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“WHOSE SCIENCE MATTERS?”
LULUCF in the Finnish Media: An Epistemic Governance
Approach to Public Discourse

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ABSTRACT

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The aim of this thesis is to analyse the Finnish media discourse around LULUCF-regulation (land use, land use change and forestry) between 2017 and 2018. In Finland, the regulation is not a small matter, since it connects the Finnish forests to global climate politics closely. More specifically, this thesis concentrates on how science was referred to and utilized within this discourse. The case of the LULUCF regulation gives an excellent insight for that because environmental issues, including climate change, are vague and abstract to begin with and in the need of expert knowledge to be translated both to the decision-makers and to the public. Research done along this line is important in a wider perspective as the case presents an example of multifaceted environmental problem in the public spotlight. Finally, the main objective of this thesis is to explore the relationship between science and politics in climate action. This is done by reflecting the findings of this thesis with a wider global perspective in these times that are said to be so very crucial in climate emissions control.

The research questions were, first, to identify the narratives within the discourse and, second, to identify how scientific authority was used within these narratives. By answering these questions guiding the main aim, it was possible to give some insights in understanding the complicated relationship between science and politics in environmental problems. World society theory works as the theoretical background explaining the rise of environmental regime and the expansion of international climate agreements. The epistemic governance approach complements the theory by guiding the focus on three dimensions of social world: ontology of the environment, identifications and norms as well as ideals.

The data consisted of articles published in all five national newspapers as well as the Finnish government's press releases that mentioned 'LULUCF' and were published online, all in all 232 articles. The methods included discourse analysis, which allowed to study the language more closely, concentrating on words and their usage. In addition, the discourse is divided into narratives to make sense of the complicated and multifaceted discourse. The narratives constructed each stakeholders' values and aims, and they were treated as a way of interpreting communication and social life. Four types of narratives from the data are identified: (1) Development for Economic Prosperity, (2) Saving the Environment, (3) Protecting the Nation and (4) Fostering Cultural Heritage.

In addition to the identified narratives and the use of science within them, the main finding of this thesis lay with gaining understanding of power and knowledge. They are closely intertwined even though the people in power do not necessarily have all the necessary information at hand. Science has reached all parts of human lives and experts are needed to work as interpreters to ordinary people and to the decision-makers. Politics at play determine who and what kind of knowledge gets the attention needed for policy change. The findings are in line with previous research and they highlight the hybrid nature of climate action both on national and global level.

Keywords: LULUCF, carbon sinks, lobbying, discourse analysis, Epistemic Governance, World Society Theory

The originality of this thesis has been checked using the Turnitin Originality Check service.

List of Abbreviations

COP – Conference of Parties

EC – European Commission

EP – European Parliament

EU – European Union

HS – Helsingin Sanomat

IL – Iltalehti

IPCC – International Panel on Climate Change

IS – Ilta-Sanomat

KESK – The Centre Party of Finland

KOK – National Coalition Party

LUKE – Natural Resources Institute of Finland

LULUCF – Land-use, Land-use Change and Forestry Regulation

MED PLAN – The Mediterranean Action Plan

MEP – Member of European Parliament

MT – Maaseudun Tulevaisuus

MTK – The Central Union of Agricultural Producers and Forest Owners

NATO – The North Atlantic Treaty Organization

NDC – Nationally Determined Contributions

PM – The Prime Minister of Finland

PS – Finns Party

R – Swedish People's Party of Finland

SYKE – The Finnish Environment Institute

UN – United Nations

UNEP – The United Nations Environment Program

UNFCCC – The United Nations Framework Convention on Climatic Change

VAS – Left Alliance

VIHR – The Greens in Finland

VN – Valtioneuvosto (The Finnish Government)

YLE – National Broadcasting Company

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1. Introduction

Finland has an outstanding reputation on many fields considering climate and environmental aspects. Finland is time and again on top of the international rankings and is regarded as a leader in environmental protection (see for instance EPI 2018 and The Good Country Index 2018) together with social-economic prosperity. Throughout the international media Finland is seen as a green and friendly country with a social-democratic system, attitude with perseverance and jovial inhabitants (see for instance UN World Happiness Report 2019). As part of the European Union (EU) Finland is regarded as the most satisfied nation within the union compared to the other EU countries (Helsingin Uutiset 2018).

With a slightly growing GDP (OSF 2018), ranking 16th in 2016 (OECD 2019) Finland is a country that lives from the input from the service sector, industry and construction sector as well as the forest, land and fishery sector's input (Tilastokeskus 2019). According to a study by Business Finland (2019), tourism grows faster than other industries. Finland is mainly marketed with fresh and clean air, tranquillity and nature with four changing, beautiful seasons and extreme weather conditions. Finland is also considered to be a country that values science, and scientific research is funded from the state budget, although it is in decline both in private and public funding (Suomen Akatemia 2018). Nevertheless, according to a report by Sitra (The Finnish Innovation Fund) (2005) Finland is working towards reaching top rankings also in innovation, by creating a positive innovation culture that will eventually help to attract people and assets from other countries. In short, Finland is highly developed, rich country with vast natural resources striving for positive developments for the well-being of its citizens on a global scale.

In 2017 I began to wonder, how the land of clean air, green nature and peaceful living is discussed in the media in relation to exploiting its natural resources, especially mining and forest. Today, the awareness of the importance of forests and the forest land areas has increased and the interdependence between forests and water, biodiversity and global warming is addressed on both global and local levels (Palo & Uusivuori 1999:10–11). Global markets billow to Finnish nature on all sectors.

I became interested in this after reading the Finnish media news reports regarding the Finnish government's plans to log record amount of forest¹, and furthermore when in 2018 the media reported about bio-economy and future pulp factories co-funded by the Chinese². This was done despite open appeals from national and international scientific communities were published, appealing to re-consider the plans in the name of preserving the world's carbon sinks. The Finnish government's exceptionally large lobbying campaign in the EU was also reported in the media³, and the public became aware of a new vocabulary such as 'carbon sinks' and 'LULUCF', together with plans to boom Finland's economy with bio-economy while still doing its part in global climate mitigation. For this thesis, these particular words are crucial. Oxford Dictionary (2019) defines carbon sinks as "an area of forest that is large enough to absorb large amounts of carbon dioxide from the Earth's atmosphere and therefore to reduce the effect of global warming". "LULUCF" comes from words land use, land use change and forestry and it has been created to ensure that the EU member states offset minimum of equivalent removal of CO₂ from the Earth's atmosphere within given time-period of 2021-2030 (European Commission 2019).

These newspaper articles, published online, form the data of this thesis. They were collected from five major national news agencies and the data includes all articles with the mention of 'LULUCF'. In addition, I have included all press releases from the government's website consisting the word 'LULUCF'. The news agencies are YLE, Helsingin Sanomat (HS), Maaseudun tulevaisuus (MT), Iltalehti (IL) and Ilta-Sanomat (IS). All in all, these make 204 articles and 28 press releases. I analyse them with discourse analysis, which provides me tools to investigate the language and the aims of the actors involved, instead of the media as the main protagonist.

The case of the LULUCF regulation in the Finnish media strikes as a paradox to me. The Finnish government has, after all, signed and sealed many global environmental agreements⁴ and has

¹ Helsingin Sanomat 14.12.2017 "EU:ssa tehtiin lopullinen metsälinjaus Lulucf-kiistassa, mutta mitä se tarkoittaa? Juha Sipilän mukaan Suomi voi nyt lisätä metsähakkuita suunnitellusti, EU-komissio on samoilla linjoilla" <https://www.hs.fi/talous/art-2000005490145.html>

² YLE 23.4.2018 "Suomen metsiä myydään halpana selluna kiinalaisille: "Suomalainen metsäteollisuus saa syyttää tästä itseään"" <https://yle.fi/uutiset/3-10173727>

³ Helsingin Sanomat 22.9.2019 "Suomen eliitti lähti vuosi sitten "talvisodan hengessä" ajamaan yhtä asiaa Brysselissä – näin EU:n metsäpätös lobattiin teollisuudelle sopivaksi" <https://www.hs.fi/talous/art-2000005377851.html>

⁴ Ministry of the Environment 30.10.2018 "Kansainväliset ympäristösopimukset" https://www.ym.fi/fi-FI/Kansainvalinen_yhteistyö/Kansainvaliset_ymparistosopimukset

ambitious plans for carbon-neutral society, where forests work as carbon sinks⁵. Previous annual Independence Day celebrations hosted by the President were a tribute to the environment and nature, with the First Lady wearing a dress made from Finnish birch trees.⁶

Firstly, I wish to understand the paradox of action and principle in Finnish policy-making and “keeping up the appearances” in global climate action. This can be explained, to a certain extent, by decoupling or loose coupling practices, but also by the Finnish political atmosphere displayed in the media. The case of the LULUCF regulation gives an excellent insight for that because environmental issues, including climate change, are vague and abstract to begin with and in the need of expert knowledge to be interpreted both to the decision-makers and to the public. Secondly, I see this to be important in a wider perspective because the case presents an example of multifaceted environmental problem in the public spotlight. Thirdly, the main objective of this thesis is to explore the relationship between science and politics in climate action. This is done by reflecting the findings of this thesis with wider global perspective in these times that are said to be so very crucial in climate emissions control. The following research questions pave the way:

1. What were the prevailing narratives in the discourse?
2. What role did the authority of science play in the public discourse?

In the thesis, the authority of science within the discourse is also under scrutiny. Scientific authority is especially prevalent in relation to environmental problems because oftentimes the problems regarding the environment would be almost impossible to recognise in their scale and depth, as climate change and the thinning of ozone layer as prime examples of this. Bruno Latour (1993:6) has called these kinds of situations ‘hybrids’ for they are too intertwined with society: too social and too narrated to be merely natural, while too significant in cultural terms to be merely about politics.

⁵ Ministry of the Environment 20.2.2017 ” Ministeri Tiilikainen: Suomesta hiilineutraali yhteiskunta viimeistään vuonna 2045” [https://www.ym.fi/fi-FI/Ajankohtaista/Ministeri_Tiilikainen_Suomesta_hiilineut\(42208\)](https://www.ym.fi/fi-FI/Ajankohtaista/Ministeri_Tiilikainen_Suomesta_hiilineut(42208)).

⁶ YLE 6.11.2018 ” Linnan juhliissa itsenäisyyspäivänä juhlietaan ympäristötekoja – Jenni Haukion puku kudotaan koivusta” <https://yle.fi/uutiset/3-10494586>

The authority of science works with the background assumption that all actors involved already share a pool of similar kind of understanding of the case at hand. By this I mean that the discourse in this case would have been very different if, for instance, climate change and global warming were not as widely accepted as they seem to be and if the mitigation practices were not understood to be established collectively. However, it must be said that the discourse carried many other disputes, even animosities.

The media is in a significant role in the relationship between science and politics, it can be seen to enable the functioning of democratic societies. Journalism is an evitable part of politics and understanding this opens new avenues to explore how different institutions and cultures of politics form media cultures and institutions (Schudson 2011:160). Without the media people would be a great deal less aware of what is happening on other public forums and knowledge would be transmitted less if the media did not work adequately. In this case of the LULUCF regulation, the media was crucial in transmitting information about the Finnish government's plans and actions, but also in introducing the open appeals of the scientific community.

Just by following the media in contemporary times for a day or two it is impossible to argue with Väliverronen, who drew the attention already in 1994 to the rise of environmental problems in the agendas of politics, industries and marketing. It is increasingly difficult to be publicly against environmental protection but that does not mean that any contradictions would have evaporated along the increasing publicity. As Väliverronen puts it, it is easy to support even apparent consensus of environmental protection, but once the economy hits recession, problems surface in conflicts of interests. (1994:19.) This is the starting point for this thesis too, to investigate those myriad ways science and politics are intertwined in the field of environmental problems in this ever-globalising and transnational world where publicity seems to play a crucial role and economic resources are scarce in the fear of another major, global recess.

World society theory complemented with an epistemic governance approach provides a fertile ground to study this topical case at hand. World society theory concentrates more on the institutions, both on national and transnational institutions such as states (e.g. Meyer et al. 1997). However, with an epistemic governance approach, I can study the ways individual actors use in convincing others with their vision of the world. This is done by addressing three domains: what the world is, who we are and what is desirable in the world. (Alasuutari & Qadir 2014). Since these

theoretical approaches carry an assumption of socially constructed reality, it is possible to scrutinise this case with the attention it needs. Because environmental problems are intertwined with societal issues that are fundamentally about power and power relations, it is relevant to study the relations more closely from the world society perspective. Furthermore, science and claims of knowledge often play a crucial role in decision-making. That is precisely why I ask: whose science matters, when there is an abundance of scientific research available and decisions are, after all, made by non-scientists? The aim of the thesis is to mirror this specific question to stories or narratives, found in the discourse. By identifying the narratives, it is possible to separate several ways of influencing in politics in a matter so vast and complicated as climate change mitigation.

I have organised this thesis to five main chapters. After the introduction, the first chapter gives a contextual overview of global environmental governance. With examples of the formation of global environmental protection agreements the chapter explains the connection between global institutions in the face of major environmental problems. Furthermore, in this chapter I give a brief overview of the interwoven threads of society, politics, science and economics in relation to transnational environmental politics while conveying them to connect with the concept of authority of science in contemporary world. The third chapter explains thoroughly the data and methodology used in the analysis, presented in the chapter four. The analysis introduces four prevailing narratives, their nature and how they were used. The narratives I have identified are 1. Development for Economic Prosperity 2. Saving the Environment 3. Protecting the Nation and 4. Fostering Cultural Heritage. In addition, I observe the role of the authority of science in all narratives separately. The final, fifth, chapter ties together the threads in discussion and concludes the thesis with remarks of possible future research.

1.1 The LULUCF regulation

The European Parliament (EP) and the Council of Europe Union agreed upon a climate and energy framework in May 30th, 2018. This framework is to support the Paris Agreement, adopted under the United Nations Framework Convention on Climatic Change (UNFCCC), which was coined to set forth long-term plans to keep the Earth's temperature from increasing above 2 °C compared to pre-industrial levels, and preferably for it to stay under 1,5 °C.

Wetlands, agricultural land and forests have a crucial role in meeting these goals. Thereby, the land use, land use change and forestry (LULUCF) sector is seen to have a great potential in climate policy. The LULUCF sector is also the provider of substitute bio-materials for fossil- and carbon-intensive materials. The EU highlights sustainable management practices, especially in maintaining and optimising carbon sinks and –stocks. The management includes innovation and technology development, and encourages to increase research funding for these fields, including preventive actions. (EU Regulations 2018).

The regulation connects Finnish forests intimately to global climate politics. Finland has provided the estimate calculations regarding carbon sinks to the EU. They are based on calculations from 2000–2009 forest-use and they carry an assumption of similar forest usage in the future years. In the coming years, the possible benefits or burdens of the forest sinks will be considered as part of the whole land use sector’s climate targets. All the EU countries have been granted flexibility in regarding carbon sinks if the calculations do not turn out to be as big as estimated, and Finland as the most forest rich country in the EU was granted an additional flexibility. In practice, the LULUCF regulation allows other sector’s emission targets to be used to partially cover emissions on other sectors without compensation. The EU’s main target in land-use sector is to reach at least as big carbon sink as its emissions are. (Maa- ja metsätalousministeriö 2018.)

1.2 Finnish silviculture and international agreements

Next, I will briefly outline the background of the Finnish silviculture and its importance to the country. I will also shortly present Finland’s climate policy, as an example of institutionalised global practice in environmental protection.

By no means is the LULUCF regulation a small issue to the Finnish economy. Because the regulation is to tie Finnish forests to global climate politics via the EU and the Paris Agreement, the control of the use of forests is leaked to transnational actors. According to the Finnish Forests Industries (2019) the forest sector contributes more than 20 percent of export and operates as a major employer especially in rural areas. Even though the LULUCF regulation only concerns state owned forests, and every forest owner can do what they want with their forests within the limitations of forest law, the significance of this regulation is notable to the country at large. In the

case of the LULUCF regulation, the Finnish government's goal was to influence the regulation so that the reference years were not limiting future logging of the forests.

Finland has the most forest land in Europe. About 76% of the Finnish land area is covered in forests. Due to the Northern climatic circumstances, silviculture is practiced in challenging conditions. The country is more than 1100 kilometres long, making the Southern and the Northern forest areas different especially in the time of the wood growth – average growth time doubles in the Southern Finland compared to the Northern Finland's forest growth time. Furthermore, the Finnish cultural, historical and social evolution has been closely intertwined with forests throughout its history. (Metla 2012.)

The National Forest Strategy 2025, started already during the previous government but clarified by Juha Sipilä's government (2015–2019), states that the main agenda is to ensure that forests stay as the provider of well-being for Finland now and in the future. This is done by increasing and supporting the industry and new innovations and by taking the future changes into account in forest politics and governance. The changes will include diversifying the industry and that needs to be met with increased customer orientated approach, the strategy states. It's last, the 7th entity of strategic goals is to strengthen the biodiversity and social sustainability. (Maa- ja metsätalousministeriö 2015.)

The Prime Minister Juha Sipilä's government's strategic plan highlights boost in the public economy and trade. The strategic 10-year plan is to achieve top positions in cleantech and bio- and circular economy and to substitute fossil fuels with them. The forests and the use of wood are especially mentioned to be increased, with reducing bureaucracy around forest use and actualising the National Forest Strategy 2025. (Valtioneuvoston kanslia 2015.)

The UNFCCC, the Kyoto Protocol and the Paris Agreement as international agreements form the base of Finland's climate policy. Finland follows the EU policies and on national level the government and the parliament 'make the most important decisions concerning climate policy' according to the international commitments and the constitution. The Ministry of the Environment acts as administrative body, and the Ministry of Employment and Economy deals issues related to energy and climate. The Finnish Climate Change Panel was formed in 2011 to act as connection for more fruitful interaction between science and policy-making. For other stakeholders such as NGOs, research institutes and labour unions, Climate Arena, organised by the Ministry of the

Environment, offers a platform to express their agendas. (Ministry of the Environment and Statistics Finland 2017.)

2. World culture and the authority of science

The LULUCF regulation connects Finnish forests to global climate politics. Because Finland has the biggest forest areas in Europe, the actions Finland takes regarding forests can be crucial in the carbon sink emission control within the EU. In this chapter I explain the world culture as the canvas against which nation-states operate in transnational level.

To understand why a nation-state is willing to hold on to global climate agreements even though they seem to be in contradiction with the most obvious state interests, I explain why sovereign states are willing to hold on to the adherence with the rest of the states in global environmental issues. The relationship between the carbon sinks and the LULUCF regulation is a global environmental problem, a relatively new phenomenon on the political sphere, as I explain in the following chapter. In addition, reactions and attitudes towards environmental issues as shared together with global understanding of them has changed greatly since the 1970s. This chapter will explore why many actors urge states to take part in “global environmental management, or the management of environmental degradation” (Haas, 1990: xviii). At the end of this chapter I address the curious relationship between the authority of science and politics.

2.1 Global environmental governance: a brief history

The term global environmental governance comes after the Global Commissions 1995 report in which definition of global governance was to include not just states, but “non-governmental organizations (NGOs), citizens’ movements, multinational corporations, and the global capital market [...]” and global mass media, and with strong emphasis on governance, not government, on global scale (p. 2–3). According to Peter Haas, however, the roots of global environmental governance lay in the late 1950s mercury poisoning in Japan. About a decade later, in 1962 Rachel Carson’s *Silent Spring* rose to the attention of wider audience in the United States with revelations of pesticides travelling through food chain to humans. The roots continue with endless descriptions of oil-spills and other environmental destructions (Haas, 1990: 2) caused intentionally by war, or unintentionally for economic prosperity (Speth & Haas 2006:2) or for lack of adequate structural intervention, but also for mere ignorance.

It is evident that environmental problems were not invented in the later part of 20th Century. It was, however, due to technological inventions that made the problems known and unavoidable to wider audience. The Apollo 11 spacecraft 1969 images of the Earth in all its beauty, vulnerability and isolation played a part in this albeit they only showed one perspective of the issue. Those images did not show that territorial boundaries made by humans are as real as natural forces in international relations. (Haas 1990:6.) It had become clear for the world leaders that the uncomfortable and often unimaginable co-operation between states and other actors needed to be established. Academics hold wide consensus that the first push towards popularising environmental issues is the 1972 United Nations (UN) Stockholm conference (e.g. Haas, 1990; Meyer et al. 1997b; Hironaka, 2014), in which the UN hosted delegations from over a hundred countries (excluding the boycotted USSR and Eastern European countries) to discuss causes and effects of environmental problems. With principles and actions being negotiated it was clear that the Northern and the Southern perspectives would differ greatly, from the previous to blame industrial expansion of pollution, while the latter held poverty as the main cause and therefore with lack of funds the less developed countries could not provide adequate aid for their people. Other aspects of environmental degradation were addressed in the coming years. International agreements were signed regarding different kinds of sources of pollution from industrial sources to municipal and agriculture waste, and in 1983 International Tropical Timber Agreement set the start for regulation of raw materials other than oil, towards sustainable management. (Haas, 1990:8–12.) The case-study at hand, the LULUCF regulation, can be seen to represent this development, but closer to Western raw materials. The LULUCF regulation connects Finnish natural resources, the forests, to climate politics and thus the decision-making is distanced from the local and national level decision-making, on the contrary to earlier practice of national politics.

The United Nations Environment Program (UNEP) was the visible and lasting outcome of the Stockholm conference (Meyer et al. 1997b: 624). It had also become clear that other than state actors were to be involved in environmental problems in order to solve them. In 1969 The North Atlantic Treaty Organization (NATO) had created a Committee on Challenges of Modern Society to promote monetary aid for problems created by pollution in the industrialised countries. The 1975 Helsinki Declaration, in which alleviations between the West and the communist countries were agreed upon, had a chapter of pursuing environmental protection (Helsinki Declaration, 1975) and the participants had a rendezvous in 1988 specifically on environmental issues. The

Organisation for Economic Cooperation (OECD) had assimilated to 1972 “polluter pays” principle, set to direct the costs of pollution control to the prices of the products and in 1986 it implemented strict control on exporting dangerous waste to be dumped outside the OECD area. International monetary institutions, such as the World Bank (WB) and the Inter-American Development Bank (IDB) also took their turn – for instance, the IDB nullified loans to build a highway through the Brazilian Amazonian rainforest due to its major effects on increasing deforestation. (Haas 1990:13–14.)

One of the most frequently used examples of a successful global co-operation regarding environmental problems is the ban of chlorofluorocarbons (CFCs). The CFCs as “highly stable compounds used in aerosol propellants, refrigeration, foam-blowing, and industrial solvents—could damage the Earth’s stratospheric ozone shield” (Speth and Haas 2006:12). They were first discovered to cause major damage to humans by weakening the protective shield of the atmosphere and allowing dangerous UVB to shine through by two American scientist Mario Molina and F.S. Rowland in 1974. Ultraviolet radiation (UVB) is known to cause damage to flora and fauna and increase the risk of skin cancer and eye damage on humans. Molina and Rowland’s findings were unsettling enough and caught the attention of the public in the United States, Canada and the Nordic countries. Ban of the use of CFCs started as a powerful movement leading the United States Environmental Protection Agency (EPA) to ban them in 1978 and the Montreal Protocol made it a global issue in 1987 (EPA, 2018). (Speth & Haas 2006:12–13.)

The list of different bans, regulations and rulings is nearly endless. The case of the LULUCF regulation is just one example of that list, and the difficulty to find a consensus between the actors that in this case are nation-states, is prevalent. States are trying to preserve the national interests, usually to the maximum. Maarten Hajer has studied these rules and regulations from policy-making perspective, giving the attention directly to policymaking as social phenomenon, drawing the attention to more than technical and analytical solutions. Hajer sees policymaking as a kind of process where different actors in the society take part in defining the environmental problem, its regulation, redefining, finding its domain to find solutions and to find out which problems are yieldable, which ones can be taken care of. Many experts and professionals of various fields are needed in the process. (1995:2.)

Peter Haas's (1989, 1990) extent study on the Mediterranean Action Plan (Med Plan), developed under the UNEP, is one example of environmental protection case with multiple stakeholders, states at the front, and with a vast list of causes of and effects on the pollution of the sea. In the case of cleaning the Mediterranean Sea the stakeholders had many seemingly contradictory desires, and in the beginning of the project even the desire to act for cleaner environment seemed to be at loss. The states with coastline in the Mediterranean seemed to think it was too much to ask to trust measurement equipment and scientists when the well-being and economic growth of the nation was at risk.

However, the Med Plan was eventually a success. Different stakeholders were able to find a common ground. Haas estimates that one reason for its success was the technicality of the scientists involved, and the consensus they were able to form. The UNEP had been able to bring together a group of experts who then were able to convince their own countries' governments of the importance to act. (Haas 1989: 379–380.) Haas (1990:55–56) calls this international co-operation between groups an “epistemic community”, a group of knowledge-based professionals believing “in the same cause-and-effect relationships, truth tests to assess them, and shares common values” (1990:55). Members of an epistemic community share similar ontological assumptions such as vocabulary, political objectives, concerns as well as world view and these are documented as common models. The members do not necessarily come from the same disciplines or background, but they are to share the same causal knowledge and when asked, would present similar conclusions on policies. The power resource lies with the “authoritative claim to knowledge”. In the case of the Med Plan the members of an epistemic community were able to influence the pollution control on several levels such as the problem and the cure determination, gather and distribute knowledge about the problems, as well as in state administrative positions they were able to enhance policies advancing the Med Plan's aims.

The UN led global environmental governance is continuous. Frank J. Lechner and John Boli (2005: 81–84) argue that the UN conferences are, in any case, a platform for nation-states to promote their own agendas in endless negotiations, but also much more. The UN meetings are events where world culture is under construction and ideas and norms to global audience are laid. This is only possible with the ‘world’ to allow this happen, in a collective effort to create common rules in

formal setting. With the example of the 1992 Rio Earth Summit, the authors explain the cultural role of these meetings as a trailblazer in global action.

The 1992 Rio Earth summit 'Rio Convention' included an establishment of the UN Framework on Climate Change (UNFCCC) to monitor and control the greenhouse gases (GHGs) that interfere the climatic system by anthropocentric measures. This was taken into force in 1994 and it has 195 parties. A body of Conference of Parties (COP) was created to control the effects of the UNFCCC. First COP was organised in 1995 in Berlin, following several meetings over the years. Most significant of them are the COP3 Kyoto Protocol, COP11 Montreal, COP15 in Copenhagen and COP17 in Durban. To highlight the extent of these conferences, the COP20 in Lima hosted over 15 000 official delegates.

Alongside COP20, there were more than 400 conferences in which new research projects and initiatives were presented. The Sustainable Innovation Forum 2014 was the largest commercially focused event during COP20, attracting high profile speakers, celebrities and over 500 pre-approved delegates representing private sector, government, NGO, UN agencies and civil society. During the two weeks of COP20, over 140 press conferences were held and more than 900 journalists from around the world covered the international event. (Climate Action 2015)

Shorette et al. (2017) write that COP21, or more commonly known as the Paris Agreement or the Paris Accord in 2015 is believed to be the most significant one of the agreements to this date. To the world society theorists, the Paris Agreement is a celebration of global environmental regime. Unlike ecological modernisation theory suggests, environmentalism is not inevitable, nor is it a consequence of material interests (intensified use of materials would lead to exploitation of the environment) and it also is not a functional reaction to environmental problems. It is a statute of intensified institutional behaviour on transnational level, bringing together first the legitimacy of environmental issues, and secondly, allowing different actors to contribute to planning and controlling of the environment. It allows a macro-level social change by bringing together actors from multiple levels and backgrounds, focusing on natural environment with long range plans. (Shorette et al. 2017.)

The Paris Agreement has also been held to have the most potential to achieve its goals to keep the Earth from not warming more than 1,5 Celsius degrees. The Agreement addresses the unequal situation between the developed countries and the underdeveloped and weak countries by

expecting support from the developed countries in line with their own national goals. The nationally determined contributions (NDCs) determine each country's goals and expects reporting on the process and procedures. (UNFCCC 2019). The EU's joint NDCs aim to decrease the greenhouse gas emissions by 40% from the level measured in 1990, with a plan to achieve this by 2030. The negotiations of the details are at the time of the writing this thesis still on-going between the member states and Finland. The European Commission (EC) has the option for penalty measures under the EU law if a member state fails to execute the obligations. (Committee for Preparing the Seventh National Communication 2017:89–91.)

Yet, the critique towards the Paris Agreement has been extensive both in the media (for example Jackson 2018; Al Jazeera 2018; Condliffe 2016 and many more) and in the academia. In the latter, the reactions have been from partially pleased in efforts yet cautious in effects (Cléménçon 2016) to complete disbelief of the usefulness of the Agreement, claiming it is merely a celebration of skilful rhetoric, corporate lobbying, promotion of sustainable development to disguise endless lust for economic prosperity and hypocrisy of the media and the public eye (Spash 2016), to mention just a few. The UN led governance is also seen as a way with limitations yet hopes for an effective bottom-up approach in the form of the NDCs are high. This is not without doubts because there is no existing and effective surveillance system: it all operates on principles of consensus and without sanctions (Victor & Leape 2015).

The European Union is one major actor in transnational environmental governance. The institution's roots are in peace keeping on European continent by enhancing economic dependency between its first members, Belgium, Germany, France, Italy, Luxembourg and the Netherlands. It was then called the European Economic Community (EEC), and it managed to create a community that today stands as one political factor of 28 countries with different bodies in policy areas, for instance economy, security, health and climate. The decisions are made by the elected European Parliament and member states with representation on the European Council and the Council of EU. Globally, the EU is one of the biggest blocks of trade in the world and it works on its foundation principle of a free market. (European Union 2018).

A major part of the EU policy-making is lobbying. It has been widely acknowledged that lobbying, or interest-group activity, has increased greatly in the past twenty years. So much so, that it can be called a system, with extensive research field upon it. (Coen & Richardson 2009:3). Lobbying

might be one of the oldest professions of the history of humans, and different ways to influence others to act in a desired manner vary greatly from “clean” to “dirty” lobbying. Lobbying refers to a lobby, where people used to wait to get a chance to have a few words with those who had power, however, in current times lobbying is more sophisticated and requires various techniques outside the physical halls the decision are being made (Schendelen 2013:58). Lobbying is generally held to be a significant way to test the waters in any policy-making, before proceeding to orthodox (or institutionalised) practices. These practices can be a right to pose a question or official meetings with stake-holders or other actors. Lobbying is widely used because it may increase the chances of succeeding. (ibid. p. 59). Both private and public actors need information, the key asset in Brussels (Bouwen 2002), so the relationship is interwoven together by nature; both need information to secure smooth functioning (Bouwen 2001). Hoff (2015) recognises two aspects in the increased interest group activity on the EU politics. She argues that the member states, instead of trying to regain power from the EU, have adopted lobbying as a means to enhance European integration. Firstly, the interest groups are thus looking for ways to influence on both national and transnational level. Secondly, the agendas of interest groups have evolved to two directions; agenda setting might be either bottom-up when the interest groups want to affect the policies on the EU to suit their interest, or top-down when the EU institutions bring agendas to the interest groups. Here, there question of funding is prevailing, meaning how much the source and amount of funding effects the outcome of lobbying. (p.64.)

In Finland, interest group activity has been shown to be robust bottom-up process especially so in business sector. The business sector enjoys considerable power in decision-making on national level, and close connection between business advocates and decisions-makers are a tradition. (Blom 2018; Vesa, Kantola & Binderkratz 2018). In the tripartite model the government encourages the business sectors’ positions in negotiations, and it has been shown that because the current system in Finland allows exceptionally privileged position for the business sector to influence the decision-makers, this has had significant causations on the EU policy-making (Blom 2018). The case of the LULUCF regulation is aligned with these findings. Because the Finnish policymaking allows vast lobbying, especially from the business sector, the route to the LULUCF regulation lobbying was paved as such from the beginning of the lobbying campaign. The way politics were accustomed to being practiced on national level was orchestrated on the EU level with a success.

2.2 World society theory and the problem of the environment

John Boli and George M. Thomas (1999) see modern global actors, that is, states, organisations, corporations and individuals as cultural constructs. Culture is the central focus of all development of the world, it is the key to action and the composer of actors. For the world society scholars, the orienteering questions are related to finding out why and in what way the actors work upon and along with the rest of the world, how identities are shaped while still often working in remarkably similar manners around the globe. Typically, these actors are rational, have agency and carry an awareness of self-interest. Means are to be found through political and economic power, improving quality of life via consumption and self-improving, ensuring the well-being of others and through technical development. Because these aims are so universal, the means to reach them have also been embraced on global level of social reality. As Boli and George explain, the world has been constructed with a similar kind of organisational structure for the past century, and the isomorphism of other practices also includes standardised models of conflicts and ‘assert distinctiveness’. (p.1–15.)

Roland Robertson (1992) has famously described that globalisation “as a concept refers both to the compression of the world and the intensification of consciousness of the world as a whole.” In neo-institutionalised perspective of globalisation, world culture and globalisation put together form a concept of world polity, originated from the Western values highlighting individualism, rationality, justice and progress. World culture is global in its nature as imbedded in structures that cross state co-operation, but also exemplifies shared understanding of “imagined community”, which in turn reinforce to identify problems and solutions within various fields of human life as global. World polity offers norms to change behaviour and actions, while moving goals on local and global level, on institutional and individual level, coining “models” and frames for identity building. (Drori et al. 2003:44.) In this case, the Finnish government can be seen to take part in this world culture by having signed the Paris Agreement both as an EU country and as an individual nation-state. By taking part in these global agreements the Finnish government is committed to world polity.

As it has been proven by world society scholars (Meyer et al. 1997:145), states seem to take part in homogenised herd-behaviour in many crucial aspects of nation-building. For example, world-

wide expansion of mass-education has been argued to happen due to close linkages to world culture, mainly of the Western ideas of education leading to development (Meyer, Ramirez & Soysal 1992). States are institutional entities of their own, and they take part in global change by following similar ‘scripts’, making organisations and nation-states similar in form in their behaviour in increasing aspects (Drori, Meyer & Hwang 2006). The states react to new trends in myriad ways, meaning that not all states follow the same path, albeit the direction might be the same. For instance, lack of resources or adequate technology might not able the state to follow certain trend, yet there is a strong will to react in some way, creating an active process of different kinds of reactions that consequently lead to new trends and so on (Alasuutari 2016:14). Pertti Alasuutari and Ali Qadir (2013:9) have referred to ‘domestication’, a process where exogenous reforms are shaped in a national level so much so, that the origin of them is eventually believed to be local. Local actors play a crucial role in this, and the success or failure of the originally global model is dependent on the local reception.

John Meyer (2004) has called countries conforming to global models as “babbitts”, blindly trying to keep up with the global competition and economy. However, most nation-states do not wish to be seen as mere puppets, conforming to models unquestioned and with varying reasons do not succeed in playing their part in policy-making. According to Drori et al. while globalisation pressures nation-states to adopt global models, the national level varies greatly, leaving much room to different outcomes. Robertson’s term *glocalisation*, a combination of global and local, is in sync with this because nations can adopt only some models and with varying means. In addition, the nature of global model of science is vast and has influence enough to merit even some levels of local implementation. (2003: 209–213).

Hironaka (2014: 3-4) explains that world society theory, as a type of an institutional analysis focusing on both cultural and organisational dynamics, suggests that this shearing of norms and ideas on organisational and individual level has led the states and other institutions adopt to same or similar policies in relation to environmental protection around the globe. The social aspect, manifested in culture, is the main aspect of this change. Lechner (2009) argues that with the realisation of major environmental problems, and by utilising the global forces such as the UN and the international environmental organisations, world society has a new way of practicing.

Individuals and states had to adapt to a new way of communication with wider set of actors. Understanding of the world citizenship and sharing one planet became clearer. (Ibid. p.249-250.)

World society explains many mundane dimensions as shared understandings of the way the world is shaped and how it works. The infrastructure, for instance travelling, has many aspects frequent travellers, regardless of their place of origin, are aware of. The economy is another system that covers the globe as one singular system and with organisations such as the World Bank and the International Monetary Fund (IMF) as major actors, besides states, corporations and individuals. Governance is yet another example of world culture. States with their own interests, power desires and clashes do not operate in state of anarchy. One major example of this is the UN with nearly two hundred member states trying to pursue common agendas with negotiations. The International Criminal Court, for one, sets an example of law making in world culture. Its efficiency can be argued, yet it is frequently referred to when discussed about doctrines, state actions and human rights and it is not easily ignored. Align with the above, world society also has common problems, such as AIDS/HIV. AIDS/HIV has been tackled on global level with the lead of the UN Secretary-General, making it one of the most striking of global efforts harnessing investors, experts, officials and the general audience to tackle the deadly spread of the disease. (Lechner & Boli 2005: 1–13) One common problem is the environmental one, with global regulatory structures created to tackle it, yet the effects seem minor (Hironaka 2014:2).

It is easy to comprehend that to keep up with this kind of world culture, many rules and regulations are needed to oversee the actors. What is more difficult to understand is why different actors consent, and who makes these rules and regulations to consent to. According to world society theory world culture delivers formal and informal rules that seem to make sense; they are seen as rational, reasonable and even natural ways of being. They are conducted by organisations working on the global level, such as international non-governmental organisations (INGOs). Sub-cultures want to take part in these rules and regulations, because they can achieve authority on global level by complying to the rules. On national level, variations may occur, yet world culture sets the cognitive pathways to follow in understanding the already confusing social surroundings. (Lechner & Boli 2005: 13–15.)

According to Maarten Hajer (2009) governance is connected to authority. He sees governance as enactment of meaning, as a process where political settings change over different principles and

convictions. This is possible via discourse that creates political facts and norms. He argues that it is ever more important to study the institutions within world society because those who can tempt others to their reality of the world will gain the most power, despite their status in the first place. This is closely linked to questions of legitimacy and responsibility. Those questions are, in the contemporary world, scrutinised in a close contact in the media, making politics mediatised and the field of governance politics of multiplicities. Hajer draws attention to the dramaturgical aspects of politics and policy-making, in addition to the wide range of participants in any decisions made. It is not enough that the right thing is done, it must also attract the media that lives from drama.

To achieve influential changes on global environmental problems, rules, regulations and assessments are crucial. In neo-institutionalist perspective, the role of institutions is strong in cultural change that can generate permanent improvements. Creation of the global environmental regime is considered to be the starting point of mutual aspirations by bringing together vast nexus of environment related problems and treating them as global. However, science rarely finds a consensus easily, and often procedures are carried out without knowing the actual outcome. Findings of a few need to be presented to public, and processing from science to policy is an effort of transnational actors, including social movements. (Hironaka 2014:24–31.) Public opinion is needed for effective climate mitigation, and institutional design can help to achieve this (Bechtel & Scheve 2013).

At the same time as individuals as actors negotiate ‘frames of meaning’ to act upon towards their own endeavours, the global system can be thought to work as a belief system where institutions such as nation-states synchronise their policies to keep up with the global culture. (Alasuutari 2016:2.) Next, I introduce briefly an epistemic governance approach, which works at the background of the analysis of this thesis, complementing world society theory.

2.3 Epistemic governance approach

To grasp more detailed perspective of the case of LULUCF regulation in the Finnish media discourse, I apply an epistemic governance approach. This allows me to scrutinise individual actors and their aspirations, and their epistemic work in trying to influence the public. The epistemic governance approach helps to illustrate how different actors are appealing to assumed common

conception of the world and the current state of affairs. This approach is to complement the aforementioned world society theory that works at the background as a canvas to explain the spread of ideas and values.

Pertti Alasuutari & Ali Qadir (2014) and Alasuutari (2016) argue that in an epistemic governance, a form of governance without any visible great governor, actors in any process of any significance must be able to work to influence others upon their conceptions of the world. This is done by addressing three objects; ontology (what the world is), identifications (who we are) and norms (what is good and desirable). These three appear together, with varying emphasis on individual arguments, and the objects are explained in more detail next.

Ontologically, the political actors must show their audience they know what the reality is. The actors' possibility to win is done by laying the foundations of the case and to convince the others of the best solution. Public opinion matters greatly at least in liberal democracies, and media visibility can be crucial. By appealing to identities, those perceptions of individual's ways of being in the world and in relation to themselves and others, can affect the outcome of the epistemic work. The way people identify themselves in relation to others in the world, and the well-established classifications of identity such as nationality, gender and class, are an important part of the epistemic work when the aim is to connect those who aspire similar things. These identifications can be distinct and mundane, such as music and body expressions, creating a team spirit and the feeling of belonging to a group. Alasuutari refers to Michael Billig's (1995) term 'banal nationalism' to highlight how especially national identity is used in communication of mundane issues and in policymaking, drawing attention to nation-state. Lastly, epistemic work utilises norms to appeal to others. Those norms can be universal in their principle, such as equality, freedom and human rights, and they can be rooted in world culture by international declarations or religion in their emotional nature. Many universally easily accepted ideas, such as 'sustainability' travel fast and are used and argued for in epistemic work efficiently because of their nature as almost self-evident, yet abstract. Reforms are demanded on national level, if the case at hand should be align with an international treaty or, on the other hand, if an international treaty is not suitable, political actors can draw upon national norms to decouple from it. (Alasuutari 2016:40–43.)

This is not to say that all governing would mean merely persuasion and soft means of influencing. Terrorism and violence are also ways to convince the audience of the limits of action, what is feasible and what is necessary. The main point is that all kinds of perspectives of reality are attempts to have an effect politically and in governing. These are not limited to scientifically proven realities, or to those that seem most real, because even the faultiest perceptions can become true in their consequences. (Alasuutari 2017: 23–24.)

Language plays a crucial role in social interactions because text and words construct the reality by reflecting, as well as carrying also concrete ramifications socially and politically (Potter & Wetherell 1987:6). For instance, the International Panel on Climate Change (IPCC) works as an authority per se, however, it must also constantly negotiate its status among other authorities. If the common epistemic community and the pool of knowledge was not shared so widely, including in common language and discourse, the authority of the IPCC could be said to be very different. In this case of the LULUCF regulation a great deal of shared construction of what is desirable has already been done, because the power is already with established knowledge, and the imageries of the social world are built within it.

Lately, Alasuutari (2018) has drawn the attention towards authority as a performative aspect of power. He suggests that instead of looking at the society as constructed with power structure, more holistic view can be reached by paying attention to the plans of action the actors operate on in their attempts to influence their audience in achieving their goals. This type of ‘epistemic capital’ is closely intertwined with epistemic governance within the society to gain desired outcomes in political life.

Alasuutari stresses the notion that epistemic work is not about fooling the other side, for in many cases a part of the identity building is to see the world from a specific perspective, and different politicians’ and stakeholders’ job is to convince others of their perspective being the best one possible. However, it is a long way from principle to action. Local political actors’ formations and authority steer the outcome of the internationally set rules and regulations. Forms of loose coupling and decoupling are common. (Alasuutari 2016:40–44.)

Drori et al. (2003:159) define loose coupling and decoupling as a weak connectedness of organisational subgroups, or they do not have strong levels of co-operation or coordination. The most striking aspect is, however, that the organisational units lacking strong connection to the core

unit, are often presenting high levels of rationalisation. Similarly, Weick (1976) defines loose coupling as lack of “glue” keeping the organisations together, but also highlights the situationally occurring events that will hold on to their own identity and separate positioning. Meyer at al. (1997) argue against realist theorists by stating that nation-states practice large-scale decoupling by systematically lacking to actualise principles agreed on world culture level. Although world culture can provide myriad policies, the nation-state is a product of culture, among other variants. The nation-state can adopt conflicting principles thus making the actions on local level irrational, ineffective and costly. On the same note, Drori at al. (2003: 168–169) argue that despite the globalisation of science has spread far and wide, the effects of it differ greatly.

2.4 The authority of science in environmental politics

The aim of this thesis is to scrutinise the role of science in contemporary policy making and politics in environmental issues in Finland and in the EU in relation to the case of the LULUCF regulation. Because of the nature of environmental issues policy-makers have no other way but to trust the experts and advisers around them and to find a way to cope with uncertainty. I attempt to make sense of this process by scrutinising how science has taken over the world in all aspects of human life, before moving on to the analysis part of the thesis.

Maarten Hajer (1995: 10–11) has addressed the issue of unattended relationship between science and politics firstly by raising concerns about the uncanny trust towards environmental experts who demand hard decisions yet can only provide “soft” support to their arguments. Secondly, Hajer calls for thorough inspection on priority principles on environmental politics, because oftentimes definition of “global” derails more urgent and direct environmental issues on local domain. Scientists take part in the international negotiations and institutions, such as the IPCC interpret what knowledge will gain authority, thus eventually hopefully lead to action. From the epistemic governance viewpoint, the IPCC also uses its own established authority when pursuing its own goals. The connection between science and politics is widely understood as such: scientists portray the surrounding world and politicians act accordingly. In this explanation science is a distant, yet important actor, kept apart from politics also by an initiative of the scientists themselves. Science can hold on to its authoritative role because it is the only authoritative source of knowledge,

whereas the epistemic governance approach implies that authoritative role can also be found elsewhere. Scientific knowledge is used as a tool, either to reinforce the message pursued, or to lay suspicion on the opponent. The international institutions of science and politics are thus creating this symbiotic relationship, influencing one another. However, there is an ongoing debate about consent of actions on local and global level, depicted on the negotiations between states and other parties. (Bocking 2004:107–110.)

From the world society theory perspective, Drori et al. (2003) understand science and its authority being based on institutionalisation, an accepted and legitimised system of knowledge that is seen as constructive force of peoples and societies behaviour in contemporary world. Science is so embedded to our current understanding of the world that no aspect of human life is left without scientific reasoning. The authority of science is constructed to the world through state activity in the name of state policy, organisations and through education and it penetrates all human activity, both in poor and rich societies. Even though science is so widely considered to be the main and the most authoritative of reality, the problem of defining what science is or should be, remains widely unanswered. However, as definition is needed to carry on with research, Drori et al. define science “as the activities that the relevant organizations and discourse patterns take to be science” (p.5). This rather wide definition leans on to the idea of culturally constructed reality. Culture is defined as “a set of constructed social realities and models” (p. 7) and science forms the base of modern policy, instead of more detailed understanding of knowledge and theory. This thesis follows this definition.

Ann Hironaka (2003) explains the cultural aspect of scientific authority in global models related to environmental themes. According to her, science has had a significant effect on the global environmental issues. The way humans consider science as indisputable part of environment is due to global authority of science. After all, it is by scientific, global measures, how people are given the information what the healthy or correct state of nature is. In institutional terms, science has besides instrumental aspect, but also an ontological aspect. The ontological aspect has enabled humans to understand the natural and the human world as interconnected and omnipresent connection with nearly incomprehensible strains of continuums where, for instance, household chemicals have been understood to cause major damage to climate and thereby to humans. The ontological aspect, therefore, has led to comprehend environmental problems as global problems.

This has, on one hand, led to formation of global environmental movements, while on the other, to lumping of all environmental problems under the same umbrella. (Hironaka 2003: 249–241.)

As Drori et al. (2003) point out, the more abstract and universally applicable the global model is, the easier it is to decouple from it on practical level. Here, the authors compare state behaviour on global level to religious systems. Religious systems provide heavily institutionalised systems for social behaviour that are applicable on every corner of the world, yet usually come with all forms of de-execution, fraud and corruption (2003:15). Comparing science to religion is indeed well justified. Drori et al. draw on the authority of science, instead of its instrumental value to emphasise the wide spread of science. As the authors call it, a “sacred canopy” in secular form, science makes sense in modern, rational world. Thereby the nature of science is not merely instrumental, although that is needed as well, but it is closely connected to constitutive and legitimating (cosmological and ontological) trades (p. 23). With these trades, science can be seen as altering the makeup of nation-states, because it touches all human living by altering the agency of both human and nation (p. 42). Lechner and Boli argue among the same principle: the UN has generated a type of a ‘secular ritual’ by implementing the authority of “humankind” to urge nation-states to address, mobilise, assemble, organise and held accountable on various global problems (2005:89).

On the other hand, Väliverronen (1994:75) argues that science has become ‘secular’ or ‘worldly’ because it is used merely instrumentally to support or to question already made decisions. He sees that in contemporary world the line separating politics and science has become more blurred along with increasing pragmatic role of scientists and experts. Marja Järvelä wrote in 1993 that expert knowledge and the input of different disciplines are valued mainly if they can be reduced to simple models that describe the chain production of carbon emissions. She argues that in this way the discourse of international environmental politics mainly includes research results that can be influenced by social policy.

Drori et al. (2003:26–28) have listed three possible reasons why science has been able to grow to embrace the world. First, science itself has been organised in highly professional and effective way. The instrumental value of science is undeniable in modern world. Second, the scientists themselves are enhancing the power of scientific knowledge, assuming everyone else are just merely following the lead of scientific elite. However, it is clear that scientists do not master neither capital nor political aspects of the society perfectly to be able to do this. The third explanation

investigates the nature of science as process-orientated, constantly altering entity, which by nature complements human curiosity by creating unexhaustive platforms to research, reason and study. Another perspective to these is ‘the sociology of scientific work’ which suggests that actually science is interdependent on social factors and its expansion is linked to human affections of non-rational base.

However, as Drori et al. point, out, these explanations are problematic for they lack the authority of science. The authors draw the attention towards modern factor, the actor hood which is the principle that explains the society’s function based on actors – individuals, organisations and states with agendas of their own to act upon and respect. These actors and their agendas are only sensible when the world around them is constructed in a manner that emphasises order and is understandable by most. (2003:31.)

The global authority of science is not merely due to economic developments, although world culture reproduces this almost omnipotent ideal of the power of science to all parts of the world. World culture is highly rationalistic in its globalisation process, providing ready-tailored packages for nations in desire of economic and social growth. (Drori et al. 2003, 221) These packages might be the same on global level but are faced with different local settings producing different outcomes. In any case, Western science is highly influential institution, allowing science to be used and reproduced in many ways to meet the goals of the actors in the field, making it more than instrumental entity (Drori et al. 2003:248), visible for instance in the work of the IPCC.

Scientific knowledge about the state of the climate has been distributed globally but the knowledge has then taken and gathered together by institutions. For instance, currently, the IPCC is the most authoritative institution in this field, bringing forth efforts for both decision-makers and the public alike. The IPCC is an organisation with 195 members, the same members who also make up the body for the World Meteorological Organisation (WMO) and the UNEP. It does not conduct research of its own, but assesses research done on climate change and its effects. The assessments are done by thousands of individuals working for the IPCC from diverse fields of expertise. (IPCC 2019). Here, authority of science is with a global institution, the IPCC, yet it cannot be said that individual scientists would be authoritative as such. The practice of climate science within the IPCC is a descriptive example of the relationship between science and politics in its status as an authoritative actor in climate science. The scientific community came together and found a

consensual view of the current climate situation, claiming that human activity has had considerable impact on the warming of the climate and this consensus laid the ground for the Kyoto Protocol in 1997 and later in the Paris Agreement 2015, for political action around the world (Bocking 2004: 115–116).

The close relationship between science and Western culture can be seen in the discourses of science policy. Drori et al. (2003: 100–113) understand science as instrumental and it is celebrated in myriad official policies and other documents of both international organisations and international governmental organisations. Authors locate two main models of policies that are competing with each other in relevance and in their use. First one is the ‘science for development’ model, which highlights appropriate scientific developments and what they can and have done for the good of the people. The same things science did well in one country, can be done in another. Development is the way to economic growth, thus brings prosperity to all. Technical development assume education, shaping the national education system from very early on in students’ life. National economic prosperity is seen as a development of the whole of the nation and science makes this possible. It is imbedded in the building blocks of a nation-state in the discourse of “science for development” and it connects international and national level organisationally, United Nations especially, in its transnational reach in policy-models and recommendations by utilising science.

The second policy model identified is “science and human rights”. This model concentrates on how science effects human life directly. Science and development connections have a secondary effect thorough labour force and technological advances, whereas science can lead to direct violations of human rights in this discourse. Science is a resource of possible evil and must be kept in control, in other words, in the hands of those who can control it. This “control” however, is mainly left with international organisations, such as UN, rather than international governmental organisations with concrete measures to act. This discourse is left with little attention, although it is one of the major causes of worry in contemporary times. (Drori et al. 2003: 108–110)

For democratic nation-states to implement ministries for science society must be able to understand this kind of use of tax funds at least on certain level. In contemporary times it is not enough that few privileged people understand many of the works of science, be it regarding human rights or economic development, but science must be appealing and comprehensive to the masses as well.

In the discourse around LULUCF regulation it was mandatory for the ordinary people to have at least some level of understanding of the regulation and its consequences as well as connection on local and national decision making, and it can be seen to happen via education. Mceneaney (2003) has studied the changing role of science in official curriculum documents, for instance textbooks, in several different countries around the world from the beginning of the nineteenth century to nineteen ninety-nine. Her research shows vividly how the presentation of science has evolved from professional men working in labs to a field of encouraging in participation, inclusive and all-encompassing activity for all students, including girls, to have in and outside of school walls, offering answers to all kinds of questions allowing humans to have control over nature surrounding us. This change was visible in all the countries in comparison in the research.

Besides influencing the development of socio-economic skin of society, climate science in particular is extremely expensive, and it must convince the decision-makers on global and local level, the public and myriad other stakeholders. Domestication is needed to ‘sell’ the topic to the local parliament, and the discourse used influences other parties involved as well. According to Bocking (2004:116–117), climate science has three roles to fulfil in policy making. Firstly, it is descriptive. Climate science explains everything there is to know about the state of the climate, the changes, the predictions and the impacts to humans and ecosystems. The political authority here is connected to the possible effects the global scientific consensus might evoke. These identifications are expected to form a body of action one nation-state at a time. Secondly, basic science is in place to show the concrete dynamics of climate change: how the oceans, the atmosphere, climate and other changing components are related. Naturally, this is political in its effects too, physics are rarely doubted. Thirdly, climate research has not only motivational, but normative aspect. What needs addressing, when and how are important questions and pave the way for climate action in politics. When viewed through these roles, science has an objective, instrumental role determined over the consensus of the epistemic community, gaining authority and influence through this. The consensus is what evokes action, and agitating doubt is a way to delay or cripple action for good.

In relevancy of scientific authority is the realisation of the solid role science has in the contemporary world. Even those aspects, for instance indigenous people’s ‘unthinkable’ knowledge, has been harnessed under scientific scrutiny (Drori et al. 2003:277). Worldwide

scientisation is so evident and powerful that if some policy, regulation or rule coined by science is noticed to be failing, another kind of science will replace the old. This is possible only after vast time and effort has been put to educate, train and organise masses of individuals. A by-product of this has been the birth of a new industry of experts who advise and suggest but do not necessarily carry any power or responsibility. (Drori et al. 2003:295.)

The authority of science has been harnessed to cover almost all aspects of human living. Yet, also non-human life is under this same scrutiny. Ann Hironaka (2003) explains that people are only aware of environmental problems because science tells so. Problems in the environment are deviations from the harmonious system of natural processes. The ideal theoretical scenario would be nature without humans, and only when humans enter the equation, balance is disrupted. Humans are aware of this in much more varied ways in the contemporary world, due to scientific labelling, measuring and conceptualising. According to Hironaka, this has been the leading way of the current environmental movement to limit human activity. Humans are the actors, and the discourse around environmental issues was reconstructed from nature causing distress to humans, to humans causing distress to nature. The ontology of nature has also changed due to this scientisation of nature. The aesthetic value of nature is no longer the main reason for preservation, such as the beauty of “wilderness” in nature parks, but the instrumental value of areas where humans had not disrupted the ecosystems took over as the main reason to limit human activity. (2003:252–258.)

This perspective emerges with a question of socially constructed environmental problems and solutions. Within the field of environmental sociology, a debate about the nature of environmental issues has been going on between realism and constructionism. If the discourse cannot be changed around environmental issues, it is difficult to see the reality of the crisis. Hard sciences will set the limits, albeit vague as well as contradictory, the socially constructed interpretation of them is under such debate it must not be let to roam free. Allegations of denial of hard facts and enabling acceleration of natural resources in the name of economic development in an agnostic pathos are at the other end of environmental action spectrum. However, social constructionist theories are steering the attention to wider scope of investigation, to critically scrutiny the social, political and cultural aspects of environmental problems. Here, power and governance play crucial roles, and rhetorical strategies of both politics and business sector become valuable assets in policymaking

when convincing the public of certain model or policy that might not be as environmentally addressed as is promised to be. (Hannigan 2006:29–33.)

Bocking (2004:116–120) argues along the same line of socially constructed environmental problems. Political significance is at the core of how people are to think about the world. He gives an example of India. When India was deemed to be the cause of methane gases by scientists outside India, the Indian Methane Campaign did their own research which indicated India's methane emissions to be less than the other research, because the agriculture practices in India were different due to soil type. This caused India not to be responsible over its gas emissions. Here, the controversy and the uncertainty of science was used to back up one nation's agenda. The responsibility was thus moved to somewhere else. Climate in general, after being defined as global, has affected the way people understand the surrounding world, because now weather is not the conventional knowledge, but in order to convince one should talk about climate, thus about the land, the oceans and the atmosphere. In truth, few has necessary knowledge of this. Yet, mundane decisions are made in the name of climate change, starting from home insulation to energy production, and as is in the case of LULUCF regulation, how and when, if all, to cut the forest the owner has had close and sometimes highly personal connection to all their life.

Bocking (p.120) explains that when the context is taken so far away from the actors, political decision-makers or the public, the technocratic perspective enforces the deficiency of democratic and political debate. He argues that social scientists too, are subordinate to technical knowledge, and their role is visible in the work of the IPCC, especially its third working group where economics have the prevailing status, and non-scientists forward information and try to predict the best ways to implement the means of actions.

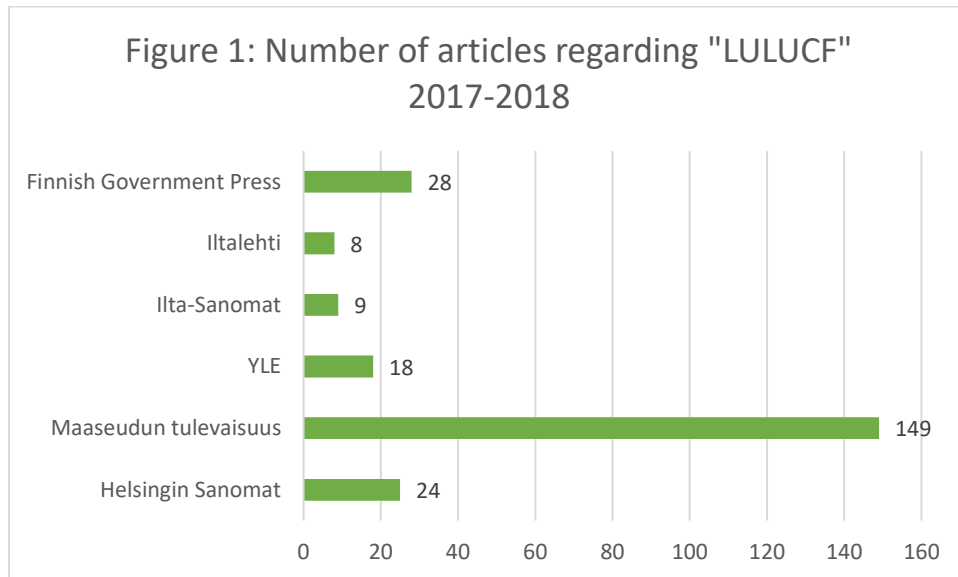
3. The data and methodology

The aim of the thesis is to analyse the public and political discourse around the LULUCF regulation in Finland, more specifically the role of science in that discourse. Even though the regulation is to control only state-owned forests, the discourse around the issue clearly exhibits how important, yet sensible issue regulation on silviculture in Finland is. The public discourse around the topic clearly demonstrated how state actions are part of the way the environment and the forests are seen, and the examples set on state level have ramifications on private forest owners' lives.

The main data consist of 204 articles published online and additional 28 press releases directly from the Finnish Government's website. The criteria for the data are that all the articles must have the mention of "LULUCF" in them and they are all published between 2017–2018. This was due to avoid speculation of what is really involved in LULUCF. The data consist of all articles from all chosen newspapers published online within the given time-frame. I justify the demarcation with a search word by highlighting the number of articles being extensive as such, giving the adequate 'window' to the discourse. The timeline of two years is also sufficient, because the events took place during mainly that period of time, with few if any mentions before 2017. The vote in EU for the LULUCF took place at the end of 2018 giving this study a culmination on the discourse around the events in Brussels and the echoes in Finland.

The Finnish national broadcasting company YLE is a major news agency, Helsingin Sanomat (HS) is the biggest national daily newspaper in Finland covering also the capital, and it captures broadly the political atmosphere in the country. Maaseudun Tulevaisuus "The Rural Future" (MT) is a notable daily format on agriculture and forestry, with clear connections to stakeholders such as the forest industry. Including MT to the data gives interesting insights in comparison to other newspapers. Two tabloids, Ilta-Sanomat (IS) and Iltalehti (IL) did not cover the topic extensively, however the fact that they have editorials regarding the LULUCF regulation caught my attention, and they both have a vast audience. I have also included the press releases from the Finnish Government (VN) to complement the data directly from the political agenda. Also, as the data clearly exhibits, lobbying the LULUCF regulation was clearly the government's agenda and the number of press releases, of which some were almost directly copied by the news agencies, implies that lobbying was successful in convincing the discourse. Justification for the selected news

organisations is that I am interested in finding out the general discourses around this topic without going too deeply into regional or local level politics. Figure 1 shows the number of articles in the given timeframe.



When it comes to limitations of this data one could ask if I would have made a more thorough sample of the public and the political discourse, for example, by interviewing key actors in politics or in the media, or additionally including social media debates or analysing the comments section of the news articles chosen? One additional critique could be posed regarding the topical nature of the data and indeed, the topic of the thesis in general. They are extremely topical in a sense that at the time of the writing the newspaper articles around this case have not ceased to be published, but rather they are now considering the effects of the vote that took place at the end of 2018.

I defend the chosen data against this critique firstly by answering the second point. My interests towards this case rose precisely because it is so topical; the public could follow the outcomes almost live. The media coverage was also the primary source of information and without it the word 'LULUCF' would be almost unheard of. In the case of the LULUCF regulation in the Finnish media, the topic may out-date at some point, yet the discourse around international and global climate and environmental issues seems unlikely to saturate. The first critique can, however, be justified firstly due to the limitations of a master's thesis, and secondly, the reason to use published

data in the form of newspaper articles serves as a preliminary moderator, because all articles went through similar process before published in the news agencies. Interestingly, 'Maaseudun Tulevaisuus' newspaper used reader's comments as 'news' even though the newspaper has a separate section for reader's comments. With analysis of interviews or comments' section, this would be a very different thesis altogether.

The methodological approach used in this study arise broadly from the assumption of socially constructed realities, aiming to scrutinise the concept of culture and explaining action (Alasuutari 2011:24). I use discourse analysis as an approach that allows me to answer a more specific question: what is the role of science in relation to the discourse given? Because of the nature of the case study at hand, science and politics are closely intertwined and the relationship between power and politics is concrete. Hajer (1995:58–61) refers to discourse analysis as an approach to study arguments in a game-like way with three factors to determine the hegemonic discourse. The factors are firstly credibility, to make the actors believe the case at hand to be the most suitable for them. Secondly, acceptability to achieve a positive status and thirdly, trust to diminish doubt or to take control over the inherent ambiguities. The discourses do not happen separate from society, they strive under previously assembled institutional conditions. Discourse has been institutionalised when it has been translated to concrete policies and institutional arrangements. In the case of the LULUCF regulation, the discourse around environmental issues, such as climate change mitigation, had already been institutionalised because the case-study at hand was only about negotiations of the reference years, not for instance weather international regulation on natural resources was needed at all. In this case the social reality where the hegemonic discourse is recognised is weighed with the three factors as clues to dynamics of the contemporary setting.

Wood and Kroger's (2000) definition of discourse allows language to be used as a data while thinking language as a social practice, to scrutinise how things are being done. Thus, language allows to make observations of the phenomenon (Alasuutari 2011:40). Discourses, as language in use, are always culturally constructed and they are intertwined with other elements such as different forms of texts or formats (Fairclough 2003:3). I understand discourse in line with Jarno Valkonen: discourses around nature and environment are to be understood as struggles of meanings that shape and construct the social world and where meanings are given to understand the situation at hand, to organise it and to demarcate it. Valkonen follows Foucault's theorising of

discourses as tied to time and place and shaped according to their surroundings. Discourses can organise and restructure, ruling in and out other perspectives, making discourses to be taken as practices that shape the reality, yet following rational patterns to make sense within that system where the discourse is being held. (2003: 32–33.) Environmental issues, for instance, have been shaped in public discourse into different forms, from almost non-existent to world-wide strikes such as ‘Fridays for Future’.

Because I am most interested in the media as a window to the public discourse, I have chosen to identify different narratives, which I find in the data, instead of calling them frames. I have used Merriam-Webster’s (2019) definition of narrative as “a way of presenting or understanding a situation or series of events that reflects and promotes a particular point of view or set of values”. In this thesis, I understand narrative as a story in line with Boje (1991:106) who refers to storytelling being the “preferred sense-making currency of human relationships”, while Czarniawska (2010:59) urges social scientists to develop interest towards “narrative as a form of knowledge, a form of social life, and a form of communication”. Brown (2005), on the other hand, has studied narratives as means to justify both action and inaction in organisations, demonstrating how the power of narrative can be found in the hands of the author of the policy maker.

These definitions vindicate the use of narrative as the starting point of this thesis because by separating the vast and meander discourse into narratives, this specific case of the LULUCF regulation was made understandable to wider audiences. The narratives were there to help to grasp the issue and to pass on information about and around it.

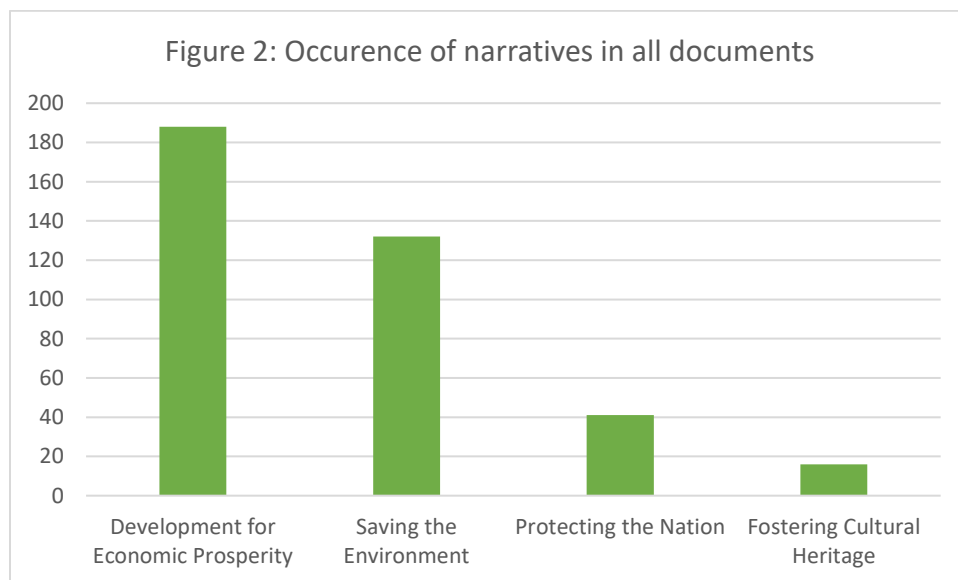
This perspective obtains the concentration of this thesis to scrutinise the actors and their aims, instead of the media as the main protagonist. The focus is on the role of the authority of science in relation to given discourses around the LULUCF regulation and its lobbying in Finland, and the way different actors use these narratives to enhance their aspirations while using epistemic governance. In practice, I concentrated the analysis on how these four different types of narratives, which I have identified, link to the background assumptions that construct reality by explaining what the world is, who ‘we’ are and what is desirable, as described in the epistemic governance approach.

In the first part of the analysis, I close-read the data and identified and named the narratives that were the most prevailing. I used Atlas.ti to organise and code the data. The narratives come down

to four because the discourse around the LULUCF regulation was concentrated around main actors, the politicians, the scientists, the stakeholders and the public in demand of action, giving each a voice in different narratives. The narratives offer different perspectives on the problem but also differ in relation to the problem definitions of the case at hand. Table 2 below shows the number of occurrences of each narrative in all documents.

The narratives I identified are:

1. Development for Economic Prosperity
2. Saving the Environment
3. Protecting the Nation
4. Fostering Cultural Heritage



In the second part of the analysis, I read the data again to explore the ways the authority of science is used to justify the single narratives. My aim was to find out whether and, if so, how the different narratives refer to science, for instance, to LUKE (Natural Resources Institute of Finland), individual scientists, the IPCC and, most interestingly, how the open letters coming directly from the scientific communities were used. Those cases, in which such a reference was vague or completely unmentioned, I have left out for clarity.

Science was treated as an authority if the article uses scientific studies or reports or relevant actors that are mentioned are scientists. This was not the case with, for instance, the published readers'

comments if there was no easily found connection to personal scientific knowledge of the author of the comment such as education and/or employment. However, if the newspaper published letters and opinions from the readers with an occupation which can easily be linked to science, such as graduate engineer of environmental technology, the opinion was counted when there were direct references to science that are used to justify action. I have also ruled out actors such as the Minister for Environment Kimmo Tiilikainen, who in this case was representing the government and was not a representative of science, although Tiilikainen is a forester and Master of Forestry and Agriculture by education⁷. I justify this exclusion by referring to a number of data pieces where he seemingly did not present himself as a representative of scientific knowledge, nor did he refer to his education or his status as forester.

To set an example of concrete coding of the data, for instance in the narrative of saving the environment, the authority of science is used to defend or comment decisions, gaining one hit from an expert in one article, while the rest of the article might be more focused on economic argumentation. Also, when an article is only based on scientific authority with action provocation based on science, it gains one hit lowering the total percentage. To compensate this, close-reading is utilised for more thorough analysis in all the cases.

⁷ Eduskunta <https://www.eduskunta.fi/FI/kansanedustajat/Sivut/790.aspx>. Accessed: 28.2.2019.

4. The LULUCF regulation in the Finnish public discourse - four narratives

In this chapter I illustrate the prevailing narratives in the LULUCF regulation discourse in Finland in 2017–2018. I explain each narrative individually, however, at times the narratives are used at the same time, overlapping each other. In some cases, one narrative appears several times in the same article if I have observed the article to cover two or more actors taking part in the discourse with their own narratives and aims. The narratives are: Development for Economic Prosperity, Saving the Environment, Protecting the Nation and Fostering Cultural Heritage. Table 1 presents the number of occurrences of the narratives in the data.

Table 1: Occurrence of narratives in the data							
Narratives	HS	IL	IS	MT	VN	YLE	Totals
Development for Economic Prosperity	20	5	6	112	17	28	188
Saving the Environment	28	2	5	62	13	21	131
Protecting the Nation	3	0	2	26	3	7	41
Fostering Cultural Heritage	0	0	3	10	2	1	16
Totals	51	7	16	210	35	57	376

In the discourse around the LULUCF regulation the usual influencing methods, such as referring to money or military, do not do the trick, thus leaving the arena for other means described in the literature review as epistemic work. Although both money and military can be used as part of epistemic work as well, these did not appear in the data. The actors try to influence the audience by presenting the information as facts of the world and that they share the same vision, for instance, about the current state of the country and what kind of actions need to be taken to secure the future well-being of a nation. The actors also refer to ‘us’ and ‘them’ in their attempts to persuade the audience of shared and common identifications. For instance, some of the actors in the data presented Finns as separate from the rest of the European Union citizens. By introducing economic development and, for instance, the importance of foreign investments in the forestry sector, some of the actors laid the norms and ideals to strive for.

I observed the role of science in each of the narratives, in particular how the authority of science was used to justify the actions and aims of the actors. The table 2 below presents the numbers and percentages of referring to scientific authority. Within the narrative saving the Environment the share is the highest with 36%, while the lowest is found in the narrative protecting the nation with 15%.

Narratives	Science	Not science	Total	
Development for Economic Prosperity	49	139	188	26%
Saving the Environment	47	85	132	36%
Protecting the Nation	6	35	41	15%
Fostering Cultural Heritage	3	13	16	19%

4.1 Development for Economic Prosperity

The narrative highlighting economic prosperity was the most used in all the articles, with 188 hits in a total of 232 analysed articles. It is prevalent in the government’s press releases, consistent in the media publicity of the government in relation to the LULUCF regulation but also especially in ‘Maaseudun Tulevaisuus’ news reporting. This narrative is about trying to influence the audience through economic care-taking that would enhance the business sector of forest industry and bio-economy factories, bringing jobs and funding to many fields in the country. This narrative is used in a clear and concise way, and the points that the actors raise can be easy to relate to, such as describing the lobbying as the hard work one must do for their own nation versus corrupt political influencing in closed circles. In the Finnish context, ‘lobbying’ can have a negative connotation as something untrustworthy, and the actors especially in this narrative seem to be aware of that because ‘lobbying’ is substituted with ‘promotion of interest’ or explained but left unspecified. This narrative is different to other narratives in its emphasis on Finland and Finnish forests being

part of the capitalist market economy and on the lobbying done by different stakeholders to support this.

The lobbying is clearly explained in the press releases, in a step by step manner of who met with whom, where and why, to give an impression of progress and active doing in this issue that is seen as being so important for Finland. Different ministers reach out to the EU decision-makers and other head-of-states in meetings in Europe and discuss the Finnish situation with them. One example of this is the following press release (VN 11.5.2017):

PM Juha Sipilä has sent a letter to [European] Commission's President Jean-Claude Juncker in which he expresses Finland's worry in relation to the way land-use sector is suggested to be included to EU's climate politics. [...] The Finnish forests are a great greenhouse gas sink. However, the currently negotiated regulation (so called LULUCF) might turn forests into a calculatory greenhouse emissions source that burdens Finland. Because of this, Finland should decrease more emissions than produced from, for instance, traffic. In addition, this might complicate Finland's targets to advance its bio-economy, which is central to Finnish economy. In the letter Sipilä highlights that Finland is engaged in EU climate policy and strongly supports the implementation of the Paris Agreement.⁸

Here, the PM himself is reported to reach out to high-level decision-makers in the EU. Other politicians are reported to do the same and the press releases reveal a narrative of hands-on working to get the best possible results for Finland. In a column by the PM, he postulates the need to explain the importance of lobbying by referring to strong ambitions to lobby on the EU level so that “[i]n this affiliation the sustainable use of forests should not be jeopardised in any way” (VN 2.6.2017). One aspect of this is the major investments the forestry industry wishes to attract from China. The Minister for Economic Affairs Mika Lintilä (kesk.⁹) explained the importance of these foreign investments in building pulp factories in Finland and the politics around them to YLE (11.10.2017):

⁸ All quotes from the data are translations made by the author.

⁹ The Centre Party of Finland *government party

Of course, it matters to the national economy, because both are almost billion euro plans. Of course, I hope that both will come true. What must be remembered is that these are solutions that the companies will do from their own bases and are based on their own profitability counting.

[...]

We are constantly in contact with European colleagues in Brussels. In the morning at the Helsinki airport I met folks who were on their way to Brussels because of this issue. The government is working full steam to ensure the solutions to be good.

In this data part of the data sample, the minister refers to the development for economic prosperity when mentioning the major investments and that the government is truly doing everything they can. However, he cannot make any promises because the investments are done by private corporations that will make their own decisions according to their profit estimates. In this narrative it is equally clear that this whole discourse might jeopardise the good reputation Finland has among major investors, and many who utilised this narrative hoped that the development of the country's economy would be going forward with the help of the foreign investments. The actors hoped that the whole LULUCF regulation affair would just be dealt with as quickly as possible, without denying the importance of the debate.

The PM also promoted this agenda in different ceremonies around the country and the speeches he gave are available on the government's website. At the 100th Anniversary of The Central Union of Agricultural Producers and Forest Owners (MTK), the PM highlighted the investments done so far (VN 11.11.2017):

Throughout history MTK has been a strong influencer, also in forest politics. The visions of this sector are now brighter than in a long time. The latest good news was received yesterday, when the forest industry agreed upon a collective labour arrangement for the upcoming two years. The forest business grows, invests and believes in the future. Along with new investments, a growing demand for timber impacts also the forest owners. According to the laws of market-based economy, the sellers will benefit in this situation. On the other hand, it is also a matter for the benefit of the

whole national economy because the investments in silviculture are worth billions of euros. These investments cannot go in vain. Timber must move forward.

This comment shows another kind of perspective because the PM is referring to investments done in Finland without specifying the origin. The narrative of development for economic prosperity by exploiting natural resources is prevalent, however, the rest of the speech concentrates also on food and agriculture that have historical roots and they will, according to the PM, have a future in Finland, too. He wants to draw the attention to Finnish action and investments, the development that can be achieved through the politics he is supporting.

Although the PM's comments throughout the discourse are tied together with justifying the importance of lobbying and the good of the nation, he, too, must justify the government's actions with scientific authority. The government uses scientific authority to back up their actions, especially in the abstract issues of climate change and carbon sinks. Research conducted by the Natural Resources Institute Finland (LUKE) and the Finnish Environment Institute (SYKE) are the main sources that are used to justify the government's actions. LUKE works under the Ministry of Agriculture and Forestry of Finland¹⁰ and 46% of SYKE's funding comes from the state budget¹¹. As an example, research that suggests a certain way of proceeding as the most cost-effective is the most cited reference and the Minister for Environment, Kimmo Tiilikainen, uses these calculations (MT 20.2.2017):

The government strategy has received criticism because when the usage of wood is increased too much, the carbon sinks in the forests decrease. According to the climate strategy, that is what happens, the sink decreases from the current 27 billion cubic meter to 15 billion cubic meter in the year 2025. Then it again increases to 20 billion cubic meters by the year 2032.

According to Tiilikainen the age structure of the forests improves when forests are maintained. Then their growth escalates in a way that the carbon sink grows. Growth stays larger than the usage over the time.

¹⁰ LUKE Natural Resources Institute Finland <https://www.luke.fi/en/luke-3/organization/>. Accessed 28.4.2019.

¹¹ SYKE https://www.syke.fi/fi-FI/SYKE_Info/Rahoitus. Accessed 28.4.2019.

According to the LUKE working group, storing carbon in aging thick forests is risky because the growth of the trees slows down, and old forests suffer from storm and insect damages. They can change from carbon sinks to uncontrolled carbon sources.

The Finnish MEP Nils Torvalds (r¹²) took the role of presenting Finns as pioneers of silviculture, thus implying to have the best kind of knowledge, technology and science of the forests. This was part of a wider claiming of knowledge in the case of LULUCF regulation. Finnish lobbyists did not even expect other EU member states to have any knowledge on forests because only Finland has the cultural and historical background – and so well-maintained forests, too. ‘Maaseudun tulevaisuus’ (MT) reported Torvald’s ponderings when the regulation was on the table of the European Parliament (EP) Committee with the headline of “*Carbon sink twisting begins in European Parliament Committees – Tiilikainen went to tell the calculations are wrong* (MT 17.3.2017):

The understanding of our forests is thin. We have received an understanding, but at what stage does it change to writing of the law.

Here, Torvalds refers to the need of concrete action. This comment implies that it is not enough that there is sympathy, he wants to see policy changes in a way he sees the best because others do not have enough knowledge about this topic.

Also, when the EP Environmental Committee voted in favour of the researchers who support moderated logging and voted against the Finnish government’s plans to increase logging, Torvalds was reported to be angry and waiting for the upcoming vote in the EP Plenary (HS 11.7.2017):

“Until then work must be done with full shoulders and send pastoral letters and try to explain what forest is”, said Torvalds, upset after the vote.

¹² Swedish People's Party of Finland *opposition party

According to Torvalds who works as a so-called shadow reporter for the Committee, the approach of the EU Parliament has nothing to do with science.

“Many MEPs haven’t got the faintest idea about good forestry. If this would have been decided with knowledge and reason, it would have already been clear”, Torvalds said.

In this statement, Torvalds wants to draw the attention to the kind of knowledge and reason he himself represents to be the correct kind and implicates that the EP is not actually following appropriate science. He aims to lay doubt on EP decision-making by referring to other, unspecified ways of doing politics and claiming he, and Finland in general, would know best when it comes to forestry.

Throughout the discourse, the uncertainty of science was prevailing. Different actors leaned on science that suited their own agendas, while leaving only minor, if any, attention to the counter arguments. However, all actors evoked to science in one way or another, strengthening the authority of science while doing so. Some commentators, for instance an editorial on MT, demanded a wider perspective before any decisions could be made, such as the evaluation of the social impact of forests in job markets and deemed that the scientific community held the Finnish forest plans to be “heresy”, quoting LUKE’s professor whose scientific evidence is supposedly more ‘accurate’ than the others’ (MT 20.3.2017). However, YLE (12.12.2018) reported about the uncertainty of the calculations and reports in relation to LUKE, which would form the base of Finnish government action in the future, with the headline *“Finland can log more forest and climate objectives are still the same, tells the new calculation – scientists and the association for nature conservation disagree”*:

Even though the carbon sink decreases due to logging and bio-economy investments, it does not, however, drop under the assumed critical level of comparison at any stage when approaching the 2050s, according to LUKE.

[...]

Here assumptions and choices are based on EU laws. When scientists make the scenarios, they can choose the assumptions and the results are according to that, says LUKE Associate Professor Aleksi Lehtonen.

Throughout this narrative, LUKE is considered to represent the authority of science, however, Associate Professor Aleksi Lehtonen who works for LUKE is also quoted often, given a face to science in this regard. His authority stems from his position as an established researcher, a type of an agent of science. The reason why a name and a face for this case is so important is that the science supported by the government was needed to convince the public, and faceless institutional science might not achieve the same outcome. Other ‘faces’ for science are given, but the reader gets the impression that Lehtonen was the most ‘sensible’ one, thus most reliable and authoritative.

In the same article, the President of The Finnish Association for Nature Conservation Harri Hölttä is quoted to be highly cautious towards the calculations while referring towards strong political pressure to increase logging. From the same Association, Otto Bruun, Expert in protection issues, is taken into discourse via publishing his tweet:

Now, the proceeding goes bio-economy first instead of climate. This is sad also because if LULUCF regulation (carbon sink calculation) is destabilised also EU climate politics is destabilised.

However, in the same article directly following this comment, a quote from Jaana Kaipainen, consulting official from the Ministry of Agriculture and Forestry of Finland, is introduced to deny these allegations of politicisation of science:

We do not control research findings. But this is not a research, it is a calculation, which has been made according to certain criteria. Choices have been made during that process and they have been told transparently.

The consulting official denies allegations of a political play to affect the research findings, however, the calculation at hand is not a research at all. She admits that the calculation has been done by following a certain criterion, but it is not known if she specified the criteria used. Also, the same article concludes that the calculation, which is conflicting to begin with, cannot be compared to any previous calculations because they have been calculated in a different way. Here, the division in calculation and research can be seen to represent a way of politicians to base their decisions on ‘hard’ evidence of calculations, not meddling with research that might or might not be accurate. Although these examples highlight the complicated nature of environmental problems, many claimed to have the ‘accurate’ knowledge.

When comparing the referring to science in the narrative of Development for Economic Prosperity, the 26% show that science was used to justify action moderately. Close-reading of the data shows that although many experts, professionals and studies from various fields of science were introduced in their comments in the discourse in general, the importance of the prosperity of the forest industry was the main agenda. This implies that in this agenda certain authorities are essentially tied together, and that evoking scientific authority leads to a certain kind of outcome, and vice versa. Here, even the open letters from the scientific community both on national and international level did not have an impact, even though a rare consensus between multi-disciplinary scientists was reached, claiming that:

Bioenergy is not carbon neutral and it may have extremely negative impacts on climate. Usually burning forest biomass causes bigger emissions than fossil fuel, because the energy density and the efficient energy convention is lower. Lulucf regulation must take into account all climate effects of biomass. (HS 25.9.2017)

Thus, according to this comment, scientific authority is valid only if it has been proven to be so by the people who have the power within society. This is closely intertwined with previous research on power and knowledge, especially because the government seemed to care about the opinion of the public. The power seemed to lie with the government, and it then used their power to pursue the science it had established to be the most authoritative one. The government’s agenda, set in the

beginning of their term, stayed the same even when the open letters and the latest IPCC report were published. The new information did not influence the narrative.

The narrative for development for economic prosperity is the one that received a comment from a Finnish MEP saying that the agenda of one industry was made to represent the agenda of the whole nation (HS 22.9.2017). This narrative was most prevailing in MT, which in its extensive reporting mostly supported the government's plans to log a record amount of forest. MT's reporting included comments from the readers, and many had opinions on this topic. MT wrote so many articles about the LULUCF that the paper published a column about the extensive coverage of their own paper, 54 pieces in the most heated month (MT 2.5.2018).

The aspect of uncertainty of science was highlighted by both sides, especially because it is impossible to predict the future due to already increasing global warming, but also because it is impossible to have accurate measurements of the current status of the climate. It is acknowledged in the discourse that the IPCC is authoritative in climate science, and that the Paris Agreement is respected in all decisions, yet mostly if there is no damage done to the current plans of the government. An illustrative example of this lobbying campaign is the PM's interview on Helsingin Sanomat (14.12.2017) after the final decision at the EU level was reached and the plans are not, according to the government's interpretation, jeopardised:

Sipilä was also happy because the uncertainty that has lingered around forestry investments has now passed. He did, however; admit that Lulucf regulation "is a rather complicated text" and that the minister for Environment Kimmo Tiilikainen (kesk.¹³) "has been trying to translate [it] to me".

This particular comment works as a great illustrator of the way contemporary politics are rendered. The prime minister Sipilä himself admits that this whole case of the LULUCF regulation is so complicated that he can barely understand it, even though he and his government have been lobbying for it for months, investing time, money and effort to achieve the solutions they would seem to be the most suitable one. The PM has been worried because of the investments, and now that it seems they are secured, he can publicly announce that he did not actually understand the

¹³ The Centre Party of Finland *government party

whole regulation paper, but he still did what he saw best for the industry. It is evident that politicians are not necessarily scientists, but also that the resources they have to utilise in decision-making might be lopsided in a sense that some stakeholders are given more authority than others. In this case, the government and its supporters trusted the science that gave them the licence to proceed business-as-usual. This is in line with the previous research in environmental policy-making. It would have required a great deal of political manoeuvring and sacrifices from the government's side to even announce any plans to act differently. It must be said, however, that the data does not include, for instance, media reporting on actual action after the LULUCF regulation came to a conclusion.

4.2 Saving the Environment

This narrative appears with the second largest number of hits, 132 times. Environmental protection is used by both sides, the government supporters and the environmental protection side, however, this is not to imply that some actors would somehow banish this aspect from the discourse. The narrative of Saving the Environment covers all mentions of protection of nature, flora and fauna as well as the climate. I have taken the basic assumption that the actor has a basic knowledge of the environment as an all-encompassing entity and that while the actor refers to 'climate', it is part of the wider entity of the environment as a whole. This narrative is interesting especially in the case of using the concept 'carbon sink' or 'carbon-pharynx' in Finnish, which was only in the minds of few climate professionals before the LULUCF regulation started to be discussed in the media. It certainly was not a popular concept before 2017. Carbon-pharynx is an interesting metaphor because it draws the attention towards the human body and human lungs' ability to breathe, just like the carbon-pharynxes have been described to be the 'lungs' of the Earth. Both parties, the supporters of the government and those who demanded change of plans, used this narrative to support their claims.

The Paris Agreement is referred to in the government press releases and it was clear that none of the actors wanted to be seen as they were the enemy of the climate. A distinctive feature of the narrative is, however, to point out that Finland is working hard to substitute all fossil fuels with bio-based wood products as a climate mitigation act. Also, this narrative draws the attention of the

audience to the global climate disaster and the mitigation of it. Finland is seen as a part of the global co-operation to alleviate global warming through Finnish forests, which, although being fragile to human hand, cradle the carbon emissions of the industrial world.

Alliances to back the government's lobbying were sought from Sweden and Estonia: Sweden because they have a booming silviculture similar to Finland, and Estonia because it was during Estonia's Presidency of the Council of the European Union when one of the voting took place. While travelling to Stockholm, Sweden, the PM thanked Sweden for understanding well the LULUCF regulation and its meaning to the Finnish forest- and bio-economy (VN 25.8.2017).

Overlapping with all other narratives is the claiming of expertise in silviculture. In this narrative it is used to justify the actions because the Finns know how to take care of the environment. The Finnish silviculture is seen as the most suitable one and Finnish politicians claim the right to say so, too. Three illustrative examples come from a Finnish politician, Jyrki Katainen, who claims that he must help the other countries in the EU to understand the Finnish silviculture:

The European Commission Vice-President Jyrki Katainen said he was upset because the question of silviculture has turned to be one of black-and-white. "I am worried most because logging is now against climate politics. This needs to be exercised more", said Katainen who thinks that the Finnish silviculture is not enough known in Europe. (HS 13.9.2017)

Katainen hopes that the understanding of forest increases in Europe. In his opinion, the forest countries should transmit a message regarding how forests grow and how they are tended. He is upset because for too many Europeans the word forest equals the one of park. "Forest must be able to put to use. I wish that along with lulucf a wholesome understanding of the forest would grow." (MT 5.12.2017)

"Some of my colleagues call forests parks. I feel like many understand silviculture as the same as raking. Forest and silviculture are as strange to many as is cultivating tuna in Malta to Eastern Finnish people." (MT 26.11.2017)

The authority of science is prevalent in this narrative, with 36% it scores the highest out of all narratives. The authority of science is used to back up the claims made in the public, and in this

narrative particularly even the most detailed of information is used. The authority of science is evident, yet the environmental protection people's statements did not receive as much attention in the public discourse as those by the government did. Furthermore, the open letters from the scientific community, with links leading to the actual letters, can be difficult to understand due to technical and expert language. For instance, the letter from the Finnish independent research unit BIOS, albeit in Finnish, can be hard to relate to due to the language used.

The application of the authority of science could have been expected to be higher in this narrative. However, within this narrative as well as the others, the images of the social world need to be familiar and relatable. Therefore, they must be rather universal and locally grounded to be more effective. Profit and development are prevailing in this narrative, too, however, the means to achieve them are different. Experts who were advocating for a restriction of logging argued for applying wood in civil engineering. That way the carbon stored in the wood would be kept and stored for a longer period, compared to pulp products and bio oil. This would not, however, suit the plans of starting major pulp factories.

An article by HS (25.9.2017) introduces the standpoint of a vast scientific community with a headline "*Almost 200 researchers around the world appeal to EU ministers: The limitations to logging of forests cannot be watered*", writing:

The researchers demand the EU ministers to ensure that land and land use impacts on climate are taken completely in to account when the ministers will try to form a consensual view of the controversial lulucf-regulation in October.

The researchers are thus positioning themselves against the Finnish government's, among others, advocated line that aims to alleviate the restrictions for the logging.

The signatories include 190 environmental and climate scientists from Europe and the rest of the world. Many Finnish researchers also put their names under the letter. One of them is the Academy Professor of meteorology, Timo Vesala, from University of Helsinki, who also took part in editing the text.

He tells that the initiative for the letter came from Swedish researchers. Vesala decided to take part in the appeal because he thinks that the scientific community's voice was not heard in the decision-making process.

"The researchers were not heard, or were heard, but only selectively", Vesala says.

In this example, the narrative is straightforwardly clear about the scientific community's consensus on the topic. However, the data for this thesis neither shows the government's answer to these allegations nor the reaction to new research findings. Nevertheless, the data does show that a consensus among distinguished researchers of the field was achieved, action was taken to make this public and criticism towards current state of affairs had been voiced out loud. Professor Vesala, too, refers to the lopsided use of scientific knowledge. In other words, he refers to the authority of science or of at least some science, certainly not to all of it. The comment above represents well the overall atmosphere of the discourse. The representation from the government's side was represented calm and official, while the opponents were indignant and demanding. As Finnish MEP Petri Sarvamaa (kok.¹⁴) put it:

The parliament was divided into two camps – on the other side the reasonable considering facts and on the other the emotion-appealing environmental populists. Instead of reasoning with facts, we were allowed to hear from the green-left mostly just unrealistic threat images of an industry exploiting the resources of our planet and about a future completely without forests. (MT 26.1.2018)

The Finnish parliament accepted the government's carbon sink vision (IL & IS 11.10.2017). This does not mean that there is no discord within the parliament because the data only consists of articles that specifically mention LULUCF. However, the data shows that the government strongly refers to work that was done to meet the requirements of the Paris Agreement. For instance, HS (14.12.2017) published an article discussing who is correct in this case, the government or the environmental organisations. Experts from environmental organisations and members of the

¹⁴ National Coalition Party *government party

climate panel as well as the lobbying politicians were interviewed. The HS article implicates that the government was right because anonymous EU official says so:

Lulucf regulation is an ambiguous issue but the government's view seems to be the right one. HS asked this from an EU Commission's official who knows this topic well. The official did not have a permission to speak with a name publicly.

"Finland controls what is the reference level of the carbon sink. At the same time, the objectives of the Paris Climate Agreement must be met", the official says. [...]

"The Finns are right when they say that the reference is to look forward and that it is not tied to a specific time period. This flexibility has now been made much clearer to countries like Finland."

This comment exhibits the difficulty of environmental problems in the media too. HS attempts to find a firm standing but falls to an easy explanation. The authority of the Paris Agreement is good enough an explanation to claim that the government is in the right, and the environmental organisations in the wrong. This is in line with the academic literature: environmental problems are often too hybrid to comprehend, and therefore difficult to report exhaustively in the media.

The narrative of saving the environment is thus highly influenced by science, however, the overall case of the LULUCF regulation is coloured with the government's plans to log a record amount of forest so that the planned investments, for instance, with Chinese companies can proceed. Science has been used and taken its place in the processes leading to the Paris Agreement, however, scientific research and researchers demanding changes of current policies and plans are not seen as authoritative enough. Even the latest IPCC report did not change the positions of the government. This report was used to promote government actions because forests could be used to substitute fossil fuels (MT 8.10.2018). It seems that this narrative was over-shadowed not just by economic prosperity, but also by the dispute of interpretation of the LULUCF regulation. This way of presenting the case made the topic even more difficult to understand. This is often the type of discourse surrounding EU politics that is seen incomprehensible to begin with.

This is merely one notable example of how the economic argumentation overruns all other aspects, yet it highlights the possible underlying assumptions of the opponents of the environmental

protectors. The following quote is reported by YLE (13.9.2017) after the EP voted in accordance with the Finnish government's lobby efforts, the outcome of which was interpreted as a confirmation to proceed with the planned increase in logging. The CEO of the Finnish Forests Industries, Timo Jaatinen, considered this decision a victory of Finnish lobbying and stated that "this has been a national effort" and that the use of forests can be increased evermore because the forests are now growing more than ever:

The world does not get any better here. But at least we are stopping unreasonable solutions for Finland that would be bad for our economic growth and forest industries.

4.3 Protecting the Nation

The narrative of Protecting the Nation does not gain many hits (á 41) in the coding, however, it gives an interesting insight into the case because of the cultural connectedness of forests and Finns in the wider picture. The nature of the LULUCF regulation is to connect Finnish forests to global climate politics, and this seemed to be difficult to handle for some actors. Also, this narrative needs to be inspected more thoroughly, as one of the loudest of lobbyists, MEP Nils Torvalds, repeatedly commented in the EU Parliament as if he was about to 'save' the Finnish nation with the LULUCF regulation. The Protecting the Nation narrative was mainly used to complement the work the government was currently doing or had done to the country, and in celebration of the successful lobbying. This narrative was coloured with patriotic features. For instance, those MEPs who voted against the government's plans were publicly framed as traitors. This narrative is different from the other narratives in a sense that it brings aspects to the discourse that seem irrelevant to the topic, such as war vocabulary and the origins of the MEPs.

HS is a good example of a catchy story-telling. In their comprehensive article about the twists and turns of the LULUCF regulation lobbying, the events are described using a certain dramatic rhetoric. Torvalds himself provided suitable quotations. The headline (HS 22.9.2017) "*A year ago the Finnish elite left for Brussels to promote one thing "in the Spirit of the Winter War" – this is*

how the EU's forest decision was lobbied to fit the industry". The headline refers to Torvalds, who worked at the Environmental Committee and was responsible for preparing the LULUCF package.

Torvalds told listeners from the energy- and forest industry gathered in Tampere-talo that changing the [EU] Commission's proposal in the [EU] Parliament would require wide co-operation of the Finns.

[...]

At the event he also expressed an invitation:

"It is needless to say that the industry is more than welcome to this liaison. We need co-operation. If I do not have the knowledge that you have, I might lose this battle."

"We need the Spirit of the Winter War."

Finns were drumming their agenda on wide front and in every occasion. Many people describe this campaign as being exceptionally large. The issue is on many other countries' agenda, but Finland and Sweden are especially active in regards to this issue.

Referring to the Spirit of the Winter War¹⁵ can be seen as direct urge to gather troops to 'save' the country in the face of a bigger force, in this case the EU. The actors supporting the government are creating a common, easily relatable ground of what the world is, who 'we' are and what is desirable. Within this narrative, perseverance and co-operation are used as metaphors to justify the increase in logging. This narrative gives an impression that the only sensible thing to do is to support the government, which is doing everything possible they can for the good of the whole nation. The myth of the Winter War mirrors this need for co-operation from all the parts of Finnish society and the desire to put aside differences.

This narrative overlap oftentimes with the Development for Economic Prosperity' narrative, yet those comments from actors that are clearly aiming to influence the discourse by referring to the

¹⁵ "[D]uring the economic crisis 'the Spirit of the Winter War' has been called forth to support national consensus at the face of economic austerity and budget cuts." (Kivimäki 2012)

nation's well-being are coded with Saving the Nation. In the same article by HS, a tweet by the PM is quoted:

Just before the plenary session, Prime Minister Juha Sipilä (kesk.) still herded Finnish MEPs.

“Soon Finnish European Parliament Members have the occasion to show support for the nationally important sustainable silviculture #LULUCF #EP”

However, MEP Sirpa Pietikäinen (kok.¹⁶), is one of the four Finns who voted against the changes. Her point of view can be seen to represent the other side of the coin – what is good for the nation is also good for the environment. HS writes in the same article:

Pietikäinen is morose about the way lulucf was operated. According to her, certain industries' agenda was made to be the agenda of the Fatherland. Pietikäinen thinks that the same happened already earlier in regard to the peat directive, when peat was attempted to be classified as a renewable energy source with Finnish effort.

“In relation to many law proposals the businesses come to me and tell their interests openly. But some industries claim to represent the interest of whole Finland. Concerning lulucf this was especially glaring.”

Four Finnish MEPs, Sirpa Pietikäinen (kok.) Heidi Hautala (vihr.¹⁷) Merja Kyllönen (vas.¹⁸) and Pirkko Ruohonen-Lerner (ps.¹⁹) were all framed to be against the government's plans by deviating from the vote. They had to explain themselves to the media, and the media attempted to devalue their vote by drawing attention to the MP's constituencies and where they are originally from, implying they are not loyal to their own roots and voters.

¹⁶ National Coalition Party *government party

¹⁷ Green League*opposition party

¹⁸ Left Alliance*opposition party

¹⁹ Finns Party *government party until 2017, Blue Reform stayed in the government after a split of the party

“There was a great deal of misunderstandings on behalf of the people, that I voted for ban of logging. The question is about the system of counting and that this does not ban logging even if hundred billion cubic metres were chopped down. In the messages there was a tone that was new, that my father was a war veteran and that my mother has worked in a war hospital as a little sister²⁰ in her youth. --- When [they] say that [I am] unpatriotic, it really is hurts”, Pietikäinen says. (HS 7.11.2017)

For sure the most difficult situation is facing the True Finns. The party’s leader Jussi Halla-aho was supporting the change of the proposal that eventually won, but Ruohonen-Lerner was not. After the True Finns split, the action of Ruohonen-Lerner is directly playing the game of the Blue Reform party because she practically voted against the party’s so often highlighted “Fatherland’s” interest. The same can be asked upon because Kainuu²¹ lives mainly on forest. The policy line taken by Pietikäinen and Hautala has already been gotten used to. (IS 16.9.2017)

It is quite surprising that the places of origin and the parents of the MEPs are used in the discourse. The narrative of Saving the Nation, of course, is about the whole nation’s well-being, and these are aspects that are seen to impact the vote, especially in the MEPs’ own electorates. However, the backgrounds and possible reasons to vote for the increasing of logging is not questioned, the fact that the MEPs are Finnish seem to be enough. These comments seemingly also represent the lack of understanding of what the LULUCF regulation vote was actually for, just like MEP Pietikäinen in the statement above emphasises. These comments seem irrelevant at first, yet for this narrative they are important. Also, the referral of the policy line taken by the MEPs Pietikäinen and Hautala can be understood here to refer that they have voted against ‘the best of the nation’ already before, and that their votes were not surprises.

Some actors present the LULUCF regulation and the Finnish politicians’ lobbying as a turning point for the Finnish economy. In an editorial in MT (6.9.2017) the importance of the situation is not left unrecognised. In general, this editorial used several kinds of narratives, apart from Fostering Cultural Heritage. For this translation, I have translated ‘edunvalvoja’ as ‘guardians of interest’, because it is clear the writer does not want to use the word ‘lobbying’, perhaps because it can be an emotionally loaded term, even though he describes the actions the Finnish politicians

²⁰ A nurse during the war time.

²¹ Merja Kyllönen’s region of origin.

have done in relation to LULUCF as “*trying to import forest knowledge to European decision-makers, with bad success*”.

The Finnish guardians of interest are facing a challenging, yet extremely important task for all Finns. The konkelo threatening Finnish well-being must be able to discharge. There are no other options.

Here the word ‘*konkelo*’ refers to situation where a fallen tree is leaning to a standing tree in the forest. It is widely known in silviculture and among foresters that one must follow a great care and approach this type of a tree with caution, as it is not easy to predict where, when and how it is going to fall. It is considered to be lethal to begin with, and advice is given to keep an eye on the treetops, not the saw biting into the standing tree, or the fallen tree might work like a guillotine. Trees might fall naturally or by silviculture activity. ‘*Konkelo*’ is thus used as metaphor for a looming situation in the EU and the Finnish lobbyists must be able to get Finland out of this trouble. Here the writer expects specific knowledge of silviculture from the assumed readers. I interpret this to overlap with the last type of narrative Fostering Cultural Heritage because the actor’s comment is published in one of the biggest newspapers in the country, with the expectation that the readers will understand his point.

Within this narrative the authority of science scores only 12%. The few hits come mainly from mentioning the Paris Agreement, or referring to studies and professors of LUKE or the Finnish Forest Centre with highly detailed forestry research on the current state of the forests and their caretaking. This narrative is different to development from the narratives Economic Prosperity and Protecting the Environment because it is mainly concerned with issues that are either very mundane and close to the people or dealing with affections, such as the looming threat of the EU and the feeling of a shared understanding of the good of the nation. This can be seen as one reason why science was not used as an authority, and that instead the actors’ place of origin or their expected knowledge of forestry gained more attention. Science is referred to in the form of the Paris Agreement, as if enough was done when merely striving for it. This is different to the narrative Protecting the Environment, in which not only the Paris Agreement is presented to work as authority of science, but instead, for instance, current scientific knowledge.

4.4 Fostering cultural heritage

The narrative fostering cultural heritage is the least frequently identified of the narratives in terms of the number of hits (á 16). However, this narrative culminates in forging a discourse that is solely Finnish, with Finnish winners and losers, making it different from the other narratives. The roots of Finnish forests go deep into the Finnish soil and culture and is linked to the national and individual well-being as well as building of the welfare-state. This kind of presentation of forest illustrates how culturally embedded in Finland the topic of forests is, thus constantly constructing the culture around it. The speakers in this narrative are evoking the well-known image of Finns in their forests, trying to make the audience see the issue of LULUCF through this perspective. The prosperity of Finland is presented as being intertwined with the Finnish ‘green gold’ and its management. It is recognised that Finland is a young country, however, its history is used a prime example of taking care of business on their own. Within this narrative, the voices of the ordinary people are also given room in the media. For instance, MT published a reader’s opinion as ‘news’. This narrative exhibits the ambivalent situation of the Finnish forests and their role as a global carbon sink, while being a profitable natural resource of the country. Here, the politicians as actors use epistemic work by appealing to the roots of Finns, claiming they know the ontology of the world, who the people are today, and what they need to strive for. The media helps hereby, although some may find more in common with those supporting strict regulation for logging. The difference between these two camps lies particularly in the perspectives: whether Finland is to act globally or locally, for short-term or long-term profits.

The PM addresses the participants of the 100th Anniversary of The Central Union of Agricultural Producers and Forest Owners (MTK) (VN 11.11.2017):

Dear Guests! Your organisation’s celebrations happen the same year the whole of Finland is celebrating the national independence coming true a hundred years ago. Here are more than timely connections in question, because natural resources, the tale of the land and the forest is inseparable part of Finland’s tale. Väinö Linna²² opened Finland’s tale with biblical tones: In the beginning

²² Finnish novelist, whose work has profoundly impacted Finnish cultural, political and social atmosphere.

there were swamp, hoe and Jussi. Linna's words condense how strong perseverance and dedication is needed to practice agriculture here in the northernmost agriculture country of Europe. Throughout the independent Finland's history, the rural folks have needed to adapt. Uncertainty is always present in a farmer's life and agriculture has been often practiced in difficult circumstances. Faith in future has, nevertheless, carried through even the hardest of times.

Within this narrative, Finnish lobbyists' hard work gets praises. In an editorial in IS (14.9.2017) the headline claims *"For once lobbying worked – EU Parliament came to their senses in forest emissions"*.

In addition to PM's press releases, this narrative illustrates that many people did, and still have, an opinion regarding this case, in which the decision-making is being detached from the forest-owners themselves. A MT reader from Keuruu, Arto Laitinen, writes:

In a dream scenario in the middle of decaying forest someone brave enough picks berries or mushrooms in the middle of bears and wolves.

The forest law changed in 2014, which after the freedom to make decisions in one's own forest improved. Now, we forest owners have the city greens and nature protection organisations at our back, who deliberately and one-sided aim to intervene in the practice of our lawful occupation. They do a lot of good for the nature, but some of their doings are annoying forest owners. (MT 20.9.2017)

This, among other similar comments draw the attention to the ways Finnish forests are being taken care of. It is aimed to steer away the attention from the capital or the EU towards those people who are actually at the heart of the LULUCF regulation: Finnish forest owners and their forests. The fear that too strict logging restrictions would turn the direction of the timber flows to markets outside of Finland is prevalent, not just because of economic reasons, but because the rural areas are so depending on the industry. By no means this is a small matter, and many people fear to lose their traditional way of life.

Within this narrative, referring to science is rather moderate with 19%. In this narrative, the authority of science is more in the background, reflected in the awareness of carbon sinks and climate change and that people need to address these issues. These themes are mentioned without any specific references, just as undisputable facts. This narrative is the culmination of the discourse in a sense that without science it is likely that very little would be known about the current climatic change and the dangers it has brought. Furthermore, interdisciplinary research can help to alleviate the negative effects, as this narrative implies, within a multifaceted setting of culture, nature and economy. Public discourse is needed to urge for action, but also to show that even after mistakes, there continues to be hope to learn from them.

One notable example comes from an active columnist, graduate engineer of environmental protection technology, forest owner Silja Keränen who ties all the already mentioned aspects of the LULUCF regulation together, such as economy, social acceptability, innovation, caution and culture and attitude changes over time. She connects Finnish forests inevitably to the global scenery:

*The most important one at the end: there is only one planet and at the moment we are living over its carrying capacity – that is why forest economy, too, needs to be sustainable, also in ecological terms.
(MT 29.11.2017)*

5. Conclusions & Discussion

The aim of this thesis was to explore how the Finnish media landscape discussed LULUCF-regulation (land use, land use change and forestry) between 2017 and 2018. The data consisted of newspaper articles as well as the Finnish government's press releases that mentioned 'LULUCF'. The research questions were, first, to identify the narratives within the discourse and, second, to identify how scientific authority was used within these narratives. By answering these questions guiding my main aim, I was able to give some insights in understanding the complicated relationship between science and politics in environmental problems. In this chapter, I explain the outline of the thesis and tie together the threads of discourse, explain the limitations to the thesis and suggest avenues for future research.

In the analysis, I identified the following four prevailing narratives. 1. Development for Economic Prosperity, 2. Saving the Environment, 3. Protecting the Nation and 4. Fostering Cultural Heritage. This listing also represents the order of their incidence. Although these narratives overlapped throughout the data, the actors did also have very specific points regarding the narrative, which were thus scrutinised accordingly. In addition to identifying the narratives, I considered the ways science was used to justify actions and what kind of science was used as an authority within each narrative.

The analysis was based on the world society theory with the background assumption of socially constructed social reality. The theory suggests that world culture sets the limits that different actors are expected to follow in order to play according to the rules of the global game (Meyer et al. 1997). This was complemented with an epistemic governance approach which allowed me to study the ways individual actors are trying to influence policymaking by appealing to three aspects of the social world: ontology of the environment, identifications and norms and ideals (Alasuutari & Qadir 2014).

The identified narratives portrayed the epistemic work in action. Actors claimed the current state of the world, who they are, who their audience is as well identifying what needs and desires in their part of the policy-change is aspired, which is especially crucial due to the international aspect brought in by the EU. The epistemic governance approach proved to be useful, for it allowed a closer look at the actors on a national level. In the future, it would be equally suitable to include

additional aspects of the detailed study of the use of authority as epistemic capital to the epistemic governance approach, to enhance the ways public policy-making and policy-change are being constructed within the society, as separate from assumed power structure at play.

Using narratives as a method for analysing public policy discourse also proved to be a useful approach. Everyone tells stories of a kind and especially politics can be seen to represent this storytelling on a highly public way, trying to appeal to as many audiences as possible. Narratives drew the attention to the many stakeholders in question, instead of, for instance, scrutinising the media and the frames the media possibly uses to influence the audiences. The narratives I identified help to bring to attention many important aspects of policy-making and public influencing, and they assist in separating many, often quite myriad, ways of public justifications of political plans and actions. The results of the thesis can be seen as an important part of the democratic political system, with an open, civilised discourse between the public and those in power.

The first narrative, Development for Economic Prosperity, was the most prevailing one. This was not surprising as the economic perspective tends to be the over-ruling aspect in all environmental issues. Especially the government actions as an active lobbyist were explained clearly and in a step-by-step manner, giving the impression that something was done to protect the Finnish forest industry. This kind of portrayal of the case took the major part of the attention, instead of, for instance, the fact that the vast scientific community was able to reach a consensus on an environmental issue.

The second narrative highlighting Environmental Protection took the attention to a global level by connecting Finnish carbon sinks to being part of a bigger climate change mitigation. The second narrative was in the public eye, with emphasis on the protection of the biodiversity and the nature, with perspectives from government funded research institutions, independent research units and global environmental organisations.

The third narrative of Saving the Nation showed the need for a nation-state to portray itself as sovereign and separate from the other states despite being a member of the European Union. Finland was presented as one unified entity that wanted to 'protect' its existence against something bigger. This narrative highlighted the national pride of good silviculture and the importance of forests for the national well-being. Many positive policies in relation to environmental protection were highlighted, and no-one wanted to have a reputation of an enemy of the nature. The data

showed that the Finnish government worked consistently in line with their own plans. Even in retrospect, at the time of writing, the strategies the government had were followed through until the end.

The fourth narrative, *Fostering Cultural Heritage*, emphasised the intertwining of Finnish cultural heritage with forests, and how the ordinary people feel about the situation. The actors welcomed the discourse and it was open and accessible to many, not just politicians or scientists, which was the main line in the narrative of *Fostering Cultural Heritage*. Naturally, the forest-owners were interested in what would happen, and their opinions were also included in the discourse by publishing them as comments, although they were only included in the data if they were published as ‘news’. If someone had followed the discourse close-up, the complicated European Union decision-making procedures would have also been clarified in this discourse. Fear of losing the traditional way of living was prevailing in this narrative.

In relation to science, there is a prevalent conception that the science that the stakeholders in power have embraced will matter the most. Although the IPCC, the same source of scientific knowledge that set the direction for the Finnish Climate policy in the first place, announced a new report more crucial than the previous one, the government did not change course. It would have needed a great deal of courage and possible political sacrifices to do that. As has been highlighted throughout this thesis, environmental problems are complicated and abstract to begin with, and their social and cultural aspects make them fully interwoven with power – and publicity. Prime Minister Sipilä’s comment about the “rather complicated text” of LULUCF regulation implies something essential about the case: politicians in power are not climate or environmental scientists and decisions are made under great pressure with insufficient knowledge, making the system of policy-making inadequate and lopsided.

The findings of the data together with the perspective of a global environmental regime suggest that people are capable of empowering themselves in relation to environmental issues. However, it would be impossible to expect everyone on the planet to gain a certain knowledge concerning the environment, even if one could agree on what an adequate level of knowledge would be, especially since it has become clear that there is a lack of consensus with regard to scientific knowledge in any case. One can always demand more science, yet this would take time, yet, science claims, the inhabitants of this planet are running out of time. The responsibility of environmental protection

is shattered, and science is used both to support and prevent action. However, Bocking (2004:132–134) has suggested a different approach. By defining the problem as global, progress and development are getting thwarted because global co-operation demands almost absolute consensus over the causes and the effects as well as the means. To avoid this, he argues that the eyes of the scientists should also be focused on the non-scientists, those whose lives have changed and whose livelihoods are under threat. This would mean a concentration on short-term uncertainties instead of long-term certainties and changing the thinking from ‘global climate’ to ‘local weather’. This would connect and allow co-operation between science, politics and the local. Defining problems as ‘global’ is not effective enough when the response needs to be, eventually, local. Thus, by embracing climate change, mundane issues of life would render the solutions more effective and empower societies and individuals, which are needed in the battle against the consequences of climate change, to avoid apathy in the face of a problem that is too big to comprehend by any measure.

Nation-states are to act for the good of the nation, and global policy models, such as “science for development” and “science for human rights” are one more aspect to take control over, to govern individuals by totalising their existence in the contemporary world. Even though all nations want to highlight their own individual status and trades, in a way similar to individual people, they still need to be part of the game that is played on a global level, which includes global corporations and institutions as well. This makes the connection between science and nation-state to be closely intertwined. If one is to consider science as merely an instrumental tool, one would miss the myriad ways science transforms the most mundane of ways of all societies. (Drori et al. 2003: 276–279)

Nevertheless, the number of environmental treaty ratifications on the global level has increased significantly, especially among rich, democratic countries since the beginning of the nineteenth century, even if they seem to work against national interests (Frank 1999). In the name of development, the least developed countries typically contest regulations made on global the level, appealing to sovereign states’ right to utilise their natural resources (Lechner & Boli 2005: 91–92).

However, the findings of this thesis imply that a nation-state is only willing to conform to rules of the world culture if the rules do not interfere too much with the expected state agenda. This was prevalent also in the 1970s when the Med Plan was being constructed to save the Mediterranean

Sea. According to Peter Haas's research, the Algerian president Houari Boumediene was reported to be openly hostile towards it:

"If improving the environment means less bread for the Algerians, then I am against it." The Algerian delegate to the 1972 United Nations Conference on the Human Environment also firmly stated that Algeria "will not sacrifice development at the altar of the environment". (Haas, 1989: 379)

This comment is in line with the findings of this thesis. In the discourse of the LULUCF regulation, Finland appeared as a nation-state which was not ready to reconsider the government's plans to a log record amount of forest, despite new scientific evidence that emerged during the course of the events. The desire to control the reference years was so strong, it was said to be one of the biggest lobbying campaigns in the EU conducted by the Finnish stakeholders.

Considering the findings of the thesis, Finland as a highly industrialised and developed country was not ready to give up this right. This case of LULUCF regulation negotiations shows vividly how a nation-state goes through even vast lobbying operations to shape the terms of the agreements to make them suit its own agenda, even though there is significant evidence it might have a negative impact on its outcomes on climate mitigation, agreed upon at a transnational level. Although the open letters from the scientific community were not significant in this round, I cannot help but speculate on their possible effectiveness in the future. After all, a rare consensus was reached among interdisciplinary researchers about the most crucial of points in climate change mitigation.

In the case of LULUCF regulation, the assorted group of actors had different levels of authority with regards to environmental issues, in this case especially about carbon sinks. The EU, the Finnish government, the environmental scientific community, politicians and the public voices all had an opinion channelled through the media, all with a different kind of authority to lean on when justifying their actions and opinions. Most of the information was mainly accessible via newspapers, both online and print. It must be noted that both sides, the lobbyists for both the government and the opponents, seemed to share a common understanding that something needed to be done. The data did not show any climate change deniers or any radically differing opinions on climate actions. The debate was on how and with what means the goals of the Paris Agreement should be met, or if they were even enough.

The scope of this thesis was limited in terms of the data-set. Albeit the dataset used was sufficient to bring out the narratives around the LULUCF regulation, it is impossible to say how and why a certain scientific knowledge was considered, and another was not. Second, the data does not include all the discourse around the phenomenon, leaving out public and political debate in the media and in the parliament about land use, land use change and forest regulation that did not include the word 'LULUCF'. This would have required a great deal more time and assets.

Several interesting paths were left unexplored for future research. Especially in relation to the manifold relationship between science and politics in environmental issues, there are multiple ways to proceed from here. Because environmental issues are so abstract to begin with, science is needed to first actualise them, then organise them and also to provide plans and directions to proceed. In politics, however, actions and principles do not always meet. More research would be needed to clarify the manifold ways science is used as part of epistemic governance in policy making both on the national and international level. For example, it would prove to be necessary and promising to study the parliamentary debates in relation to LULUCF regulation along other environmental problems in Finland, to understand the political play and ways of epistemic governance. In addition, because environmental issues are never simple, the research on the stakeholders would also give insights into the relationship between politics and science, not only because many different stakeholders provide material for different scientific research.

Furthermore, the understanding of environmental politics would increase if different countries were compared together in relation to the same or similar environmental problems. This could be done between countries in the EU or, for instance, between countries who have or have not implemented the Paris Agreement. A detailed study on the ways of how science is referred to and how authority is distributed would give more understanding, and hopefully lead to more functional mechanisms to utilise this authority in policymaking.

Bocking (2004) suggests that to make better and more effective political decisions, it would be more suitable to steer the focus away from the reasons and find a consensus on the means to act. Values, affections and profits are all legitimate reasons to protect the surrounding environment. Social change is not be found by competing for the most ethical or profitable action, but "thorough collective inquiry, creative conflict mediation, and public deliberation over values and policy goals" (p.74).

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- 02.06.2017 Pääministeri Juha Sipilä: EU-politiikan tärkeät vuodet
- 25.98.2017 Pääministeri Sipilä Tukholmassa: ”Yhdessä saavutamme enemmän”
- 11.11.2017 Pääministeri Juha Sipilän puhe MTK: n Pohjois-Suomen 100-vuotisjuhlassa

YLE:

- 13.09.2017 Ympäristöministeri Kimmo Tiilikainen: Yritysten kannattaa investoida Suomessa metsäteollisuuteen jatkossakin
- 11.10.2017 Elinkeinoministeri Lintilä: Kiinalaisten investoinneilla Lappiin merkitystä kansantaloudelle

12.12.2018 Suomi voi hakata lisää metsiä ja ilmastotavoitteet täyttyvät silti, kertoo uusi laskelma – tutkijat ja luonnonsuojeluliitto erimielisiä

Maaseudun tulevaisuus:

20.02.2017 Hiilineutraali Suomi 2045 istuu energiastrategiaan

17.03.2017 Hiilineluvääntö alkaa Euroopan parlamentin valiokunnissa – Tiilikainen kävi kertomassa laskujen olevan pielessä

20.03.2017 Lisää metsäoppia Brysselin päättäjille

06.09.2017 Metsäpolitiikka on pahassa konkelossa

20.09.2017 Vihreä viisastelu metsänomistajan riesana

26.10.2017 Risto Isomäki: Metsien käyttöä pitäisi ajatella satojen vuosien päähän –” niinhän ympäristöjärjestötkin ennen sanoivat”

26.11.2017 Katainen Savon Sanomille: Hiilinelukiistaa ei kannata viedä päämiestasolle

29.11.2017 Kohti kestävä ja monimuotoista metsätaloutta

05.12.2017 Jyrki Katainen uskoo metsänkäytön luluuf-neuvotteluiden kääntyvän vielä Suomen eduksi

02.05.2018 Iso uutinen on monta pientä juttua

08.10.2018 Suomen metsien hiilinelun kasvattamiseksi väläytellään monenlaisia keinoja: peltojen metsitystä, järeämpää puustoa ja tukea metsänomistajille hiilensidontaan

26.01.2018 Vieraskolumnit: Red II ja vihreän populismin loputon taisto

Helsingin Sanomat:

25.09.2017 Lähes 200 tutkijaa ympäri maailman vetoaa EU-ministereihin: Metsien hakkuille asetettavia rajoituksia ei saa vesittää

11.07.2017 EU-parlamentti teki rajun metsälinjauksen – tutkijat kiittelevät, suomalaismepit suuttuivat

13.09.2017 Suomen metsätaloudelle voitto pelätyssä äänestyksessä – EU-parlamentin kanta mahdollistamassa laajat lisähakkuut

22.09.2017 Suomen eliitti lähti vuosi sitten” talvisodan hengessä” ajamaan yhtä asiaa Brysselissä – näin EU: n metsäpätös lobattiin teollisuudelle sopivaksi

- 07.11.2017 Kokoomuksen Sirpa Pietikäinen on EU-parlamentissa ”epätavallisen” kuriton – äänestää raportin mukaan enemmän sosialistien kuin oman EPP-ryhmänsä linjoilla
- 14.12.2017 EU: ssa tehtiin lopullinen metsälinjaus Lulucf-kiistassa, mutta mitä se tarkoittaa? Juha Sipilän mukaan Suomi voi nyt lisätä metsähakkuita suunnitellusti, EU-komissio on samoilla linjoilla

Ittalehti:

- 11.10.2017 Eduskunta hyväksyi hallituksen hiilinelukannan

Ilta-Sanomat:

- 11.10.2017 Eduskunta hyväksyi hallituksen hiilinelukannan
- 16.09.2017 Pääkirjoitus: Suomalaismeppien äänestys puhuttaa
- 14.09.2017 Pääkirjoitus: Kerrankin lobbaus toimi – EU: n parlamentti tuli järkiinsä metsäpäästöissä