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Article

Biodiversity Protection in Private Forests: An Analysis of Compliance

Jukka Similä[*,**], Ismo Pölönen[***], Jenny Fredrikson[****], Eeva Primmer[*****] and Paula Horne[******]

[**]University of Lapland
[***]University of Eastern Finland
[****]Federation of Finnish Fisheries Associations
[*****]Finnish Environment Institute
[******]Pellervo Economic Research
[*]Corresponding author. E-mail: jukka.simila@ulapland.fi

ABSTRACT

Compliance is a precondition for a regulatory system to be effective. This article analyses the drivers behind non-compliance and ways of enhancing compliance by empirically investigating the assumptions of compliance theories in the regulation of biodiversity conservation in private forests in Finland. The article shows that institutional factors, such as the characteristics of the decision-making procedure and the roles professional forest organisations, as well as market pressure on large corporate actors, explain to a large extent the identified low level of non-compliance. Knowledge, information and coordination are identified as the most important bottlenecks in the enhancing the implementation of regulation on habitat conservation. We propose the following combination for the promotion of compliance: building on a cooperative strategy by improving the knowledge base and sharing; following a responsive regulation strategy by maintaining existing deterrence tools; and applying true smart regulation through more ambitious institutional arrangements for engagement with new third parties.

KEYWORDS: Compliance, biodiversity protection, enforcement, regulation, forest regulation

1. INTRODUCTION

A high degree of compliance is a precondition both for achieving the objective of regulation and for guaranteeing its legitimacy. Although there is a general consensus about the desirability of a high level of compliance with regulatory obligations, views on what explains compliance diverge. Broadly speaking, two main lines of thinking have previously dominated the discussion. Rational theories stress the cost of

complying and the subsequent benefits, in explaining individual level compliance, whereas cooperative theories consider other, more social factors such as commitment or capacity, as the crucial factors explaining compliance or its absence.[1]

While both theories have been criticised, recent approaches to compliance combine cooperation and deterrence theories. The approaches of responsive regulation, smart regulation and meta-regulation each bridge the rational and cooperative theories, and pay attention to the context of application. In other words, these theories are potentially more context-sensitive than the rational theories yet more robust than the cooperative theories. The responsive regulation approach suggests that in the first instance of non-compliance, regulators should enforce by persuasion and apply more punitive deterrent responses only if the regulatee continues to breach.[2] Enforcement should both aim to facilitate compliance and work as a threat. Instead of enforcement style, emphasis can be placed on the institutional features of regulation. The smart regulation approach puts much weight on third parties as watchdogs and the meta-regulation approach focuses on improved capacity of the regulatee to carry out the implementation and monitoring of environmental management.[3] Hence, these two approaches highlight the ability of the regulator to enforce by partially relying on other actors than those with direct enforcing roles.

This article conceptually and empirically examines theories of compliance in the regulation of biodiversity conservation in private forests. It focuses on the Finnish Forest Act (1093/1996), which requires the preservation of the characteristics of particular valuable habitats in forestry operations.[4] During the 10-year period following the enactment of the Forest Act in 1996, there had been close to 200 identified breaches regarding the habitat regulation aspects of the Forest Act. This figure is very low in comparison to the approximately one million forestry operations conducted in private forests in Finland during the same period. Despite the low level of identified non-compliance, there has been criticism of the functioning of the law as

1 Gary Becker, 'Crime and Punishment: An Economic Approach' (1968) 76 J Polit Econ 169; Sidney Shapiro and Randy Rabinowitz, 'Punishment Versus Cooperation in Regulatory Enforcement: A Case Study of OSHA' (1997) 49 Admin L Rev 713, K Kuperan Viswanathan and Jon G Sutinen, 'Blue Water Crime: Deterrence, Legitimacy and Compliance in Fisheries' (1998) 32 L Soc Rev 309; Durwood Zaelke and Thomas Higdon, 'The Role of Compliance in the Rule of Law, Good Governance and Sustainable Development' (2006) 3 JEEPL 376.

2 Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (OUP 1992) 158–62.

3 Neil Gunningham, 'Enforcing Environmental Regulation' (2011) 23 JEL 191 and Neil Gunningham, 'Strategizing Compliance and Enforcement: Responsive Regulation and Beyond' in Christine Parker and Vibeke Lehmann Nielsen (eds), *Explaining Compliance – Business Responses to Regulation* (Edward Elgar 2011) 199–221. Enforcement and Compliance strategies and their combinations have also been analysed in an environmental regulation context in several other studies. Eg Raymond Burby and Robert Paterson, 'Improving Compliance with State Environmental Regulations' (1993) 12 J Policy Anal Manage 753; Søren Winter and Peter May, 'Regulatory Enforcement and Compliance: Examining Danish Agro-Environmental Policy' (1999) 18 J Policy Anal Manag 625; Carolyn Abbot, 'The Regulatory Enforcement of Pollution Control Laws: The Australian Experience' (2005) 17 JEL 161; Carolyn Abbot, *Enforcing Pollution Control Regulation: Strengthening Sanctions and Improving Deterrence* (Hart Publishing 2009).

4 The Forest Act is applied both in public and private forests and it defines sustainable timber production and biodiversity conservation as parallel objectives.

well as the legal and ecological consequences of its enforcement.[5] Our aim is to understand the implementation of the regulatory obligations relating to habitat conservation in these forests and identify possible means for improving the enforcement strategy in this area.

The central questions that this article addresses are as follows: (1) what are the factors explaining compliance and non-compliance with the regulatory obligations in relation to the Forest Act in Finland, and (2) how can compliance in this area be advanced? The questions are investigated by analysing the official documentation of the violations of the Forest Act and interviews with representatives of relevant stakeholders. Utilising these two datasets allow a combining of the analysis of the formal enforcement system with its implementation that is embedded in the institutional and socio-economic context. The empirical analysis is anchored in an overview of the theoretical approaches to compliance and enforcement, and an analysis of the current regulatory context in Finland.

To familiarise the reader with the context and the roles of different actors in the implementation of the Forest Act, we describe the key characteristics of the forest industry, the stakeholders and nature conservation regulation in Finland in the following section of the article. In the third section, we outline the theoretical viewpoints explaining regulatory compliance and non-compliance and discuss their relevance to our study. Drawing on the theories, we close the section by deriving detailed questions for the empirical analysis. In the fourth section, we describe our empirical analyses and present the results. In the fifth section, we discuss the explanations for compliance and non-compliance identified in our empirical analysis, and critically reflect on its contradictions and uncertainties. Finally, we draw conclusions for an appropriate compliance strategy for forest biodiversity regulation.

2. INDUSTRY, STAKEHOLDERS AND REGULATION

2.1 Forestry and Forest Owners

Forestry and the forest industry play a significant role in the national economy and its structure in Finland. Forestry land covers almost 86% of the country's land area, and forestry and the forest industry combined account for almost 5% of Finland's GDP, employing almost 3% of the total labour force.[6] Covering such a large area, forests host a significant amount of Finland's biodiversity and are also the primary habitat for 43% of the threatened species identified in Finland.[7] The greatest threat to these species is forestry.[8]

5 Tero Laakso, Tanja Leppänen and Tapio Määttä, Metsärikollisuus empiirisen oikeustutkimuksen kohteena 'Forest Criminality as an Object of Empirical Legal Research' [2003] Defensor Legis; 647; Juha Pykälä, 'Implementation of Forest Act Habitats in Finland: Does it Protect the Right Habitats for Threatened Species?' (2007) 242 Forest Ecol Manage 281.

6 Esa Ylitalo (ed), *Finnish Statistical Yearbook of Forestry 2011* (Metsäntutkimuslaitos (Finnish Forest Research Institute) 2011) 470.

7 Pertti Rassi and others (eds), *Suomen lajien uhanalaisuus 2000* (*Endangeredness of species in Finland, 2000*). (Ympäristöministeriö and Suomen ympäristökeskus (Ministry of the Environment and Finnish Environment Institute) 2001).

8 Ari-Pekka Auvinen and others (eds), *Evaluation of the Finnish National Biodiversity Action Plan 1997–2005* (Finnish Environment Institute 2007).

About 60% of forest land (growth/ha/a $> 1\,m^3$) in Finland is owned by private individuals.[9] The average size of a forest holding is about 30 hectares. In the past, most forest owners were farmers, while nowadays the largest group is pensioners and only one-fifth are farmers.[10] About 80% of forest owners place some economic expectations on their forest property, but at the same time, more than 30% take some action to safeguard natural values on their own initiative.[11] About a third of forest owners participate in harvesting, and two-thirds engage in some kind of forestry activity, such as planting or thinning, while others have no personal involvement in the management of their forest.[12]

2.2 Professional Forest Organisations

Landowners rely significantly on professional expertise when making management and conservation decisions in their forests.[13] The professional organisations managing the integration of forestry and biodiversity conservation in Finnish non-industrial private forests include public, private and associational actors.[14] These organisations interpret and apply the law when planning and carrying out silvicultural operations; they are often the main information source for the landowner.[15] Because of the central role that the forestry organisations play in defining forest management, they should be the focus when explaining compliance with regulatory obligations in relation to habitat conservation.

The Forestry Centre[16] has dichotomous roles in the Finnish forest planning and management system. It functions as a public forest authority, but it also provides expert advice and planning services based on the forest inventories and databases, which it has in its possession.[17] Local Forest Management Associations have forest owners as members and provide extension services and plan a significant share of those forestry operations that are not planned by the timber purchasing company. Their role is also to enhance the profitability of forestry.[18] Thus, the associations

9 Ylitalo (n 6) 470.

10 Paula Horne, Ville Ovaskainen and Terhi Koskela, 'Metsänomistajien ja kansalaisten näkemykset metsäluonnon monimuotoisuuden turvaamisesta' (Safeguarding forest biodiversity in Finland—Citizens' and non-industrial private forest owners' views) [2004] Metsäntutkimuslaitoksen tiedonantoja 933.

11 Heimo Karppinen, Harri Hänninen and Pekka Ripatti, 'Suomalainen metsänomistaja 2000' (Finnish Forest Owner 2000) [2002] Metsäntutkimuslaitoksen tiedonantoja 852 (Forestry Research Institute Bulletin); Horne, Ovaskainen and Koskela (n 10).

12 Karppinen, Hänninen and Ripatti (n 11).

13 Teppo Hujala, Juha Pykälä and Jukka Tikkanen, 'Decision Making Among Finnish Non-Industrial Private Forest Owners: The Role of Professional Opinion and Desire to Learn' (2007) 22 SJFR; Eeva Primmer and Heimo Karppinen, 'Professional Judgment in Non-Industrial Private Forestry: Forester Attitudes and Social Norms Influencing Biodiversity Conservation' (2010) 12 Forestry Polit Econ 136–45 .

14 Eeva Primmer and Steven Wolf, 'Empirical Accounting of Adaptation to Environmental Change: Organizational Competencies and Biodiversity Conservation in Finnish Forest Management' (2009) 14 Ecol Soc <http://www.ecologyandsociety.org/vol14/iss2/art27/> accessed 3 November 2013.

15 Harri Hänninen and Jussi Uusipuro, 'Metsänomistajat neuvonnan ja metsäsuunnittelun käyttäjinä' (Forest owners as users of forestry guidance and planning) [2002] Työtehoseuran metsätiedote 651 (Forest Bulletin of Työtehoseura) 4; Hujala, Pykälä and Tikkanen (n 13).

16 Regional Forestry Centres were merged with Finland's Forestry Centre in 2012 based on the Act 418/2011.

17 Primmer and Wolf (n 14).

18 Associations work on a statutory basis (Act on Forest Management Associations 534/1998).

have a role as service providers and advocacy organisations. In those cases where the timber purchasing corporation plans the operation, the forestry expertise rests with the timber purchaser. In some cases, the operation planner can be a small- or medium-sized forestry entrepreneur.[19]

General forest management guidelines that are applied to all actors have been developed by the Forestry Development Centre Tapio.[20] While forestry data and Forest Act habitat inventories are held by the Forestry Centres, other habitat and species data are held by the environmental administration (Centres for Economic Development, Transport and the Environment, ELY Centres). The ELY Centres holds much of the ecological expertise, and is resorted to when ecological knowledge beyond the expertise of forestry organisations is required.[21]

2.3 Regulation

Finnish state regulation on forest biodiversity has two important pillars; one based on the Nature Conservation Act and the other on the Forest Act. Our research focuses on the obligatory habitat conservation regulatory obligations in the Forest Act, since the implementation of this key regulation is particularly complicated and challenging for practitioners.[22] The other state-based instruments aimed at conserving forest biodiversity are top-down forest conservation programmes, nature reserves, a voluntary forest conservation programme and the habitats protection provisions in the Nature Conservation Act.[23] All these mechanisms differ greatly from habitat conservation under the Forest Act that has the implementation responsibilities so dispersed.

The Forest Act lists seven habitat types that are protected if they are found in a natural or near-natural state and are clearly distinguishable from the surrounding forest habitat. The interpretation of the Act rests mostly with professionals.[24] Protection does not mean total prohibition of forestry in, or nearby, the habitats, but it requires that silvicultural measures or logging are carried out in a manner that preserves the special characteristics of the habitats. The law does not require the authorities to designate the protected habitats. Instead, it is the obligation of the forest owners, or of other logging rights holders, to identify the habitats on a case-by-case basis, and to designate their boundaries. It is also the responsibility of the logger to decide what forestry measures can be carried out without destroying the habitat or its special

19 Primmer and Wolf (n 14).

20 Metsätalouden kehittämiskeskus Tapio (Tapio Development Centre for Forestry), *Hyvän metsänhoidon suositukset (Recommendations for Good Forestry Practice)* (Metsätalouden kehittämiskeskus Tapio 2006).

21 Primmer and Wolf (n 14); Heli Saarikoski, Maria Åkerman and Eeva Primmer, 'The Challenge of Governance in Regional Forest Planning: An Analysis of Participatory Forest Program Processes in Finland' (2012) 25 Soc Nat Resources 667.

22 The identification and delineation of the approximately 90,000 generally small-sized (less than one hectare) habitats scattered across the landscape requires knowledge of the ecological characteristics and the legal requirements. Primmer and Karppinen (n 13).

23 Chapter 4 of the Nature Conservation Act.

24 The Forest Act also includes a general obligation to manage and utilise forests 'in such a manner that the overall preconditions for the preservation of habitat characteristic for biological diversity of the forests are secured' (Forest Act, s 10.1). However, this obligation is regarded so ambiguous that it cannot be enforced. Matti Kiviniemi, *Metsäoikeus (Forest Law)* (3rd edn, Metsälehti Kustannus 2004) 301.

features.[25] Hence, the regulatory technique adopted in the Forest Act entails a need for particular expertise when implementing the law. The actors utilise various sources of information when applying the regulatory obligations in relation to habitat conservation,[26] but the actual decisions also rely on their professional judgment.[27] To ease and streamline decision-making, general guidelines on Forest Act habitat conservation have been produced and the habitats have been inventoried. The inventory has contributed to a systematic database but it does not, in strictly interpretive terms, change the legal status of the inventoried habitats—nor that of the habitats that have not been identified in the inventory.[28] The inventory does not achieve 100% coverage but the habitats are protected based on their valuable special characteristics defined in the law.[29]

The regulatory control of logging rights holders is based on the notification of forest operations to the Forestry Centre. It is noteworthy that this is not a permit mechanism. The forestry operation can be started after 14 days from the notification unless the authorities do not initiate a separate process against the rights holder. Notification is a way to provide information to authorities.[30] The control procedure has been developed to process the large number of forestry operations in Finland (around 100,000 annually).[31] For the same reason, the Forestry Centre is able to make on-site investigations only very rarely. Instead, they rely mainly on the inventory database and their own knowledge of local conditions. Since inventory data is not published and the notification procedure does not include public consultation, supervision of the Forestry Centre occurs with no public scrutiny.[32] This feature of the current forest regulation is relevant when considering the need for facilitating compliance through engagement of watchdogs (smart regulation). Increasing the access to information for the public could potentially enhance compliance with the forest regulation.

The Forestry Centre acts as the authority that handles breaches of forest legislation. If the Forestry Centre suspects a violation of the Forest Act, it reports the case to the prosecutor (Forest Act, Section 22) who, in turn, in most cases requests the police to investigate the case. The Forestry Centre can, however, also conduct preliminary investigations. If the violation is interpreted to be very minor, the Forestry

25 Jalkanen, Riitta, Metsälain 10 §:n implementointi: metsätoimihenkilöiden oikeudellisen osaamisen kehittyminen täytäntöönpanoprosessissa Pohjois-Karjalassa (Development of Foresters Legal Know-how in the Implementation Process of Forest Act's Section 10 in North Carelia). [2011] Ympäristöpolitiikan ja -oikeuden vuosikirja (Yearbook for Environmental Law and Policy) V 190–91.

26 Primmer and Wolf (n 14).

27 Primmer and Karppinen (n 13).

28 Klaus Yrjönen, *Metsälain erityisen tärkeät elinympäristöt. Kartoitus yksityismetsissä 1998–2004. Loppuraportti* (*Forest Act Habitats of Special Importance. Mapping in Private Forests. Final Report)* (Maa- ja metsätalousministeriö (Ministry of Agriculture and Forestry) 2004).

29 Janne Kotiaho and Vesa Selonen, *Metsälain erityisen tärkeiden elinympäristöjen kartoituksen laadun ja luotettavuuden analyysi (Analysis of the Quality and Reliability of the Mapping of Forest Act Habitats of Special Importance* (Suomen ympäristökeskus (Finnish Environment Institute) 2006).

30 Forest Act, s 14.1.

31 Metsätalouden Kehittämiskeskus Tapio (Forestry Development Centre Tapio), *Annual Statistics 2005*.

32 Minna Pappila and Ismo Pölönen, 'Reconsidering the Role of Public Participation in the Finnish Forest Planning System' (2012) 27 Scandinavian J Forest Res 177, 180–83.

Centre may decide not to report the case. The enforcement strategy of the Forestry Centre has been criticised for not reporting observed violations to prosecutors often enough. Although the prosecutors could, in principle, take action without any reports, in practice the lack of other channels for information about possible violations prevents this. Due to the small number of reported cases, and consecutive legal proceedings, the deterrence effect of the regulation has been claimed to be weak.[33]

In addition to state regulation, there is private regulation in the form of certification systems. The main certificate system in Finland is the Finnish Forest Certification System (FFCS) that belongs to the Programme for the Endorsement of Forest Certification schemes (PEFC). FFCS is the clearly dominant forest certification regime in Finland, as it covers 95% of managed forests.[34] In the present form, forest certification and legal regulation are closely linked, as one substantial requirement of certification is compliance with law. Only very limited additional requirements are included in the FFCS, the requirement for leaving retention trees on-site is the most significant, both ecologically and economically.[35] For legal compliance, the added value of the FFCS certification is linked to supply chain pressure. Pulp and paper companies, the main buyers of timber, need certificated raw material for successful trade in international markets and they generally buy only certificated timber. As a consequence, the forest owner may lose market opportunities, if they do not comply with forest certification conditions—and hence with the law.

3. THEORETICAL FRAMEWORK AND ITS RELEVANCE IN THE FINNISH PRIVATE FORESTS

Compliance with regulatory obligations is an essential condition for regulation to be effective.[36] Understanding compliance requires that we pay attention to factors explaining both compliance and non-compliance. To a large extent, the adequacy of enforcement strategies depends on the nature of non-compliance, the motives of the regulatees, and the institutional features of any particular regulation.[37] Non-compliance can be considered to fall under two broad categories: unintentional and intentional. Unintentional non-compliance occurs when reasons other than the willingness of the regulatee explain the breach. Non-compliance is intentional when the regulatees are not willing to comply with the regulation (for whatever reason), despite being aware of the regulation and despite being able to comply.

33 Laakso, Leppänen and Määttä (n 5).

34 Minna Pappila, *Metsäsertifiointi – itsesääntelyä vai markkinointia?(Forest Certification - Self-Regulation or Marketing)* [2008] Ympäristöpolitiikan ja -oikeuden vuosikirja (Yearbook for Environmental Law and Policy) II 210.

35 Pappila (n 34) 205, 233–36, 251.

36 Other factors influencing effectiveness of regulation include its nature, design, implementation and societal context. On the qualities constituting good regulation, see eg Robert Baldwin, Martin Cave and Martin Lodge, *Understanding Regulation - Theory, Strategy, and Practice* (2nd edn, OUP 2012) 25–39.

37 See also Christine Parker and Vibeke Lehmann Nielsen, 'Introduction' in Christine Parker and Vibeke Lehmann Nielsen (eds), *Explaining Compliance – Business Responses to Regulation* (Edward Elgar 2011).

3.1 Unintentional Factors Affecting Compliance

One of the potential reasons leading to unintentional non-compliance is the lack of specific regulatory knowledge and expertise among regulatees.[38] The expansion of regulation in recent decades has increased complexity, which generates difficulties for comprehending and simply managing the multitude of rules.[39] The interpretation of a legal rule may require technical, scientific or other expertise, which lay-regulatees do not typically possess. This complexity is significant in environmental regulation, as environmental legislation is full of references to technical details, regardless of whether it addresses enterprises or ordinary citizens. Complex regulation may also be ambiguous and open to various interpretations, which increases the risk of non-compliance.

The biodiversity protection instrument in the Finnish Forest Act is an illustrative example of a regulatory area where the interpretation of law calls for particular expertise. Defining the boundaries of a habitat in accordance with the Forest Act requires knowledge of ecological and legal matters, as well as economic and geographical factors. There is evidence that landowners, who are the main regulatees in the context of Forest Act, are not completely familiar with the regulatory obligations on biodiversity conservation in forestry, or the ecological reasoning underlying them.[40] However, organisational capacities are also important in this context: forest owners typically rely on professional organisations when managing their forests.[41] Hence, the relevant 'body' interpreting the law for this particular case is not a single legal entity, but a combination of actors. For this reason, our empirical analysis takes into account the capacities of both forest owners and the professional forest organisations, as well as the interaction between them.

3.2 Motives to Comply with Regulation

In addition to unintentional non-compliance, regulatees may have various motives for intentional non-compliance—or compliance. The motivational explanations can be divided into three broad categories, namely economic, normative and social

38 See also the OECD's (2000) categorisation of the causes for non-compliance, namely: (1) lack of regulatory knowledge and understanding, (2) willingness of regulatees and (3) the ability of regulates. OECD, *Reducing the Risk of Policy Failure: Challenges for Regulatory Compliance* (OECD Publishing 2000) 13–23. The OECD has also conducted a study for identifying different national approaches to compliance assurance regarding regulation on pollution prevention and control. OECD, *Ensuring Environmental Compliance: Trends and Good Practices* (OECD Publishing 2009).

39 There are no signs that this trend is significantly changing, despite the numerous Better Regulation activities. As Tala points out, the growing volume of laws and regulations both at national and transnational level seems to be like a force of nature with no serious opponent force in contemporary societies. Jyrki Tala, 'Better Regulation Through Programs and Quality Standards – Are New Perspectives Needed?' (2010) 4 Legisprudence 193, 212.

40 Harri Hänninen and Mikko Kurttila, 'Metsänomistajien tiedot luonnon monimuotoisuutta vaalivan metsänhoidon velvoitteista ja suosituksista' (The Knowledge of Forest Owners on Obligations and Recommendations Concerning Forestry Treasuring Biodiversity) [2004] Metsätieteen aikakausikirja (Forestry Science Journal) 285.

41 Hujala, Pykäläinen and Tikkanen (n 13); Primmer and Wolf (n 14); Primmer and Karppinen (n 13). Forestry professionals have also been criticised for failing to integrate up-to-date ecological knowledge with the legal standards. Pykälä (n 5); Pappila and Pölönen (n 32) 182.

motives.[42] Perhaps the most commonly identified reasons for complying and breaching regulatory obligations are economic motives.[43] If the costs incurred by compliance are relatively high, the regulatees may calculate that obeying the regulation is too costly. In other circumstances, the economic reasoning operates the other way round. If the benefits of non-compliance are low, then taking the risk of a sanction might not be economically justified.[44] Previous research indicates that profit-seeking motives could be an essential explanation for non-compliance with the biodiversity regulation aspects of the Finnish Forest Act.[45] Hence, economic motivation as a potential explanation for the non-compliance will be given particular attention in the following empirical section.

Compliance and non-compliance also depends on normative aspects, such as the values and attitudes of the regulatees. The general legitimacy of government, particularly if it is strong, may encourage citizens to obey the law, even when they do not understand the actual benefits of compliance in a given case. Expressions of a sense of duty, or a sense of civic duty,[46] are often seen as relevant normative motives. The sense of civic duty based on the general legitimacy of the government is distinct from normative values in relation to nature conservation. The values and attitudes of forest owners towards forests generally, and biodiversity protection in particular, may either support or contradict the goals of regulation.

Previous research shows that the goals of forest management and forest owners' attitudes and values towards biodiversity conservation in Finland are heterogeneous.[47] Non-industrial private forest owners can be divided into four groups according to their goals for forest management.[48] *Multi-objective owners* (41%) consider recreational, conservational and economic objectives for forests as the most important. So-called *recreationists* (24%) emphasise the importance of forests as a source of recreation as well as conservational and scenic values. *Investors* (15%) emphasise the economic security provided by the forest as an asset, while *self-employed owners* (20%) consider the forest as a source of regular sales revenue and labour income, as well as a source of funding for big investments. The normative goals and attitudes of forests owners affect to what extent they employ voluntary conservation practices in their forest management. Among multi-objective owners and recreationists, conservation practices are rather common (over 40%) while in the other groups they are much rarer (investors 32%, self-employed owners 17%). The most commonly

42 Parker and Nielsen (n 37).

43 See also OECD, *Improving Regulatory Compliance: Strategies and Practical Applications in OECD Countries* (OECD Publishing 1993).

44 When compliance or non-compliance is explained purely by economic motives, the regulatees are typically regarded as rational actors whose objective is to maximise the economic gains. See Abbot (n 3) 19–27.

45 It has been argued, based on the empirical material, that the level of sanctions has tended to be low in comparison with the economic benefits offenders have gained through breaches of the Forest Act. Laakso, Leppänen and Määttä (n 5) 662.

46 Peter May, 'Compliance Motivations: Perspectives of Farmers, Homebuilders, and Marine Facilities' (2005) 27 Law and Policy 317, 320.

47 Karppinen, Hänninen and Ripatti (n 11) 1–84; Horne, Ovaskainen and Koskela (n 10), 1–110.

48 Karppinen, Hänninen and Ripatti (n 11) 15–37.

stated reason to protect nature values on one's own property is an 'obligation to protect nature'.[49] This motivation signals a strong civic duty to protect biodiversity.

While a large proportion of forest owners are willing to promote biodiversity values, many forest owners do not accept traditional forms of nature conservation policies. One of the most serious environmental conflicts in recent decades in Finland is related to the implementation of the EU Natura 2000 network, which took a top-down regulatory approach.[50] Although this conflict was not about compliance with law but about the implementation practice of EU law at national and local level,[51] it indicates strong tensions between state policies and values and perceptions of land owners in certain situations. The importance of maintaining property rights and sovereignty in decision-making have also been revealed in survey studies of forest owners. Conservation contracts, in which land ownership is maintained, are acceptable to the majority, while government acquisition of areas with conservation value is acceptable only to one-fifth of all forest owners.[52]

In addition to economic and normative motives, a third set of motives are social. By social motives, we mean motives that relate to the extent to which approval or respect of business partners, peers, regulators or others motivate the regulatees to comply with the law.[53] While large companies work to maintain their reputation and position in the market at a global level, compliance of smaller actors is more dependent on their informal reputation in a local community. Large forestry companies are the dominant buyers from private forests and because their reputation is linked to the perceptions of how the forests from which they acquire timber are managed, it is risky for them to buy timber from sellers who do not comply with regulation. This impact is what Gunningham and Sinclair call 'supply chain pressure'.[54] Forestry professionals have been found to significantly rely on social norms and the approval of other foresters when deciding on how to delineate habitats.[55] Another aspect of reputation is that given by the regulator. Regulatees might be seeking for the approval of regulators beyond the economic consequences of non-compliance. During the negotiation process, they may be affected by the opinions of the regulators about what would be a good solution in the case at hand, although the regulator would not claim that this was strictly based on legal requirements.[56]

The notion that large companies are more sensitive to international publicity does not mean that private forest owners would not be affected by social reputation.

49 Horne, Ovaskainen and Koskela (n 10).

50 Juha Hiedanpää, 'The Edges of Conflict and Consensus: a Case for Creativity in Regional Forest Policy in Southwest Finland' (2005) 55 Ecological Econ 485.

51 The major protest was directed against the designation of areas for the Natura 2000 network. Landowners used different methods of protesting, but open violations of legal regulation was not one of these.

52 Horne, Ovaskainen and Koskela (n 10) 1–110.

53 Parker and Nielsen (n 37), Gunningham, Kagan and Thornton use the concept of social licence instead of social motives but apparently it has the same meaning, Neil Gunningham, Robert Kagan and Dorothy Thornton, *Shades of Green – Business, Regulation, and Environment* (Stanford UP 2003) 33–38.

54 Neil Gunningham and Peter Grabosky, *Smart Regulation: Designing Environmental Policy* (OUP 1998) 110, 223–24, 338; Neil Gunnigham and Darren Sinclair, *Leaders & Laggards – Next-Generation Environmental Regulation* (Greenleaf Publishing 2002) 109–10.

55 Primmer and Karppinen (n 13).

56 Ayres and Braithwaite (n 2).

Clearly, local community acceptance is important for non-industrial forest owners in their relevant community. This community may consist of neighbours and other peers, and an important role is played by the forestry professionals with whom the landowner discusses potential forestry operations.[57] Due to community pressure, private forest owners may acknowledge the importance of protecting biodiversity regardless of any regulatory obligation to do so, and in such cases, the regulatory obligations only help them to identify how to forward this goal. Naturally, the contrary may also be the case: community values may encourage indifference towards regulation.

Motives are often interlinked and affected by other factors.[58] For example, a forest owner may have an expectation of a minimum income from forestry and that plays a significant role in her decision-making. With that said, the same actor may still not consciously weigh the economic costs and benefits of breaching and complying. Similarly, compliance motivations are hard to distinguish from the fact that legal regulation provides the foundation for social responsibility.[59] The forest owners' experience of the fairness of procedures affects their attitudes on cooperation with the regulators.[60]

3.3 Enforcement and Compliance Strategies

Different enforcement and compliance theories are accompanied with different inferences about how compliance should be addressed. When the assumption is that rational actors calculate the cost of compliance and weigh them against benefits, the role of deterrence in preventing non-compliance is particularly emphasised. Deterrence consists of two elements—detection and sanctions—the likelihood and appropriateness of which essentially defines the effectiveness of deterrence.[61] Rational theories place special emphasis on economic motivations. In cooperative theories, however, deterrence is assumed to play a minor role as a driver for compliance. Instead, these theories explain compliance using normative factors, such as the sense of civic duty of the regulatees, and the legitimacy of regulation. According to these theories, strict, coercive enforcement may cause a backlash and actually reduce compliance. Consequently, these theories assume that an increase in deterrence does not increase compliance.[62]

57 Hänninen and Uusipuro (n 15); Hujala, Pykäläinen and Tikkanen (n 13) 454–63; Primmer and Karppinen (n 13) 136–46.

58 May (n 46).

59 Robert Kagan, Neil Gunningham and Dorothy Thornton, 'Fear, Duty, and Regulatory Compliance: Lessons From Three Research Projects' in Christine Parker and Vibeke Lehmann Nielsen (eds), *Explaining Compliance – Business Responses to Regulation*. (Edward Elgar 2011) 37–58.

60 Riikka Paloniemi and Annukka Vainio, 'Legitimacy and Empowerment: Combining Two Conceptual Approaches for Explaining Forest Owners' Willingness to Cooperate in Nature Conservation' (2011) 8 JIES 123.

61 Becker (n 1); Abbot (n 3) 19–27.

62 Kuperan and Sutinen (n 1). Both rationalist and cooperative theories have been criticised from an effectiveness point of view for a long time. Maximisation of deterrence tends to reduce trust between regulators and regulatees, and lack of trust has negative implications for compliance. On the other hand, endless faith in the good will of regulatees will encourage exploitation by actors whose choices are influenced by economic rationality. See Shapiro and Rabinowitz (n 1) 718–24, 761–62.

Responsive regulation combines deterrence and cooperative theories, building on the idea of continuous escalation of enforcement reactions. According to this theory, the regulator's first reaction to violations of a regulatory obligation should not be a punishment. Instead, persuasion and negotiation and informal enforcement tools should be used to coax the actor into complying with their regulatory obligation. Only if the regulatee appears seemingly indifferent to a regulatory obligation should the regulator use more severe enforcement measures.[63] This approach is considered more efficient than the straightforward enforcement strategy based on deterrence, which requires a high level of investment in monitoring and sanctioning. On the other hand, responsive regulation is expected to be more effective than cooperative strategies that reject punishment. In an ideal scenario, responsive regulation allows for the directing of strict enforcement action on the (minority) group of regulatees who persistently breach, and 'deserve to be sanctioned'.[64]

Responsive regulation faces challenges in situations where regulators have difficulty monitoring and grading the level of a breach and when the regulator has a very limited connection with the regulatee.[65] This seems to be a particularly relevant restriction of ideas of responsive regulation as an effective enforcement strategy in forest biodiversity conservation. Measuring the outcome of biodiversity conservation and even just observing the numerous different operations that are conducted in Finnish private forests can be extremely challenging for the regulator.

3.4 Institutional Features of Regulation

Theories of smart regulation and meta-regulation pay attention to the institutional features of regulation instead of the enforcement style in responses to the challenges of non-compliance. Smart regulation aims to overcome the situations where interactions between regulators and regulatees are infrequent, by recruiting third parties as surrogate regulators.[66] Third parties, such as local communities, non-governmental organisations (NGOs) and business associations, can contribute to the compliance and enforcement by providing information to regulators and regulatees and fulfilling a watchdog role.[67] Forest certification has been seen as an example of smart regulation,[68] although certification schemes vary significantly.

In Finland, the main forest certificate FFCS/PEFC scheme that covers most of the private forests supports compliance with the regulatory obligations in relation to habitat conservation. A threat of losing markets is a strong incentive to comply with the certification standards and hence with the law. However, there is no representative from any environmental NGO on the management board of the association

63 Ayres and Braithwaite (n 2), 158–62.

64 Ayres and Braithwaite (n 2); Abbot (n 3) 46–52.

65 On the critics of responsive regulation, see eg Robert Baldwin and Julia Black, 'Really Responsive Regulation' (2008) 71 MLR 59, 62–64 and Gunningham (n 3, both).

66 Gunningham (n 3, both).

67 Gunningham and Grabosky (n 54); Gunningham and Sinclair (n 54) 95. Using third parties as private enforcers can also lower the costs of inducing compliance.

68 Gunningham (n 3, both).

granting FFCS/PEFC certificates in Finland.[69] The board members represent groups like forest owners, logging companies, the forest industry—and the church.[70] The Finnish forest certificate system is based on an assumption that it is in the collective interest of all forest owners that Finnish forestry enjoys a good environmental reputation among timber buyers. The board can be seen as a kind of a watchdog, because it is motivated to maintain the credibility of certificates by controlling individual forest owners. This is crucial from the compliance point of view, although one could assume that the members of the organisation would have no interest in raising the certificate standards over the level required by international markets.

Some forest organisations and professionals can be considered third parties in some sense. They significantly influence how the forests are managed and how biodiversity issues are addressed.[71] For example, forest owners often assign Local Forest Management Associations to make critical choices about how to carry out logging operations. The role of professional organisations as a third party differs from that of NGOs; they are not watchdogs for biodiversity as such, but they do enhance the compliance with the law as part of the production chain. Their motivation for compliance is based on the fact that neglect of the legal requirements could negatively affect the position of their organisation and perhaps also the entire sector. Furthermore, they do not have direct economic motives for violating the law.

An additional theory on compliance, known as meta-regulation, suggests that an efficient method of regulation would be the regulation of risk management systems rather than regulating the risks themselves. Utilising the capacities of the regulatee in the development, implementation and monitoring of environmental management would thus generate the desired outcome.[72] In the context of biodiversity conservation in Finnish private forests, the individual forest owners have traditionally been a target of regulation rather than an active partner. Forest owners have not been information producers, either. The forest owners' views have been distilled into policies through their regional and national advocacy organisations, which might have a role in identifying some of the risks if biodiversity conservation is a goal for them. Thus far, these organisations have mainly advocated economic use and timber production instead of biodiversity conservation. However, as a part of a regulatory shift where biodiversity conservation has become part of forest regulation, biodiversity conservation knowledge has also improved in these organisations.

Having explored the theories of compliance and non-compliance as well as enforcement strategies with a view to the Finnish private forests, we find that there is no single theory that can alone explain the effectiveness of biodiversity protection regulation in Finnish private forests. Building on the notion that the effectiveness of enforcement strategies depends on the nature of non-compliance, the motives of the

69 Environmental organisations have no other role in the implementation of forest policies and plans at the operational level. Pappila and Pölönen (n 32) 179–83.

70 The idea behind having the church as a member is to add plurality and increase and the legitimacy of the certificate in circumstances, where environmental non-governmental organisations are not participating.

71 Hujala, Pykäläinen and Tikkanen (n 13) 454–63; Primmer and Karppinen (n 13) 136–46.

72 Gunningham (n 3) 191.

regulatees, and the institutional features of regulation, we designed an empirical analysis aimed at answering the following questions

- How frequent is non-compliance with the regulatory obligations in relation to habitat conservation in Finland?
- What role do economic, social and normative motives play in compliance?
- To what degree do complexity, risk and knowledge explain compliance?
- What role do the institutional features of the regulation have in explaining compliance?

By answering these questions, we aim to identify the factors explaining compliance and non-compliance with habitat regulation in Finland and the needs and means for improving the enforcement system in place.

4. EMPIRICAL ANALYSIS

4.1 Materials and Methods

The data for empirical analysis consisted of: (1) all reports of Forest Act violations from when the Forest Act entered into force in 1997 up to May 2006, and (2) 13 thematic interviews with representatives of relevant forestry stakeholders. Combining the two different datasets was designed to follow the principle of triangulation,[73] in which simultaneous use of different sources and approaches allows making more reliable inferences in cases where the different analytical approaches produce similar results and therefore avoiding inferences that are likely to be false.

The violation report data gathered from all the 13 regional Forestry Centres included decisions on violations of habitat protection under the Forest Act made by the Forestry Centres and the district courts. To address the frequency and characteristics of violations in a quantitative fashion, we recorded: (1) the dates of the different stages of inquiry into the case, (2) what each authority decided in the case and (3) the factors that had led to the violation according to the different stakeholders from each violation case.

To address the motives, knowledge and institutional features, we conducted 13 thematic interviews with all stakeholder types relevant to the compliance assumptions. The interviews were carried out in August 2007, in order to assess the 10-year period that the Forest Act had been in force. The sample of interviewees included four civil servants from two regional Forestry Centres, two representatives of forest owner associations, one farmer-forest owner, three representatives of environmental NGOs and the environmental managers of three major pulp and paper companies. Following the ideas of qualitative research,[74] the sample was designed to capture the range of different factors affecting compliance and the ways in which they functioned. All major environmental NGOs and large forestry companies in Finland were covered. In line with other studies relying on interviews, the interview data were

73 Norman Denzin, 'Triangulation' in John Keeves (ed), *Educational Research, Methodology, and Measurement: An International Handbook* (Permagon 1988) 511–13.

74 David Silverman, *Doing Qualitative Research: Methods for Analysing Talk, Text and Interaction* (Sage Publications 2001) 5–16, 44–48, 117–124, 139, 189–201, 268–307, 387–392.

collected primarily to address issues that would not be recorded in the documents.[75] The interviews, each lasting approximately 90 minutes (ranging from 40 to 140 minutes), were recorded and transcribed. We analysed the transcribed interviews with the help of NVivo7.

4.2 Results

4.2.1 Frequency of violations and authority action

During the period between the adoption of the Forest Act in 1997 and May 2006, a total of 283 cases of potential violations of protected habitats were investigated by the Forestry Centres. Less than a third of these potential violations were reported to the prosecutor. Twenty-two cases were prosecuted and out of these, 15 resulted in a sentence. It is worth noting that although the Forestry Centre interpreted 176 out of the 283 cases to be violations, only 77 (27%) of these cases were reported. Out of the 99 unreported cases, the Forestry Centre interpreted the violation to be insignificant in 70 cases. In 12 cases, the violation was statute-barred. The remaining 17 remained unreported. Out of the 27% of investigated cases reported to the prosecutor, 29% resulted in a sentence. The criminal sanctions ranged between 3 and 30 day-fines.[76] By comparison, the average number of day-fines for driving a car without a licence is 26.[77] The number of investigated Forest Act habitat protection violations was small relative to the over 100,000 forestry operations carried out every year.

4.2.2 Unintentional reasons for non-compliance

In the interviews, lack of information, difficulties in identifying protected habitats and difficulties related to the interpretation of the law were identified as the main reasons for non-compliance. Many interviewees pointed out that the planners of forestry operations did not have direct access to the inventory data on Forest Act habitats, which made such planning more laborious.[78] Forest owners had received a notification about habitats located on their land, but they did not consistently deliver this to the person contracted to plan the operation.

75 Per Angelstam and others, 'Protecting Forest Areas for Biodiversity in Sweden 1991–2010: The Policy Implementation Process and Outcomes on the Ground' (2011) 45 Silva Fennica 1111; Saarikoski, Åkerman and Primmer (n 21).

76 In Finland, the amount of a day-fine is related to income. Hence, the number of day-fines indicates the seriousness of a crime, and the level of a day-fine is dependent on monthly income. The basic idea of calculating day-fine is as follows: first taxes, and certain tax-like payments are reduced from total monthly income. Thereafter, 255 € is reduced from what is left and the sum is then divided by 60. Finally, each underage child reduces a day-fine by 3 €. If income is 1500 € per month, taxes and tax-like payments 500 €, day-fine is 12 €. Hence for a person with 1500 € income and without an underage child, 3 day-fines would be 36 € and 30 day-fines 360 day-fines.

77 Rikollisuustilanne 2005, *Rikollisuus ja seuraamusjärjestelmä tilastojen valossa (State of Criminality 2005, Criminality and Sanctions in Light of Statistics)* (National Research Institute of Legal Policy 2006).

78 Despite the fact that information on habitat locations is public in nature, access to the database containing inventory information on habitats has been restricted by the forest administration due to privacy protection. On the critics of this practice see Pappila and Pölönen (n 32). They note that Forest Centre could give information on the sites with environmental values without disclosing the type of information on private individuals that would violate protection of privacy.

Many interviewees considered the identification of habitats protected under the Forest Act as problematic, particularly in the winter, when the indicator species are leafless and snow covers the ground. Difficulties were identified in determining whether the habitats were in a natural or near-natural state; and in determining the boundaries of the protected habitats. Definitions and determining the correspondence between legal definitions and the natural environment were considered the main difficulties in terms of complying with the regulation. The violations resulting from these difficulties were assessed to be due to deficient and indecisive guidelines from authorities, combined with the absence of information on habitat locations.

The quantitative analysis based on legal documents also pointed to a shortage of knowledge about habitats and legal definitions as the main reason for non-compliance; these were reported to be the reason for non-compliance in most of the cases. It was also common that actors interpreted the content of law in a different way to the authorities.

4.2.3 Economic reasons

The interviewees did not consider economic calculation to be a relevant motivation for non-compliance. Generally, violations were not considered to result from intentional, purposeful action. However, the environmental NGO interviewees suspected economic motivations as well as aspects of property rights to be the cause of some violations. Many interviewees made remarks about the occasional purposeful ignorance among land owners or other actors, but highlighted that these were rare exceptions.

Ignorance among the forest owners was not considered a problem since practical decisions about forestry operations were usually said to be made in cooperation with forestry professionals or were completely assigned to the professionals. Contrary to the assumption that forestry actors' ignorance or incompetence could be a reason for the violations, the interviewees underlined a high level of professionalism involved in forest management decision-making. The interviewees generally judged the professionals to have a high level of knowledge, and their organisations to follow a culture of adhering to and managing legal and other standards.

The high level of compliance was considered to rely on a general culture and system of compliance. The interviewees pointed out that civic duty and positive attitudes towards nature conservation supported adherence to the law. The professional pride of planners and loggers, peer-control and good practice were also considered to support lawful practice. According to many, the institutional setting of the forestry sector was one of the main strengths and reasons for low-level mistakes. Because the sector mainly functions through educated professionals working for a limited group of organisations, implementing change is considered easy and is seen to take effect in a more integrative manner than would be the case if every forest owner were to make decisions independently.

Most of the interviewees, again with the exception of two environmental NGO representatives, judged that the regulation as a whole was working rather well, although they identified some deficiencies. Information flow and coordination gaps as well as unclear definitions lacking in uniformity were considered important points

for improvement. The forest authorities and representatives of forest owner associations felt that new enforcement activities should focus on a better definition of protected habitats, more guidance to support compliance, and access to the information on locations of habitats for all actors involved in forestry.

4.2.4 Influence of international markets

All interviewees recognised that there was pressure in the international pulp and paper market for global corporations to comply with regulation. The representatives of companies claimed that their level of compliance would be high whether this pressure existed or not, whereas environmental NGO representatives considered global market pressure and the threat of market sanctions as the main reasons for companies to adhere to regulation. In any case, the representatives of the pulp and paper companies pointed out that they took care to ensure that the forests they buy timber from were managed in accordance with the law. The supply chain effect could even lead to over-compliance among companies, as they avoided buying timber from controversial areas, eg areas that were subject to protection campaigns. Despite this, the companies were reluctant to pressurise forest owners to follow higher standards than those confirmed either in law or by certification systems. Apart from this, at least one company that owned large areas of forest adopted higher standards in the management of its own forests than in other forests where its raw material came from. The corporate forests were used as showcases, with the idea that practices developed in these forests could be marketed to private forest owners who wished to manage their forests in an environmentally sound way, taking biodiversity and multiple use into account. The practical consequences of supply chain effects is relevant for compliance, although the forest certification system dominating the Finnish market does not require much more than the law does in terms of habitat conservation.[79]

4.2.5 Transparency

Although the identification of protected habitats is an obligation of the holder of logging rights, the authorities had gathered systematic (but incomplete) information of the habitats. This information was made available for forest authorities as well as forest owners. Some interviews pointed out that lack of general availability of this information has a negative impact on compliance, because it made it difficult, if not impossible, for environmental NGOs and authorities to control whether forest logging was occurring in the identified habitats. As the forest owners also had the information, they could pass it on to loggers or other stakeholders but this did not appear to be a systematic practice.

4.2.6 Enforcement styles

As pointed out above, the sanctions for violations appeared lenient. However, this was not considered a problem among the interviewees. Rather, they considered deterrence to occur through the reaction on the part of the regulator, regardless of the sanction. On this notion, two of the interviewed representatives of environmental NGOs took a different view to the rest of the interviewees. They felt that reactions

79 Pappila (n 34) 233–37, 251.

to violations were too lenient, and also suspected that violations were more abundant in number than the authorities knew or wished to admit to.

5. DISCUSSION

Our analysis of the documented violations and stakeholder interviews illustrates the factors contributing to compliance and drivers behind non-compliance in Finnish forest biodiversity conservation. Based on both our theoretical and empirical analyses, we now discuss ways of enhancing compliance with the regulatory obligations in relation to habitat conservation regulation under the Finnish Forest Act. We find that there have been only a few identified violations of law that have led to investigation and that only a handful of cases have been sanctioned each year. Our analysis demonstrates that the rare identified cases of non-compliance are generally unintentional, mostly caused by the difficulty in interpreting ecological conditions against the regulation. Lack of information on the locations of the habitats and difficulties in interpreting the criteria defined in law explain the reported violations to a large extent. We did not find any evidence that the level of fines or other economic reasoning would be a crucial factor affecting non-compliance.[80]

From our analysis, it appears that institutional features such as the characteristics of the decision-making procedure and the roles of those actors involved are the key explanations for the low level of documented violations. First, those making the crucial decisions concerning forestry operations and habitat delineation are typically not the same people who would receive the direct benefits from the breaches of law. Forestry professionals plan and carry out forestry operations, and the forest owners very rarely make the decisions on their own. As professional foresters would risk their career by violating the law without gaining any direct economic benefits from the breach, the incentives for bending the law are questionable. Furthermore, the interviews point to a sense of civic duty and a culture of adhering to legal rules among forestry professionals. This social norm can be considered to extend to forest owners as well, as the authorities and professionals possess significant legitimacy among forest owners and their communication with these actors is cooperative and consultative, rather than enforcing.[81] Thus, also normative and social motives seem to be behind the identified low non-compliance.

Second, those actors who have the largest reputational stakes do not seem likely to take the risks that come with breaching regulatory obligations. The major timber buyers (ie large pulp and paper companies) can attract significant negative attention if they buy from forests that do not meet the requirements of the law. This has a link to smart regulation through forest certification systems, which supports compliance with the law. The public violation of forest regulation is also a violation of forest certification rules and the major companies are committed to buying timber only from certified forests.[82] As our empirical findings point to a lack of intentional breaching

80 This is in line with observations found elsewhere. Kagan, Gunningham and Thornton (n 59).

81 Hujala, Pykäläinen and Tikkanen (n 13); Paloniemi and Vainio (n 60); May (n 46).

82 This is in line with other research, see eg E Carina Keskitalo and others, 'Local Consequences of Applying International Norms: Differences in the Application of Forest Certification in Northern Sweden, Northern Finland, and Northwest Russia' (2009) 14 Ecology Soc <http://www.ecologyandsociety.org/issues/view.php?sf=44> accessed 3 November 2013.

and highlight the reputational mechanisms that also support compliance, we can assume that the actors in the sector share an idea of professional social norms and self-control.

The generally coherent reasoning of interviewees is contradicted by the NGO representatives. They believe that the forest owners' profit-seeking motives for non-compliance are a true problem. Furthermore, they see hidden criminality in the sector as an issue. These suspicious views of the relatively closed sector are justified, but also seem distanced from the experience of those other interviewees directly engaged in forestry. While we cannot exclude the possibility that some individual forest owners intentionally breach the rules, the NGO views can be exaggerated in generalising the strategic non-compliance across all forest-owners. As the majority of forest owners have been found to not seek maximum profit from forestry,[83] and as there are compensation mechanisms in place, economic motives for intentional non-compliance are not obvious. However, even if the NGO views do not correctly reflect the compliance practice, they certainly point to legitimacy challenges for the forestry sector.

Another controversial issue is the role of transparency. The interviewees had clearly differing views regarding the availability of information of the geographical location of habitats protected under the Forest Act and the consequences of potentially making this information public. From a smart regulation perspective, the lack of transparency and limitations of the information flow are clear shortcomings of the Finnish forest planning and management system. The idea that third parties would function as 'watchdogs' does not appear to occur in circumstances where access to information is limited. However, our study indicates that compliance can be reached in some cases without the publicity of the documents. It seems that forest professionals, who plan and carry out forest operations in the Finnish system, have had strong motives to promote compliance with the law, even without direct public scrutiny.

This does not mean that increasing transparency and access to the information relating to forest habitats would not be a rational means for enhancing compliance. A public map of habitats would reveal the identification of habitats and the potentially unidentified habitats to true third parties, such as environmental authorities, land-use planners, local residents and NGOs. This would allow them to report the unidentified sites to the forest authority and forest owners.[84] Easier access to habitat information would also support the work of forestry professionals. As mentioned earlier, many interviewees pointed out that a lack of direct access to the inventory data on habitats made planning more laborious and missing information on the locations of the habitats was an important explanation for the reported violations.

6. CONCLUSIONS

The change in forest regulation in Finland since the mid-1990s portrays a general change in environmental regulation, with the establishment of new governance structures, using increasingly flexible legal formulations of obligations, and generally

83 Horne, Ovaskainen and Koskela (n 10).
84 Pappila and Pölönen (n 32) 179–83.

applying more reflexive regulation. As this type of regulation functions on the basis of state authorities sharing control and responsibilities with several public and private actors, it will affect the reasons for non-compliance and strategies aiming to ensure compliance. We conclude that in order to achieve compliance with modern environmental regulation, and biodiversity regulation in particular, the knowledge, motivations and ability of the regulatees should be the focus when analysing and developing compliance.

Our results indicate that the present regulatory approach is able to produce compliance. The rare cases of identified non-compliance were mainly due to a lack of regulatory or ecological knowledge. We did not find any evidence that economic motives would be a crucial driver for non-compliance. This has important consequences for choices regarding a compliance strategy.

Our results do not justify increasing the deterrence from the level it is currently at. The group of forest owners that have a non-chalant attitude towards habitat protection are a small minority that is already affected by the existing deterrence. In our view, making deterrence even stronger would not significantly increase compliance or the effectiveness of regulation. In fact, the opposite may be the case. Adversarial enforcement might weaken the high level of trust between forest owners and the network of professionals surrounding them, as highlighted in our results.

If we look into the institutional arrangements, we find knowledge, information and coordination to be the most important bottlenecks in improving the effectiveness of regulation of habitat conservation. Raising the level of knowledge about both ecological characteristics and legal requirements among those implementing the law would contribute to the effective implementation of regulation, and increasing coordination would ensure more uniform and sound habitat protection practice. Integrating these aspects in the education and training of foresters as well as sharing information among all relevant actors dealing with habitat delineation are suitable ways of improving informed decision-making.[85] Active communication and transparency of decision-making could be backed up by public access to information concerning the location of habitats. Allowing different stakeholders, eg nature conservation authorities, citizens and NGOs, to contribute to the gathering and use of information would also support compliance and the effectiveness of regulation. Hence, making the regulatory system more transparent would be a major improvement for compliance.

With regard to external control, we consider the forest certification system as a partial solution which improves compliance. To make it easy for all forest owners to participate in the main scheme, namely the Finnish Forest Certification System, the standards are only stricter to a minor extent than the legal standards. Making the standards stricter would mean fewer participants and this would weaken the role of certification supporting the compliance with law in general.

In sum, we propose the following combination for the promotion of compliance with regulation of nature conservation under the Finnish Forest Act: (1) building on a cooperative strategy by improving the knowledge base and sharing, (2) following a responsive regulation strategy by maintaining the existing deterrence and (3)

85 See also Primmer and Wolf (n 14).

applying true smart regulation through more ambitious institutional arrangements for engagement with new third parties, such as NGOs. We underline the importance of acknowledging the institutional setting in which regulatees are expected to comply with the law, in line with others who have studied implementation empirically.[86] Enforcement and compliance strategies should be chosen according to their suitability to particular institutional contexts.[87]

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86 Eg Burby and Paterson (n 3); Winter and May (n 3).

87 See also Gunningham (n 3) 201.