influential in the 2013 revision. The influence of the private forestry coalition stemmed from its ability to create employment opportunities and generate tax revenues by exporting Finnish forest products. Meanwhile, the environmental coalition had focused on nature conservation, which could not directly translate into national tax incomes. However, during the study period, the environmental coalition gained leverage as a consequence of the international rise in environmental consciousness in the 1990s, which derived from the negative effects of the industrial utilization of natural resources. The environmental coalition also employed more radical methods in the 1990s than in the 2000s. The campaigns during the 1990s affected the demand for Finnish forest-based products in international export markets, which posed a serious threat to the Finnish forest industries. An interesting research question for the future would be how the institutionalization of environmental protection has influenced the radicalism of environmental organizations, and the political influence of those organizations.

Sustainability is about maintaining the living conditions on Earth. Unfortunately, a significant part of all human actions has an adverse effect on these conditions, which is why human activities should strive for sustainability. However, differing values among individuals lead to varying interpretations (discourses) of how the abovementioned problems are perceived, and how they should be resolved. Obviously, some of the interpretations (discourses) and solutions have more potential to effectively respond to and resolve these issues than others. Yet the dominant discourses may not necessarily be the most effective ones, but rather those that can effectively attract support from citizens and influential groups. The bioeconomy narrative, for example, appears to have been an effective way to justify the economic utilization of nature in Finland from the 2010s onwards, while ignoring the negative effects of that approach.

Based on the results, the ecological modernization discourse appeared to dominate the development and application of Finnish forest policy. The same discourse has also been found to dominate Swedish forest policy (Lindahl et al. 2017). Regarding the shift needed for a sustainability transformation from weak to strong sustainability, it appears that, in forest policy, efforts to safeguard forest biodiversity went into reverse from the early 2000s to 2015. Civic environmentalism, introduced in the early 1990s as a fundamentally re-organized approach to the use of natural resources, has not gained traction and appears to be fading from actual policies when comparing the situation in 2000 to that in 2015. Tikkanen (2018) identified a similar declining trend for this discourse in regional forest programs in Finland.

Different pathways of international influences were found to affect forest policy through the argumentation of the different coalitions. The private forestry coalition and the forestry administration coalition, representing the forestry paradigm, advocated influence through international markets and preferred voluntary measures to address environmental problems. In contrast, the environmental coalition, representing the environmental paradigm, emphasized the importance of international legally binding rules and non-legally binding initiatives as the primary pathway of influence. Given the significance of forest-based product exports, all actors considered international legally binding rules and international non-legally binding norms and discourse as equally effective pathways. This is in line with the previous study by Falkner and Treib (2008). It appears that Finland, in the 1990s, succeeded collectively in building a good reputation for integrating environmental considerations into its forestry practices, which later allowed for a weakening of environmental standards in forestry during the 2010s.

Consequently, there is a risk that the forest-based bioeconomy will simply continue forestry business-as-usual if the current problematizations and proposed solutions reflected in forest policy remain unchallenged (Ramcilovic-Suominen et al. 2022; Lindahl et al. 2023). An example of this inability to change course is the rapid rise of information technology, which contributed to the decline in the demand for traditional paper products – a shift that the Finnish forest industries were not prepared for. Forestry and forest industries require substantial capital, with investment time horizons spanning several decades. Due to this, and the cognitive biases described in social psychology, the risk of continuing business-as-usual practices in forestry and forest industries remains extremely high (cf. Kahnemann and Tversky 2013; Nofsinger 2017).

Methodologically, Articles I and II have contributed to advancing the development of the ACF theory, as the thorough application of the framework in the identification of the coalitions and their value positions provided top-tier applications, at least in the field of natural resources (cf. Matti and Sandström 2011). Several previous applications of the ACF within the context of natural resource policy lack a systematic and thorough description of the identified ten fundamental normative precepts of the ACF, which serve as the basis for coalition identification (cf. Matti and Sandström 2011). Therefore, the process of identifying stakeholders' value positions and cooperation among actors by following these ten normative precepts of the ACF in qualitative interviews (Article I) enabled a deep understanding of the policy subsystem. This facilitated a well-informed document analysis and the extension of the studied time frame (Article II). The New Environmental Paradigm (NEP) scale appeared to have potential in supporting the identification of actor coalitions in environmental policy research, as in this study at least, the actors' scores aligned precisely with their positions as identified based on the ACF theory (cf. Dunlap et al. 2000). The NEP scale could be applied in future studies, for example to quantify the level of public support for the economic utilization of natural resources vs. environmental protection. The NEP scale could also serve as a valuable tool for identifying the policy core beliefs of policy actors forming advocacy coalitions.

Since the ACF was designed to explain policy change within a time frame of at least ten years, the approach applied in Article II contributes to the validation of the ACF's suitability for explaining policy change. The most significant contribution of this dissertation to the development of the ACF theory is the consideration of how international influences impact the policy subsystem. The theoretical approach developed for Article II is unique and contributes universally to future policy studies. By combining the Four Pathways of International Influences framework – much less applied than the ACF – with the ACF, this study provides an essential additional lens for examining how international influences have shaped Finnish forest policy. The developed approach can be applied to study any international influences on any national policy contexts.

Articles I, II and III each offer nuanced descriptions of the Finnish forest policy subsystem, which can inform, or at the very least provide food for regenerative thought for forest policy stakeholders, policy practitioners, and scholars (cf. Howlett and Rayner 2013; Capano and Howlett 2020; Cejudo and Trein 2022; Ramcilovic-Suominen et al. 2022; Lindahl 2023). The methodology applied and further developed in these studies allows for its universal application across various substantive and regional contexts.

What about the future of the Finnish forest sector? It depends on how effectively the two opposing paradigms – one representing human livelihoods and well-being, and the other advocating a healthy, rich, and resilient natural environment – can be reconciled. The partial success achieved since the 1990s will not be sufficient in the future, as ecosystem degradation

continues due to intensive forestry. This ongoing decline affects the resilience of forest ecosystems and will also impact forestry through increased costs, such as those of timber production (Pohjanmies et al. 2021; Ruggerio 2021; Lindahl et al. 2023). Following the ideas presented by Wolfslehner et al. (2020), a frontier of change could be developed if influential actors from the opposing paradigms were to engage in intensive cooperation – an event that occurred in Swedish forest policy in the 1990s with the development of forest certification (Elliott and Schlaepfer 2001). The generation of this kind of frontier of change could be bolstered, for example, by increased political recognition or increased resources for environmentally oriented actors (Wilkes-Allemann et al. 2020). Given the landownership structure, the success of this kind of frontier would require shifts in the dominant discourses surrounding forests and forestry, as proposed by Vainio and Paloniemi (2012) and Takala et al. (2017a; 2017b; 2019; 2021; 2022). Wolfslehner et al. (2020) emphasize the importance of evidence-based information as a foundation for future forest policy development, which should strive for maximized synergies and minimized trade-offs between different needs for forests. Winkel et al. (2022), drawing on Buchy and Hoverman (2000) and Maier et al. (2014), proposed participatory policy approaches for decision-making on public forestlands. Such approaches could enhance the social and environmental dimensions of sustainability in forest policy and therefore warrant further study in the future.

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APPENDIX 1 – List of the interviewed organizations

Organizations that participated in the writing of the proposition for the revised Forest Act:

Interviews conducted with representatives of the following organizations:
Central Union of Agricultural Producers and Forest Owners
Finnish Association for Nature Conservation (FANC)
Finnish Forest Centre
Finnish Forest Industries Federation
Finnish Forest Owners' Association
Finnish Forest Research Institute
Forestry Association Kalajokilaakso
Forestry Development Centre TAPIO
Forestry Experts' Association
Ministry of Agriculture and Forestry
Ministry of Environment
UPM-Kymmene Oyj
WWF Finland

Declined to participate in the interviews:
Finnish Wildlife Agency

Were not reached for the interviews:
Metsähallitus
Pellervo Economic Research PTT

APPENDIX 2 – Interview guide and applied codes

Ten fundamental normative precepts in the ACF theory (Sabatier, 1998) and **interview questions**, and codes, which were used to reveal those:

1. Orientation on basic value priorities

What are the most important aspects related to development of forest policy that you want to bring out? (code: the most important aspects related to development of forest policy)

2. Identification of groups or other entities whose welfare is of greatest concern

Whose welfare is at the first place to be promoted in the development of forest policy? (code: whose welfare is of greatest concern)

Precepts with a substantial empirical component:

3. Overall seriousness of the problem

What are the main problems of the forest sector? (code: the main problems of the forest sector)

What is the overall seriousness of the problems? (code: the overall seriousness of the problems)

4. Basic causes of the problem

What are the basic causes of the problems? (code: the basic causes of the problems)

Does the revision of the forest act solve some of the problems? (code: potential of the revision in solving the problems)

5. Proper distribution of authority between government and market

What is the proper distribution of authority between government and markets? (code: the proper distribution of authority between government and markets)

6. Proper distribution of authority among levels of government

What is the proper distribution of authority among levels of government? (code: the proper distribution of authority among levels of government)

7. Priority accorded various policy instruments (e.g. regulation, insurance, education, direct payments, tax credits)

What are your priorities accorded various policy instruments (e.g. regulation, insurance, education, direct payments, tax credits)? (code: priority of different policy instruments)

10. Participation of public v. experts v. elected officials.

Who has a right to participate in forest politics? (e.g. public vs. experts vs. elected officials?) (code: who has a right to participate)

Components that were left out of the examination because of their irrelevance (8) and overlapping with NEP (9):

8. Method of financing

9. Ability of society to solve the problem (e.g. zero-sumcompetition v. potential for mutual accommodation; technological optimism v. pessimism)

Questions about the revision process:

Was it necessary to revise the forest act? (code: necessity of the revision)

Why the forest act revision was performed at the time it was done, why not earlier or later? (code: why the revision was carried out when it was carried out)

Are you satisfied with the revised forest act? (code: satisfaction to the revised forest act)

Did you cooperate with other actors of the forest sector? With whom? (code: cooperation between actors)

With whom do you usually cooperate? (code: usual cooperation)

Were your opinions taken into account in the revision process? (code: were you heard)

Were other actors' opinions taken into account in the revision process? (code: were the other actors heard)
Whose words had the greatest significance? (code: whose words had the greatest significance)

Questions about the competitiveness of the forest sector:
Does the revised forest act affect the competitiveness of forest industry? (code: revision and the competitiveness)
Does the revised forest act affect the prerequisites of forestry? (code: revision and the prerequisites of forestry)
Does the revised forest act affect the biodiversity of forest nature? (code: effect of the revised forest act on the biodiversity)

Items of the New Environmental Paradigm Scale (five-level Likert scale) (Dunlap et al., 2000):
1. We are approaching the limit of the number of people the earth can support.
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interfere with nature, it often produces disastrous consequences.
4. Human ingenuity will ensure that we do not make the earth unlivable.
5. Humans are severely abusing the earth.
6. The earth has plenty of natural resources ifwe just learn howto develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated.
11. The earth is like a spaceship with very limited room and resources.

APPENDIX 3 – Code book for identifying the environmental meta-discourses.

Code groups	Code
Civic environmentalism	Biodiversity Bottom-up Culture Openness Participation
Green governmentality	Expertise Stewardship Carbon storage Forest sector Positive image
Ecological modernisation	Decision-making Flexible Market orientation Marketisation New technology Taxation Win-win
Goal is	Social Environmental Economic
Variables	Specific-funding Specific-Goal Specific-m&e Specific-ref level Rhetorical