A Legal Method and Tools for Evaluating the Effectiveness of Regulation: Safeguarding Forest Biodiversity in Finland

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Abstract[*]

This article proposes improvements in the legal method and in particular the tools for evaluating the effectiveness of regulation. Finnish forest legislation is used as an example of how to identify the shortcomings in regulation on safeguarding biodiversity. The evaluation draws on concepts such as *lex imperfecta* and deficient and incoherent regulation to describe potential shortcomings. The gaps may induce implementation deficits, and thus decrease the effectiveness of regulation. Three categories of private forest landowners have been distinguished to illustrate that full voluntarism in policy instruments may lead to very different compliance results depending on landowners' attitudes. The evaluation tools presented, as well as the results of the evaluation itself, are considered in light of regulatory theory. The tools and conclusions elaborated may be used to aid in the evaluation of regulation in other countries.

Regulation, legal method, methodological tools, forest management, biodiversity, effectiveness, compliance.

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1 Introduction

In recent years, the evaluation of regulation and, in particular, of its effectiveness has become not only a political trend but also a fairly widespread practice. In this article, I put forward what I consider an improved legal method and tools for evaluating that effectiveness. While the need for improvement was originally identified in previous studies of environmental law in Finland, the method and conclusions suggested can aid in evaluating regulation in other countries as well. Safeguarding forest biodiversity is one example -- a case study -- of how the method and tools may be successfully applied.

'Effectiveness' is understood as the extent to which the policy goals (regulatory objectives) associated with a body of legislation are achieved.[1] For instance, the purpose of the Finnish Forest Act (FOA 12.12.1996/1093), as set out in section 1, is to promote

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[1] See e.g. M Hildén, J Lepola, P Mickwitz, A Mulders, M Palosaari, J Similä, S Sjöblom and E Vedung, *Evaluation of environmental policy instruments – a case study of the Finnish pulp & paper and chemical industries*, Monographs of the Boreal Environmental Research, 21 (Finnish Environment Institute), 2002.

economically, ecologically and socially sustainable management and utilisation of forests in order for forests to produce good output in a sustainable way while maintaining their biological diversity.[2] Thus, the first purpose (regulatory objective) is the sustainable use of forests; the second is maintaining biodiversity. In principle, the purpose of the FOA is to safeguard biodiversity from two different directions: on the one hand, it regulates actions, or forestry measures; on the other, it directly protects key forest habitats.

Forestry measures can affect biodiversity in two ways. Firstly, a measure may directly destroy a site with significant nature conservation values. For example, the immediate surroundings of springs, brooks and rivulets – all protected directly under section 10(2) of the FOA – may easily be cut down by accident during the wintertime. This kind of impact can be called a *direct effect*. Secondly, a forestry measure – or a combination of measures – may change the structural features of a forest, which in turn affects biodiversity. The harmful effects on biodiversity may appear in species, genes or ecosystems. This kind of effect is referred to hereinafter as *a structural effect.* The management of structural effects requires legal mechanisms that help to control 1) the fragmentation of forests, 2) changes in tree species, 3) changes in the age structure of forests, 4) decayed wood and 5) logging waste.[3]

Policy goals are often phrased in such general terms in the legislation that measuring their implementation is difficult, if not impossible.[4] What is more, the legislation may contain several divergent regulatory objectives. In this vein, *Hutter* has noted that there appears to be a different set of regulatory objectives when a law is used to regulate rather than prohibit behaviour.[5] For instance, sustainability in the FOA encompasses ecological concerns, but with economic and social aspects of sustainability also taken into consideration, the goal of safeguarding biodiversity in the Act is no longer so clear.[6] In Finland timber/wood production is still the primary purpose of economic forests. According to the preparatory work on the FOA, profitable forestry requires that private landowners' obligations with regard to biodiversity protection remain reasonable and that society fund the protection within the limits of forest legislation and provide guidance for protection.[7] Economically sustainable use is thus the strongest policy goal in the management of private forests.

The National Forest Programme (NFP) could clarify the purpose of the FOA to maintain biodiversity, yet it states that "the underlying principle is that manufacturing and service production based on forests and wood can be increased while maintaining the social acceptability, economic viability and ecological, social and cultural sustainability of the value chains of production from the forest to the market". Although it adds that "economically, socially and ecologically sustainable solutions will be used in forest management, following the internationally accepted ecosystem approach, to protect natural functions valuable to humanity and nature alike",[8] a clear imbalance can be

[2] See http://www.finlex.fi/fi/laki/kaannokset/1996/en19961093.pdf.

[3] O Honnay, K Verheyen, B Bossuyt and M Hermy (eds.) Forest biodiversity, *What history can teach us about present and future forest biodiversity* (CABI Publishing), 2004, 21. M Hildén, A Auvinen and E Primmer (eds.), *Suomen biodiversiteettiohjelman arviointi*, Suomen ympäristö 770 (Finnish Environment Institute), 2005, 172.

[4] J Tala, *Lakien vaikutukset*, Lakiuudistuksen tavoitteet ja niiden toteutuminen lainsäädäntöteoreettisessa tarkastelussa (Oikeuspoliittinen tutkimuslaitos 177), 2001. N Gunningham and P Grabosky, *Smart regulation* (Oxford University Press), 2004, 25.

[5] B M Hutter, *Regulation and Risk, Occupational health and safety on the railways* (Oxford University Press), 2007, 17.

[6] See more about sustainable development e.g. J C Dernbach, *Targets, timetables and effective implementing mechanisms: necessary building blocks for sustainable development*, William and Mary Environmental Law and Policy Review, vol. 27:79, 2002, 87-89.

[7] See Government proposal 63/1996, grounds for section 1 and general grounds for purpose of the FA.

[8] Government Resolution, *Finland's National Forest Programme 2015*, on 28 February 2008, 11. The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and

seen between the different goals of forest management. This discrepancy seems anyhow to be an expression about the breaking consensus in Finnish forestry policy[9]. So far international and EU forest strategies do not bring any clarity how to balance these particular issues in the national forest management.[10] However, a discussion of international policy falls outside the scope of this article. Moreover, both strategies are soft law instruments and the EU does not have competence in forestry policy[11]. Thus, the case study concentrates on Finnish forestry policy and forest legislation in particular.

Finnish national forestry policy thus includes divergent objectives without agreement on substantive environmental goals. *Dernbach* says that after agreement on the goals is reached, it will become reasonably clear that the cheapest, most effective instruments will be more than adequate, regardless of what they are.[12] But what are the most effective instruments? Even if the targets were defined very precisely, measuring their achievement would be difficult. Different evaluation criteria are required in order to find the optimal policy mix. The possible criteria include 1) effectiveness (contributing to the improvement of environmental quality), 2) cost efficiency (improving the environment at minimum cost), 3) equity (fairness in the burden-sharing among players, including inter-generational equity) and 4) political acceptance (including factors such as liberty, transparency and accountability).[13] This article focuses on the formal effectiveness of regulation as opposed to economic efficiency.[14] The case study presented draws on certain empirical studies of acceptability and ecological effectiveness. Thus, the study is in part concerned with legitimacy and compliance issues in practice.

The formal effectiveness of regulation depends on many factors: The design of regulation, its implementation by public authorities, and compliance with it all influence its effectiveness. Here, regulation must be understood in a broad sense that encompasses standard setting; monitoring and enforcement; sustained, reactive and informative oversight with reference to rules or provisions; intervention by public authorities to steer actions concerning the environment and the economy; and all types of policy instruments for social and legal control.[15]

The role of non-governmental organisations (NGOs) is also important when evaluating the effectiveness of different policy instruments in legal framework. NGOs, as well as public authorities, can protect conservation as a public interest, monitor enforcement of biodiversity protection or bring new

sustainable use in an equitable way; its legal roots lie in the Convention on Biological Diversity (the CBD). See e.g. R B Keiter, *Biodiversity conservation and intermixed ownership problem: from nature reserves to collaborative processes*, Idaho Law Review vol. 38, 2002, 317-323 and C Manson, Natural communities conservation planning: California's new ecosystem approach to biodiversity, Environmental Law vol. 24:603, 1994.

[9] J Donner-Amnell, T Rytteri, *Metsäsektorin hyväksyttävyys murroksessa?*Millä oikeudella? Luonnonvarojen hallinnan legitimiteetti, T Määttä and P Rannikko (Ed.), 2009, manuscript.

[10] *The Forest Principles* of the United Nations Conference on Environment and Development at Rio de Janeiro from 3 to 14 June 1992 and Council Resolution of 15 December 1998 on a *Forestry Strategy for the European Union* (OJ C56, 26.2.1999), 1.

[11] E Kasimbazi, *An international legal framework for forest management and sustainable development*, Annual survey of international and comparative law, vol. 2:1, 1995, 97. S Löytömäki, *Forests and the EU – Perspectives for the International Governance of Natural Resources and the Conservation of Biodiversity*, (The Finnish Forest Research Institute, research papers 914), 2004, 13-15. Ministry of Agriculture and Forestry, *EU:n metsäasiat - Suomen kannat*, (Publications 8), 2004, 33 and K Kokko, R Toivonen, P Pelkonen, M Mäki-Hakola, P Letto-Vanamo, R Enroth, T Ojanen and L Tahvanainen, *EU Competences in Forestry Policy* (Publications of Ministry of Agriculture and Forestry 6) 2006, 7-10.

[12] J C Dernbach (n6), 104.

[13] N Gunningham and P Grabosky (n4) 26, 30.

[14] Sometimes the word 'effectiveness' is defined as a concept encompassing two major dimensions: "formal" (judicial, political) and economic. TemaNord, *The Effectiveness of Multilateral Environment Agreements* – A Report (number 513) from a Nordic project, 1996, 5.

[15] N Gunningham and P Grabosky (n4) 4 and T Foley, *Using a responsive regulatory pyramid in environmental regulation*, QELA Conference Carrot, Sticks & Toolkits, 2004, 1.

approaches to the protection of forest biodiversity.[16] For example, new forms of public participation were used in the preparation of the NFP in Finland.[17] However, the role and participation of NGOs fall outside the scope of the present analysis, which focuses on testing certain legal methods and tools for evaluating effectiveness.

Factors which are not in any way related to regulation, such as changes in the economic environment of the regulated actions, may also significantly affect the degree to which policy or regulatory goals are achieved. The problem is known in evaluation literature as the impact problem.[18] Regulation is usually enacted in order to avoid certain risks to the environment and biodiversity. Impact problems related to causality between a policy goal and a regulated action are particularly apparent in the case of risk regulation. Forestry is assumed to be the most important factor affecting biodiversity in forests. Although the exact relationship between different forestry measures and the effects on biodiversity are not well known, the indicators describing the development of forest habitats show that forest biodiversity is diminishing in Finland.[19] Thus, it is economic motives rather than forestry regulation, implementation, or compliance that drive the sustainable or unsustainable use of forest biodiversity. For instance, in 2008 the Finnish government approved a new tax allowance for forest owners designed to increase the selling of timber and to lower timber prices for the forest industry. The allowance has stimulated economic activity that most likely will result in biodiversity loss in forests. It may function as a perverse incentive in the light of the regulative objective of maintaining biodiversity.[20]

Recognising the impact problem, the article will focus on the design of regulation and try to map the features in the design of legal regulation that are conducive to effectiveness. The design of the legal framework is important even in the case of voluntary incentive measures. Any economic incentive measure, whether geared to biodiversity conservation or another purpose, depends on the existence of an appropriate institutional and legal framework and the corresponding capacity to implement the measure.[21]

The Finnish regulation relevant to the protection of forest biodiversity is mainly set out in the Nature Conservation Act (NCA 20.12.1996/1096)[22]. The NCA, with the strict nature (areas, habitats and species) conservation it prescribes, is still the backbone of efforts to safeguard biodiversity in the country; while the forestry legislation maintains biodiversity mainly with voluntary policy tools. However, the NCA, as well as general land use (physical) planning, is beyond the scope of the present analysis.

All in all, biodiversity protection in forest management has shifted from reliance on a strict regulatory approach to trust in a voluntary one that primarily uses informative and economical guidance. Voluntary regulation leaves the ultimate choice of how to protect forest biodiversity to landowners and other such actors in forest management. The new METSO programme accepted by the Government of Finland

[16] D Clark, D Downes, *What price biodiversity? Economic incentives and biodiversity conservation in the United States* (Journal of Environmental Law and Litigation 9), 1996, 63-64. K Raitio, *"You can't please everyone" – conflict management practices, frames and institutions in Finnish state forests*, (University of Joensuu) 2008. K Kokko, *Ympäristöperusoikeuden evoluutio kirjallisuuden ja erityisesti korkeimman hallinto-oikeuden vuosikirjaratkaisujen valossa*, Oikeus kansainvälisessä maailmassa: Ilkka Saraviidan juhlakirja (Ed. M Aarto and M Vartiainen), Edita, 2008, 341.

[17] See E Primmer and S Kyllönen, *Goals for public participation implied by sustainable development, and the preparatory process of the Finnish National Forest Programme,* Forest Policy and Economics 8, 2006, 838-853.

[18] See e.g. E. Vedung, *Public policy and program evaluation* (Transaction publishers), 1997, 97-99 and J Similä, *Regulating industrial pollution* (University of Helsinki), 2007, 28.

[19] Hildén et al. (n3) 37–51, 171.

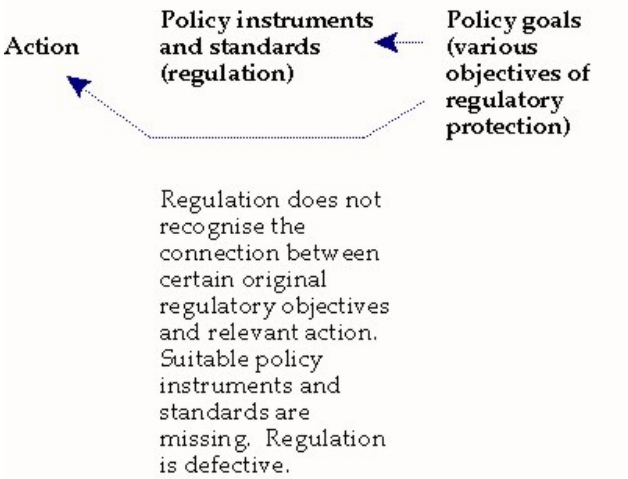
[20] I Bowles, D Downes, D Clark and M Guérin-McManus, *Economic incentives and legal tools for private sector conservation* (Environmental Law & Policy), 1998, 238.

[21] OECD, *Handbook of incentive measures for biodiversity*, Design and implementation, 1999, 63.

[22] See http://www.finlex.fi/fi/laki/kaannokset/1996/en19961096.pdf and e.g. J Similä, *Luonnonsuojelulaki* (Lakimies liiton kustannus), 1997 and J P Tolvanen, *Maankäytön luonnonsuojelullinen sääntely* (Lakimiesliiton kustannus), 1998.

is a clear response to the voluntary trend aiming to increase acceptance of forest biodiversity protection among private landowners.[23] The programme is an integral part of the National Forest Programme and aims with new policy instruments to improve forest biodiversity especially in Southern Finland. METSO and the Finnish Forest Certification System (FFCS), the most common certification system in the country, are taken up in the analysis below.

Figure 1: Defects in the regulation



The article is research completed as part of the project *Law, Forests and Biodiversity* (FORBID 2005-2008), funded by Academy of Finland. The project group has made extensive studies of the relevant legal framework in Finland and of legal innovations in other countries.[24] Innovations are needed because, as *Harte* has pointed out, the types of legal instruments developed to solve more conventional environmental problems may be inadequate for protecting biodiversity.[25] However, the present case study concentrates on existent forest regulation and aims to draw conclusions about its evaluation for a discussion of regulatory theory.

2 Basis for legal method and tools used

The analysis in this article is based partly on the existing Finnish legal literature.[26] At first glance, judicial research – as work on doctrine – is far removed from the above-mentioned process of evaluating legislation. It is thus no surprise that in national environmental law the evaluation of effectiveness is but one of a number of themes and is seldom addressed in its own right. The Finnish case differs from international environmental law in this respect.[27] Although a critical perspective, one casting doubt on the possibilities of using forest legislation to safeguard biodiversity, is familiar in Finnish jurisprudence, the effectiveness of legislation has not been expressly studied in environmental law. The earlier criticism in the literature concerning the legal implementation of objectives for safeguarding biodiversity (protection, sustainable use, non-degradation) has usually been based on two different arguments:

(1) The policy instruments and standards either wholly or partially fail to acknowledge links with

[23] Government Resolution, 27 March 2008, on the Forest Biodiversity Programme for Southern Finland 2008-2016 (METSO). P Horne, T Koskela and V Ovaskainen (ed.), *Metsänomistajien ja kansalaisten näkemykset metsäluonnon monimuotoisuuden turvaamisesta*, The Finnish Forest Research Institute, Research papers 933, 2004, 78-79.

[24] L Fromond, J Similä and L Suvantola, *Regulatory innovations for biodiversity protection in private forests - towards flexibility*, J Environmental Law vol. 21, 2009, 1-31.

[25] J Harte, *Land use, and ecosystem integrity: the challenge of preserving Earth's life support system*, Ecology Law Quarterly, vol. 27:929, 2001, 959.

[26] L Suvantola, *Huominen ei koskaan kuole. Luonnonsuojelun ja ympäristönkäytön konfliktitilanteen ratkaisemisesta* (Edita), 2006, K Kokko, *Biodiversiteettiä turvaavat oikeudelliset periaatteet ja mekanismit* (SLY 243), 2003, K Kuusiniemi, *Biodiversiteetin suojelu ja oikeusjärjestyksen ristiriidat*, (Oikeustiede – Jurisprudentia), 2001 and JP Tolvanen (n22).

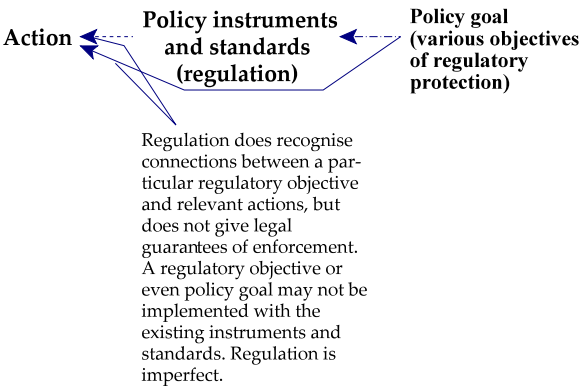
[27] P Sand (edit.), *The effectiveness of international environmental agreements* (UNEP, Grotius publications limited), 1992. In international environmental law studies, formal (judicial/political) effectiveness is assessed by asking whether, and how, treaty obligations may effectively be implemented at the national level and how the implementation may be verified. Thus, the concept refers first to the mechanisms set forth in the treaty to ensure its implementation and compliance and whether and to what extent these measures ensure the achievement of the treaty objectives. TemaNord (n14) 5.

relevant actions, including their effects on biodiversity. Thus, the regulation that includes the legally relevant mechanisms does not recognise the connection between a particular regulatory objective, in this case maintaining biodiversity, and the relevant action to that end. This discontinuity may also mean that the regulation in practice promotes interests other than the original objective of safeguarding biodiversity; in other word, other interests bypass the *ratio legis* in practice. (*Defects in the regulation, chapter 3.*);

(2) The policy instruments and standards[28] which are meant, among other things, to safeguard biodiversity do not function properly because the regulation in which the legal mechanisms are included has no -- or insufficient -- sanctions or other guarantees of implementation and enforcement. Thus, while the regulation recognises connections between the particular regulatory objective and relevant actions, it does not give legal guarantees of enforcement. (*Lex imperfecta, chapter 4.*)

These arguments open the door to improving the legal methods and tools for evaluating effectiveness.

Figure 2: Lex imperfecta



[28] Policy instruments such as permits, licenses, taxes and environmental impact assessments (EIAs) acquire their functional framework from legislation and are a part of the regulatory system for guiding relevant action. The implementation of policy instruments is usually somehow legally ensured in regulation.

3 Defects in the relevant regulation

The first argument concerns defects in the relevant regulation (see Figure 1). It does not mean a complete absence of regulation for fulfilling the policy goal, but only that the specific reasons for the loss of biodiversity are not regulated. One reason may be that some powerful policy goal behind the regulation has in fact eclipsed a particular weak regulatory objective to the extent that the policy instruments and standards, as components of the regulation, do not fulfil the weak regulatory objective. In fact, the argument means that there is a lack of instruments or standards for a particular regulatory target, in this case the legal mechanisms for safeguarding biodiversity. Defects in the regulation can be analysed by comparing the possible factors that negatively affect biodiversity with the logic of the regulation (*ratio legis*[29]) and the regulatory objectives.

What is the difference between a policy goal and a regulatory objective? A policy goal is usually divided into many regulatory objectives in the legislation. This division may mean that in practice some of the objectives are not met by the policy instruments and standards. For instance, a certain administrative mechanism may focus on protecting a private actor's basic rights, but the public authorities have no legal mechanisms to steer the actor's actions in practice toward a specified regulatory objective, for example, the ecologically sustainable use of forest habitat.[30] In this respect, the mechanisms, although the regulation exists, can be totally or partly incomplete or dysfunctional for purposes of achieving a particular legal aim, and thus cannot fulfil the criteria for formal regulatory effectiveness.

Section 11(1) of the FOA concerning *special permits* is a classic example of *deficient legislation* in Finland. Although the *ratio legis* of the subsection is to safeguard biodiversity, in particular certain key biotopes

[29] *Ratio legis* is, according to Barron's law dictionary, the underlying principle, reasoning, grounds, scheme, theory, doctrine, or science of the law.

[30] K Kokko (n26) 258–259.

in forests, special permits must be granted by the Forestry Centres in certain circumstances to landowners, among others, to carry out management or utilisation measures that minimise their losses from conservation. Thus, consideration of the permit is based only on avoiding significant financial losses to the landowners; it essentially no longer takes into account the protection of biodiversity as a regulatory objective.[31] Although it is possible in practice to impose some limitations on management through the permit provisions, the framework in which permits are considered should be more clearly expressed in the legislation in order to avoid shortcomings such as that noted here.[32]

4 Lex imperfecta

4.1 Background

The second of the arguments in the legal literature concerns what is often called *lex imperfecta* (see Figure 2), which is law or regulation that lacks backing by sanctions, incentives or mechanisms of enforcement and thus may entail problems of non-compliance.[33]

Lex imperfecta may in principle fulfil certain regulatory objectives or policy goals but it does not offer any legal guarantees of their being fulfilled in practice. *Lex imperfecta* can be identified by looking at the regulatory objectives and at the regulation as whole and how it is intended to work with various policy instruments and standards. The preparatory works usually mention the policy goals of regulation. If the real purpose of legislation is only to indicate the direction of desired behaviour without sanctions, it may be implemented as *lex imperfecta* deliberately, with informative guidance, and social or moral norms compensating for the shortcomings. However, where *lex imperfecta* has no such purpose, it may lead to serious problems with regard to the effectiveness of law.

4.2 A legal framework with informative guidance

The first suspicion that *lex imperfecta* has been used on purpose and that it is not then a real tool for evaluating the legal framework arises when one observes that regulation is based on mainly informative and economic guidance. I address this question in the following two sections.

The FOA includes a general obligation (Sec. 10.1) according to which forests must be managed and utilised so as to ensure the overall prerequisites for the preservation of habitats characteristic of the biological diversity of the forests. Although the wording of this provision is formulated to be binding, the provision itself seems to have little practical relevance. Even in the government bill proposing the FOA, the provision was understood as a general principle concerning the use and management of forests, one with no mechanism to implement or enforce it.[34] Hence, it is very much an instance of *lex imperfecta*. Many legal scholars consider that, being a general principle, the provision cannot in itself impose obligations on forest owners, and that actions out of keeping with the provision can cause no reaction on the part of the authorities.[35] Thus, it is not surprising that according to section 9(1) of the Forest Decree (the FD 1200/1996), a forest use declara-

[31] K Kokko (n26) 254–259.

[32] According to section 11(1) of the FA, if fulfilling the obligations referred to in section 10(3) causes a reduction in forest yield or other financial loss which is not insignificant to the landowner or the holder of the right of possession or other special right, the Forestry Centre must, upon application by the landowner or holder of the special right, grant permission to carry out management or utilisation measures in a way that results in minimum losses to the party in question.

[33] Traditionally, regulation which does not include sanctions is called *lex imperfecta.* See e.g. K Makkonen, *Zur problematik der juridischen entscheidung*, 1965, 74. If an imperfect regulation is somehow violated, authorities do not have any way to react to the violation. Thus, e.g. K Makkonen, *Oikeudellisen ratkaisutoiminnan ongelmia* (SLY), 1981, 92-95, unlike some other authorities, e.g A Alanen, *Yleinen oikeustiede*, 1948, 34, considers that such a regulation is not in fact a legal but more of moral norm.

[34] Government Proposal (HE) 63/1996, 32.

[35] J Similä (n22) 127, J P Tolvanen (n22) 371–372, M Pappila, *Metsien sääntely ja biologinen monimuotoisuus* (SYS), 1998, 144 and K Kuusiniemi, *Biodiversiteetin suojelu ja oikeusjärjestyksen ristiriidat*, Oikeustiede - Jurisprudentia, 2001, 553–584.

tion, which is the main vehicle for controlling felling operations, must only provide information concerning habitats of special importance, not information related to the general principle. This information is not needed because there is no use for it in enforcement.

What then is the significance of section 10(1) of the FA? The provision can be viewed in at least two ways. Firstly, it may influence the interpretation of section 6(1) of the FOA: if the site where felling is to be carried out is important in terms of safeguarding forest biodiversity, the landscape or the multiple use of forests, felling may be carried out in a manner required by the special nature of the site. It may provide more reason to take biodiversity into account over other values in felling. Secondly, the provision offers guidance to forestry centres in laying down the regional target programmes for forestry, granting environmental support or giving guidance to forest owners.[36] In this respect, it also relates to the guidance on how to avoid harmful structural effects. The provision may thus have indirect effects on forest owners, but it does not impose any duties on them[37], whereby its direct legal effect on them is *defective*. Section 10(1) of the FOA does not provide actual policy instruments and standards for managing and utilising forests in order to safeguard biodiversity. It clearly respects landowners' basic rights, but does not provide concrete safeguards for nature and its biological diversity, which, according to section 20 of the Constitution, is the responsibility of everyone (all Finnish citizens and other persons under Finnish jurisdiction).[38]

Forest planning in Finland is a type of informative guidance without legal effects. As such a tool forest planning could reduce harmful structural effects on forest ecology; however, the planning system is more relevant to economic than ecological sustainability. In formal terms, regional target programmes for forestry do not have legal effects[39] on the plans and actions of forest owners operating on individual holdings. Furthermore, they do not indicate exactly where biodiversity values lie. Since the programmes only describe the features of forests in the given area generally, the programmes are instances of *lex imperfecta*. There are no sanctions or other legal consequences to ensure that forest owners will in fact comply with the programmes.

The forestry management plans (fi *metsänhoitosuunnitelma*) made for or by order of forest owners are voluntary, but are in practice important tools for management, which can stress different interests in different forest areas.[40] Plans can, for example, include information about forest habitats of special importance. However, again no legal or even no economic sanctions ensue from forest owners' decision to dismiss the drawn up plans as long as their actions are within the limits set by forestry legislation (obvious shortcomings in the forest management cannot be observed) and according to good forest management and use practices[41]. Another question is how well these plans are coordinated with neighbouring planning areas.

All in all, forestry planning in Finland is informative guidance without any backing by legal or economic sanctions. Different types of landowners may use their forests very differently depending on their private interests. In the legal sense, compliance and the effectiveness of the planning for safeguarding biodiversity continue to lack any guarantee (*lex imperfecta)*.

Neither the observation of defects in regulation nor the identification of regulation as *lex imperfecta* means automatic non-compliance. In Finland successful

[36] Government Proposal (n34), 32 and e.g. M Pappila (n35), 145.

[37] M Kiviniemi, *Metsäoikeus* (Metsälehti kustannus), 2004, 301.

[38] K Kokko (n16) 316.

[39] J Salila, *Metsäalueen oikeudellisesta asemasta* (SLY), 2005, 255.

[40] J Salila (n39) 256.

[41] See Forest Association Management Act 10.7.1993/543 section 10 (http://www.finlex.fi/fi/laki/kaannokset/1998/en19980534.pdf) and Supreme Administrative Court case 2003:44.

informative guidance seems to correct bias in legislation. Indeed, such guidance is no doubt the main approach in Finland to handling the structural effects of forestry.[42] For instance, education and drafting recommendations for sustainable forestry are what are known as the "promotion tasks"[43] of the forestry centres. Informational guidance may describe how to save dead and decaying trees in a felling operation, for instance. Recommendations given by using the general legal competence of the agencies are clearly intended as no more than *lex imperfecta*. Nevertheless, recommendations and other such guidance do have an influence on the behaviour of forest owners. In fact, previous research has indicated that recommendations and advice services have an impact on forest owners' behaviour[44], but do not necessarily mean significantly better results in safeguarding forest biodiversity. Thus, the advice services should still be improved in many ways.[45]

The conclusion to be drawn here is that *lex imperfecta* may lead to a situation where private forest owners do not get legal support from forest legislation to protect biodiversity beyond the minimum standard of social norm embodied in forest management practices. Moreover, owners do not necessarily have even information about such a possibility in forestry planning. This problem has also been noted in the new METSO programme: "Private forest owners are setting increasingly wide-ranging objectives for the management of their forests. This means that the scope of forestry plans for the forest holdings must also be expanded. One new option is for plans to emphasise the biodiversity objectives set out in the METSO Programme. Such nature management plans drafted on the commission [initiative] of the forest owners aim to harmonise other uses of forests with the safeguarding of their biodiversity."[46]

Another voluntary approach to maintaining forest biodiversity in private owner's forest management is to obtain certification under the Finnish Forest Certification System, which is a group certificate. About 95% of the Finnish forests in economic use are certified under the FFCS. The FFCS comprises the common elements of forest certification: the requirements for forest management and use, chain of custody certification, and qualification criteria for external auditing. The system demands that the special features of some valuable habitats be preserved. It partly overlaps with other policy instruments; in fact, empirical research has shown that the ecological effects of the FFCS have been small because it does not contribute much to forest management compared to the requirements of forest and nature conservation legislation.[47] The fact that retention trees are saved in cuttings is perhaps the system's most important contribution.[48] The system is an instrument based on self-compliance and its enforcement is usually backed up only by possible economic loss to the landowner. Thus, the FFCS is a *legally imperfect* way to control the actors and it is also questionable how well the economic sanctions protect against

[42] Except for environmental assessment, there is no single instrument expressly intended to govern structural effects. See Act on Environmental Impact Assessment Procedure (468/1994) section 4, which states: "The procedure shall be applied according to the Decree on Environmental Impact Assessment Procedure (268/1999) section 6 paragraph 1 subparagraph 2e permanent alteration of natural forest, peatland or wetland over what can be considered a unified area above 200 hectares in size, by carrying out new ditching or by draining unditched peatland and wetland areas, by removing the tree stock permanently or by replanting the area with tree species not indigenous to Finland." Thus far the sections of the Act and the Decree have not been adopted in practice.

[43] The Act on Forestry Centres and the Forestry Development Centre Tapio (18.12.1995/1474) section 1a.

[44] M Kurttila and H Hänninen, *Family forest owners' knowledge with respect to obligations and recommendations fostering biodiversity in forest management, Small-scale Forestry in a Changing Environment*, Proceedings of the International Symposium IUFRO, May 30 - June 4, 2005, 290-298.

[45] H Hänninen and M Kurttila, *Metsäluonnon moni muotoisuusneuvonnan vaikuttavuus ja kehittämistarpeet*, (working papers of the Finnish Forest Research Institute 57), 2007, 52–56.

[46] Government Resolution (n23) 4.

[47] A Nieminen, *Metsäsertifioinnin ekotehokkuus* (working papers of the Finnish Forest Research Institute 39), 2006, 3, 57.

[48] J Siitonen and M Ollikainen, *Talousmetsät*, Metson jäljillä (ed. P Horne et al.) 2006, 57.

potential abuse by individual actors operating under a group certificate.

How can informative guidance in forestry have any influence if its legal framework is so weak? One reason for the fairly good compliance may be that institutions and actors in forestry regard recommendations and other informative guidance as social norms, which although not legally binding in practice, compensate for the weakness of the legal framework. At the same time, different kinds of subsidies may guide owners to practice sustainable forest management even without legal backing. However, the problem in particular compliance is that the key issue in the operational strategy of the institutions and actors[49] is economically sustainable forestry, not the safeguarding of biodiversity as an aspect of ecologically sustainable forestry.

4.3 A legal framework with economic guidance

In Finland subsidies are used to promote safeguarding of forest biodiversity beyond the minimum standards set by forest legislation. The most important tool in this respect is environmental support.

Before approving the FOA, Parliament stated that the primary means to protect forest habitats of special importance mentioned in section 10(2) is *environmental support*, which is described in section 19 of the Act on the Financing of Sustainable Forestry (AFSF 1094/1996).[50] Thus the permit provided for in section 11 (1) of the FOA is an exception and it is to be used only as a last resort. However, in the administrative practice of forest centres, forest owners usually are free to choose which of the policy instruments they primarily use.[51] Section 5, paragraph 2 of the new Financing of Sustainable Forestry Act (FSFA 544/2007) will not amend this practice.[52]

The receipt of environmental support is based on voluntary agreements that are usually made for 10 years at a time, after which all of the duties and rights set out in the agreements cease directly by law if new ones are not made.[53] This practice seems to continue under the new FSFA, although it critically compromises the safeguarding of biodiversity: If a new agreement is not reached after 10 years, protection of nature according to the agreement does not continue either. An improvement in protecting biodiversity would be to have the agreement continue automatically after the 10-year period if neither side has served notice of termination. A new landowner might be allowed to terminate at all events the agreement within six months after the transfer of property rights, as provided under the current legislation.[54]

A landowner may cancel the agreement whenever she/he wishes to during the ten-year period after returning the pro-rated portion of the original compensation received plus a 10 per cent surcharge.[55] The surcharge is not really a sanction but interest on what has been a cheap loan to landowner, although in practice this conclusion is not so straightforward[56]. In any case, the civil sanctions should be strong enough to ensure the agreed protection of biodiversity; otherwise

[49] See E. Primmer, *Biodiversiteetin turvaamisen asema organisaatioiden strategioissa ja toiminnassa – normit, rakenteet ja osaaminen* (Metsätieteen aikakauskirja 2) 2006, 309.

[50] Parliament's reply 209/1996, 1. (In Finnish: "Ettei metsälain 11 §:n poikkeusmenettelyä sovelleta siten, että kestävän metsätalouden rahoituksesta hyväksytyn lain mukaiset tukitoimenpiteet sivuutetaan vaarantaen metsäluonnon monimuotoisuudet turvaaminen.")

[51] See Kiviniemi (n37) 319. From 1997 to 2002, 179 permits were applied for under section 11 of the FOA.

[52] Government Proposal 177/2006, 30. According to section 11 (2) of the FA, permission may not be granted if sufficient support from state funds under section 19 of the Act on the Financing of Sustainable Forestry (AFSF 1094/1996) or otherwise has been granted or will be granted for the measure in question. Section 16 of the new FSFA will substitute section 19 of the AFSF.

[53] FSFA, section 16, paragraph 4 and Government proposal 177/2006, 41. Decision of the ministry of agriculture and forestry on the environmental support of forestry, section 8.

[54] FSFA, section 37, paragraph 1.

[55] FSFA, section 37, paragraph 2.

[56] Simple example: the subsidy is 10, 000 €/ 10 years. The landowner cancels the agreement after 5 years and returns 5500 €, meaning that he or she has had a 5000 € loan at 2% contractual interest/year.

the result is *lex imperfecta* and the landowner's changed attitude or other impact problems can jeopardise the intended protection. The economic values of forests are still the main interests for forest owners.[57] The risk that implementation will fail is greatest in the areas where landowners have applied for environmental support only because of the obligations imposed by the FOA or where they are timber-market oriented and do not see any special nature conservation values in their forests[58]. The private forest owners in *Karppinen*'s categorisation (multiobjective owners, recreationists, self-employed owners and investors) probably fall mainly into the groups 'self-employed owners' and 'investors'.[59] Thus the subsidy with the agreement framework may have impact problems and may open up the unwelcome prospect of speculative nature conservation.

Moreover, a critical situation would arise when a landowner violates the agreement by treating a target area harmfully and the forestry authorities want to dissolve the agreement. Once an agreement is dissolved, it no longer guarantees protection of the target area at all, whereby the parts of the area that have not yet been treated by the landowner are also at risk of being harmed. Thus, cancellation of the agreement should not occur without serious negotiations between the parties or proper consideration of all other ways of solving the problem.[60] In such a case, application of the administrative proportionality principle in favour of the landowner may also protect forest biodiversity. Claims for recovery of environmental support are also problematic from the standpoint of safeguarding biodiversity in the target area. If a claim is made automatically without considering what is reasonable for landowners under the circumstances, all categories of landowners may lose their remaining motivation to continue protecting the area. However, when the claim is considered justifiable it should be in fact effective. Generally, without a proper penalty or other sanction recovery is only recouping a loan from a landowner who has violated the support agreement on purpose. In itself it is not really an effective sanction with a preventive effect on the landowner's behaviour.

Civil liability in agreements thus does not automatically function in the best possible way for protection of biodiversity. Authorities cannot concentrate simply on the legal relationship between the parties, but must also consider the effects on the area covered by the agreement. Thus, what is known as the biodiversity safeguarding relationship should also be taken into consideration. The relationship is legally relevant and is included especially in policy instruments relating to nature conservation legislation.[61] It is important to realise that applying solutions here that are customary in contractual relations may have a harmful influence on forest biodiversity. In the light of the formal effectiveness of regulation alone, the environmental support agreements considered here are not, without the aid of the traditional nature conservation instruments, an adequate solution for safeguarding forest biodiversity.

The METSO programme aims to provide an understanding of the new kinds of voluntary economic instruments and their function. The instruments being developed include trading in natural values, this is a procedure whereby a landowner or his or her authorised representative enters into an agreement to maintain or improve the specified natural values of the forest parcel and in return receives a regular payment from the 'buyer' of these values, for example, the state or a forest conservation foundation. The

[57] H Kumela and T Koskela, *Metsänomistajien näkemyksiä luonnonarvokaupan ja sen sopimusehtojen hyväksyttävyydestä*, Metsätieteen aikakauskirja 2, 2006, 268.

[58] See M Äijö, *Metsänomistajien suhtautuminen ympäristötukisopimuksiin Pirkanmaalla*, Pirkanmaan metsäkeskuksen tiedote 1, 2005.

[59] See H Karppinen, *Values and objectives of non-industrial private forest owners in Finland*, Silva Fennica 32(1), 1998, 43–59.

[60] See FSFA section 35 paragraph 1.

[61] K Kokko (n26) 73-83 and K Kokko, *Biodiversity Law*, in publication, Working Papers of the Finnish Forest Research Institute 1 (ed. P Horne & T Koskela), 2004, 160.

agreement may define areas within which the owner is required to maintain a rare species or elements essential to biodiversity (e.g., dead and decaying trees). [62] In the test trading area of the province of Satakunta, 65 per cent of protected habitats were rich decayed tree stands.[63] The new METSO programme aims to use ecological site selection criteria to increase the variation in such a protection.[64] However, the idea of trading has encountered some difficulties, as it clashes with EU provisions on state aid and its enforcement is thus far unsure.[65]

Economic policy instruments are not ecologically effective if the protection they provide does not continue when the agreement periods end[66] or if, for some reason, for example, the preferences of new landowners, agreements are dissolved during the period. Thus, the risk of 'implementation deficit', to be taken up below, should be carefully considered. It is also important to give sufficient thought to how these instruments will impact the overall regulatory strategy for safeguarding forest biodiversity[67] and how to find a suitable and meaningful policy mix to achieve particular ecological objectives.

On balance, the above analysis of deficient regulation and *lex imperfecta* shows that informative and economic guidance for safeguarding forest biodiversity from structural and direct effects do not provide strong legal guarantees. Is there then need for stricter regulation? The observation should not be the sole justification for new forest regulation. There may be a number of reasons why new regulation should not be enacted, even though no such regulation exists or the existing regulation is imperfect. New regulation may result in costs and other side-effects. It may also lower the perception of legitimacy among the target actors of particular regulation.[68] Thus, the net benefit of possible new regulation must be seriously scrutinised before its adoption. However, forest owners may need better guarantees of legislation that will safeguard their rights if they want to protect forest biodiversity at a standard higher than that required by conventional forest management. Here, too, the legal framework for economic guidance and, for example, environmental subsidies or nature value trading agreements should be clear enough.

Evaluation at this stage reveals the deficiencies in regulation, which may be intentional or not. *Tools for analysing the defects in regulation* and *for identifying lex imperfecta* may both also be useful in the implementation of international agreements[69] or EU legislation, and can be used without the support of empirical research. Thus, analysis of the deficiencies of regulation may provide useful insights into its development in cases where amendments are needed. It is also possible to analyse informative and economic instruments as parts of legislation. However, when using these methodological tools, the regulation analysed must be set in the wider context of the legal system and regulatory regimes and the coherence of the legislation must be examined as well.

5 Consistency tool

The coherence of policies, regulatory regimes or, in this case, legislation may also be the focus of evalua-

[62] Government Resolution (n23) 7-8.

[63] M Mönkkönen and E Primmer, *Uudet Keinot*, Metson jäljillä (ed. P Horne et al.), 2006, 96.

[64] Government Resolution (n23) 8.

[65] If the trading is connected with environmental support, the compensation from the protection cannot be more than 100% of costs plus the economical loss, which usually means less than 200 euros per hectare per year. Thus, the possibilities of free trading are limited in advance. For more detail, see European Commission 13.II.2008 K(2008)460.

[66] M Mönkkönen and E Primmer (n63) 95.

[67] N Gunningham and P Grabosky (n4) 13–14.

[68] E Romstad, B Kriström and J Sumelius, *Environmental conflicts – the role of economic instruments*, (TemaNord 517), 2003, 15, 48. See also P Horne, T Koskela ja V Ovaskainen (ed.), *Metsänomistajien ja kansalaisten näkemykset metsäluonnon monimuotoisuuden turvaamisesta*, Metsäntutkimuslaitoksen tiedonantoja 933, 2004, 76.

[69] P H Sand (n27) 25 and TemaNord (n14) 6.

tion without empirical material.[70] In Finland felling is possible after making a forest use declaration in accordance with section 14 of the FOA, with this then notified to the regional forest centre. The centres inspect the declarations and may use the opportunity to prohibit the measure pursuant to section 16 (Prohibition of the treatment) after the negotiations prescribed in section 15 (Negotiation obligation) if the measure violates characteristics of habitats of special importance or is otherwise in conflict with the Act. Landowners may apply for a special permit to treat habitats of special importance in a manner contrary to that set out in section 10. There are also environmental subsidies available if protecting a habitat in a particular situation proves too expensive. If the forest centre does not react to the forest use declaration, the felling can be carried out, but the landowner or feller is still responsible for any acts contrary to the forestry legislation. The analysis to follow of a valid policy mix for safeguarding biodiversity quite obviously concludes that the regulation *is not coherent*. Thus, traditional doctrine, or legal dogmatics, can provide an excellent background for the evaluation of legislation or regulation that uses different legal mechanisms. The legal studies tradition also helps to understand the difference between defects in regulation and failures in administrative practice.

A deeper understanding of the logic of law or regulation helps to correct some legislative drafting problems and serves to complement empirical evaluation. The coherence or consistency of legislation is a way of analysing the effectiveness of regulation (*consistency tool*) if only we remember that the logic of the regulation is one among a number of factors; implementation and enforcement difficulties – not to mention the impact problem – may also reduce effectiveness.[71] It is possible that a policy objective will not be achieved even with consistent legislation if implementation or enforcement is unsuccessful for some practical reason. *Westerlund* has described the first phenomenon using the term 'implementation deficit'.[72]

The hypothesis of implementation deficit presumes that during the steps of implementation, the policy is never fully realised. It is a useful tool in understanding that the goals of legislation and regulation in themselves should be sufficiently ambitious. In practice, there are many reasons why people and other relevant actors disregard legislation. Regulations are sometimes unclear, and the actors may not have sufficient information about the objectives of the regulation and about the rights and duties it establishes. Sometimes, the private actors' risks of being caught are too small, and the sanctions for illegal actions too light, with the result that although public authorities implement regulation through administrative decisions, final enforcement of the decisions in the case of a single actor is unsuccessful.[73]

Westerlund's hypothesis describes top-down policy implementation, which only partly applies to Finnish forestry regulation.[74] In principle, forest legislation allows forest owners to be key actors in the legal sense. In practice, forest owners usually delegate their authority to professional forestry institutions and actors and follow their and the public authorities' instructions (informative guidance). In fact, the only mechanism to protect biodiversity that is backed by legal sanctions under the FOA is the protection of habitats of special importance. Seven listed habitats

[70] P H Rossi, H E Freeman and M W Lipsey, *Evaluation: A Systematic Approach*, (SAGE Publications, Thousand Oaks), 1999.

[71] J Tala, (n4) 264–265.

[72] S Westerlund, *Perspective*, Håndhævelse af miljølovning (ed. E M Basse), (Gadjura), 1997, 308-309.

[73] J Tala (n4) 301.

[74] In general, the model is not suitable with instruments such as the environmental impact assessment (EIA) that allow for with public participation , which makes a bottom-up approach possible in implementation. See also K Eckerberg, *Environmental protection in Swedish forestry* (University of Umeå), 1987, 7-16. The opportunity to process an EIA in forestry projects has not been used. See I Pölönen, *Ympäristövaikutusten arviointimenettely – Tutkimus YVA-menettelyn oikeudellisesta asemasta ja kehittämistarpeista ympäristöllisen vaikuttavuuden näkökulmasta* (SLY), 2007.

are protected, assuming they are in a natural or near natural state and clearly distinguishable.[75] This protection does not mean complete prohibition of forestry activities in or near the habitats, but requires that forestry operations be carried out so as to preserve the special features of the habitats. Since the legislation does not require authorities to designate the protected habitats, it is the obligation of forest owners and operators to first identify the habitats and then decide what measures can be carried out without destroying the special features. Forestry centres only monitor the treatment and, where necessary, refer the matter to a prosecutor pursuant to section 22(1) of the FOA.

Table 1. Reasons given by actors for illegal actions (from Fredrikson)*

Reasons	Forest owner	Contractor	Planner of measure
Habitat has not been observed	22	24	11
Ignorance of the content of legislation	13	-	-
The actor thought that the habitat did not fulfil the criteria in section 10	22	15	14
Economic or technical difficulties	2	-	-
The actor thought that the demands were were fulfilled	5	16	7
Human error or error in communication between parties	-	10	3

*Not all the actors fit into just one category. In three cases, contractors had received direct orders from forest owners to handle the habitats in a particual way. In these cases, the forest owners' negligent instructions were thought to be the actual reasons. J Fredrikson, *Skyddet av skogslagens särskilt viktiga livsmiljöer*, the Finnish Environment 19 (Finnish Environment Institute SYKE), 2008, 47.

The open nature of the regulation on habitats of special importance leaves various issues to be decided case by case, such as the identification of habitats, the designation of their exact boundaries and definition of special features, and the forestry measures that could destroy them. This flexibility is probably the reason why habitat protection has been accepted among private landowners and such extensive protection (about 60,000 hectares, 45 per cent of the protected forest land in Southern Finland)[76] has been possible. But is the habitat protection ecologically effective? Without answering this question directly, it can be said that the FOA leaves room for various interpretations, and ignorance of section 10 and its obligations is still a problem in practice (see table 1).

Empirical research in Lohja shows that the regional forest centre has designated fewer than 10 per cent of the areas that meet the criteria of the FOA as habitats of special importance (FAH).[77] According to *Pykälä*, the small size of the key habitats was the main selection criterion rather than their important features not only in Lohja but elsewhere in Southern Finland. Thus, the implementation of habitat protection as prescribed by the FOA appears to be unsuccessful. *Pykälä* supposes that this failure is probably caused by some combination of the following: (1) insufficient implementation of biodiversity targets in managed forests, (2) the shortage of biodiversity expertise in forestry organisations, (3) the lack of clear definitions in the implementation of the Forest Act, and (4) management instructions allowing deterioration of FAHs. The main

[75] According to section 10(2) of the FA, habitats of special importance for forest diversity are:
1) the immediate surroundings of springs, brooks, rivulets constituting a permanent water flow channel and small ponds;
2) herb-rich and grassy hardwood-spruce swamps, ferny hardwood-spruce swamps, eutrophic paludal hardwood-spruce swamps and eutrophic fens located to the south of the Province of Lapland;
3) fertile patches of herb-rich forest;
4) heathland forest islets in undrained peatlands;
5) gorges and ravines;
6) steep bluffs and the underlying forest; and
7) sandy soils, exposed bedrock, boulder fields, peatlands with sparse tree stand and flood meadows which are less productive than nutrient-poor heathland forests.

[76] Ministry of Agriculture and Forestry, *Metsälain erityisen tärkeät elinympäristöt, kartoitus yksityismetsissä*, leaflet, 2004, 5.

[77] J Pykälä, Metsälain erityisen tärkeät elinympäristöt ja luonnon monimuotoisuus – esimerkkinä Lohja, The Finnish Environment 32, 2007, 46.

objective of forestry organisations is to secure a timber supply and goals conflicting with this aim, such as biodiversity preservation, may be neglected.[78] The result seems to be in line with the legal analysis presented earlier in this article. *Hanski* as well expresses doubts as to whether habitat protection measures will at all benefit the ecologically more specialised species, although the actions do increase the quality of forest landscape for many species.[79]

In fact, the only obligation in the FOA for forest owners with regard to safeguarding forest biodiversity is that found in section 10(3). It provides that if the habitats referred to in subsection 2 are in or resemble a natural state and are clearly distinguishable from their surroundings, the management and utilisation measures affecting them must be carried out in a manner which preserves the special features of the habitats. The obligation in this provision is not very clear, and its interpretation is difficult. The need for the interpretation is usually at hand when violations of section 10(3) are investigated and after that charges are brought pursuant to section 18(2) of the FOA. In practice it is also difficult to show that a person deliberately or negligently carries out a management or use measure directed at a habitat of special importance contrary to section 10 or to a provision or regulation issued under it, or without permission or contrary to the condition on permission in section 11 as set out in section 18(2) subparagraph 4 of the Act.

How these flexible norms can lead to criminal responsibility and how the responsibility can be apportioned between forest owners and other actors in a harvested forest area have been also difficult questions in the courts. Moreover, there is no uniformity in legal praxis.[80] In practice, enforcement of criminal sanctions is not particularly complicated if the habitats are mapped or if the landowner has asked for advance information in accordance with section 14c of the FOA,[81] but the latter is rarely the case in court. With section 11(2) stating that the permission may not be granted if sufficient support from state funds has been granted or will be granted for the measure in question, and thus opening the way to economic guidance, assigning criminal responsibility based on the flexible norms can be even more complicated. The conclusion is that the forestry regulation is not *consistent* with criminal regulation and thus may lead to implementation deficits and the ineffectiveness of forestry regulation in safeguarding biodiversity. In fact, empirical research shows that the probability of receiving a sentence for a violation of section 10 of the FOA varies from one part of the country to another.[82]

Although the regulation is not coherent, it seems to function reasonably well where compliance is concerned. The key habitats are protected by forest owners and other actors quite well and the number of exceptions has been limited. The result in compliance can be explained in terms of the social norms and good informative guidance among the actors.[83] The protection of forest habitats includes at least three informational instruments. Firstly, forestry agencies have carried out projects intended to identify habitats of special importance. To date, not all such habitats have been identified.[84] In fact, only about 80 per cent of all the habitats referred to in section 10 of the FOA were found in the national inventory.[85] Secondly, the

[78] J Pykälä, *Implementation of Forest Act habitats in Finland: Does it protect the right habitats for threatened species?*, Forest Ecology and Management 242, 2007, 286.

[79] I Hanski, *Extinction debt and species credit in boreal forests: modelling the consequences of different approaches to biodiversity conservation*, Ann. Zool. Fennici 37, 2000, 279.

[80] T Laakso, T Leppänen and T Määttä, *Metsärikollisuus empiirisen oikeustutkimuksen kohteena*, Defensor Legis 4, 2003 and K Tiittanen, *Rikosoikeudellisen vastuun jakautuminen metsälain avainbiotooppien suojelussa,* Ympäristöpolitiikan ja –oikeuden vuosikirja, 2008, 297-299, 301.

[81] Supreme Administrative Court 2006:37.

[82] T Laakso et al. (n81) 659.

[83] See E Primmer (n49) 311–312.

[84] J S Kotiaho and V Selonen, *Metsälain erityisen tärkeiden elinympäristöjen kartoituksen laadun ja luotettavuuden analyysi*, The Finnish Environment 29, 2006.

[85] K Yrjönen, *Mete-kartoitus*, METSOn jäljillä (ed. P Horne), 2006, 75.

agencies have produced information about which measures could destroy the special features of the protected habitats.[86] Thirdly, according to section 14c of the FOA, prior felling or other treatment a landowner may apply for a statement from the forest centre concerning a habitat of special importance. The centre then decides whether the site mentioned in the application is of special importance and whether the proposed treatment of the forest parcel complies with the requirements laid down in section 10(3).

In principle, the regulatory objectives in the legislation may occasionally be realised even better than could be assumed from the regulatory framework. This phenomenon is called 'over-compliance'. Over-compliance is possible, for example, where key habitats are in practice distinguished in excess of the minimum standards of the forestry legislation. The regulative objective in section 1 of the FOA is high an ambitious one in aiming to maintain forest biodiversity. In fact, the objective is limited in application to mainly the key habitats; in other respects the legislation studied seems to be fairly weak and not coherent for protecting biodiversity. However, empirical studies show a high degree of compliance and even over-compliance with the key habitat provisions[87], with compliance seemingly better among actors than the present findings on the effectiveness of the provisions would suggest. Unfortunately, over-compliance does not seem to materialise in the field: the examples from the Lohja area show that not even the minimum standards are reached in practice.[88] Without further ecological studies nothing certain can be said about the conservation status of key habitats and ecological effectiveness in Finland on the whole.

The above analysis using the consistency tool seems to confirm empirical studies on implementation deficits in practice but not in compliance among actors. The consistency of regulation is, however, only one factor contributing to the deficits. Another important factor is the attitudes of regulatees, especially when the legal framework of the regulation is weak and imperfect. This gives good reason to explore a compliance tool.

6 Compliance tool

As mentioned above, the effectiveness of regulation has an indirect relation with compliance problems. Regulatory theory asserts that the best way to regulate is by being responsive to the conduct of the regulatees, the people who display the focal behaviour. In the case of forestry regulation, the regulatees subject to direct effects are mainly forest owners and those subject to structural effects are both forest owners and forest organisations. Thus, policy instruments should concentrate on regulating the behaviour of these parties. However, in practice those whose behaviour affects forest biodiversity vary. The relevant actor may be also a legal or private person who plans forest fellings, the owner of the felling rights, or the people in charge of the actual felling.

Horne, *Koskela* and *Ovaskainen* have studied the attitudes of private forest owners using a typology comprising multiobjective owners, recreationists, owners seeking economic safety and owners emphasising income from forestry. About 15 per cent of landowners did not accept any kind of measures designed to protect forest habitats. About 85 per cent would have accepted at least one of the solutions presented. Over one-third of the owners stated that they voluntarily protect natural values in their forests. Some of them would be willing to undertake protection even without any compensation.[89] With reference to *Karppinen*'s and *Appelstrand*'s typologies,[90] I would simplify the number of categories of regulatees and

[86] Ministry of Agriculture and Forestry, section 9 of the decision (14.3.1997/ 224).

[87] H Hänninen and M Kurttila (n45) 35 and E Primmer (n49) 311-312.

[88] See J Pykälä (n78) 286.

[89] P Horne et al. (n68) 49-52, 58, 72.

[90] H Karppinen (n59) 53 and M Appelstrand, *Miljömålet i skogsbruket – styrning och frivillighet*, Lund studies in sociology of law 26, 2007, 266-271, 298-299.

Table 2, Compliance tool, typology of private forest landowners

Types of forest landowner	**Characteristics**
Conservationists	willing to conserve habitat without compensation could go beyond the minimum standards of habitat conservation in legislation could even challenge the traditional forestry and information guidance by forest agencies in order to protect forest habitats strictly
Neutrals	willing to conserve habitat with some compensation follow without question the minimum standards of habitat conservation in legislation do not challenge traditional forestry and information guidance by forest agencies
Timber-market oriented	are not willing to conserve habitats with less than full compensation have some doubts about minimum standards of habitat conservation in forest legislation try to use traditional forestry and information guidance in order to get maximal profit from the timber of the forest habitats

describe the compliance problems in terms of three types of forest owners. This typology is based on landowners in the Pirkanmaa area who have key habitats in their forests and have been interviewed by *Äijö*. [91] His research shows that 79 per cent of the landowners who have made agreements on environmental subsidies greatly appreciate the natural values of their forests. Some of them would have protected the habitat without any kind of compensation. However, 20 per cent saw no special nature values in their forest habitats. They were timber-market oriented with a focus on economic efficiency and would not remove these habitats from economic use if not forced to do so by law. The results can be generalised, taking into account the other studies mentioned above, to mean that 20 per cent of forest landowners are conservationists, 20 per cent aim at maximum economic efficiency and 60 per cent are neutral. This categorisation is not meant to correlate directly with the actual practice throughout the country, because even the same landowners' motivations may vary in different circumstances. However, it at least gives us three types of forest landowners who have different characteristics and a means of analysing compliance with various policy instruments (*compliance tool*, see table 2).

Forestry regulation, as well as regulatory objectives and strategies, should take this variety of forest landowners into consideration better than it does at present.[92] If the voluntary approach is the approach of choice in forestry regulation, then it should be pointed out with reference to the compliance tool that 20 per cent of the owners may not be interested in protecting forest biodiversity. This means that only 80

[91] M Äijö (n58) 4.

[92] M Appelstrand (n91) 298.

per cent are probably willing to accept some kind of voluntary protection. If this is an acceptable regulatory objective, then the next step is to find a suitable mix of policy instruments.

With deficient and imperfect regulation, implementation may well be successful among conservationists, but among neutrals it is already far more uncertain. Thus, sanctions or other such mechanisms are probably needed in order to ensure 80 per cent enforcement of the regulatory target. This means, for example, that it is possible to use voluntary agreements for biodiversity protection but that the agreements must be binding during the agreement period and the instruments should also otherwise be in line with the requirements of ecological effectiveness.

The compliance tool also suggests that strict nature conservation may be necessary in certain ecologically valuable areas owned by timber-market-oriented landowners. Thus, it is important also for landowners' legal rights that the forestry regulation (legal framework, policy instruments, etc.) for safeguarding biodiversity is coherent and clear enough. When this is achieved, then the landowners understand, on the one hand, their possibilities to protect biodiversity voluntarily and, on the other, the situations when the public interest in nature conservation is so high that biodiversity must be strictly protected by law. If the largest group of neutrals is suspicious of the forestry regulation for safeguarding biodiversity, its members may move in the direction of the timber-market-oriented landowners. In fact, *Karppinen*'s results suggest that an exclusive emphasis on the economic benefits of forests does not lead to the most active silvicultural and cutting behaviour; rather, it is multiobjective owners, those underscoring both the monetary and amenity benefits of their forest property, who are the most active in this respect.[93]

[93] H Karppinen (n59) 53.

7 Discussion

Voluntary policy instruments may lower monitoring and enforcement costs,[94] but one risk of voluntarism is non-compliance. If non-compliance does not trigger legal or other sanctions, the realisation of ecological improvements has to rely on forestry firms or other actors, motivated by their the powerful commercial/strategic interests, to alter their behaviour from "business-as-usual".[95] Actually, when cutting forests and buying timber, forestry firms could inform the forest owners better than they do at present about how to maintain biodiversity.[96]

The risk of non-compliance with the regulatory objective of maintaining biodiversity is probably highest among timber-market-oriented landowners. In contrast, the voluntary approach may work well without strict regulation among conservationist landowners towards promoting ecologically sustainable use of forests. Other social factors may also lead to successful compliance in the case of voluntary instruments. However, voluntarism can inadvertently lead to *lex imperfecta* if the voluntary policy instruments, such as environmental support agreements, are not backed by legislation. Without legal backing, possible compliance problems and their control are no longer legal issues in the traditional sense (at least in continental law system). Other factors then easily undermine the guidance of the legal framework in forest management.

In Finland, forestry regulation provides only a general framework for forest management and is thus in principle responsive regulation[97] that allows forest owners, using the best available knowledge, to decide

[94] G Parkhurst and J Shogren, *Evaluating incentive mechanisms for conserving habitat*, Natural Resources Journal, 2003, 1148.

[95] OECD, *Voluntary Approaches for Environmental Policy*, 2003, 86.

[96] H Hänninen and M Kurttila (n45) 34.

[97] I Ayres and J Braithwaite, *Responsive regulation*, Transcending the deregulation debate (Oxford University Press), 1992, 5.

how to manage their privately owned forests. In practice, research-based information guidance from forest authorities and institutions has taken the place of legal norms in forest management,[98] with the result that forest owners do not necessarily know which part of the applicable regulation is based on the law. Even courts follow the information guidance as soft law when they interpret flexible and weak provisions of the FOA. Empirical studies from the year 2006 shows that forest owners' knowledge of duties and recommendations concerning ecologically sustainable forest management can only be given a mark of "fair".[99] Thus, many forest owners seem to be ignorant of the fact that the forest legislation mainly gives them freedom of choice when trying to safeguard biodiversity as part of managing forests. Under these circumstances, at least the neutral group of owners will probably comply in practice with the social norms of forestry institutions and actors who place economically sustainable timber production first among the different regulatory objectives. The social norms at play may make it difficult for the owners to say no and protect biodiversity beyond the standards of conventional forest management without clear support by legislation.[100]

The examples of Finnish forestry legislation presented above show that it is possible to use a voluntary approach to promote nature conservation in private forests. If the legitimacy of policy instruments is high among landowners, defective or imperfect regulation may work quite well in practice, perhaps even better than strict normative legislation. Thus, informational or economics-based legislation can give signals sufficient to produce some extra biodiversity protection. However, problems appear if an owner does not want to follow the informational or economic guidance that is intended to limit adverse structural or direct effects or wants to do more towards safeguarding biodiversity than the conventional forest management guidance requires. Command and control regulation is thus needed for the regulatory baseline[101] and the voluntary approach can raise the bar where biodiversity protection is concerned. It is necessary to point out here that most of the baseline in Finland is set out in the Nature Conservation Act, a treatment of which falls outside the scope of this article. However, the baseline in the FOA for habitat protection, for example, should also be clear enough.

Problems may become worse if the policy mixes of informational, legal and economic measures used for the same purpose do not function well together and leave room for an implementation deficit or non-compliance. Thus, when drafting legislation the Government and Parliament must somehow value forest biodiversity and decide on the appropriate regulatory level of protection from the direct and structural effects of forestry. A voluntary approach alone, without any strict regulatory limits, is not the solution in practice. The inconsistency in the level of the legal system that is invoked may have serious consequences for the whole policy mix used for a particular regulatory purpose, in this case protecting forest habitats. This consideration is illustrated in greater depth using the regulatory pyramid, depicted in Figure 3 (on next page).

The pyramid represents the normative idea that less intrusive and less punitive measures should be the 'reaction of first instance', with regulators then being able to move up and down the pyramid to access the appropriate level of enforcement. The broad base of the pyramid, representing the bulk of the matters that are handled informally, narrows with the smaller number of cases handled by progressively more formal means.[102] The pyramid model seems to be realised in part in Finnish forestry regulation,[103] which

[98] Oinaala, Sampsa, *Kirjoitus, joka muutti Suomen metsät*, (Helsingin Sanomat 9.11.), 2008.

[99] H Hänninen and M Kurttila (n45) 29.

[100] M Appelstrand (n91) 297.

[101] N Gunningham and P Grabosky (n4) 433.

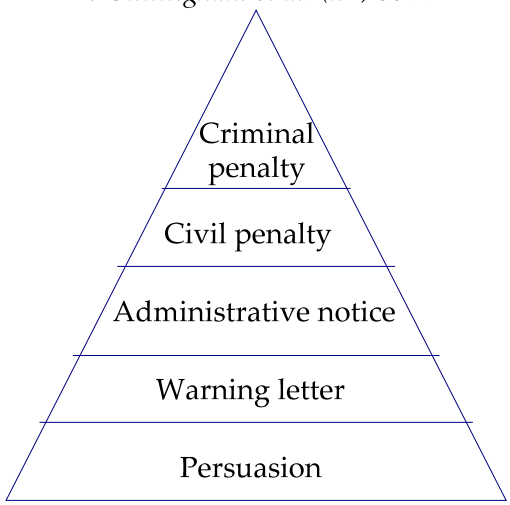
[102] T Foley (n15) 2.

[103] According to Government Proposal 178/2006, 90,000 to 110,000 forest announcements are made per year; according

is described below briefly from the top of the pyramid to the bottom.

Criminal penalties at the top of pyramid can offer guarantees of enforcement if regulations are clear enough. Regulations should offer guidelines for courts on how the criminal responsibility should be apportioned between actors comprising the same

Figure 3. Regulatory Pyramid. N Gunnigham et al. (n4) 397.



party to individual cases. This is also a matter of the preventive effects of regulation. Landowners and other actors should also be able to recognise in advance their potential criminal liability in particular cases. This may mean that habitat protection according to regulations should be public and the habitats should be mapped somehow or even delimited through decisions by the forest centres. This is also important where landowners' rights are concerned. Furthermore, the possibility to request advance information concerning the habitats of special importance from the forest centres is important in avoiding violations of the forestry legislation. In Finnish forest regulation, one problem is that criminal sanctions apply only in the case of violations of the biodiversity baseline, namely destruction of habitats of special importance. As this regulation is inconsistent and its ecological effectiveness is uncertain, most of the safeguarding of biodiversity in forestry regulation is relegated to the other steps of enforcement pyramid.

The next enforcement step in the pyramid is civil penalties. In Finland, voluntary administrative agreements are used to protect forest biodiversity. The evaluation presented above mentions environmental subsidies and trade in natural values using administrative agreements. The agreements can be placed somewhere between private and public law, as they have elements of each. Administrative agreements form part of administrative decisions, but the sanctions in cases of violation of such agreements are usually based on those set out in the agreement itself, not the general administrative legislation. The legislation should include framework regulation for the negotiations and the agreement itself.[104] Civil sanctions are used in the agreements in order to ensure effectiveness.

The Finnish examples show that as policy instruments these agreements must be carefully considered before they are put to use, since they can function perversely. In certain situations they may not provide any incentives to promote biodiversity, but rather encourage its destruction. Another salient question is how to design the framework legislation underlying the agreements and incentive measures in general.[105] The regulations for the voluntary measures should allow flexibility in individual agreements, but should set minimum qualification standards[106]. The regulation should ensure that the voluntary measures that are based on agreements guarantee the protection of biodiversity during the stipulated period and that the agreements can be continued even after that period

to the AFSF, the number of funding decisions is 50,000. In contrast, the number of claims for recovery of funding in 2005 was 114. The number of forest offences in 2003-2005 was 9 per year and 6 in year 2006 (Suomen kansallinen ympäristörikosseurantaryhmä, *Vuosiraportti vuoden 2006 ympäristörikoksista Suomessa*, 2007, 17). These numbers do not include the instances of minor criminal violence, but they do describe the current situation.

[104] O Mäenpää, *Hallinto-oikeus* (WSOY), 2003, 139.

[105] OECD (n21) 68-69.

[106] I Bowles et al. (n18) 240.

without administrative difficulties. The sanctions in the agreement must be strict enough, even though the agreement itself is made voluntarily, otherwise the instruments can be used simply to gain extra profit on top of the timber value of the habitat. Non-compliance may emerge especially in cases where landowners are timber-market oriented.

Administrative notice or negotiations with landowners or other actors may not function as a policy tool if the number of administrative matters, such as the Finnish forest use declarations, becomes too great. The forest announcement may be a starting-point for negotiations between the landowner and a forest centre if the felling of forest affects habitats of special importance. The duties of the landowners and others concerning habitat protection have been established directly in legislation in order to ensure protection, but the policy mix comprising the announcement and criminal and civil sanctions is not constructed in a very sophisticated way. Due consideration must be given to the choice of policy instruments when they are mixed. Poor mixes may lead to situations in which the effectiveness of regulation is not guaranteed properly at any step in the pyramid. If poor policy mixes lead to implementation that falls short of a particular regulatory objective, the role of the policy tools must be reconsidered. However, it is possible to successfully combine regulatory-administrative instruments and incentive-based measures, as examples in Japan, Korea and Greece have shown[107].

Warning letters, persuasion related to programmes and plans, and forest certificates can together be seen as constituting the informative guidance that is used in Finland to reduce harmful structural effects on forest biodiversity. This approach may be a good tool in practice, but if the guidance on structural effects, such as how to plan forestry, is not clearly regulated and backed by administrative or criminal sanctions, the protection of forest habitats against the effects will be legally dubious and imperfect. This kind of voluntary approach may be sensible in some cases, but as a general regulatory policy for safeguarding biodiversity it is legally ineffective in that it leaves out the other levels of the regulatory pyramid. Informative guidance is best used in combination with other instruments.[108]

8 Conclusions

The tools for the evaluation of regulation presented here do not produce complete information about the effectiveness of legislation. What they indicate can be misleading without a critical understanding of the social and economic context of the legislation in question. It is possible in certain social and economic contexts that *lex imperfecta* works well in implementing the relevant policy objectives.[109] In such cases, buttressing regulation with sanctions is not necessarily the solution. In theory, it is also possible that the improvement of *lex imperfecta* actually vitiates the outcome of a desired policy. This idea relates to empirical legitimacy or acceptance.[110] If the regulates feel that particular legal mechanisms are a threat to rather than guidance for their actions, they may act in a less desirable way than before the amendment of the legislation. In any event, the evaluation can formulate a hypothesis regarding the level of effectiveness of regulation or, more precisely, of particular legislation. The hypothesis can be tested by empirical studies in the fields of forest economy, sociology or ecology.

The methodological tools for evaluating regulation that have been presented here have a number of clear merits. Firstly, they form a cost-effective evaluation method if one compares them to empirical studies. Secondly, this evaluation aids other research work, and is particular useful in interdisciplinary work. Knowing the logic and deficiencies of regulation helps to express empirical questions. The results of empiri-

[107] OECD (n21) 116-117.

[108] N Gunningham and P Grabosky (n4) 427,430.

[109] OECD (n21) 20-21.

[110] See P Horne at al. (n23) 76-77.

cal studies do not become real arguments for improvement of legislation without a proper understanding of the logic of the regulation in force. Thirdly, knowledge about regulation promotes understanding of what contributes to a well-functioning legal system and legal mechanisms in general.

This evaluation uses concepts such as *lex imperfecta* and defectiveness and incoherence in regulation to describe shortcomings. These gaps may cause implementation deficits and thus decrease the effectiveness of regulation. Three categories of private forest landowners have been described to illustrate that full voluntarism in policy instruments may lead to very different degrees of compliance depending on the attitude of the landowners. Several factors other than legal ones affecting the forestry behaviour of private landowners had to be excluded from the study. Moreover, forest owners' values and objectives are dependent on the cultural, institutional, social and economic environment in each country.[111]

These con-siderations must be taken into account when making comparisons with other countries or interpreting the present results. However, the main outcome of the case study presented here is that the effectiveness of forest regulation cannot simply rely on voluntary approaches; the approaches must be complemented by well-designed, strict policy instruments and standards guaranteeing the minimum level of biodiversity protection. The question is not which form of regulation to choose, but of how to pass smart regulation with a sophisticated mix of policy instruments and standards. In this regard, the legal method described in this article can provide valuable assistance indeed in ascertaining what constitutes smart regulation not only in Finland but in other countries as well.

[111] See also H Karppinen (n59) 53-54.