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The Role of Nordic Environmental Law Journal

*Gabriel Michanek, editor*¹

The meeting in Copenhagen in December exposed clearly the political conflicts embedded in the climate change issue. The EU target before the meeting was to limit the raise of temperature in the atmosphere to two degrees Celsius compared to preindustrial level. However, EU could not reach a broad international consensus among the industrial states of the world to reduce emissions of greenhouse gases with 30 % by 2020, based upon 1990 emission level. The meeting also failed to set the target for the contribution from developing states. The need for continuous political negotiations and meetings is obvious. It is necessary to reach an agreement with clear, legally binding obligations for the individual states. Still, even with a two degrees raise, the risk remains for significantly changed conditions in the biosphere in terms of e.g. flooding over large land areas. We observe already today a decrease of the Arctic ice cover. We are in climate change. It is no longer a matter of only changing the course but also to adapt. Some are doing it by planning for further extraction of carbon rich oil and gas resources where the melting ice invites them to.

The Baltic is an inland sea with sensitive water ecology. Substantive inflows of fresh salt water from the North Sea enter only occasionally through the narrow passages in the Belts and Öresund. The exchange of water is further counteracted by the halocline barrier between the surface and depth water layers, leading, all in all, to shortage of oxygen in the depths of the sea. Moreover, the Baltic brackish water ecosystem hosts relatively few species; many of those living on the brink of their geographical or ecological extension area. Due to these natural conditions, the resilience to further impacts is low. Nevertheless, 85 million people live in the large Baltic Sea catchment area, in industrialised states with an average high consumption per capita of energy and natural resources and with numerous industries, forestry, agricultures etc. Pollutants of different kinds are continuously introduced into the sea. Huge emissions of nutrients cause algal blooms and eventually oxygen absence and death in the sea bottoms.

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The climate change and the conditions in the Baltic are results of unsustainable development. Overfishing and loss of biodiversity are other examples. Despite the Brundtland report 1987 and the global conferences on the environment in Rio 1992 and Johannesburg 2002, we are still not utilizing natural resources and protecting air, water and land in a way that meets that the needs for future generations. Turning from unsustainable to sustainable development in a world with strongly increasing population, necessitates technical development and very tuff political decisions but also efficient policy implementation. The role of law is in this context crucial; on international, EU and national level.

This is the situation at the time when the first issue of Nordic Environmental Law Journal is published. It is also a reality to which environmental law research must relate. Different tasks are ahead.

We need to investigate if our existing legal techniques are efficient for implementation of environmental policies and to look for other solutions. Studying foreign legal systems can be useful in order to find and develop new legal solutions to be used. This task includes also how to adapt the law to new sustainable technology and new forms of land use, for extraction of renewable energy resources, for separation and storing of CO₂ etc.

It is necessary to approach the legal system for decision making, including the role of different courts and authorities. Can we continue to decentralise legal powers in planning, licensing and control when urgent national and international objectives shall be implemented, such as protection of biodiversity and transformation of land use to promote extraction of wind and other renewable energy resources?

Environmental law research should observe and cooperate with other sciences related to policy making and implementation, e.g. economics, political science and system theory. There is also an obvious connection between law and ecology. A development is not sustainable if the law admits forestry, hunting, hydropower development, industries and other activities to be performed in a way that threatens ecosystems on which human and other life depend; such development is self-destructive. Linking law with ecology is crucial and also difficult. The researcher must explain how law should be constructed to meet non linear effects, complexity and uncertainties in nature.

Sustainable development is not only dependant on the potential in specific legislation aiming at environmental protection. Research must involve a

great number of other statutes related to the use of land and natural resources, statutes partly based upon other objectives than to protect ecosystems, e.g. the legislation on mining, forestry and development of infrastructure. Actually, sustainable development calls for the entire legal system not to counteract it.

But this is not sufficient. Law is conserving the past, let me illustrate with one example. Environmental air quality standards, aiming to protect human health, are exceeded in parts of Stockholm. Still, a breathing citizen has no legal means to challenge a licensed polluting industry in the area; she is formally prevented from appealing a decision by a supervising authority to do nothing, and at the same time locked out from filing a private law suit in court. The Swedish Environmental Code (aiming at “sustainable development”) denies her to ascertain environmental rights to which she is entitled according to EC law and the Aarhus convention. The reason is partly historical. The Swedish Environmental Code is based upon traditional “concession law” from the 1940’s, protecting the polluters position.

Many legal constructions and principles of today derive from a time when sustainability was not an issue. They are deeply rooted in our legal systems and apply generally, e.g. the principles of e.g. legal certainty and proportionality. So is the concept of private ownership to land and natural resources. The EU Commission has adopted a decision to halt the loss of biodiversity within the union from 2010 and beyond. The decision recognizes biodiversity as a precondition for sustainable development. However, implementing the objective in most or all of the member states clashes inevitably with property rights. Forest land includes a great deal of Sweden’s biodiversity, but Swedish law does not prevent the forestry from destroying most of it. This is basically due to the constitutional protection of ownership, in combination with insufficient state resources to compensate land owners if habitats and ecosystems are set aside, for the needs of future generations. Traditional legal principles and concepts should not be washed out but they must be discussed, reconsidered and complemented if they establish obstacles to sustainable development. This is part of a systematic approach.

It is sometimes stressed in the political debate that the giant step to a sustainable development opens for radically new thinking in technology and economy. We are facing similar challenges for jurisprudence. If ecological sustainability is a precondition for economic and social life governed by law, then legal theory and methodology must start out from

the same presumption. If legal theory and methodology needs to be improved to cope with sustainability, this is a task for environmental law research.

Enormous efforts are needed to mitigate and, more or (hopefully) less, adapt to some climate change, to avoid a future ecological collapse in the Baltic and instead provide for sustainable fishery and other ecosystem services in the sea. A revised legal system should not only aim at sustainable development, it must also include a system of different instruments ensuring implementation of the objective. Such a complex construction cannot be performed without a legal theory based upon sustainable development.

It is indeed time for a Nordic journal in environmental law, for analyses and discussions of the role of law in connection with implementation of different environmental objectives. Independent academic legal writing fulfils here a complementary and reviewing role besides the politically connected law making institutions.

Gabriel Michanek

The Role of Courts in Environmental Law – a Nordic Comparative Study

Helle Tegner Anker

Ole Kristian Fauchald

Annika Nilsson

Leila Suvantola

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1 Introduction²

The legal situation in any given country cannot be determined solely on the basis of the provisions of enacted legislation (law in books). Instead, it is a joint product of the initiatives of the legislator, the interpretation and application of the law by courts and the practice of administrative authorities or other relevant actors (law in action). Hence, provisions which appear similar if examined word by word can be and are often practiced in very different ways. Courts make the final determination of what law is in individual cases. The courts may, however, have different roles when carrying out this task. On the one hand, differences may arise from the legal system, for example how the functions of the court or the scope of review is defined. On the other hand, differences may be caused by the legal culture, i.e. how the role of the court is perceived both by the legal society and the court itself. For illustrative purposes, we can imagine a continuum from a common law type of court that “enacts” law to a court that only interferes when it is confronted with apparent injustice.

The role of courts in environmental law may also differ significantly from one country to another depending upon the structure of environmental legislation, i.e. whether specialized (environmental) courts or quasi-judicial bodies have been established as an integral element of environmental legislation or whether environmental matters are handled by general courts or administrative courts. In order to

provide a meaningful analysis of the role of courts in environmental law it is thus necessary to explain the functions of different types of courts as part of the environmental law system of each country addressed in this study.

Environmental law does not merely concern disputes between individual parties. Recent environmental law has for the most part been enacted and re-enacted in the interest of the society as a whole, because activities regulated by environmental legislation have far reaching impact both in space and time. Many activities that may lead to environmental harm require some kind of permit granted by an administrative authority. Courts are generally the final resort for the affected members of the public to challenge such permits. Therefore, it is important whether there is effective access to court and how the courts decide environmental disputes.

The general aim of this article is to compare the role of courts in environmental law in four Nordic countries (Denmark, Finland, Norway and Sweden). The Nordic countries are frequently considered to be in the same legal family and regarded fairly similar due to their historical and sociopolitical similarities.³ However, when we look more closely at environmental law in these countries, they turn out to be a heterogeneous group. Two of the most significant differences concern the court systems and the relationship between administrative decision-making, administrative appeal and court review. These differences are the result of

² This comparative study was initiated in 2006 as part of the activities of the Nordic Environmental Law Network (www.neln.life.ku.dk) funded by NordForsk. Helle Tegner Anker is professor at the Institute of Food and Resource Economics, Faculty of Life Sciences, University of Copenhagen (hta@life.ku.dk). Ole Kristian Fauchald is professor at the Department for Public and International Law, University of Oslo (o.k.fauchald@jus.uio.no). Annika Nilsson is associate professor at the Faculty of Law, Lund University (annika.nilsson@jur.lu.se). Leila Suvantola is researcher at the University of Joensuu (leila.suvantola@joensuu.fi). Her part of this study was carried out as a part of her co-ordination activities of the Environment and Law Research Programme financed by the Academy of Finland.

³ Some authors refer to a Scandinavian law or legal tradition, e.g. Lester Bernhard Orfield: *The Growth of Scandinavian law*, University of Pennsylvania Press, 1953. See also Jacob W.F. Sundberg: *Civil Law, Common Law and the Scandinavians*, in *Scandinavian Studies in Law*, Vol. 13, 1969 pp. 179-205. It has been stated that Scandinavian law of today is generally characterised by its pragmatic, practical and realistic conception of law, see Ellen Margrethe Basse & Jørgen Dalberg-Larsen: *The Danish Legal System*, in H.T. Anker, B.E. Olsen & A. Rønne: *Legal systems and wind energy*, DJØF Publishing and Kluwer Law International, 2008 pp. 61-75 at p. 66. The Scandinavian legal tradition extends to Finland which was part of and thus shared the legislation of Sweden until 1815. In the 20th century Sweden has been closely followed by the Finnish legislator.

differences in the historical development of administrative law, but also of differences in environmental law in the examined countries.

This study consists of six parts. First, we paint a general picture of the framework within which the courts in each country do their task of interpreting law in individual cases (section 2). This section sheds light on the formal differences and similarities between the countries as to the court system, the courts' scope of review and access to courts. Secondly, we explain the methodology used in our study, the material we used and the challenges we faced (section 3). Thereafter, we move to the outcome of the study. We compare the countries as to what kind of cases are brought to the court (section 4), who brings the cases to the court (section 5), and what is the outcome of the case (section 6). Finally, we suggest some conclusions concerning the role of courts in the four Nordic countries (section 7).

2 The framework

2.1 The concept of courts

Examination of the court systems relevant to environmental law indicates that courts have different functions in each country – in fact the role of courts may differ between different sectors of environmental law within one country. These differences may be explained by historical traditions in environmental legislation, e.g. the role of courts in water law, or by different circumstances and changes in the legal system as a whole.

As our focus is on courts, it should be clarified what we refer to by a court. A court is generally defined as a body 'with the authority to adjudicate legal disputes and dispense civil, criminal, or administrative justice in accordance with rules of law.'⁴ The composition of courts may vary significantly. Apart from the judges educated in law, courts may include other members

such as laymen, technical or scientific experts etc. Courts should be independent bodies according to the general principle of distribution of powers, i.e. they should be independent from the legislative and the executive powers. Courts are thus distinguished from quasi-judicial appeal bodies that organisationally are part of the executive. In reality, however, the functions of more specialised – and perhaps expert based – courts may resemble those of administrative appeal bodies. Thus, the court concept in itself is problematic when the role of courts in environmental law is compared in different countries. For example, until the end of the 1990's Finland and Sweden had water courts which had both administrative and court functions. In 1999, the Swedish environmental courts replaced the water courts *and* the Licencing Board (Koncessionsnämnden för miljöskydd). The Licencing Board was categorised as an authority while the environmental courts are part of the Swedish general court system.⁵ The composition and functions of the environmental courts have a certain resemblance with the previous Licencing Board. The Swedish environmental courts operate as first instance authorities in some cases and as appellate bodies in other cases.⁶

⁵ One overall aim of the Environmental Code was to amalgamate the Swedish environmental legislation into one code. The Government considered it important to coordinate the trial system and the procedure as far as possible. The chosen system, regional environmental courts replacing the former water courts and linked to the general court system, was considered to best correspond to the demands on such an integrated trial body. A strong argument for this solution seems to be that it was considered more efficient to use an existing structure, with some existing competence in the field, rather than to establish a new body. However, there were many differing opinions and suggestions concerning what would be the optimal structure of and procedure for the trial system. See e.g. Governmental Bill 1997/98:45 chapter 4.22.

⁶ A governmental investigation (SOU 2009:10) proposes amendments that once again will radically change the environmental procedural structure in Sweden. It proposes that the environmental courts shall be complemented by five licencing boards (Koncessionsnämnder för miljöfarlig verksamhet och vattenverksamhet, i.e. licencing boards for environmentally hazardous activity and water activity). The licencing boards are proposed to take over the first instance trial from both the county administrative boards and the environmental courts. The environmental courts will,

⁴ David Walker: *Oxford Companion to Law*, Oxford University Press, 1980, p. 301.

While Sweden opted for an environment court construction, Denmark on the other hand has developed quasi-judicial appeal boards that organisationally are part of the Ministry for the Environment, but operate on an independent basis.⁷ The appeal boards

exclusively of general courts, namely of district courts, courts of appeal and the Supreme Court. There are no courts or independent administrative appeal bodies specialised in environmental law.⁹ In Norway any decision made by an authority can be appealed to a

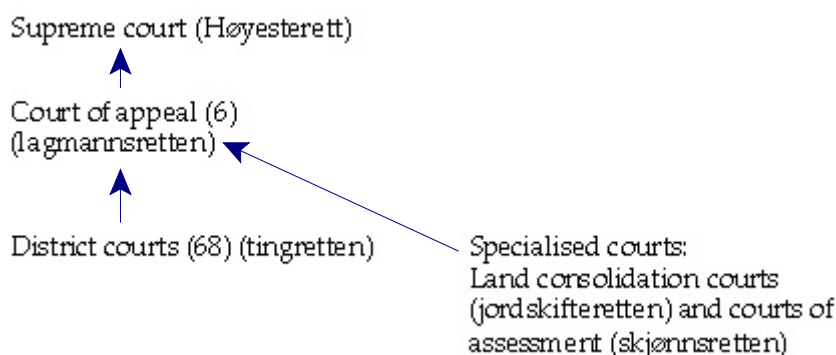


Figure 1. Court system in Norway.

are not categorised as courts for the purpose of this study although there appears to be some resemblance between The Environmental Protection Board of Appeal and the Swedish environmental courts.

Another important element regarding court systems in general is the different traditions as regards civil courts and administrative courts.⁸ Norway and Denmark have not established administrative courts. In general, they rely on the ordinary courts to deal with all types of disputes. Sweden and Finland, on the other hand, have long traditions for distinguishing between general courts and administrative courts.

2.2 The court system in context in the examined countries

Norway has a “simple” court system consisting almost

according to the proposal, function as appeal bodies. They are still to be categorised as general courts even though the appeals will concern decisions of administrative bodies.

⁷ On the background and history of the Nature Protection Appeal Board (dating back to the Nature Conservation Board established in 1917) and the Environmental Protection Board of Appeal (established by the 1973 Environmental Protection Act), see Ellen Margrethe Basse: Ankenævn på miljø- og naturområdet, in L. Ramhøj (ed.): Festskrift til Orla Friis Jensen. Fast ejendoms ret – synsvinkler og synspunkter, Jurist- og Økonomforbundets Forlag, 2007, pp. 209-229.

⁸ This issue is further explored immediately below.

superior administrative body, which may or may not be specialised in environmental law.

Denmark has a rather similar simple system of general courts – the district courts, the two High Courts (Court of Appeal) and the Supreme Court.¹⁰

The general courts in both Norway and Denmark review all types of cases: administrative, civil and criminal cases that are brought to the courts. There are no specialised courts within environmental law in Denmark. Thus, the courts have not been assigned more specific functions in environmental law than in other areas of law. However, Denmark has established specialised quasi-judicial administrative appeal boards in environmental matters ensuring a form of independent review of administrative decisions. Cases can be brought to the courts as well and there is no general obligation to exhaust administrative appeal before bringing a case to court. The administrative appeal

⁹ Two specialised courts, “jordskifteretten”, which deals with ownership to and delimitation of immovable property, and “skjønnretten”, which deals with valuation of property, make decisions that frequently have significant environmental implications.

¹⁰ With effect from 1 January 2007 a court reform has significantly reduced the number of district courts from 82 to 24 and has extended the role of the district courts as first instance to all cases with a few exceptions.

boards – Naturklagenævnet and Miljøklagenævnet¹¹ – operate independently from the Ministry for the

In both countries environmental law has a close relationship with administrative law, as environmental

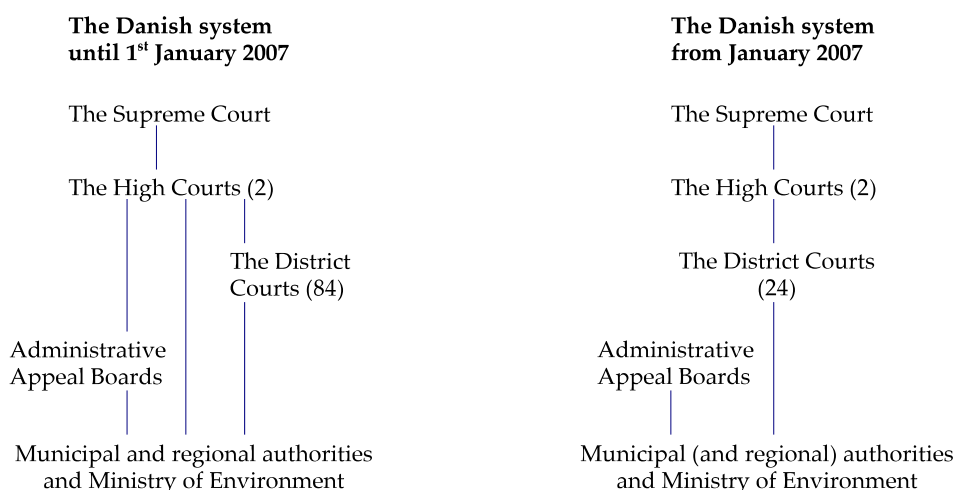


Figure 2. Court system in Denmark.

Environment, of which they are organisationally a part.

Finland and Sweden share a history of a dual court system which dates back to 17th century, consisting of general courts and administrative courts. The first administrative court was the chamber court in Sweden (which Finland was part of). Since the middle of the 17th century, the county administrative boards (länsstyrelse) acted as general administrative bodies. Their duties began to cover administrative adjudication, and deciding appeals began to be regarded as separate from their administrative duties.¹²

¹¹ The composition of the appeal boards differs. While the Nature Protection Appeal Board in addition to the chairman has two Supreme Court judges and seven politicians as members, the Environmental Protection Appeal Board in addition to the chairman has two or four members with scientific or technical expertise appointed by the Ministry for the Environment and business organisations respectively. A political agreement has been made to merge the two appeal boards in 2010.

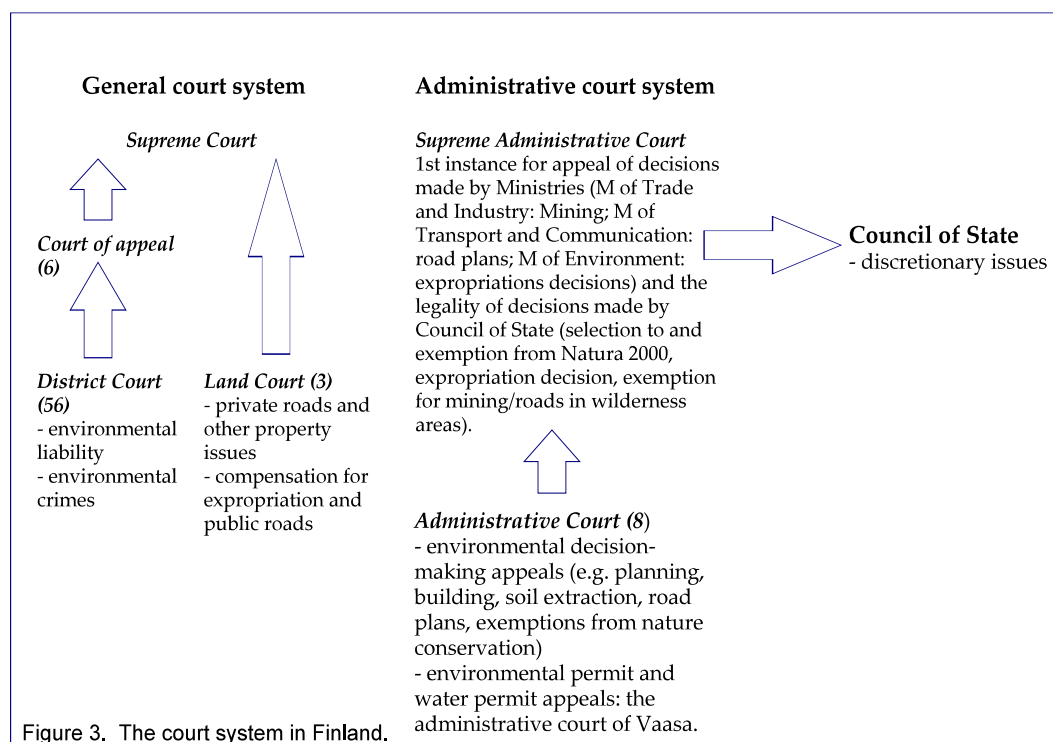
¹² The Swedish (and thus, Finnish) chamber court was established 1799, as the previous administrative body ("kammarrevisionen") was transformed to an administrative court. The Supreme Administrative Court was not, however, established until 1909. See e.g. Rune Lavin: *Domstol och administrativ myndighet*, Norstedts förlag 1972, pp. 24 and 26, and Finlands Regerings Proposition 114/1998 Lagförslag till Riksdagen med förslag till lag om förvaltningsdomstolarna <http://www.eduskunta.fi/tripho->

law is, to a large extent, applied in administrative decision-making. Both countries have had a water court system dealing with permits involving use of public authority and with compensation as a private law issue. In Finland water courts were amalgamated to the administrative courts at the end of the 1990's when the administrative court system was totally revised.¹³ In Sweden they were amalgamated to the environmental courts in 1999. While in Finland all administrative decisions are appealed to administrative courts, in Sweden the system is slightly more diverse (see below).

In Finland, any planning or building decision, resource use permit, environmental permit, decision to establish a conservation area or to give an exemption from conservation provisions is made in an administrative decision-making process and any appeal is lodged in an administrative court. One of the administrative courts – the Administrative Court of Vaasa (the former Water Court of Appeal) – specialises in environmental permit appeals. Decisions of the administrative courts can be appealed to the Supreme Administrative Court. Decisions concerning the

[me/bin/akxkaanna.sh?{KEY}=HE+114/1998+Yleisperus telut +vp&{KIELI}=R](http://www.eduskunta.fi/tripho-me/bin/akxkaanna.sh?{KEY}=HE+114/1998+Yleisperus+telut+vp&{KIELI}=R).

¹³ The Finnish Administrative Courts Act (430/1999).



environment made by Ministries – e.g. mining permits or road plans – are appealed directly to the Supreme Administrative Court.

In Sweden, planning, building and some infrastructure issues are decided in the first instance by administrative authorities. Many of those cases are appealed to administrative courts. Detailed plans and some other decisions are appealed to the Government. Most decisions concerning environmental permits, decisions concerning nature conservation and environmental supervision are decided by administrative authorities in first instance. Such decisions are appealed to the environmental courts for review. The environmental courts further grant environmental permits as the first instance bodies in some permit trials (large or otherwise complicated operations), and judge cases of a civil law character.¹⁴ The specialised environmental

¹⁴ The Government decides on the permissibility of some large infrastructure projects and industrial operations, where after the case is returned to the authority or environmental court for issuing the detailed permit. The Government's decisions may not be subject for an ordinary appeal,

courts and the Environmental Court of Appeal are established as part of the general court system. The courts are provided with environmental and technical expertise. As indicated above, recent proposals suggest to alter the Swedish court structure in environmental cases.¹⁵

Against this background, it can be observed that there is a degree of judicial or quasi-judicial specialisation in the review of administrative decisions concerning environmental issues in Denmark, Finland and Sweden. The main differences between these countries concern whether this specialisation is part of the administrative system (Denmark), the administrative

but private parties concerned – and, today, NGOs - may apply for legal review on formal grounds.

¹⁵ See footnote 5 above. Further, it has been proposed that building issues and local plans etc., that currently are appealed to administrative courts, are appealed to Environmental Courts in the future. See the Governments Bill 2006/07:98 and SOU 2007:111, SOU 2008:31 and SOU 2009:10.

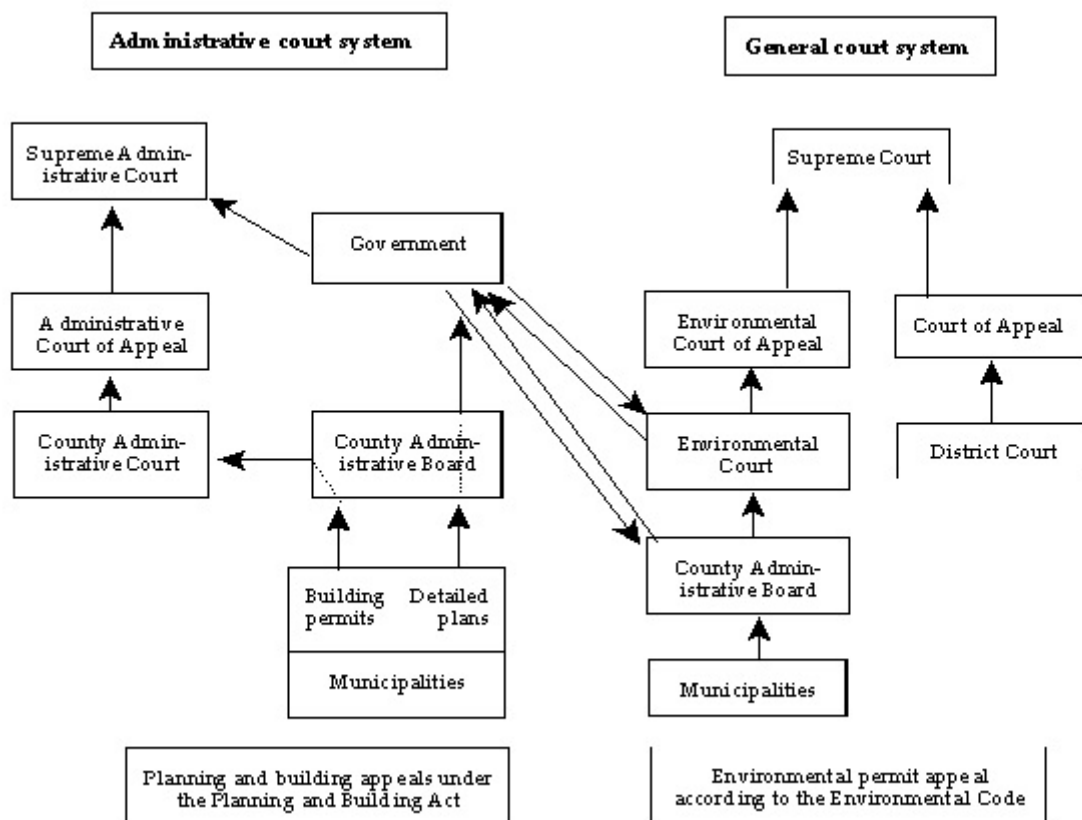


Figure 4. Court system in Sweden.

court system (Finland) or the general *and* administrative court system (Sweden). Here, however, the focus is on the role of courts – administrative courts or general courts – in environmental law. Hence, the Danish administrative appeal system is not examined even though it does resemble the specialised courts in Finland and Sweden. Looking strictly at the courts, the examined countries are divided into two groups: in Finland and Sweden there is some degree of specialisation in administrative and environmental cases, while in Denmark and Norway this is not the case.

All of the four countries share a fairly similar ombudsman institution. Its significance in environmental law varies. In Norway it provides a significant avenue to justice supplementing the courts.¹⁶ In Denmark relatively few environmental

¹⁶ For a discussion of the need for an environmental ombud, see Ole Kristian Fauchald: Er det behov for et miljøombud? In Helle Tegner Anker and Birgitte Egelund Olsen (eds.) "Miljørettslige emner. Festskrift til Ellen Margrethe Basse",

cases are decided by the Ombudsman – one explanation being good access to the administrative appeal boards.¹⁷ In Finland and Sweden its role remains minor, e.g. due to good access to administrative court procedures.¹⁸

Jurist- og Økonomforbundets Forlag, 2008, pp. 199-219. The Act concerning the Storting's Ombudsman for Public Administration (June 27, 1962) requires, however, that cases only be raised by persons who have been subject to injustice by the public administration, see § 6.

¹⁷ See further Ellen Margrethe Basse: Ombudsmandens rolle inden for miljøområdet, in Peter Garde, Steen Rønsholdt, Jens Olsen, Arne Fliflet og Jens Møller (eds.), "Festskrift til Hans Gammeltoft-Hansen", Jurist- og Økonomforbundets Forlag, 2004, pp. 17-26.

¹⁸ The Swedish Justitieombudsman, JO, receives a rather large number of complaints on environmental issues but often refrains from acting, for different reasons. The functioning of the Swedish JO with regard to environmental issues is discussed in A. Nilsson: *Rättssäkerhet och miljöhänsyn*, Santérus förlag 2002.

2.3 Court procedures and scope of review

The differences in the court systems referred to above are also reflected in the court procedures applicable in environmental cases in the examined countries. Generally, the civil courts apply the so-called adversarial procedure addressing the claims brought forward by the parties to the case only. In Norway, the Dispute Act gives courts responsibility for conducting independent assessment of the law to be applied and for ensuring relevant clarification of facts.¹⁹ In Denmark the courts apply the adversarial procedure addressing the claims brought forward by the parties.²⁰ In the administrative court in Sweden and Finland the court procedure is more inquisitorial. The administrative courts examine the cases on basis of the grounds of the appeal. Where an appeal merely states that the decision is illegal, the courts will examine relevant bases for determining its legality. Both in Finland and Sweden, the administrative and environmental courts have the duty to ensure that the claims presented by the parties in the case are properly investigated, and, if necessary, the appellant is requested to supplement the appeal. The court can also ask for statements from governmental authorities, scientific institutions or other relevant institutions to clarify the facts as well as carry out inspections on site.²¹ This principle is applied also in the environmental courts in Sweden although they are organisationally part of the general court system.²²

The adversarial procedure of courts may cause difficulties for private parties in particular and some-

times also for NGOs. Environmental court cases are often characterised by a relatively high degree of complexity. The claimant must be familiar with relevant law to be able to formulate the claim successfully and sufficiently precisely from the start. Moreover, if the defendant is a company or an authority, the resources to litigate may be significantly in its favour. On the other hand, the more inquisitorial procedure of administrative courts may facilitate appeals by private parties and NGOs, since the courts have a stronger duty to ensure that the case is properly investigated.

There may also be differences between the countries regarding the scope of review by the courts of administrative decisions. The courts either have a duty to carry out a full review of the case or there are *de jure* or *de facto* limitations of their scope of review. In principle, the courts in Norway and Denmark perform a full review of the case, including discretionary issues.²³ For Norway this does not apply to issues that, according to the law, are to be decided on the basis of the discretion of the authorities. In practice the Norwegian and Danish courts frequently exercise self-restraint on discretionary issues in environmental cases, often limiting the review to procedural errors or abuse of power. In Norway, this seems in particular to be the case for courts of first instance and appeals courts. In a few Danish court cases it appears that the courts do examine more discretionary matters, however with certain limitations.²⁴

In Finland, decisions made within the municipal autonomy can be appealed – and thus be examined by the courts – only on the basis of procedural errors, abuse of power and the legality of the decision.²⁵ In the field of environmental law such decisions are building permits and approval of detailed plans.²⁶ In other

¹⁹ See in particular Chapter 11 of the Norwegian Dispute Act (2005 no. 90).

²⁰ Consolidated Act no. 1069/2008 on Court Procedures (Retsplejeloven) Chapter 32 (§ 338).

²¹ The Finnish Administrative Judicial Procedure Act (586/1996) 33 §, the Swedish Administrative Procedure Act (1971:291) 8 § and 23-25 §§,

²² The procedure in the environmental court is regulated in the Code of Procedure and, with regard to specific issues in the environmental courts, the Environmental Code chapter 22. The court's competence and obligations with regard to sufficient investigation is prescribed for in 2 §, 11-13 §§ and 18 §.

²³ The Danish Constitution in § 63 provides for a full review of administrative decisions.

²⁴ See *infra* section 6.

²⁵ The Finnish Municipal Act (365/1995) § 90.

²⁶ The Finnish Planning and Building Act (1132/1999) § 88.

administrative law cases, the Finnish Supreme Administrative Court has to transfer the appeal to the Council of State – the highest administrative body – to the extent it concerns discretion. This restriction has, however, become in practice almost outdated since the Supreme Administrative Court's interpretation of legality is broad and it has not transferred any appeal cases since 1999. In Sweden the courts perform a full review, except in a few types of cases where restrictions are established by law. The environmental courts review discretionary issues as well as issues of legality. The Supreme Administrative Court's legal review of Governmental decisions is limited; the court may annul the decision if it apparently is not in accordance with the law. As in Finland, the Court's interpretation of what is in accordance with the law may be rather broad.

The court's attitude towards a restricted or a full review may be partly dependent on their knowledge of the substantive issues. It is fair to assume that the court's composition in this respect is based on which types of cases they are expected to decide and which type of review they are expected to perform. The expertise reflected in the composition of the courts as well as the experience gathered by the courts may thus be important factors for their scope of review in practice.

2.4 Access to courts

The importance of access to courts has been emphasised in Article 9 of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998), to which all four countries are parties. Article 9(3) does not limit the possibility of states to define the criteria for access to justice, but Article 9(4) and (5) emphasise the aspect of effective access to courts.

Access to courts is a key issue in environmental law because of the impact of environmental activities on third persons and the society as a whole.²⁷ In this

²⁷ Jonas Ebbesson (ed.): *Access to Justice in Environmental Matters in the EU*, Kluwer Law International, 2002. A recent

regard the general concept of *locus standi* is insufficient to ensure effective access to courts as it focuses on a legal or economic link between an individual and the claim in question. The *de jure* access to courts in Denmark, Finland and Norway is generally not limited to those being individually and significantly affected, although there is no unlimited *actio popularis* in any of the countries. However, on closer examination some variation can be identified among the courts.

In Norway, access to courts is provided to persons that present a legal claim and that demonstrate a genuine need for having the claim determined against the defendant. The rules concerning access to courts are similar to those applicable to access to administrative complaints.²⁸ In addition, there is a requirement concerning the importance of the claim that has to be met to gain access to appeal courts and to the Supreme Court.²⁹ In Denmark, access to courts is not stipulated by law, contrary to what is the case for access to administrative appeal. Danish courts, however, generally grant *locus standi* to the same group of persons or organisations that have access to administrative appeal.³⁰ In Finland, the environmental cases are almost exclusively decided in the administrative courts and the *locus standi* in general courts requiring a legal interest is significant only in environmental damage cases. Almost all environmental legislation since 1990's contains appeal right provisions which vary but in general grant right of appeal to those who may be affected and to local or regional environmental

study of access to justice in EU Member States can be found in Milieu Ltd.: *Summary Report on the inventory of EU Member States' measures on access to justice in environmental matters*, 2007. There are separate country studies for Denmark, Finland and Sweden. These studies are available at <http://ec.europa.eu/environment/aarhus/pdf/studies.zip>.

²⁸ Compare § 1-3 of the Norwegian Dispute Act (2005 no. 90) and § 28 of the Public Administration Act (February 10, 1967).

²⁹ See in particular §§ 29-13 and 30-4 of the Norwegian Dispute Act (2005 no. 90).

³⁰ E.M. Basse & H.T. Anker: Denmark, in J. Ebbesson (ed): *Access to Justice in Environmental Matters in the EU*, Kluwer Law International, 2002, p. 157f.

NGO's.³¹ Where the applicable legislation does not contain specific appeal right provisions, the Administrative Judicial Procedure Act provisions are applied. In these cases the right of appeal is significantly narrower and extends only to the addressees of decision and to persons whose rights, interests or duties are *directly* affected by the decision.³² This concerns private roads, mining, expropriation, wilderness areas, off-road traffic, water traffic, forestry and resource use in the sea areas.³³ In Sweden, access to courts is generally limited to parties that are concerned by the decision.³⁴ However, the interpretation of the concept "concerned" is left to the courts and varies depending on the applicable legislation. Parties concerned may raise an administrative case and appeal; to an administrative body or to a court, whichever is the right instance of appeal in that type of case. Permission to appeal is required to higher instances. (Private parties also have access to the environmental courts for a civil law suit for injunction or compensation.) To some extent contrary to Denmark and Norway, administrative authorities may appeal an administrative decision to a court in both Finland and Sweden, provided that the authority is considered "concerned" or the relevant legislation provides for a right of appeal. In Denmark an authority must demonstrate a significant interest in order to challenge an administrative decision by e.g. the administrative appeal boards.

The right of NGOs access to courts varies significantly between the countries. In Norway, the only requirements are that the issue at stake falls within the scope of the general objective of the NGO and that the NGO has not solely been established in order to gain

access to court.³⁵ In Denmark the right of NGO access to courts is not stipulated by law as opposed to access to administrative appeal.³⁶ Standing of NGOs has in general been accepted by the courts.³⁷ In Finland, the local or regional NGOs have right of appeal in the majority of environmental administrative decisions, excluding the majority of exemptions granted by the Nature Conservation Act. National NGOs only have the right to appeal decisions of national scope such as nature conservation plans. In Sweden, NGOs' right to appeal is restricted. They may appeal decisions concerning permits, municipal plans that are considered to have significant impact on the environment and supervisory decisions concerning contaminated land. The right to appeal is, furthermore, restricted with regard to the NGO's purpose (environmental protection or nature conservation), its size (2000 members) and its duration (shall have existed for 3 years).³⁸ The latter serves the same purpose as the Norwegian restriction on *ad hoc* NGOs.

As a conclusion, *de jure* access to courts is fairly broad in the four countries.³⁹ Yet, *de facto* barriers may significantly limit effective access to courts. Here we concentrate on costs of litigation. The potential

³⁵ One landmark case concerns the establishment of a military practice field, raised by an NGO established with the purpose of working against the establishment of the field, see Rt. 2003 p. 833. Another famous case concerns the access to courts of a Swedish NGO, see Rt. 1992 p. 1618.

³⁶ In general local and national NGOs that safeguard nature, environment or recreational interests have access to appeal to the administrative appeal boards as specified in e.g. the Planning Act (consolidated act 1027/2008), the Nature Protection Act (consolidated act 1042/2008) and the Environmental Protection Act (consolidated act 1757/2006). Certain variations may appear though.

³⁷ See e.g. U1994.780Ø regarding the standing of Greenpeace in a case concerning the construction of the Oresund Bridge.

³⁸ However, the environmental process in Sweden is rather open; everyone, including organisations that do not fulfil the criteria, have access to the files of the case and may add any information they find relevant, also if they do not have the right to appeal.

³⁹ However, the Swedish criteria for NGOs' access to justice have been criticized, see Milieu Ltd.: Summary Report on the inventory of EU Member States' measures on access to justice in environmental matters, 2007, at 10-11.

³¹ See e.g. Environmental Protection Act (86/2000) § 97 and Nature Conservation Act (1096/1996) § 61.

³² The Finnish Administrative Judicial Procedure Act § 6.

³³ See footnote 62 for interpretation of this provision in relation to access to justice in Finland.

³⁴ The Administrative Act (1986:223) 22 §, The Administrative Procedure Act (1971:291) 33 §, the Environmental Code (1998:808) chapter 16, 12 §.

litigation costs appear to be significantly higher in Norway than in the other countries. The basic costs incurred by a claimant bringing a case before a district court in Norway is NOK 4,300 (480 €)⁴⁰ increasing with NOK 2,580 (290 €) per day of court proceedings for each day beyond the first day.⁴¹ Appeals to the courts of appeal cost NOK 20,640 (2,300 €), and the costs per day of proceedings are the same as for the court of first instance. The same applies to cases appealed to the Supreme Court. Accordingly, the minimum fee for a civil case that is appealed all the way to the Supreme Court is NOK 45,580 (5,400 €), provided that the case does not need more than one day in court at each level. In addition, the losing party will normally have to pay the costs of the opponent.⁴² In Denmark court fees are fairly low starting from 500 DKK (67 €) and with a maximum fee at 75,000 DKK (10,000 €). Private appellants may be ordered to pay the litigation costs of an authority if they lose the case. In Finland the appeal fee in administrative courts is 82 € and in the Supreme Administrative Court 204 €. Costs of litigation are covered by each party. The state is ordered to pay the litigation costs of the other party if there is a clear legal mistake in the appealed decision. The costs ordered are significantly lower than those accepted in general courts. The private appellant may have to pay the litigation costs of an authority only if the appeal is manifestly groundless. In Sweden, the cost for an application to the environmental court is, at present, 450 SKR (41 €). Appeals are free of charge. Litigation costs, except in civil suits, are predictable also if they may be considerable, as each party pay their own costs.⁴³ The option of civil suit for preventive measures

is seldom used, probably since the losing party pays the opponent's costs.

3 Methodology of the comparative study

The original intention of this study was to make a comparison of case law from the four countries. Yet, a comparison was complicated by the differences in the court systems and structure of environmental legislation introduced above. Moreover, the nature and availability of the research material differed significantly from country to country. Thus the results are not fully comparable. Regardless of this, we believe that the findings of the study are significant for our understanding of how the design of court systems interact with the functions courts have in environmental cases.

The study is performed as a quantitative analysis on the basis of the character of the environmental cases brought before courts, and a more detailed qualitative analysis in relation to all or a sample of cases to answer the following key questions:

- 1) what kind of environmental cases are brought to courts;
- 2) who bring environmental cases to courts; and
- 3) what is the outcome of the cases.

In Norway the study concentrated on published cases⁴⁴ initiated to protect the environment, whereas a broader range of cases has been included in the Danish, Finnish and Swedish studies. The main purpose of limiting the selection of cases examined in Norway was to examine to what extent courts have served and in the future can be expected to serve to promote environmental interests. Moreover, it was

⁴⁰ In order to ensure comparability, fees in € are calculated at the exchange rates on June 4, 2009.

⁴¹ See the Act concerning Court Fees (1982 no. 86). After six days, the fee increases to NOK 3.440 (€ 380) per day for each additional day.

⁴² See § 20-2 of the Norwegian Dispute Act (2005 no. 90).

⁴³ However, the cost to *have* a permit may be considerable, as supervision partly is paid by operations that have permits. The supervisory fee varies between 0–250,000 SKR (22,900 €) depending on the size of the enterprise.

⁴⁴ However, one unpublished case concerning hunting of wolves was included. It was decided by Oslo namsrett on 16 February 2001 and received significant attention both domestically and internationally. The cases examined include all cases published by "Lovdata", see www.lovdata.no. For the 10-year period 1996-2005, the total numbers of published cases are: Supreme Court – 2,697 civil cases and 2,643 penal cases, appeal courts – 17,015 civil cases and 9,629 penal cases, and district courts – 1,456 civil cases and 1,475 penal cases.

feasible to use this criterion for identifying relevant cases rather than to use the broader criterion “environmental cases”. The cases selected include those in which the individual interests coincided with the public environmental interest. All selected cases were examined in detail. In total there were 51 civil cases and 57 criminal cases during a ten-year-period of 1996–2005. In Denmark the study covered civil cases related to environmental issues presented to the High Courts and the Supreme Court in the period from 1996–2005.⁴⁵ There were in total 260 published environmental cases of which 45 were identified as being initiated to protect the environment. The cases initiated to protect the environment were primarily cases challenging administrative decisions invoked with reference to the interference with environmental interests, e.g. pollution, noise, landscape, nature or recreational interests.

In the study of Finland and Sweden another approach was adopted. First and foremost the number of cases inhibited the detailed study of all environmental cases. In these countries it was not feasible to choose only the cases which were invoked for the purpose of environmental protection.

In Finland the Statistics Finland collects and publishes statistics on the numbers of court cases and their outcome, and the Supreme Administrative Court publishes annual reports. The total number of environmental cases identified in these sources during the period 2001–2005 were annually 3000–4000 in administrative courts (in total 13567 cases) of which about 800 cases were annually appealed to the Supreme Administrative Court (in total 4464 cases). Environmental cases formed one fifth of all cases decided by the Supreme Administrative Court annually. In addition there were annually over 300 property law cases decided in the Land Courts, almost 40 environmental crime cases in the district courts, and one or two environmental liability cases in the district courts. As 97 percent of the environmental cases were decided

in administrative courts, the study concentrated on them. The vast number of cases decided by the administrative courts as well as by the Supreme Administrative Court allowed a quantitative examination of the cases but made a more detailed examination of for example claimant and outcome of the cases impracticable. In order to select a sample it was decided to examine in detail only those environmental cases decided by the Supreme Administrative Court that it has classified as precedents, a total of 143 cases. These are decisions which the Court regards to have relevance for the application of law in identical or similar cases or are otherwise of public interest.⁴⁶

In Sweden during the period 2001–2005 the Supreme Court decided 15 precedents in environmental cases.⁴⁷ The Environmental Court of Appeal decided 2184 cases of which 667 were judgements.⁴⁸ The environmental courts decided 8038 cases and the property courts decided 5792 cases during the period. In this study the 15 precedents from the Supreme Court and the 667 judgements from the Environmental Court of Appeal are included. The cases include a broad range of cases such as permit applications, administrative review, nature conservation and claims for compensation. The Supreme Administrative Court decided 20 precedents and 189 other cases,⁴⁹ mainly concerning planning issues, infrastructure and nature conservation, which are all included in the study. It was not possible to extract statistics from the lower courts for this study.

⁴⁵ The survey was based on the cases published in *Miljøretlige Afgørelser og Domme (MAD)*, see www.thomson.dk.

⁴⁶ These cases are available at the website of official legal documents (www.finlex.fi).

⁴⁷ The cases published in the Yearbook of the Supreme Court.

⁴⁸ The other cases were decisions and protocols, and applications for permit to appeal.

⁴⁹ Reports respectively note cases in the Yearbook from the Supreme Administrative Court.

4 What kind of cases are brought to the courts?

4.1 Introduction

The types or categories of environmental cases may differ from country to country. The cases have generally been categorised according to the *legal theme*, the *environmental theme* and the *activity* in question. Legal theme relates to the type of claim, e.g. review of administrative decisions, compensation claims, criminal cases etc. Environmental theme relates to environmental interest at stake in the case, e.g. a clean environment, nature protection, recreation, cultural heritage etc. The activity in question categorises the human activity that was addressed in the case, e.g. emissions, building and construction, planning, infrastructure etc. A certain variation as to themes and activities occur between the four countries due to differences in the national environmental law, in activities leading to environmental problems, and in the environment as such.

4.2 Comparison regarding legal theme

In Norway the 108 cases identified during 1996-2005 initiated with a view to promote environmental interests represented only an estimated 0.4 percent of the civil cases brought to court and 0.7 percent of the criminal cases brought to court. It is thus of interest that environmental issues were far more frequent among criminal cases than among civil cases in Norway. It appears that criminal law plays a surprisingly significant role for environmental protection when compared to civil cases in Norway. In the Norwegian civil cases the main legal claim was monetary compensation. Few cases aimed at injunction (stopping environmentally harmful activities) or at challenging the validity of administrative decisions. In only one case did the claimant argue that public authorities had failed to comply with a duty to act to protect the environment.

In Denmark the number of environmental court cases (260) identified during 1996-2005 appears relatively low, in particular the number of cases (45)

initiated to protect the environment. This may, however, be explained by the fact that Denmark has a quasi-judicial administrative appeal system with independent administrative appeal boards providing a cheap and fairly expedient opportunity for review of administrative decisions. Nevertheless, court review of administrative decisions – primarily decisions by the administrative appeal boards – accounted for 67 percent of the civil court cases. The second largest group of civil court cases (22 percent) related to questions of monetary compensation or liability for pollution costs etc.

Denmark differs significantly from Norway, despite the similarities of their court systems. While most Norwegian cases to promote environmental interests concerned claims for compensation, the clear majority of the corresponding Danish cases challenged administrative decisions giving a permit or adopting a plan for new development. This is a noteworthy difference since there is extensive use of the administrative appeal boards in Denmark. These findings seem to confirm an impression that there exist strong disincentives to bringing environmental administrative decisions to court in Norway.

The legal theme in almost all cases in Finland concerns review of administrative decisions. These cases do in general not concern monetary compensation, since such compensation cannot be awarded in administrative review, except in water law cases (8 percent of all administrative cases).⁵⁰ Monetary compensation was the main issue in only six environmental liability cases initiated during the examination period.⁵¹

The detailed examination of a sample of cases from the Finnish Supreme Administrative Court showed

⁵⁰ Water Act (264/1961) chapter 11 concerns monetary compensation for damage, harm or lost interest caused by decision made on the basis of the act or by an activity which such a decision is required for,

⁵¹ Monetary compensation could also have been raised in relation to the 153 criminal cases decided in first instance because in Finland damages are awarded in criminal procedure if the damage is caused by committing a crime.

that one third of the 143 examined cases concerned decision-making competence, procedure and availability of information (in total 34 percent of the cases). It is particularly interesting that in nine of these cases the Court regarded the information available to the decision maker to have been insufficient and the cases were returned to the original permit authority for renewed and better informed decision-making.⁵² This indicates that the Court stresses the duty of the decision-maker to be well informed of the alternatives and the impacts of their decisions concerning the environment.

In Sweden, as in Denmark, a clear majority of the cases in the Supreme Administrative Court as well as in the Environmental Court of Appeal challenged decisions concerning a permit or a plan for development, either by the applicant or by a counterpart that was not satisfied with the outcome. Another large group of cases in the Environmental Court of Appeal concerned review of administrative supervisory decisions. Claims for monetary compensation represented less than 10 % of the cases in the Environmental Court of Appeal. The few cases in the Supreme Court concerned, *inter alia*, legal standing, environmental crime, and interpretation and application of environmental law. A large number of cases in all the courts concerned fees, administrative fines and formal issues, which were not very interesting from the environmental perspective.

Norway was the only country for which criminal cases were studied. Hence, our study does not provide a basis for comparing the role of courts in such cases. Our most important finding regarding the legal theme in environmental cases was the significant focus on administrative decisions in all countries except

Norway.

4.3 Comparison regarding environmental theme

Among the Norwegian civil cases initiated to benefit the environment, more than half were related to neighbour issues. These cases concerned competing interests between neighbours, and those bringing the cases to court were parties suffering from environmental degradation. Another 18 percent of the cases concerned private rights to natural resources, and were initiated by parties whose access to such resources would suffer due to environmental degradation. Only in 29 percent of the cases were the issues brought before the courts related to more general environmental concerns, such as issues concerning pollution and clean environment (21 percent) or nature protection and conservation (8 percent). Hence, it can be observed that anthropocentric interests were dominant in these cases. These findings indicate that private parties had few incentives or possibilities to bring cases promoting environmental interests before courts in Norway. This was in particular the case for issues concerning nature protection and conservation. It is also remarkable that there were no civil cases concerning recreation and public access to nature, or concerning cultural heritage.

A similar tendency can be seen in Denmark where overall neighbour issues accounts for 19 percent of all cases. However, a clean environment (air, water and soil) has nevertheless been registered as the most dominating environmental interest in 32 percent and nature protection in 26 percent of all cases. It must be recalled that the Danish figures are not limited to cases initiated to protect the environment, thus including appeals of administrative decisions restricting emission or pollution.

The environmental interest at stake in the cases in Finland was examined only in the sample of precedents of the Supreme Administrative Court due to the overwhelming number of cases. In the same case there may have been several environmental interests at stake or there may have been several appellants with

⁵² Either the environmental values had not been examined or environmental impacts had not been sufficiently assessed. E.g. in case KHO 2002:78, the nesting sites of a flying squirrel (Habitat Directive Annex IV a species) were not sufficiently examined in the planning process and thus the nature conservation interests could not have been taken properly into account as stipulated by the Planning and Building Act. In decision KHO 2005:88 an alternative site for the proposed pig farm with less adverse environmental impacts had not been assessed.

Table 1. Environmental interest at stake in the studied countries. The figures from Norway and Denmark cover a ten-year period of 1996-2005, whereas the figures from Finland and Sweden cover a five-year period from 2001-2005.

Env. interest	Norway	Denmark	Finland	Sweden
Clean env't (air, water, soil)	11 (21,5 %)	83 (32 %)	14 (7 %)	404 (59 %)
Nature conservation	4 (8 %)	67 (26 %)	27 (14 %)	54 (8 %) ¹ 9 (4 %) ²
Overall neighbour issues	27 (53 %)	50 (19 %)	7 (4 %)	incl. in other themes
Recreation and public access to nature	-	12 (5 %)	15 (8 %)	incl. in nature conservation
Built and cultural heritage	-	10 (4%)	9 (5 %)	183 (87 %) ²
Private rights	9 (17,5 %)	6 (2 %)	53 (28 %)	61 (9 %) ¹
Other	-	32 (12 %)	64 (34 %)	163 (24 %) ¹ 17 (8 %) ²
Total	51	260	191	682¹ 209²

¹ Supreme Court and Environmental Court of Appeal

² Supreme Administrative Court

conflicting interests. In the majority of cases the main interest was private rights (28 percent) understood to cover also the requested right to carry out the proposed activity. Of the environmental interests nature conservation was most often presented (in 14 percent of the cases). Clean environment and recreation interests were both brought up in about one case out of ten. Built and cultural heritage was the concern in 5 percent of the cases. It has to be pointed out that neighbourhood issues were raised in only 4 percent of the cases. This is a significant difference when compared to Norway and Denmark.

The most dominating environmental interest in the Swedish Supreme Court and the Environmental Court of Appeal was a clean environment, as this was at focus in the cases concerning permits and review of administrative supervision.⁵³ Nature conservation was the main theme in only 8 percent of the cases, but nature protection in general is an interest included in the "clean environment" interest, as this is understood by Swedish law. The main part of the cases concerning

⁵³ However, the Supreme Court grants leave to appeal on grounds of legal issues rather than on environmental themes.

private rights does not have a genuine environmental theme as they concern compensation for flooded sewer systems, duty to pay for garbage collection etc. Decisions on environmental sanction fees and judgments concerning administrative fines (one third of the cases in the “other” group below) are aiming at different environmental interests depending on which type of issue they address. The overall dominating environmental theme in the Swedish Supreme Administrative Court is the built environment, in a broad sense, as this is the main issue related to environment for which the court has jurisdiction. Most kinds of environmental themes may occur in relation

to this overall theme, such as air quality, noise, protection of threatened species or neighbour issues. The Supreme Administrative Court also has decided some cases concerning nature conservation during the studied period. Such cases were transferred to the environmental courts in 1999, by the Environmental Code.

Against this background, it can be asked whether the differences in focus on environmental theme in the countries can be attributed to differences in the natural environment, differences in legislation, differences in the role of courts, or simply to differences in the categorisation in the country studies. The fact that

Table 2. Environmental cases in the studied countries listed according to activity in question. The figures from Norway and Denmark cover a ten-year period of 1996-2005, whereas the figures from Finland and Sweden cover a five-year period from 2001-2005.

Activity	Norway	Denmark	Finland Administrative Courts	Sweden
Planning	n.a.	8% (20)	45% (6079)	51% (106) ²
Building	10% (5)	32% (82)	17% (2373)	28% (60) ²
Emissions and pollution permits	39% (20)	32% (84)	11% (1446)	45% (305) ¹
Water	n.a.	n.a.	10% (1320)	17% (116) ¹ (also included in permits above)
Waste	n.a.	n.a.	6% (836)	-
Use or resources (soil, mining, forestry)	16% (8)	2% (6)	4% (610)	2% (17) ¹ (also included in permits above)
Supervision (env. protection and water)	n.a.	n.a.	2% (227)	15% (105) ¹
Nature conservation management	n.a.	n.a.	1% (181)	8% (52) ¹ 5% (10) ²
Infrastructure	35% (18)	6% (15)	<1% (31)	8% (16) ²
Other	n.a.	20% (53)	3% (464)	32% (220) ¹ 8% (17) ²
Total	51	260	13567	682¹ 209²

¹ Supreme Court and Environmental Court of Appeal

Denmark has the highest share of cases on nature conservation may be explained by the fact that Denmark is most densely populated and agriculturally developed of the four examined countries and accordingly has a more dispersed system of protected

one concerned forestry. It is also remarkable that few of the numerous planning and building cases brought before Norwegian courts were initiated for environmental purposes.

In Denmark emissions and pollution are also the

Table 3. The appellant or claimant in court.

Claimant / Appellant	Norway all courts only cases initiated to protect the environment	Denmark first instance only cases initiated to protect the environment	Denmark first instance - all cases	Finland Supreme Admin Court precedents in first instance	Sweden Environmental Court of Appeal
Private addressees (excl. companies)	82 % (41)	16 % (7)	44 % (115)	27 % (38)	14 % (82)
Other private parties		53 % (24)	17 % (44)	24 % (60)	27 % (160)
Company	10 % (5)	2% (1)	17 % (44)	14 % (20)	35 % (210)
Authority	2 % (1)	2 % (1)	7 % (18)	15 % (21)	22 % (133)
Environmental NGO	8 % (4)	16 % (7)	3 % (7)	15 % (22)	2 % (14)
Municipality	n.a.	n.a.	n.a.	8 % (12)	-
Other	-	11 % (5)	12 % (31)	4 % (6)	-

areas that are likely to be affected by many different activities. In addition, it can be assumed that activities which will be harmful to the fairly small nature areas will be more controversial in Denmark than in the other countries.

4.4 Comparison regarding activity

The two activities that were brought before Norwegian courts most frequently were pollution-related activities, including efforts to clean up existing pollution, prevent pollution and prevent noise, and construction of infrastructure. Taking into account the importance of natural resources in the Norwegian economy, it is remarkable that few cases concerned extraction of such resources. None of the cases concerned extraction of marine resources, and only

dominating activities in environmental court cases. However, building and construction activities are almost just as frequent in court cases. This may reflect the fact that Denmark is fairly densely populated and that building activities are subject to several restrictions and often raise controversies.

The activity was examined only in relation to the review of administrative decisions in the Finnish cases. The cases were classified into 11 groups according to the activity affecting the environment: planning, building, pollution permits, water, waste, use of natural resources, supervision, nature conservation management, infrastructure and other activities. In administrative courts almost half of the cases concerned planning (45 percent). The second largest group was building cases (17 percent), environmental

permits (11 percent) and water issues (10 percent). The number of cases in the “other activity” group, which included cases concerning waste, use of resources, nature conservation management and infrastructure, was fairly small.

In comparison with courts in Norway and Denmark, the Swedish Environmental Court of Appeal has a rather different function. As the court is the appeal instance for environmental permits of different types; industry, water operations, gravel pits etc, it is natural that a large part of the activities in the court cases is about permit issues. For the same reason, supervisory issues are rather frequent. Most of the cases related to the environment in the Swedish Supreme Administrative Court concern municipal planning, infrastructure, actions for building and constructing and, in a few cases, nature conservation management.

In all countries, there was little focus in courts on activities related to use of resources or activities concerning nature conservation or management. One significant difference between the countries is the focus on planning and building in the courts of Denmark, Finland and Sweden as compared to the courts of Norway. The high costs of bringing cases to courts in Norway may be a barrier to bringing cases as the potential benefits of bringing planning and building decisions to courts in environmental interest would not outweigh these costs.

5 Who brings environmental cases to the courts?

A relatively high percentage of cases in all examined countries are brought to courts by private parties to whom the original decision is addressed (hereinafter “private addressees”), including companies, typically challenging administrative or court decisions that refuse or restrict a permit to conduct environmentally harmful activities. The latter types of cases were not included in the Norwegian study, however, which focused only on court cases initiated to protect the environment.

In Norway, 51 civil cases were initiated to protect the environment during the period 1996–2005. Private parties accounted for the great majority of cases, namely 82 percent, while companies accounted for 10 percent, public authorities for two percent and NGOs for eight percent of these cases.

In Denmark there were 260 civil cases related to environmental issues in the High Courts and the Supreme Court during the period 1996–2005. Private addressees, including companies, accounted for 61 percent of all environmental cases in first instance, whereas other private parties accounted for 17 percent, authorities for seven percent and NGOs for three percent. When court cases initiated to protect the environment are examined the picture is somewhat different. Of the 45 cases initiated to protect the environment private addressees and companies accounted for 18 percent, other private parties for 53 percent and NGOs for 16 percent of the court cases in first instance. The claims by private addressees were primarily related to compensation claims regarding noise or other interference with private property. The authorities only accounted for one percent of the cases initiated to protect the environment.

In Finland the analysis of a limited number of Supreme Administrative Court cases (143) showed that private addressees brought forward 27 percent of the cases in the first instance, other private parties 24 percent, companies 14 percent, authorities and NGOs 15 percent and municipalities eight percent. In the first instance there were two or more appellants in one fifth of the cases.

The Swedish study is focusing on who *appeals* the case to one of the three examined courts. The rates differ between the courts as they handle different types of issues. In the Environmental Court of Appeal, companies accounted for 35 percent of the appeals, neighbours for 27 percent, other private parties for 14 percent, NGOs for only 2 percent, and authorities for 22 percent. In the Supreme Administrative Court, private parties accounted for 27 percent of the appeals and neighbours for 63 percent. The cases before the

Supreme Court are too few to discuss in terms of percentage.

The samples differ: for Denmark all cases are included, while for Finland the sample is the appellant in the first instance of 143 cases of the Supreme Administrative Court and for Sweden it is the appellant in the Environmental Court of Appeal.⁵⁴ In the Finnish figures the sum of percentages is higher than 100 as in the same case there may have been two or more appellants.⁵⁵

Even though the Finnish and Swedish studies did not extract cases initiated *to protect* the environment, such information can, however, be extrapolated from the numbers of appellants. It can be assumed that most cases initiated by authorities, NGOs and neighbours aim to protect the environment (or the neighbourhood). Private claimants may indirectly act to protect the environment although through monetary compensation. On the other hand, private addressees of public decisions, including companies, typically initiate the appeal in an exploitative interest i.e. to challenge a permit refusal or permit conditions. For example, in Finland companies brought forward only five out of 20 relevant cases in another role than addressee.

Even though the *de jure* access to courts in the examined countries is broad, the number of cases actually brought to the courts by NGOs is low. Moreover, Norway seems to stand out from the rest of the countries due to the low number of environmental cases brought by private parties in general and NGOs in particular. A rather obvious conclusion is that in countries where the court trial is part of the

ordinary administrative appeals procedure (Finland and Sweden) there are many environmental cases, while in countries where the application to court can be regarded as an additional procedure the cases are fewer.

The low number of environmental cases initiated by private parties in Norway is an indicator that the potential costs of bringing cases to courts in Norway has been a significant disincentive to environmental litigation. In the Danish court system the number of cases raised by NGOs is fairly limited – only seven cases from 1996–2005 have been identified – whereas 24 cases appears to have been initiated by other private parties concerned in order to protect the environment. Even though court fees are fairly low, the risk of having to pay the costs of the opponent(s) may be an obstacle to bringing cases to the courts also in Denmark. Moreover, the possibility of bringing the case before an independent complaint mechanism may be regarded by many as a sufficient option for review in Denmark. However, the similarities between Norway and Denmark despite the differences in costs of initiating cases may indicate that the nature of environmental legislation in these countries, in particular the extent to which environmental legislation establishes clear rights and duties that can be invoked by private parties, may be a significant factor for the low number of cases.

The considerable number of environmental cases in Finland is a clear indication that access to justice in environmental law matters: low costs, limited risk of liability for opponents' costs and relatively broad right of appeal. Also in Sweden low costs, the inquisitorial procedure which may provide the weaker part with guidance on what would be needed for a successful judgement, and a relatively broad right of appeal, at least in many types of cases, lower the threshold to bring environmental cases to courts.

6 What is the outcome of court cases?

In the Danish and Finnish studies a particular focus

⁵⁴ It should thus be noted that the Swedish cases do not indicate who initiated the case before the courts.

⁵⁵ In Finland the municipalities have a dual role in environmental issues. They act as an authority in pollution permit and soil extraction issues. Here, however, the municipality is not the decision-maker, but represents the interest of the municipal self-government and the interest of the municipality as a whole. Also the Swedish municipality has a similar dual role where the Municipal Council is the "government" of the municipality and one or several municipal boards act as executing authorities

has been directed towards the review of administrative decisions and the extent to which the cases lead to changes in administrative decisions. The Swedish study includes review of administrative decisions but also, in accordance with the court structure, review of cases decided in the environmental courts as a permit authority (see section 2.2). Due to a high number of court cases it has not been possible to make a more in-depth qualitative analysis of the Swedish cases. In Norway judicial review of administrative decisions in cases initiated to protect environmental interests is limited to only 5 cases during the ten year period examined.

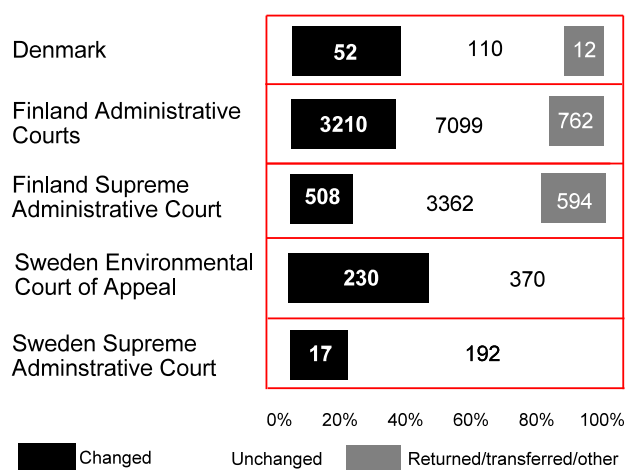


Figure 5, Outcome of court cases.

It should be emphasised that “change” of the administrative decision by the court is a continuum from totally altered to minor changes with little significance. For Norway, only one out of a totality of five cases was successful in overturning the administrative decision, namely a case concerning a permit to hunt wolves.⁵⁶ It appears that the rate of change in administrative decisions by the courts in Denmark, Finland and Sweden in essence depends upon the type of court and the nature of cases addressed in the respective courts. There is a relatively high rate of change of administrative decisions in all three countries; 30-40 percent in the lower courts. For Finland and Sweden, the rates of successful appeals in the

supreme courts are in general low. In Denmark where the general courts review administrative decisions the rate of change is 30 percent. In Finland the rate of change was rather high (35 percent) in administrative courts, but fairly low (12 percent) in the Supreme Administrative Court. In Finland, the lower change rate in the final court instance could be interpreted to indicate good quality of the lower court decisions.⁵⁷ The relatively high rate of change in the lower court may be due to the fact that the period examined in this study coincided with major revisions in the environmental protection and planning and building legislation both of which came into effect during the first months of 2000. The decision makers appear to have had difficulties in adopting correct interpretation of the new pieces of law, in particular that of the Environmental Protection Act.⁵⁸ In Sweden the rate of change in the Environmental Court of Appeal (to the benefit of the appellant) was about 38 percent (judgements except fines and fees). The Swedish Supreme Court changed 8 out of 15 cases – but the number of cases is too small to be the basis for any conclusion. The Swedish Supreme Administrative Court changed only about 8 percent of the cases. The low rate of change in the Supreme Administrative Court is to a large extent depending on the court’s self-restraint to alter municipal decisions and the restricted legal review of Governmental decisions.

The rate of change of the administrative decisions does not, however, indicate the extent to which the courts act in favour of the environment or contrary to it. Despite the difficulty of assessing this, an attempt has been made to indicate whether the courts in reviewing administrative decisions favour environmental interests. In Norway the courts were unlikely to conclude in favour of environmental interests in the few cases regarding review of administrative deci-

⁵⁶ See RG 2000 at 1125.

⁵⁷ Conclusion made in relation to Finland by Leila Suvantola in Tuomioistuinratkaisut ympäristöasioissa 2001–2005, Ympäristöoikeuden ja -politiikan vuosikirja 2007, University of Joensuu, Joensuu 2007, 363–376, 369.

⁵⁸ See *ibid.*, 368.

sions. These cases are too few to draw conclusions concerning the general attitude of Norwegian courts in such cases. However, they seem to confirm the general impression that private parties avoid bringing cases concerning the validity of such decisions to courts. It also contrasts with findings that a clear majority of environmental cases brought to courts were decided in favour of environmental interests (53 percent in favour and 39 percent to the disadvantage of environmental interests). Taken together, these findings can thus be regarded as supporting the thesis that has been presented by some theorists that Norwegian courts tend to decide in favour of public authorities.⁵⁹

In Denmark the courts do not appear to act in favour of the environment to any great extent as only 25% were categorised as in favour of the environment. In addition, most of the rulings categorised as in favour of the environment reflects the acceptance of compensation claims related to noise from roads etc. Thus, the rulings may express a safeguarding of individual economic interests rather than broader environmental interests as such. In some of the cases categorised as negative to the environment the courts have applied a very narrow interpretation regarding the legal basis for clean-up orders for (incidental) pollution in order to safeguard the legal certainty of the polluter.⁶⁰

In Finland the Supreme Administrative Court can be described as environmentally friendly. Only seven percent of the cases appeared to be contrary to environmental interests, while 65 percent could be considered to further environmental objectives.

In the Swedish study of the Environmental Court of Appeal, the result with regard to environmental protection has been analysed based on the outcome for different appellants. Companies aiming at performing some kind of operation or action, probably negative for the environment, were successful in 50

percent of their appeals. Authorities, acting to protect the environment, were successful in 55 percent of their cases. However, neighbours and NGOs protecting the environment were successful in only 19 and 7 percent of their appeals, respectively. In the study of the Supreme Administrative Court, authorities' decisions may promote environmental *or* exploitation interests. Nevertheless, the outcome of these cases supports the above hypothesis, as authorities were successful in 67 percent of their appeals, companies in 25 percent, but private parties and neighbours were successful only in 4 percent of their cases. Municipal plans, aiming at exploitation, were changed in 2 percent of the cases, infrastructure decisions aiming at exploitation were never changed. The low rate of changes of municipal plans is not surprising considering the strong principle of municipal planning monopoly that is applied in Sweden.

The success rate of NGOs has been analysed in all four countries. Generally, there were a limited number of NGO cases in all four countries. In Norway, four cases initiated by NGOs were identified during 1996-2005. Of these cases, only one case was successful.⁶¹ In Denmark seven cases raised by NGOs have been identified in the period from 1996-2005. Three of the seven cases dealt with the question of right of access to court (which was granted) and injunctive relief (which was not granted). Of the four cases dealing with more substantive issues two cases can be regarded as partly successful.⁶² In Finland, NGOs brought 17 cases of the 143 cases to the administrative court. They appealed to the Supreme Administrative Court in 12 of those cases. It appears that having been successful in the first instance they did not need to appeal to the second instance. In Supreme Administra-

⁵⁹ See Asbjørn Kjønstad, *Er Høyesterett statsvennlig*, in *Lov og Rett*, 1999, at 97-122 with further references.

⁶⁰ E.g. MAD2001.1377Ø and MAD1990.130V.

⁶¹ See Rt. 2003 p. 833, Rt. 2003 p. 1630 and RG 2000 p. 1125. One of the cases has not been published. It was decided by Oslo namsrett on 16 February 2001. RG 2000 p. 1125, which concerned hunting of wolves, was the only successful case.

⁶² MAD2001.539V (lacking assessment according to the Habitats Directive art. 6(3) re. the release of beavers close to a Natura 2000 site) and MAD2000.83H (lacking EIA of a road project).

tive Court NGOs were successful in 7 cases. Three of the cases concerned access to justice⁶³ and four concerned substantive interpretation.⁶⁴

In Sweden, NGOs appealed two cases to the Supreme Court and 15 cases to the Environmental Court of Appeal during the period. NGOs had no access to the Supreme Administrative Court. The NGOs were successful only in one case in the Supreme Court and in one case in the Environmental Court of Appeal.

In sum, it seems that NGOs in general do not make much use of the courts in order to promote environmental interests in the Nordic countries. Given that they only bring cases to court in a limited number of cases, it must be assumed that those cases that are brought to courts represent important cases from the perspective of NGOs. Against this background, it is particularly noteworthy that NGOs in general are unsuccessful, perhaps with the exception of Finland, when bringing cases to the courts.

7 Conclusions

Although the Nordic countries share a number of similarities in environmental legislation, there appear

⁶³ In KHO 2003:2 a building permit had been granted without the required exemption decision by another authority. The right to appeal was granted according to the standing provisions concerning the exemption decision. In KHO 2004:76 a right of appeal exemptions from hunting restrictions of non-protected species was granted to local bird conservation organizations. In KHO 2005:49 the appellant was a sports fishing organisation and it was decided to have right to appeal a decision establishing a conservation area

⁶⁴ In KHO 2003:38 and KHO 2003:99 the Supreme Administrative Court gave interpretation of the conservation provisions of the Habitat Directive Annex IV concerning flying squirrel (*Pteromys volans*) threatened by forestry activities and motorway construction. In KHO 2005:42 the Court interpreted the duty to assess impacts of proposed mining operations in the vicinity of a Natura 2000 site and came to the conclusion that the Ministry did not have sufficient information to form an opinion on whether an assessment should or should not be carried out. Finally in KHO 2005:57 the Supreme Administrative Court made restrictions to a permit for taking of ground water which could impact a Natura 2000 site.

to be some major differences as regards the role of courts in environmental law.⁶⁵ These differences stem primarily from differences in the court systems and in the functions of the courts. In particular, the existence of administrative courts in Finland and Sweden as opposed to the general court systems in Norway and Denmark stands out as a clear difference. In addition, the establishment of more specialised environmental courts in Sweden is a significant difference. Thus, a comparison of court cases has turned out to be quite complex. Nevertheless, the findings in the study are significant for the understanding of how the role of the courts interacts with the design of court systems and the nature of environmental legislation.

Norway has a "simple" system of general courts. The findings of the Norwegian study indicate that the Norwegian environmental legislation and court system do not favour the use of courts to promote environmental interests in civil cases. Courts were used more actively to contribute to environmental protection through criminal cases. In general, the Norwegian courts seem to serve to reinforce, rather than act as a correction to, the approach of public authorities to cases concerning environmental protection. This conclusion is supported by the fact that environmental NGOs bring few cases to courts and lose most of the cases brought forward. It also seems to be confirmed by the fact that the outcome in cases concerning judicial review of administrative decisions was in favour of the public authorities in four of five cases.

The Danish court system is very similar to the Norwegian system of general courts. However, in Denmark the existence of specialised quasi-judicial appeal bodies within environmental law may also affect the role of the courts in environmental law. Despite the fairly expedient and specialised administrative appeal system, a relatively large share of the environmental cases brought to the courts is reviews of administrative (appeal) decisions. Thus, the Danish courts to some extent function as a correction to public

⁶⁵ Iceland has not been included in this study.

authorities, although the courts in the majority of cases appear to act in favour of public authorities. This confirms the general reluctance or self-restraint that limits the scope of review by the courts primarily to legal issues. Furthermore, it appears that the Danish courts in general tend to favour legal certainty and more traditional individual legal interests. Yet, there are examples of successful environmental court cases and the Danish courts in general accept a broad right of access to courts, including that of NGOs. These examples primarily relate to procedural guarantees.

In Finland it appears that courts play a very significant role in environmental law. Courts are relied on to achieve environmental justice in relation to environmental decision-making. Yet, the courts play a minor role in monetary compensation for environmental damage. This is largely due to the control and permit mechanisms which are central to environmental law in Finland. The need to rely on courts for monetary compensations is therefore limited to environmental damages caused by accidents or illegal activities. The significance of the courts in delivering environmental justice is confirmed by the finding that the Supreme Administrative Court appears environmentally friendly in its decision-making.

In Sweden, courts play an important role for environmental law. This would largely be due to the procedural structure, with courts as ordinary and rather easily accessible instances in the process, but probably also to the cheap and inquisitorial process (except in civil law suits) which makes it possible for “ordinary people” to go to court. The environmental courts’ specialization and composition vouch for a high degree of competence with regard to environmental issues. But it is not possible from this study to draw any clear conclusions concerning the significance of the courts in delivering environmental justice. For such conclusions, there would be need for a more in depth study regarding how courts interpret environmental law than has been undertaken here. A finding worth mentioning even if it is outside the scope of this study and thus has not been presented above is that

who is appealing seems to be of significance for the outcome of the case; appeals from authorities and from companies applying for a permit seem to be considerably more successful than appeals from private parties and NGOs.

Common to the Nordic countries is that the environmental law is dominated by a public law perspective. Moreover, the environmental legislation in these countries vests public authorities with a broad margin of appreciation. However, the extent of margin of appreciation seems to vary somewhat between the countries, and this may be one reason for differences between the countries regarding the role of courts. Moreover, general differences between the administrative law systems of the countries mean that independent review of decisions by administrative authorities vary significantly between the countries. Norway can be placed at one extreme, with almost no independent review of administrative decisions by courts, while the Swedish and Finnish systems provide for a review by different types of courts. In Sweden the environmental courts and in Finland the administrative courts handle a large amount of environmental cases and generally perform a full review, whereas Norwegian and Danish courts decide rather few environmental cases and generally exercise self-restraint in their review of administrative decisions.

Another explanation of the differences in the nature and number of court cases in Norway/Denmark on the one hand and Finland/Sweden on the other may be the differences between the adversarial and inquisitorial systems of proceedings used in the respective courts. But even though Norway and Denmark have similar courts, there seems to be more court cases in Denmark than in Norway – in particular court cases that challenge administrative decisions. It could be argued that the relatively easy access to the quasi-judicial appeal system in Denmark may in fact lead to more court cases challenging administrative decisions as the first step has already been taken in the administrative appeal process.

Norway stands out as the country in which the

economic risk of bringing environmental cases to courts is the most significant. At the same time, Norway seems to be the country that has the lowest formal threshold for bringing cases to courts. Against this background, it is of interest to observe that few cases are brought to court in Norway compared to the other Nordic countries, a fact that indicates that the economic risk is very significant when private parties consider whether to bring cases to court. The considerable number of environmental cases in Finland is a clear indication that effective access to justice in environmental law matters: low costs, limited risk of liability for opponents' costs and relatively broad right of appeal. Also in Sweden, low costs, the inquisitorial procedure which may provide the weaker part with guidance on what would be needed for a successful judgement, and a relatively broad right of appeal, at least in many types of cases, lower the threshold for bringing environmental cases to courts. An added cause for the rather considerable number of environmental cases in court in Sweden may be the integrated procedural structure; a part who is dissatisfied with an administrative decision – whether it is a decision on a permit application or a supervisory decision – does not have to take a separate initiative to take the case to court.

In general it appears that courts have not been assigned any important role as part of the environmental law systems in Norway and Denmark. This coincides with the traditions to rely on general courts without establishing administrative courts or more specialized courts. Finland and Sweden have a tradition of administrative courts dating back two hundred years – and to some extent also a tradition of specialized courts within specific areas, e.g. the environmental courts of Sweden. Courts may, thus, have been afforded a more important role as part of the environmental law systems in Finland and Sweden. Administrative courts play a significant role in both countries characterized by a rather extensive review of administrative decisions. In addition, Sweden has established specialized environmental courts dealing with in particular environmental permit cases. Denmark has chosen another approach establishing more specialized administrative appeal boards. Although having a quasi-judicial element, the boards cannot be characterized as courts. Yet, the function of e.g. the Danish Environmental Protection Board of Appeal may to a certain extent resemble the function of a Swedish environmental court, i.e. to ensure a qualified, expedient and accessible review of administrative decisions. Norway, on the contrary, has relied

Table 4. Qualitative analysis of the outcome of the environmental court cases in the studied countries in their examined period.

	Norway	Denmark	Finland	Sweden
	Civil cases	Cases that change administrative decisions	Supreme Administrative Court precedents	Environmental Court of Appeal
Pro environmental interests	53% (27)	25 % (13)	60 % (86)	34 %
Neutral/Uncertain	8 % (4)	35 % (18)	29 % (41)	-
Contra environmental interests	39 % (20)	40 % (21)	11 % (16)	43 %

¹ The numbers show an approximation of the percentage of success by appellants that act pro or contra the environment.

on appeals to superior administrative authorities with the general courts as a last resort.

Yet, it has to be noted, that environmental law is by nature flexible. Environmental legislation – at least in the Nordic countries – offers broad discretion to public authorities and few rights to private parties or clearly defined duties for public authorities – perhaps with the exception of an increasing number of procedural guarantees, e.g. in the form of impact assessment requirements etc. Hence, it may be difficult for private parties to identify a satisfactory legal basis for bringing an environmental claim in countries where the courts have not been assigned an important role in the environmental law system. Specialized courts and administrative courts as well as quasi-judicial appeal boards may, however, provide better options than the general courts, in particular for review of administra

tive decisions. A system that relies on the general courts may expect a certain focus on individual legal interests, including legal certainty, as well as a reluctance or self-restraint in dealing with more discretionary matters.

Thus, when drawing up environmental law systems it is important to consider and discuss what role courts should play – or what functions they should have – as part of the environmental law system and consequently which court structure that would be most appropriate to meet those demands. The functions of courts and quasi-judicial appeal bodies should be an important component of any legal system. In addition, effective access to courts, not only focusing on formal access, appears to be a key element that should be addressed in any system that intends to safeguard environmental interests alongside other interests.

Naturmangfoldloven – en milepel i norsk miljølovgivning

Inge Lorange Backer

Abstract⁶⁶

The Nature Management Act – Act of 19 June 2009 no. 100 – is a milestone in Norwegian environmental legislation. It constitutes a follow-up to Article 110 b of the Constitution which establishes a right for everyone to a natural environment whose productivity and diversity is maintained whilst leaving the implementation of this right to further regulation. The Act replaces the 1970 Nature Conservation Act and is a thorough modernisation of the law in the light of present-day environmental principles and international conventions. It is guided by the 1992 Biodiversity Convention and serves as the legal basis for national implementation of other international instruments in the field of nature conservation, such as CITES, the World Heritage Convention and the Ramsar and Berne Conventions. The Act came into force on 1 July 2009, except for its provisions relating to the introduction and release of invasive alien species.

The Act covers natural diversity in all its aspects – living organisms, landscape, and geology. All species of Norwegian fauna and flora are covered, including invertebrates and, in principle, algae and single-celled organisms. The Act can be said to provide rules on three different levels. First, it lays down the legal basis for preserving outstanding natural areas and rare or threatened species, in particular by protected areas and priority species. Secondly, it provides for the management of natural diversity elsewhere in built-up or rural areas, particularly by selected habitat types, principles for wildlife management, and rules on invasive alien species. Thirdly, with a view to encouraging sustainable use of natural resources, it lays down management objectives, a general duty of care with respect to natural diversity and a number of

environmental principles that shall guide decision-making by public authorities in pursuance of the Act itself or of any other statutory legislation, as well as the allocation of grants from the public purse or the exercise of public ownership.

Harvesting of wildlife and salmon and fresh-water fish is permitted only when expressly authorised. For plants, harvesting is, as a main rule, allowed unless it will threaten the survival of the local population of species. The authorities may be obliged to consider a species for priority status if it is registered on the Norwegian Red List and functional ecological areas may be designated for priority species. Subject to certain exceptions, the deliberate import or release of alien species will require a special permit. More stringent rules are introduced for the five different categories of protected areas including their management. Legal protection is improved against encroachments whilst a proposal for a protected area is under consideration. National parks may be established even on private ground and marine protected areas may be created within the limit of territorial waters. Landowners will receive compensation from the state for economic loss due to impediments to ongoing land use but not for restrictions on new future use. The instrument of selected habitat types has been inspired by similar European networks. After the Government's selection of habitat types local authorities will be able to consider the various localities under the Planning and Building Act 2008. New statutory rules deal with the access to genetic resources and benefit-sharing from the extraction and exploitation of genetic material and allows for a permit requirement to be introduced by regulations under the Act. Lastly, the Act authorises various enforcement measures including reinstatement orders, direct enforcement and coercive fines, as well as sanctions against violations

⁶⁶ Inge Lorange Backer är professor och dr. jur.

in the form of damages or criminal sanctions.

The Act is divided into ten chapters and consists of a total of 78 sections. The provisions regarding the objectives of the Act, management objectives, environmental principles, and access to genetic material apply to the Norwegian continental shelf and economic zone as well as to the land territory and territorial waters. The other provisions do not apply beyond the limit of

territorial waters, but the Government intends to examine further the feasibility of an extended geographical scope.

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1 Innledning

Den nye norske naturmangfoldloven – lov 19. juni 2009 nr. 100 om forvaltning av naturens mangfold⁶⁷ – er en vidtspennende lov som omfatter all natur i Norge. Den følger opp miljøvernbestemmelsen i Grunnloven § 110 b første ledd og biomangfoldkonvensjonen av 1992.⁶⁸ Naturmangfoldloven tjener til å virkeliggjøre den grunnlovfestede retten til en "Natur hvis Produksjonsæвне og Mangfold bevares", som først og fremst virker som et tolkingsprinsipp og et lovgivningsprogram, jf. § 110 b tredje ledd.⁶⁹

Denne artikkelen gir en oversikt over den nye loven. I et avslutningsavsnitt knytter jeg noen få kommentarer til lovens virkninger og miljørettslige forskningsutfordringer.

Loven har ti kapitler med i alt 78 paragrafer. Den trådte i kraft 1. juli 2009, med unntak for kapittel IV om fremmede organismer og enkelte tilhørende

endringer i annen lovgivning.⁷⁰ Loven kom i stedet for naturvernloven av 1970.⁷¹ Andre miljøvernlover gjelder fortsatt. Noen av dem er endret på visse punkter – dels for å innordne dem under naturmangfoldlovens prinsipielle regler (viltloven, lakse- og innlandsfiskloven), dels for å styrke ivaretagelsen av naturmangfoldet (grannelova) eller sikre en helhetlig vurdering av forskjellige miljøhensyn (kulturminneloven).

Naturmangfoldloven bygger på en større utredning fra Biomangfoldlovutvalget, NOU 2004:28.⁷² Den omfattende proposisjonen, Ot.prp. nr. 52 (2008-2009),⁷³ slutter seg til den kursen som Biomangfoldlovutvalget hadde staket ut og til de fleste av utvalgets forslag til lovbestemmelser, noen ganger med mindre justeringer. I Stortingets energi- og miljøkomité ga regjeringens flertall full tilslutning til proposisjonen i Innst. O. nr. 100 (2008-2009), mens opposisjonspartiene hadde enkelte endringsforslag som gikk i forskjellige retninger. Under odelstingsdebatten høstet regjeringens proposisjon mange lovord fra alle hold – om man ser bort fra opposisjonens kritiske kommentarer til den tid (to måneder) som komiteen fikk til å behandle saken.

Arbeidet med en ny lov – som var varslet i stor-

⁶⁷ Naturmangfoldloven er lovens offisielle korttittel. En passende forkortelse kan være "nml."

⁶⁸ Convention on Biological Diversity, Rio de Janeiro 5. juni 1992. Konvensjonen trådte i kraft for Norge 29. desember 1993 på grunnlag av ratifikasjon 9. juli 1993, jf. St.prp. nr. 56 (1992-93) og Innst. S. nr. 168 (1992-93).

⁶⁹ Jf. særlig NOU 2004:28 (se note 5) s. 179-81 og Innst. O. nr. 100 (2008-2009) s. 12-13. Om Grunnloven § 110 b se senest Ole Kristian Fauchald: Forfatning og miljøvern – en analyse av Grunnlovens § 110 b, Tidsskrift for rettsvitenskap 2007 s. 1-84. Som Fauchald viser, er det påtakelig at grunnlovbestemmelsen ikke har vært påberopt i lovgivningssammenhenger hvor det ville ha vært naturlig. For kortere innføringer se Inge Lorange Backer: Innføring i naturressurs- og miljørett (4. utg., Oslo 2002) s. 53-57, Hans Chr. Bugge: Lærebok i miljøforvaltningsrett (2 utg., Oslo 2009) s. 79-83 og Carl August Fleischer: Miljø- og ressursforvaltning. Grunnleggende forutsetninger (3. utg., Oslo 1999) s. 47-61.

⁷⁰ Se kgl. res. 19. juni 2009 nr. 704.

⁷¹ Lov 19. juni 1970 nr. 63 om naturvern.

⁷² NOU 2004:28 Lov om bevaring av natur, landskap og biologisk mangfold (naturmangfoldloven). Forfatteren var leder av utvalget.

⁷³ Heretter omtalt som "prp."

tingsmeldingen om biologisk mangfold i 2001⁷⁴ – har hatt bred politisk støtte, selv om enkeltspørsmål har vært kontroversielle. Biomangfoldlovutvalget ble oppnevnt i 2001 av regjeringen Stoltenberg I og fikk et tilleggsmandat om erstatning for områdevern under regjeringen Bondevik II i 2002, og utredningen ble tatt imot av samme regjering. Med fremleggingen av proposisjonen oppfylte den rødgrønne regjeringen (som består av Arbeiderpartiet, Senterpartiet og Sosialistisk Venstreparti) et av sine løfter i regjeringserklæringen fra 2005 ("Soria Moria-erklæringen").

2 Grunnleggende utgangspunkter

2.1 Natursynet i loven

Hvilket natursyn bygger loven på? Svaret er at loven gir rom for flere syn på naturen, uten at noen av dem har et fortrinn. Formålsparagrafen dekker det syn at naturen og andre naturlige organismer har en egenverdi, og den fanger uttrykkelig opp et antroposentrisk syn på naturen ved å si at den skal tas vare på også som grunnlag for menneskenes virksomhet, kultur, helse og trivsel.⁷⁵

Sammenlignet med naturvernloven 1970 har naturmangfoldloven regler om utnyttning av naturen i form av bestemmelser om bærekraftig bruk, i tillegg til regler om vern. Det bredere perspektivet viser seg også i formålsparagrafen og lovens overordnede terminologi: Mens naturvernloven tok sikte på "vern",⁷⁶ foreslo Biomangfoldlovutvalget "bevaring" som nøkkelbegrep, og i den vedtatte loven er dette erstattet med "forvaltning" av naturmangfoldet. Som

det fremgår av nml. § 1, blir vern og bærekraftig bruk i dette perspektivet virkemidler i forvaltningen av naturmangfoldet og midler til å nå de forvaltningsmål som loven stiller opp i §§ 4 og 5.

Med proposisjonen kan man si at loven gir regler på tre nivåer:⁷⁷ For det første dekker loven den mest verneverdige og særpregete delen av norsk natur (særlig reglene om områdevern og prioriterte arter). For det annet skal den ivareta naturmangfoldet i hverdagslandskapet (særlig med regler om utvalgte naturtyper, forvaltningsprinsipper for arter og regler om fremmede organismer). For det tredje har loven betydning for all virksomhet som påvirker naturen (gjennom bestemmelser om bærekraftig bruk i lys av lovformålet).

Norsk natur er kjennetegnet ved sin variasjon.⁷⁸ Selv om artsrikdommen ikke er stor i globalt perspektiv, har tilpasninger til varierende klima, topografi og lysforhold preget flora og fauna. I Norge finnes Europas sørligste forekomst av arktisk natur og verdens nordligste edelløvsog furuskoger. Det anslås å være 60 000 arter i Norge. Bestandssituasjonen er vurdert for over 18 000 arter i Norsk Rødliste 2006, og noe under 2000 arter er regnet som truet. Siden 2003 har det vært et politisk mål å stanse tapet av biologisk mangfold i Norge innen 2010.⁷⁹ Det som påvirker det biologiske mangfoldet sterkest, er arealinngrep i artenes leveområder, introduksjon av fremmede organismer, høsting og annen beskatning, forurensning og klimaendringer.⁸⁰ Det er særlig de tre først nevnte påvirkningsfaktorene som naturmangfoldloven gir virkemidler mot, men f.eks. reglene om områdevern og utvalgte naturtyper kan også gi beskyttelse mot forurensning.

⁷⁴ Se St.meld. nr. 42 (2000-2001) Biologisk mangfold. Sektoransvar og samordning s. 201-03.

⁷⁵ Jf. prp. s. 60-61 og Innst. O. nr. 100 (2008-2009) s. 15 sp. 2.

⁷⁶ Naturvernloven 1970 ga først og fremst ga grunnlag for det som gjerne ble betegnet som "klassisk" eller "spesielt" naturvern – områdevern (og artsfredning), men hadde også enkelte regler om det "generelle" naturvern (§ 2 om plikt til å foreta undersøkelser og treffe avbøtende tiltak, som aldri ble satt i kraft, § 15 om reklameskilt, som sto ved lag til naturmangfoldloven, og § 16 om forsøpling, som ble overført til forurensningsloven i 1981).

⁷⁷ Se prp. s. 14 sp. 2.

⁷⁸ Se nærmere NOU 2004:28 kap. 5 og prp. s. 41-42.

⁷⁹ Se Nasjonal Agenda 21, St.meld. nr. 1 (2003-2004) Nasjonalbudsjettet 2004 s. 172 flg., særlig s. 191 sp. 2. Målet er fastholdt i senere stortingsdokumenter og i Soria Moria-erklæringen.

⁸⁰ Se nærmere NOU 2004:28 s. 97-130.

2.2 Biomangfoldkonvensjonen og andre internasjonale miljøkonvensjoner

Da biomangfoldkonvensjonen ble ratifisert i 1993, fant man at det kunne skje uten lovendringer.⁸¹ Senere utvikling og målet om å stanse tapet av biologisk mangfold har vist behov for nye tiltak som naturmangfoldloven skal gi grunnlag for. Det er også fremhevet at en mer aktiv oppfølging av biomangfoldkonvensjonens verdier og mål tilsier at de kommer klarere til uttrykk i norsk lovgivning. Spesielt reglene om tilgang til genetisk materiale (nml. kap. VII) er utslag av en slik tankegang.

På enkelte punkter har også andre internasjonale konvensjoner har spilt en rolle. Loven danner nå grunnlaget for gjennomføringen av Washingtonkonvensjonen om handel med truete arter (CITES),⁸² Ramsarkonvensjonen om våtmarker og verdensarvkonvensjonen har spilt en rolle for reglene om områdevern,⁸³ og Bernkonvensjonen påvirker reglene om artsforvaltning.⁸⁴

Naturforvaltning faller som utgangspunkt utenfor EØS-avtalen. Men særlig fugledirektivet og habitatdirektivet⁸⁵ har gjort at EUs regelverk kunne sies å ligge på et høyere beskyttelsesnivå enn norske regler. Det har vært et mål at Norge ikke skulle ha dårligere rettslige virkemidler for bærekraftig bruk og vern av naturmangfoldet enn man har i Europa ellers. Det har hatt betydning bl.a. for de nye reglene om utvalgte naturtyper.⁸⁶

⁸¹ Se St.prp. nr. 56 (1992-93) s. 10-11. Se også NOU 2004:28 s. 159-61 og prp. s. 20-21, 44 og 65.

⁸² Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington 3. mars 1973.

⁸³ Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar 2. februar 1971, og Convention Concerning the Protection of World Cultural and Natural Heritage, Paris 16. november 1972.

⁸⁴ Europarådets Convention of European Wildlife and Natural Habitats, Bern 19. september 1979.

⁸⁵ Direktiv 79/409/EEC om beskyttelsen av ville fugler og direktiv 92/43/EEC om bevaring av naturtyper samt ville dyr og planter.

⁸⁶ Jf. NOU 2004:28 s. 173-74 og prp. s. 49-50.

2.3 En tverrgående lov

Naturmangfoldloven er ingen overordnet lov i den forstand at den har trinnhøyde over ordinær lovgivning. Selv om man anser bevaring av naturmangfoldet som en forutsetning for menneskets overlevelse, gir ikke det loven noen forrang på linje med menneskerettskonvensjoner som er innlemmet i menneskerettsloven.⁸⁷ Men det kan være berettiget å se mål og prinsipper i naturmangfoldloven som et program for ny lovgivning om særskilte naturressurser.

I stedet er det treffende å karakterisere naturmangfoldloven som en *tverrgående lov*. Det har den til felles med f.eks. forvaltningsloven, som setter en normal minstestandard for saksbehandlingen på alle forvaltningsområder. Naturmangfoldloven utfyller særlovgivningen som knytter seg til bestemte naturressurser, og den har betydning for tolkingen av og skjønnsutøvingen etter særlovgivningen. Gir særloven regler som går lenger i å ivareta naturmangfoldlovens formål, vil de selvsagt gjelde foran eller i tillegg til naturmangfoldlovens bestemmelse. Siden naturmangfoldloven ikke har noen særskilt trinnhøyde, kan en særlov også fravike den ved å sette lavere krav. Men for en nyere særlov bør det da fremgå av forarbeidene. Man kan se det slik at *lex specialis* gjelder ikke på vanlig måte i forholdet mellom naturmangfoldloven og en særlov. Når en eldre særlov har lempeligere regler, la Biomangfoldlovutvalget opp til at naturmangfoldloven ville gå foran i egenskap av *lex posterior*. Etter den senere lovforberedelsen er det usikkert om dette kan fastholdes hvis det virkelig er motstrid mellom lovene. Formodentlig vil spørsmålet sjelden komme på spissen. Gjelder det forvaltningens skjønnsutøving etter en eldre særlov, vil naturmangfoldloven iallfall supplere særloven med reglene i §§ 1 og 4 til 13.

⁸⁷ Lov 21. mai 1999 nr. 30 om styrking av menneskerettighetenes stilling i norsk rett (menneskerettsloven).

3 Lovens saklige og stedlige virkeområde

3.1 Hva gjelder loven for?

Naturmangfoldloven gjelder for all norsk natur, til lands og til vanns – fra den helt uberørte natur til naturelementer i byer og andre tettbygde strøk. Den omfatter biotisk og abiotisk natur, både biologisk, landskapsmessig og geologisk mangfold, slik formålsbestemmelsen i § 1 viser. Den omfatter alle naturlige organismer, også encellede.

På to punkter som har med genetisk mangfold å gjøre, går loven utenfor denne rammen. Domestiserte arter faller som utgangspunkt utenfor lovens virkefelt, men for å sikre genetisk mangfold innenfor domestiserte arter er det en særskilt hjemmel for bevarings tiltak (§ 27 annet ledd, jf. forvaltningsmålet i § 5 tredje ledd). Denne hjemmelen kan få betydning for bevaring av tradisjonelle dyreracer og foredlete plantesorter. Reglene i kap. VII om tilgang til og utnyttning av genetisk materiale er en klar oppfølging av biomangfoldkonvensjonen, og må ses i et internasjonalt utviklingsperspektiv.

Forvaltning av biologisk mangfold preger lovens systematiske oppbygging, særlig ved at reglene om artsforvaltning kommer rett etter lovens alminnelige prinsipper. Enkelte høringsinstanser ga uttrykk for at landskap og geologi ble skjøvet for mye i bakgrunnen.⁸⁸ Men dette må også ses i lys av at plan- og bygningsloven (lov 27. juni 2008 nr. 71) er den alminnelige lov om arealdisponering utenom særskilte verneområder, og at plan- og bygningsloven 2008 gir bedre virkemidler til å ta vare på naturmangfoldet enn forgjengeren av 1985 gjorde.

3.2 Hvilke områder gjelder loven for?

Naturmangfoldloven gjelder fullt ut for *landterritoriet* og *territorialfarvannet* (dvs. indre farvann og havområdene ut til 12 nautiske mil fra grunnlinjene⁸⁹), jf. § 2 første ledd. For territorialfarvannet ligger det likevel

en viktig saklig begrensning i at høsting av marine organismer (ikke medregnet anadrome laksefisk) skjer etter reglene i havressurslova 6. juni 2008 nr. 37, jf. 5.1 nedenfor.

På *Svalbard og Jan Mayen* er utgangspunktet at bare kap. VII om tilgang til genetisk materiale gjelder, jf. § 2 annet ledd. For Svalbard gjelder i stedet svalbardmiljøloven (lov 15. juni 2001 nr. 79), en samlet miljølov som også dekker forurensning, arealplanlegging og kulturminner.⁹⁰ For Jan Mayen er det Jan Mayen-loven (lov 27. februar 1930 nr. 2) med forskrifter som gjelder.⁹¹ Men naturmangfoldloven gir Kongen adgang til å gjøre også andre bestemmelser i loven enn kap. VII gjeldende for Svalbard og Jan Mayen.

Loven gjelder overhodet ikke for *bilandene i Antarktis* (Bouvetøya, Peter I's øy og Dronning Maud land). Her gjelder lov 27. februar 1930 nr. 3 med forskrifter.⁹²

Det spørsmålet som var mest omstridt i slutfasen av lovforberedelsen, gjaldt lovens anvendelse på *kontinentalsokkelen og i Norges økonomiske sone*. Biomangfoldlovutvalget foreslo at loven skulle gjelde med de begrensninger som folkeretten setter, men uten å presisere hvilke begrensninger det ville bli tale om.⁹³ Fra miljøvernhold er det fremhevet at 12-milsgrensen økologisk sett er en vilkårlig grense, og at det er behov for lovens virkemidler også utenfor denne grensen. Proposisjonen fulgte ikke opp utvalgets forslag, dels for å unngå en uklar avgrensning som følge av uklare folkerettslige regler, dels fordi man så behov for justeringer i enkelte bestemmelser dersom de skulle gjelde utenfor 12-milsgrensen uten å skape rettsusik-

⁸⁸ Se for en oversikt Backer: Svalbardmiljøloven – en liten norsk miljøbalk, i Fågelperspektiv på rettsordningen. Vänbok til Staffan Westerlund (Uppsala 2002) s. 387-405.

⁹¹ Se særlig midl. forskr. 28. mai 1971 for regulering av naturinngrep på Svalbard og Jan Mayen, og forskr. 11. august 1978 om forvaltning av vilt og ferskvannsfisk på Svalbard og Jan Mayen, som begge fortsatt gjelder for Jan Mayen.

⁹² Se særlig forskr. 5. mai 1995 nr. 408 om vern av miljøet i Antarktis, som gjennomfører miljøvernprotokollen 4. oktober 1991 til Antarktistraktaten.

⁹³ Se NOU 2004:28 s. 182-84 og 575-76.

⁸⁸ Se prp. s. 54.

⁸⁹ Jf. lov 27. juni 2003 nr. 57 om Norges territorialfarvann og tilstøtende sone §§ 1 til 3.

kerhet eller folkerettslige komplikasjoner. Men flere av lovens prinsipielle bestemmelser er gjort gjeldende, og regjeringen ga uttrykk for at den vil foreta en nærmere vurdering av hvilke øvrige bestemmelser som bør få anvendelse utenfor 12-milsgrensen.⁹⁴ I realiteten spilte nok petroleumssektorens ønske om å slippe å forholde seg til de nærmere reglene i naturmangfoldloven, en viktig rolle.

Et særskilt spørsmål var om loven skulle gjelde for *virksomhet utenfor norsk jurisdiksjon*. Her setter folkeretten grenser, så en slik ordning ville i praksis tjene til å pålegge norske rettssubjekter å ta lignende hensyn til naturmangfoldet i utlandet som de må gjøre på norsk territorium. Særlig med tanke på fremtidig internasjonalt samarbeid foreslo utvalget en hjemmel for Kongen til å gjøre hele eller deler av loven gjeldende og begrunnet det bl.a. med hensynet til verneområder i internasjonalt farvann. Men dette forslaget ble ikke fulgt opp i loven.⁹⁵

4 Lovens alminnelige prinsipper for bærekraftig bruk

4.1 Oversikt. Forvaltningsmål

En viktig side ved naturmangfoldloven er å fremme bærekraftig bruk av naturmangfoldet. Men loven foreskriver ikke noen bestemte bruksmåter, og begrepet bærekraftig bruk er ikke nærmere definert.⁹⁶ Det loven gjør, er å oppstille visse mål for forvaltningen av naturmangfoldet (§§ 4 og 5) og miljø-

rettslige prinsipper for bærekraftig atferd og offentlig beslutningstaking (§§ 6 til 13). Dette er bestemmelser som har betydning for offentlige avgjørelser etter både naturmangfoldloven og særlovgivningen.

Forvaltningsmålene gjelder på aggregert nivå, og ikke direkte for den enkelte handling. Tankegangen har slektskap med den målstyring som har vært utbredt i næringsliv og offentlig forvaltning de siste tiårene. Forvaltningsmålet i § 4 gjelder naturtyper og økosystemer – disse begrepene er definert i § 3 bokstav j og t. Forvaltningsmålet i § 5 gjelder arter og deres genetiske mangfold og kan ses som en generalisering av målet om å stanse tapet av biologisk mangfold innen 2010. Disse forvaltningsmålene kan gi Riksrevisjonen grunnlag for forvaltningsrevisjon, som nettopp vil rette seg mot den overordnede måloppnåelsen. De vil også være relevante hensyn i domstolenes rettsanvendelse.

4.2 Aktsomhetsplikten etter § 6

Den generelle aktsomhetsplikten i § 6 har en forgjenger i faneparagrafen i naturvernloven 1970, men er mer operasjonell enn den. I sin vedtatte utforming er § 6 likevel mindre krevende enn Biomangfoldlovutvalget foreslo.

Aktsomhetsplikten retter seg mot enhver, i og utenfor næring. Målestokken er hva som er rimelig å gjøre for å unngå skade på naturmangfoldet i strid med forvaltningsmålene i §§ 4 og 5. Dette kan forutsette kunnskap om naturtilstanden og økologiske sammenhenger. Men § 6 innebærer ikke noen generell eller absolutt plikt til å skaffe seg kunnskap, til forskjell fra kunnskapsplikten for produsenter og importører etter produktkontrollloven. Innholdet i aktsomhetsplikten etter § 6 kan likevel ikke bare vurderes i lys av den kunnskap som vedkommende faktisk har. Særlig næringsutøvere som utnytter naturressurser, må forventes å skaffe seg relevant økologisk kunnskap i rimelig utstrekning.⁹⁷

Har aktiviteten offentlig tillatelse, er hovedregelen at tillatelsen med vilkår gjelder i stedet for den

⁹⁴ Se Ot.prp. nr. 52 (2008-2009) s. 68-69. Det er særlig lovens formål, forvaltningsmål, flere av prinsippene for offentlig beslutningstaking samt hovedreglene om genetisk materiale som gjelder utenfor 12-milsgrensen (§§ 1, 3 til 5, 7 til 10, 14 til 16 og 57 og 58). Ser man bort fra reglene om genetisk materiale, får dette først og fremst betydning for myndighetsutøving etter andre lover.

⁹⁵ Se NOU 2004:28 s. 184 sp. 1 og 576 sp. 1. Proposisjonen refererer delte meninger blant de få høringsinstansene som uttalte seg, men redegjør ikke for standpunktet i lovforslaget – se Ot.prp. nr. 52 (2008-2009) s. 68.

⁹⁶ Om begrepet bærekraftig bruk se prp. s. 75-76 og Markus Jerkø: Det norske formålet "bærekraftig utvikling", Tidskrift for rettsvitenskap 2009 s. 354-87 (særlig s. 369-71).

⁹⁷ Jf. prp. s. 377 sp. 1.

generelle aktsomhetsplikten, jf. § 6 annet punktum. Her gjelder en reservasjon hvis forutsetningene for tillatelsen ikke lenger er til stede, enten fordi naturforholdene har endret seg vesentlig, eller fordi løyvehaverens atferd går langt ut over det som det var rimelig i å regne med. I slike tilfelle kan atferden bli innfanget av aktsomhetsplikten.⁹⁸ Loven har ikke noen tilsvarende bestemmelse til fordel for den som har basert seg på råd fra fagkyndige eller fra et offentlig organ (f.eks. i landbruksforvaltningen), men det kan få betydning når man skal vurdere om det for å unngå skade på naturmangfoldet er "rimelig" å kreve noe annet enn å følge rådet.

Overtredelse av aktsomhetsplikten kan ikke straffes, men kan medføre erstatningsplikt etter vanlige regler eller plikt til å betale miljøerstatning etter § 74. Aktsomhetsplikten kan også påvirke tålegrensen etter grannelova.⁹⁹ Viktigste er det nok at overtredelse gir grunnlag for å kreve retting eller avbøting etter § 69.

4.3 De miljørettslige prinsippene i §§ 7 til 12

Kapittel II lovfester også andre alminnelige bestemmelser for bærekraftig bruk i form av prinsipper for offentlig beslutningstaking. Disse kan godt betegnes som miljørettslige prinsipper. De enkelte prinsippene er inntatt i §§ 8 til 12, mens § 7 angir deres rettslige betydning. De gjelder like mye for avgjørelser etter særlovgivningen som etter naturmangfoldloven.¹⁰⁰

Prinsippet om *kunnskapsbasert forvaltning av naturmangfoldet* i § 8 sikter for det første til vitenskapelig

basert kunnskap (§ 8 første ledd). Kravet til vitenskapelig kunnskap om bestandssituasjon, utbredelse og tilstand, og om effekten av påvirkninger, gjelder likevel bare "så langt det er rimelig". I første ledd annet punktum er rimelighetsbegrensningen presisert i forhold til sakens karakter og risikoen for skade på naturmangfoldet. Også eksistensen og påliteligheten av kunnskap som ikke er vitenskapelig basert og utbredelsen av den berørte arten eller naturtypen må kunne ha betydning.

For det annet skal det legges vekt på erfaringsbasert kunnskap som er opparbeidet over lengre tid (typisk flere generasjoner) gjennom bruk av og samspill med naturen (§ 8 annet ledd). Samisk erfaring er nevnt særskilt, men regelen gjelder også for kunnskap ervervet i andre lokalsamfunn og tradisjonelle næringer. All slik erfaring kan si noe om både hvordan naturmangfoldet kan bevares og om hvordan det blir påvirket av menneskelig virksomhet.

Naturmangfoldloven har ikke egne regler om konsekvensutredninger. Kravet til konsekvensutredning av virkninger for miljø og samfunn følger av plan- og bygningsloven 2008 kap. 14 med tilhørende forskrift.¹⁰¹

Føre var-prinsippet i § 9 er preget av den kontekst som en nasjonal lov gir, og utformingen skiller seg derfor fra f.eks. Rio-erklæringen av 1992.¹⁰² Nasjonal lovgivning gjør ofte myndighetene pliktige til å treffe en beslutning, f.eks. ved å avgjøre en søknad om tillatelse. Det kan da være at det, trass i § 8, mangler sikker kunnskap om hvorvidt og hvordan det omsøkte tiltaket vil påvirke naturmangfoldet, og kanskje gjør en rimelighetsvurdering etter § 8 første ledd at man ikke kan forvente nærmere vitenskapelige undersøkelser. I slike tilfelle skal det etter § 9 første punktum tas sikte på å unngå mulig vesentlig skade på naturmangfoldet. Det kan skje ved å gi en begrenset

⁹⁸ Denne reservasjonen er beslektet med regelen i forurensningsloven § 7 tredje ledd, som gjør at ingen kan basere seg på en utslippstillatelse hvis det er åpenbart at den kunne endres eller omgjøres fordi skadevirkningene av utslippet er vesentlig større enn ventet eller de kan reduseres uten urimelige kostnader.

⁹⁹ Se lov 16. juni 1961 nr. 15 om rettshøve mellom grammar § 2, der det nå også skal tas hensyn til naturmangfoldet på stedet når tålegrensen fastlegges. Om grannel. § 2 generelt se Hans Chr. Bugge: Forurensningsansvaret (Oslo 1999) s. 464-505, Endre Stavang: Naborettens forurensningsansvar (Oslo 1999) og Thor Falkanger og Aage Thor Falkanger: Tingsrett (6. utg., Oslo 2006) s. 339-72.

¹⁰⁰ Jf. prp. s. 51 sp. 2.

¹⁰¹ Forskr. 26. juni 2009 nr. 855 om konsekvensutredninger (i kraft 1. juli 2009).

¹⁰² Om føre var-prinsippet se generelt Nicolas de Sadeleer (ed.): Implementing the Precautionary Principle. Approaches from the Nordic Countries, EU and USA (London 2007).

tillatelse eller sette vilkår som vil beskytte naturmangfoldet, og om nødvendig ved å avslå søknaden. Men § 9 første punktum er ikke noen bindende retningslinje om at enhver skade skal unngås.

§ 9 annet punktum tar sikte på den situasjonen at det overveies tiltak for å beskytte eller bevare naturmangfoldet. Her kan usikker eller mangelfull kunnskap bli brukt som argument mot å treffe tiltak. Hvis det begrensede kunnskapsgrunnlag som man har, indikerer en risiko for alvorlig eller uopprettelig skade på naturmangfoldet, gjør annet punktum at kunnskapsmangelen ikke kan brukes som argument for å la være å treffe tiltak. Denne siden av føre var-prinsippet – som er velkjent i internasjonal sammenheng – får betydning for vedtak om verneområder, prioriterte arter og utvalgte naturtyper.

Økosystemtilnærmingen står sentralt i økologisk tenkning og i biomangfoldkonvensjonen. Det innebærer at man ikke bare ser på virkninger for den enkelte art eller bestand isolert, men på hvordan dens funksjoner for andre arter og deler av økosystemet kan bli påvirket. Etter § 10 skal det enkelte tiltak vurderes i lys av den *samlede belastning* som det aktuelle økosystemet er eller vil bli utsatt for gjennom andre inngrep. Virkningen av et tiltak skal altså ses sammen med tidligere tiltak og aktuelle fremtidige tiltak.

Etter § 12 skal man anvende *miljøforsvarlige teknikker, driftsmetoder og lokaliseringer* for å unngå eller begrense skader på naturmangfoldet. Et eksempel kan være å utsette høsting for å gi årets avkom bedre sjanse til å overleve. Dette prinsippet er en generalisering av retningslinjen i forurensningsloven § 2 nr. 3,¹⁰³ og det skal anvendes i lys av en bred økonomisk og samfunnsmessig vurdering. Det innebærer altså ikke noe påbud om å anvende miljømessig teknologi uten hensyn til kostnadene.

Merkostnadene ved miljøforsvarlige teknikker, driftsmetoder og lokaliseringer skal som utgangspunkt *bæres av tiltakshaveren selv*. Etter § 11 gjelder det samme for andre særskilte tiltak for å begrense skade-

virkningene. Også dette prinsippet er en generalisering av et velkjent prinsipp i forurensningssektoren ("forurenseren betaler", jf. forurl. § 2 nr. 5). Men § 11 tar forbehold om at tiltakets eller skadens karakter kan gjøre dette urimelig.

Prinsippene i §§ 8 til 12 retter seg mot både avgjørelser for å beskytte og bevare naturmangfoldet og avgjørelser om å utnytte eller påvirke naturressurser. Etter § 7 gjelder de ved all "*utøving av offentlig myndighet*", uansett om avgjørelsene treffes etter naturmangfoldloven eller på annet rettsgrunnlag. Begrepet myndighetsutøving har generelt stor betydning for å avgrense virkeområdet for forvaltningsrettslige regler, og det nøyaktige innholdet kan nok variere. Ved § 7 er det naturlig å ta som utgangspunkt det innhold begrepet har i forvaltningslovens vedtaksdefinisjon.¹⁰⁴ Etter nml. § 7 første punktum får prinsippene også anvendelse på tilskudd og avgjørelser om fast eiendom i kraft av det offentliges eierposisjon der dette ikke blir regnet som enkeltvedtak etter forvaltningsloven. Derimot gjelder ikke prinsippene for beslutninger som det offentlige treffer som eier av løsøre, aksjer eller andre selskapsandeler, eller for innkjøp eller leie (med mindre beslutningen kan sies å gjelde forvaltning av fast eiendom).

Rettslig sett gjelder ikke prinsippene i §§ 8 til 12 direkte for private beslutningstakere, selv om de er uttrykk for god og rasjonell miljømessig framferd. Indirekte kan de likevel få betydning for private beslutningstakere, via forvaltningsavgjørelser som regulerer den private virksomheten eller som tolkingsmomenter når innholdet av aktsomhetsplikten etter § 6 eller andre lovbestemmelser skal fastlegges.

Prinsippene gjelder for offentlig myndighetsutøving selv om det er private rettssubjekter som utøver myndighet. For andre beslutninger må det trekkes en grense mellom offentlige og private rettssubjekter. Er offentlig eierskap organisert i en form som står åpen for private, f.eks. som aksje-

¹⁰³ Lov 13. mars 1981 nr. 6 om vern mot forurensninger og om avfall (heretter forurl.).

¹⁰⁴ Se lov 10. februar 1967 om behandlingsmåten i forvaltningssaker (forvaltningsloven, forkortet fv.l.) § 2 første ledd bokstav a, jf. om begrepet enkeltvedtak bokstav b.

selskap, kommer man utenfor virkeområdet for §§ 8 til 12. Det er mer uklart om de gjelder for statsforetak, som er en organisasjonsform som bare står åpen for staten selv. Dersom statsforetak – spesielt Statskog SF – faller utenfor, vil reglene miste mye av sin betydning for forvaltning av fast eiendom. Regnes statsforetak generelt med, må prinsippene iakttas også av Statkraft SF og Statnett SF, som er de statlige hovedaktørene i produksjon og distribusjon av vannkraft. Den praktiske betydning av dette blir begrenset som følge av avveiningsregelen i § 14 første ledd, men det er likevel tvilsomt om loven kan forstås så vidt. De beste grunner taler vel for at de lovfestede prinsippene ikke gjelder for statsforetak generelt, men for Statskog SF så langt foretaket forvalter fast eiendom.¹⁰⁵

Også rettsvirkningen av prinsippene i §§ 8 til 12 fremgår av § 7. De har karakter av *retningslinjer*, jf. § 7 første punktum. Prinsippene determinerer altså ikke noe bestemt innhold i avgjørelsen, men utgjør hensyn eller betrakningsmåter som forvaltningen er pliktig til å anvende. Det understrekes av at beslutningen etter § 7 annet punktum skal vise hvordan prinsippene er anvendt. Det innebærer et særskilt krav til begrunnelsen for avgjørelsen som kommer i tillegg til den alminnelige regelen i fvl. § 25.

4.4 Miljøkvalitetsnormer

Et nærliggende virkemiddel i en rasjonell forvaltning for å ta vare på miljøverdier er miljøkvalitetsnormer, som gir uttrykk enten for en bestemt miljøstandard (f.eks. forekomst av indikatorarter) eller for en viss samlet påvirkning av miljøet fra flere kilder eller tiltak. Bruk av miljøkvalitetsnormer har vært mest diskutert i forurensningssektoren. I norsk rett har miljøkvalitetsnormer spilt relativt liten rolle og i hovedsak hatt betydning som retningslinjer for forvaltningens

skjønnsutøving.

Med § 13 er det uttrykkelig lovgrunnlag for miljøkvalitetsnormer som virkemiddel til å ta vare på naturmangfoldet, men bare som retningslinjer. Bli en slik miljøkvalitetsnorm overtrådt (eller det er fare for det), har aktuelle forvaltningsorganer etter § 13 tredje ledd en oppfordring (men ingen rettsplikt) til å samrå seg om en plan for hvordan miljøkvalitetsnormen likevel kan bli overholdt. Men f.eks. miljøvernorganisasjoner har ikke noe rettskrav på at dette skjer, og loven gir ikke noen særskilte hjemler for tiltak i en slik plan.¹⁰⁶

4.5 Forholdet til andre samfunnsinteresser

Tiltak etter loven, f.eks. områdevern og prioritering av arter, skal etter § 14 første ledd avveies mot andre viktige samfunnsinteresser. Regelen vil vel lettest få betydning for å ivareta hensyn til næringsgrunnlaget i lokalsamfunn og større utbyggingstiltak av samfunnsmessig interesse i f.eks. energi- og samferdelsektoren. Den krever ikke at slike samfunnsinteresser skal gis noen særlig vekt eller forrang, og skal bare sikre at de blir tatt i betraktning når tiltak for naturmangfoldet blir overveid. Bestemmelsen omfatter ikke individuelle interesser knyttet til f.eks. enkelte grunneiere, men det betyr ikke at slike interesser er utenforliggende i de avveininger som gjøres etter loven.

Mens § 14 første ledd bare er et krav til avveiningsprosessen, har § 14 annet ledd en materiellrettslig betydning ved å stille krav om at naturgrunnlaget for samisk kultur gis "tilbørlig vekt" dersom det er tale om vedtak som berører samiske interesser direkte. Om det er tilfellet, vil nok som utgangspunkt bero på om Sametinget er av den oppfatning. Utenfor slike tilfelle gjelder ikke § 14 annet ledd, uten at det betyr at samiske interesser er irrelevante i avveiningsprosessen.

¹⁰⁵ Lignende avgrensningsspørsmål oppstår bl.a. for Finnmarkseiendommen (jf. finnmarksloven 17. juni 2005 nr. 85) og PETORO som forvalter av statens direkte økonomiske engasjement i petroleumsvirksomheten (jf. petroleumsloven 29. november 1996 nr. 72 kap. 11). For drift av kommunale skoger som eies av en kommune direkte, er det på den annen side klart at prinsippene i §§ 8 til 12 gjelder.

¹⁰⁶ Biomangfoldlovutvalget foreslo en mer vidtgående hjemmel, både til å fastsette rettslig bindende miljøkvalitetsnormer og til å omgjøre tillatelse når normen ble overtrådt, se NOU 2004:28 s. 201-02 og 585-86.

5 Artsforvaltning

5.1 Oversikt

Reglene om artsforvaltning i naturmangfoldloven kap. III gjelder stort sett inngrep som retter seg direkte mot organismene. Det er særlig uttak av og skade på organismer som reguleres, uansett formål. Uttak kan ha forskjellige formål – høsting, avliving for å unngå skade eller ulempe, innlemming i samlinger eller innfangning for andre formål.¹⁰⁷ Sikring av artenes leveområder kan skje etter kap. III for såkalte prioriterte arter, men for øvrig er det andre regler som gir grunnlaget: kap. V om områdevern, kap. VI om utvalgte naturtyper og annen lovgivning om bruk av naturen.¹⁰⁸ I kap. IV har naturmangfoldloven regler for å beskytte naturlig viltlevende bestander mot å bli utkonkurrert av innførte arter.

Reglene i kap. III omfatter alle slags naturlig viltlevende organismer, men omfanget av reguleringen varierer for forskjellige klasser av organismer. For marine organismer (unntatt anadrome laksefisk) blir høsting og annen utnyttning regulert av havressurslova¹⁰⁹ i stedet for kap. III (§§ 15, 20 og 21, alles fjerde ledd),¹¹⁰ men nml. §§ 1 og 4 til 13 vil gjelde når fullmaktene i havressurslova skal brukes.¹¹¹ Havressurslova ble forberedt parallelt med naturmangfoldloven på initiativ fra Fiskeridepartementet, som

¹⁰⁷ Uttak – som er definert i § 3 bokstav o – er det overordnede begrep. Den underordnede terminologien varierer i stor grad med formålet, fremgangsmåten ved uttak og hva slags organisme det gjelder.

¹⁰⁸ Nml. kap. III har i tillegg en hjemmel for ferdsselsregulering i utmark (§ 22, som er hentet fra viltloven 29, mai 1981 nr. 38 § 8 – en bestemmelse som knapt har vært brukt). Av annen lovgivning er plan- og bygningsloven 2008 særlig viktig.

¹⁰⁹ Lov 6. juni 2008 nr. 37 om forvaltning av viltlevende marine ressursar (havressurslova).

¹¹⁰ Derimot blir det trolig plass for naturmangfoldloven når det gjelder skade på marine organismer eller uttak av dem for andre formål enn utnyttning (f.eks. avliving av skadegjørende individer), siden havressurslova etter sin § 3 tar sikte på høsting og annen utnyttning.

¹¹¹ Jf. prp. s. 385 sp. 2.

nok ønsket en egen lov til å regulere høstingen av fisk og andre marine organismer i stedet for å la det gå inn under naturmangfoldloven.

5.2 Dyr

For uttak av naturlig viltlevende dyr gjelder et legalitetsprinsipp: Uttaket må ha hjemmel i lov, jf. § 15 første ledd. Det gjelder også for en grunneier som vil høste viltlevende ressurser på sin eiendom. Det er videre et overordnet forvaltningsprinsipp at unødig skade og lidelse på viltlevende dyr og deres reir, bo eller hi skal unngås. Dette er i tråd med dyrevelferdsloven.¹¹²

Hjemmelskravet er nytt for innlandsfisk. Derfor ble det gitt en egen forskrift om høsting av innlandsfisk før naturmangfoldloven ble satt i kraft.¹¹³

Naturmangfoldloven trekker opp den generelle rammen for høsting av vilt og lakse- og innlandsfisk, som etter § 16 første og annet ledd hjemles i bestemmelser etter viltloven og lakse- og innlandsfiskloven.¹¹⁴ For det første er det etter § 16 tredje ledd et minstekrav at arten produserer et høstingsverdig overskudd. Kravet om "best tilgjengelig dokumentasjon" for dette må ses på bakgrunn av den generelle bestemmelsen om kunnskapsgrunnlaget i § 8, men innebærer ikke noe generelt eller ubetinget krav om vitenskapelig basert dokumentasjon. For det annet angir § 16 fjerde ledd de sentrale momenter som det skal legges vekt på ved avgjørelsen om å åpne for høsting: artens funksjon i økosystemet og virkningen som høsting kan ha for annet biologisk mangfold, nærings- og rekreasjonsmessig betydning, høstingstradisjon i området, og skade som arten gjør. Disse overveielserne

¹¹² Lov 19. juni 2009 nr. 97 om dyrevelferd § 3 annet punktum. Loven trer i kraft 1. januar 2010.

¹¹³ Se forskr. 26. juni 2009 nr. 851 om fiske etter innlandsfisk mv. og fangst av edelkreps (innlandsfiskeforskriften).

¹¹⁴ Lov 29. mai 1981 nr. 38 om viltet og lov 15. mai 1992 nr. 47 om laksefisk og innlandsfisk m.v. Som vilt regnes naturlig viltlevende landpattedyr, fugler, krypdyr og amfibier, jf. definisjonen i nml. § 3 bokstav p.

vil ofte føre til differensierte regler for forskjellige områder, særlig om høstingstiden.

Annet uttak enn høsting er det regler om i §§ 17 og 18. Adgangen til uttak etter § 17 følger direkte av loven. Den omfatter skadehindring og nødverge, dyrevelferd og smittevern. Avliving av dyrevern- eller smittevernhensyn kan alltid foretas når det skjer i med hjemmel i dyrevelferdsloven eller matloven.¹¹⁵ For å hindre skade på person eller eiendom er det en alminnelig adgang til å avlive smågnagere, krypdyr og lakse- og innlandsfisk. Er det annet vilt enn smågnagere og krypdyr som volder skade, kan avliving bare skje i nødvergesituasjoner. Nødvergeregelen har vært sterkt omdiskutert med sikte på rovvilt, og naturmangfoldloven viderefører viltlovens regel uendret.¹¹⁶

Annet uttak må etter § 18 bygge på et forvaltningsvedtak – forskrift eller enkeltvedtak. Denne paragrafen gir en mer generell hjemmel for å tillate uttak for å forebygge skade. Bortsett fra for fremmede organismer er det likevel en forutsetning at formålet ikke kan nås på en annen tilfredsstillende måte, og at uttak ikke truer bestandens overlevelse.¹¹⁷ De fleste uttaksformålene som § 18 nevner, gir også grunnlag for at naturforvaltningsmyndigheten av eget tiltak iverksetter uttaket (§ 18 tredje ledd).

For virvelløse dyr (f.eks. insekter) gjelder en mye videre adgang til avliving og uttak, jf. § 20.

5.3 Planter og sopp

For planter og sopp er hovedregelen motsatt av den som gjelder for dyr. Etter § 15 annet ledd er utgangspunktet at uttak av planter og sopp er tillatt så langt det ikke truer overlevelsen av den aktuelle

¹¹⁵ Se særlig dyrevelferdsloven § 12 og matloven 19. desember 2003 nr. 124 § 23.

¹¹⁶ Rettspraksis etter den tidligere bestemmelsen i viltloven § 11, slik den lød etter lovendring i 1993, har derfor fortsatt interesse – se særlig *Rt. 1997 s. 1341* (hønehaug (*Accipiter gentilis*)) og *Rt. 2004 s. 1956* og *2005 s. 769* (bjørn (*Ursus arctos arctos*)). Om rovviltpolitikken se senest St.meld. nr. 15 (2003-2004) Rovvilt i norsk natur jf. Innst. S. nr. 174 (2003-2004).

¹¹⁷ Disse vilkårene skriver seg fra Bernkonvensjonen art. 9 nr. 1.

bestanden.¹¹⁸ Skjer uttaket for å forebygge skade eller fjerne fremmede organismer, er det likevel alltid lovlig etter § 21 første ledd. Også her kan naturforvaltningsmyndigheten selv foreta uttaket i kraft av loven (§ 21 annet ledd).

Selv om hovedregelen er fri adgang til å høste villlevende planter og sopp, kan dette reguleres i forskrift eller enkeltvedtak etter § 21 tredje ledd. Denne bestemmelsen kan f.eks. brukes til å forby plukking av multekart.¹¹⁹

5.4 Skade som følge av lovlig virksomhet

En bivirkning av mange slags virksomhet er at den skader villlevende organismer, og naturmangfoldloven skal ikke hindre en bærekraftig bruk. Det er bakgrunnen for at forvaltningsprinsippene i § 15 første og annet ledd ikke hindrer lovlig ferdsel, landbruksvirksomhet eller annen virksomhet som skjer i samsvar med aktsomhetsplikten i § 6. Som oftest vil dette ikke ha noen betydning for det biologiske mangfoldet. En medvirkende årsak til det ligger i aktsomhetskravet etter § 6, som kan gjøre det nødvendig å gå frem slik at man unngår skade på naturmangfoldet (jf. 4.2 foran). En bilfører kan derfor være nødt til å bremse for å unngå å kjøre på et pinnsvin (*Erinaceus europaeus*) som krysser veien. Skal en art sikres større beskyttelse mot lovlig virksomhet, må det skje ved vedtak om prioriterte arter eller områdevern, eventuelt i noen grad gjennom reglene om utvalgte naturtyper.

5.5 Prioriterte arter

Reglene om prioriterte arter kommer i stedet for tidligere regler om artsfredning. De vil særlig få betydning som et virkemiddel til å beskytte arter som er klassifisert som truet på Norsk Rødliste 2006. Oppføring på rødlisten har ikke i seg selv direkte

¹¹⁸ Denne reservasjonen kan gi en viss beskyttelse f.eks. for de velkjente forekomstene av blåveis (*Anemone hepatica*) i Kongeskogen på Bygdøy i Oslo.

¹¹⁹ Forbudet mot plukking av multekart (umodne *Rubus chamaemorus*) etter lov 6. mai 1970 nr. 5 ble opphevet ved matloven.

rettsvirkning, men kan gi grunnlag for vedtak om prioritering av arten etter §§ 23 og 24.¹²⁰

En forskrift om å gjøre en art prioritert treffes etter § 23 av Kongen i statsråd. Hovedkriteriene i forvaltningsskjønnet er om bestandssituasjonen er i strid med forvaltningsmålet i § 5, om arten har en vesentlig andel av utbredelsen (eller genetiske særtrekk) i Norge, og om det er internasjonale forpliktelser knyttet til arten. Rødlisting vil i mange tilfelle medføre at naturforvaltningsmyndighetene etter § 23 annet ledd får plikt til å vurdere om arten bør prioriteres.

Hva prioriteringen betyr, beror på forskriften innenfor de rammer som § 24 setter. Forskriften kan for det første forby uttak eller skade som ellers ville være lovlig etter §§ 15 til 22 (jf. 5.2 til 5.4). For det annet kan den gi beskyttelse for mindre økologiske funksjonsområder som arten trenger for å overleve (f.eks. hiområder eller rasteplasser). Men denne beskyttelsen må ikke påføre grunneieren et vesentlig tap som følge av en vesentlig vanskeliggjøring av igangværende bruk av området. Skjer det, kan grunneieren kreve unntak fra forskriften eller at det aktuelle området i stedet blir vernet etter kap. V med tilhørende rett til erstatning. For det tredje kan forskriften innføre et skjerpet krav om konsekvensutredning ved planlagte inngrep i funksjonsområder. Forskriften kan videre gi regler om skjøtselstiltak (som ved områdevern) for å sikre funksjonsområdets kvalitet, og det er lagt opp til en tilskuddsordning for dette.¹²¹

5.6 Andre artsforvaltningstiltak

Naturmangfoldloven har også enkelte andre virkemidler som retter seg direkte mot artsforvaltningen. Enkelte bestander av en art kan oppvise genetiske særtrekk, og § 25 gir hjemmel for totalfredning og andre tiltak for å beskytte dem. Handel med truede

arter – særlig internasjonal handel – har lenge vært ansett som en av de største truslene mot visse arter, og § 26 gir en hjemmel for vidtrekkende regler om dette. Bestemmelsen tjener først og fremst som grunnlag for forskrifter som gjennomfører CITES-konvensjonen.¹²² For arter som er direkte utryddingsstruet har naturforvaltningsmyndigheten etter § 27 også plikt til å vurdere å iverksette bevaringstiltak utenom leveområdet (bevaring *ex situ*, f.eks. i genbanker og botaniske hager). Denne bestemmelsen er en umiddelbar gjennomføring av biomangfoldkonvensjonens artikkel 9.

6 Fremmede organismer

Innførsel og utbredelse av fremmede organismer kan være en alvorlig trussel mot det eksisterende biologiske mangfold. Nye organismer kan f.eks. overføre sykdom til eksisterende arter eller utkonkurrere dem.¹²³ Reglene i kapittel IV retter seg mot innførsel og utsetting av fremmede organismer. Organismer kan innta nye leveområder også ved naturlig spredning, men det faller utenfor reglene i kap. IV, som bare retter seg mot menneskelig bistand – enten den skjer bevisst eller ved at den fremmede organismen følger med som "blindpassasjer".

Om en organisme regnes som fremmed, har betydning for om forvaltningsmålet i § 5 gjelder, og om den kan fjernes og avlives etter reglene i §§ 18, 20 og 21. Dessuten gjelder ikke rammene i § 16 tredje og fjerde ledd for høsting av dyr som regnes som fremmede organismer.

Etter definisjonen av "fremmed organisme" i § 3 bokstav e er det avgjørende at organismen ikke hører til noen art eller bestand "som forekommer naturlig på stedet". Denne ordlyden er vid nok til å omfatte organismer som er kommet til Norge på egen hånd

¹²⁰ Oppføring på rødlisten kan også få betydning f.eks. for anvendelsen av den strafferettslige generalklausulen mot miljøkriminalitet (straffeloven 22. mai 1902 nr. 10 § 152 b annet ledd nr. 1, som vil bli avløst av straffeloven 20. mai 2005 nr. 28 § 240).

¹²¹ Jf. prp. s. 157 sp. 1 og Innst. O. nr. 100 (2008-2009) s. 20 sp. 2.

¹²² Den nærmere gjennomføring av CITES-konvensjonen er skjedd ved forskr. 15. november 2002 nr. 1276.

¹²³ Noen eksempler: Vasspest (*Elodea canadensis*), lakseparasitten *Gyrodactylus salaris* og iberiaskognegle (*Arion lusitanicus*). Se nærmere NOU 2004:28 s. 112-20.

(migrerende arter), f.eks. mårhund (*Nyctereutes procyonides*) og villsvin (*Sus scrota*). Det kan spørres om den skal fortolkes innskrenkende så den bare omfatter organismer introdusert gjennom menneskelig aktivitet, men de beste grunner taler etter min mening for å ta definisjonen på ordet.

Forarbeidene er uklare på dette punktet. I tilknytning til definisjonen i § 3 er det sagt at den bare dekker organismer som er introdusert gjennom menneskelig aktivitet (prp. s. 72 sp. 1). Samtidig synes det forutsatt at hjemmelen for å tillate utrydding av fremmede organismer (§ 18 første ledd bokstav g) skal kunne anvendes på organismer som har spredt seg naturlig, så lenge de ikke kan sies å ha etablert seg (prp. s. 389 sp. 2), og det er i samsvar med forslaget i NOU 2004:28.

§ 28 lovfester en aktsomhetsplikt for den som står for utsetting eller driver virksomhet som kan medføre spredning av fremmede organismer. For den ansvarlige for utsetting betyr dette en konkretisering og skjerping av den alminnelige aktsomhetsplikten i § 6. I tillegg har § 28 regler om varslings- og tiltaksplikt ved skade på biologisk mangfold som følge av utsetting eller utslipp av fremmede organismer.

Innførsel av organismer trenger som hovedregel tillatelse etter § 29. Det gjelder for alle slags organismer, domestiserte som villlevende, og uansett om de regnes som fremmede eller ikke. Etter definisjonen i § 3 bokstav h foreligger innførsel først når organismen kommer inn på landterritoriet. Fra kravet om tillatelse gjelder det unntak bl.a. for landlevende planter og visse husdyr. Skjer innførselen med sikte på utsetting i miljøet, skal søknaden også klarlegge hvilke virkninger som utsettingen kan ha. Blir det så gitt tillatelse til innførselen, kan utsetting skje uten noen ytterligere tillatelse, jf. § 31 første ledd bokstav a. Et minstekrav for å kunne gi tillatelse er etter § 29 tredje ledd at innførselen ikke vil ha vesentlige uheldige følger for det biologiske mangfold.

Utsetting av fremmede organismer kan bare skje på grunnlag av §§ 30 og 31. Forutsatt at aktsomhetsplikten etter § 28 blir respektert, gir § 31 uten videre

adgang bl.a. til å sette ut planter i hager, parkanlegg og dyrkede områder (men adgangen kan begrenses ved forskrift). Norske treslag kan fritt settes ut. Naturmangfoldloven er altså ikke til hinder for å plante norsk gran i deler av landet hvor gran ikke forekommer naturlig.¹²⁴ Utsetting av utenlandske treslag må derimot ha tillatelse etter § 30. Det samme gjelder annen utsetting av fremmede organismer som ikke kan skje med hjemmel i § 31. For vilt og akvatiske organismer trengs det tillatelse så sant organismen ikke finnes naturlig i distriktet eller vassdraget. Det betyr f.eks. at det kreves tillatelse til utsetting av pungreke (*Mysis relicta*, jf. Rt. 1999 s. 1517 om erstatning for utsetting i Selbusjøen). For å gi tillatelse må det – som etter § 29 – ikke være grunn til å vente vesentlige uheldige følger for det biologiske mangfoldet.

Reglene i kapittel IV om innførsel og utsetting av fremmede organismer må ses i sammenheng med særlovgivningen¹²⁵ Der det kreves tillatelse til innførsel eller utsetting etter flere lover som ivaretar hver sine hensyn, legger § 32 opp til en samordnet saksbehandling.

7 Områdevern

7.1 Innledning. Forholdet til naturvernloven 1970

Reglene om områdevern i naturmangfoldloven kap. V bygger videre på naturvernloven 1970, med klargjøringer av strukturell art og enkelte prinsipielle endringer.¹²⁶ Det er lovfestet generelle mål for område-

¹²⁴ Kommunen har en viss adgang til å hindre dette med hjemmel i skogbrukslova 27. mai 2005 nr. 31 § 6 fjerde ledd, som må anvendes i lys av de alminnelige reglene i naturmangfoldloven kap. II.

¹²⁵ Jf. f.eks. akvakulturloven 17. juni 2005 nr. 79 og ballastvannforskriften med hjemmel i skipssikkerhetsloven 16. februar 2007 nr. 9 (forskr. 7. juli 2009 nr. 992 om hindring av spredning av fremmede organismer via ballastvann og sedimenter fra skip).

¹²⁶ Områdevern etter naturvernloven 1970 (unntatt erstatningsreglene) er inngående behandlet i Inge Lorange Backer: Naturvern og naturinngrep. Forvaltningsrettslige styringsmidler (Oslo 1986) s. 72-259.

vern i § 33, ikke minst av pedagogiske grunner, og de enkelte vedtak om områdevern skal holdes opp mot disse målene. Den enkelte verneforskrift skal angi formålet mer konkret (§ 34 annet ledd). De generelle målene for områdevern vil også ha betydning for beskyttelsestiltak som treffes etter annen lovgivning, som havressurslova, skogbrukslova og markaloven¹²⁷ (§ 33 annet ledd).

For de enkelte vernekategoriene er vilkår og rettsvirkninger presisert. Det gir et klarere skille mellom vernekategoriene enn man kunne lese ut av naturvernloven 1970. Områdevern etableres av Kongen i statsråd ved forskrift (§ 34 første ledd). Forskriftskompetansen er avgrenset klarere når det gjelder både minimumsvern og maksimumsvern, og de rammer som loven gir om rettsvirkningene, kan anvendes direkte. Av prinsipiell interesse er også den alminnelige regelen om at eksisterende bærekraftig bruk som støtter opp om verneformålet, fortsatt er tillatt (§ 34 femte ledd).

Vedtak om områdevern har som utgangspunkt bare virkning innenfor de grenser som er fastsatt i verneforskriften. Iblant kan virksomhet utenfor – helst nokså nær – et verneområde innvirke på verneverdiene der. Det følger da av § 49 at det vil ha betydning for aktsomhetskravet etter § 6. Dessuten bestemmer § 49 at dersom tiltaket trenger tillatelse etter annen lovgivning, skal det legges vekt på verneverdiene ved avgjørelsen av om å gi tillatelse og i tilfelle på hvilke vilkår.

7.2 Vernekategoriene

Etter naturmangfoldloven er det fem forskjellige vernekategorier: nasjonalparker, landskapsvern-områder, naturreservater, biotopvern-områder og marine verneområder. Det innebærer en viss sanering, idet naturminner, vassdragsvern-område og særskilte plante- og fuglefredningsområder samt biotopvern etter villtloven og lakse- og innlandsfiskloven er tatt ut.

¹²⁷ Lov 5. juni 2009 nr. 35 om naturområder i Oslo og nærliggende kommuner (markaloven), som har til formål å sikre skogområdene med kulturlandskap omkring Oslo for friluftsliv, naturopplevelse og idrett.

Eksisterende verneområder blir likevel stående ved lag inntil videre i medhold av § 77 første punktum. Vern av vassdrag mot kraftutbygging skjer ved stortingsvedtak, med nærmere regler i vannressursloven §§ 32 til 35.¹²⁸

Vilkårene for å opprette *nasjonalparker* er lempet (§ 35). Det stilles ikke lenger krav om urørthet, men området må være uten "tyngre naturinngrep". Viktigst er at det ikke lenger stilles krav om statseiendom. En nasjonalpark kan etter § 35 fullt ut legges på arealer som er i privat eller Finnmarkseiendommens eie.¹²⁹ Skulle man finne at et tidligere vedtak om nasjonalpark gikk lenger i å trekke inn privat grunn enn naturvernloven 1970 ga adgang til, må det antas at den nye hjemmelen reparerer feilen.

Vernekategorien *landskapsvern-område* ble etter naturvernloven brukt på mange måter.¹³⁰ Slik vil det nok fortsette etter § 36. Bestemmelsen gjør det klart at pågående virksomhet kan fortsette og utvikles videre så langt den ikke endrer landskapets særpreg eller karakter vesentlig. Nye tiltak må tilpasses landskapet. I tråd med prinsippet om samlet belastning i § 10 er det lovfestet at det skal legges vekt på den samlede virkning av tiltakene i området. Verneforskriften kan angi nærmere hvilke krav som bl.a. stilles til landskapsmessig tilpassing i landskapsvern-området.

Vilkårene for å opprette *naturreservat* er forenklet og presisert i § 37. Naturreservat er den strengeste vernekategorien etter norsk rett. Urørthet er riktig nok tatt ut som et lovfestet kriterium for vern, men kan

¹²⁸ Lov 24. november 2000 nr. 82 om vassdrag og grunnvann (vannressursloven). Se videre rikspolitiske retningslinjer for vernede vassdrag, fastsatt ved kgl. res. 10. november 1994 med hjemmel i plan- og bygningsloven 1985 § 17-1 (og opprettholdt ved plan- og bygningsloven 2008 § 34-2 tredje ledd). Et vassdrag eller deler av det kan også inngå i slike verneområder som nevnt nedenfor. Vernekategorien vassdragsvern-område, som ble innført ved vannressursloven, har ikke vært tatt i bruk. Om stortingsvedtakene om vassdragsvern se særlig Backer 1986 s. 275-97.

¹²⁹ Ved finnmarksloven 17. juni 2005 nr. 85 overtok rettssubjektet Finnmarkseiendommen statens umatrikulerte grunn i Finnmark, som omfattet mer enn 95 % av arealene i Finnmark fylke. Loven er en oppfølging av Samerettsutvalgets utredninger om retten til land og vann i Finnmark.

¹³⁰ Jf. Backer 1986 s. 149-50 og NOU 2004:28 s. 299-301.

fortsatt ha betydning for skjønnsutøvingen ved avgjørelsen om det skal opprettes reservat. Det fremgår nå uttrykkelig at spesielle geologiske forekomster kan vernes som naturreservat.¹³¹ Det er også presisert at reservatfredning kan brukes for områder som ved fri utvikling eller gjenopprettningstiltak kan ventes å få slike verneverdier som et naturreservat skal ha. På rettsvirkningssiden er det gitt hjemmel for bestemmelser om vern av kulturminner i naturreservatet. Grensen mot *biotopvernområder* etter § 38 kan nok fortsatt virke uklar, ettersom et område som "har særlig betydning for biologisk mangfold" kan vernes som naturreservat, mens et område med "særskilt betydning som økologisk funksjonsområde for ... bestemte arter" kan vernes som biotopvernområde.

Marine verneområder etter § 39 er en nyskaping i loven. Mens de øvrige vernekategoriene godt kan omfatte store sjøområder sammen med et landareal, skal varig vern av rene sjøområder etter naturmangfoldloven skje som marine verneområder. Lovens stedlige virkeområde gjør at marine verneområder bare kan opprettes innenfor 12-milsgrensen. Dersom vernet bare skal gi regler om utøving av fiske, er det reglene i havressurslova som må brukes.¹³² Et marint verneområde kan omfatte både sjøbunn, vannsøyle og havoverflate, eller begrenses til noen av disse. Rettsvirkningene må naturligvis respektere folkerettens grenser.

Alle slags verneområder kan etter § 40 gis en særskilt *internasjonal status* i samsvar med en internasjonal konvensjon om vern av natur- og kulturmiljø. Det vil være mest aktuelt for områder som er meldt inn etter Ramsarkonvensjonen for våtmarker eller verdensarvkonvensjonen. Følgen av en forskrift etter § 40 er at de folkerettslige virkninger som den internasjonale status har, også får virkning som nasjonal rett. Det kan f.eks. medføre plikt til å finne et erstatnings-

område eller gjennomføre en særlig saksbehandling dersom det skal tillates inngrep i verneverdiene i området.¹³³

7.3 Saksbehandlingsregler og foreløpig vern

Saksbehandlingsreglene for områdevern er som før tilpasset plan- og bygningslovens system (nå lov 27. juni 2008 nr. 71). Reglene i §§ 41-43 og 46, jf. også § 34 første ledd, klargjør anvendelsen av forvaltningsloven ved områdevern. § 46 statuerer i første ledd nærmere krav til begrunnelsen for vedtak om områdevern, og annet ledd klargjør hvordan underretning og kunngjøring skal skje. Ved større verneområder må det foretas en konsekvensutredning av virkningene for næringsliv og lokalsamfunn i medhold av reglene etter plan- og bygningsloven 2008.¹³⁴

For å hindre at verneverdier går tapt under saksforberedelsen, er det regler i §§ 44-45. Adgangen til å vedta midlertidig vern etter § 45 gjelder nå ikke bare bestemte områder, men kan også anvendes generelt på en naturtype hvis den står i fare for å forsvinne. Midlertidige tiltak etter §§ 44 og 45 er tidsbegrenset til fire år med mulighet for forlengelse i to år.

Når det er søkt om tillatelse etter annen lovgivning til et tiltak i det påtenkte verneområdet, gir § 44 første ledd adgang til summarisk avslag på søknaden når verneforslaget er kunngjort etter § 42. Bestemmelsen er ny og vedtatt etter mønster av vannressursloven § 22. Tillatelse kan bare gis dersom tiltaket ikke vil ha nevneverdig betydning for verneforslaget, eller – av Kongen – dersom vesentlige samfunnsinteresser står på spill. Det kan ikke gis offentlig tilskudd til tiltak i et område der verneforslag er kunngjort. For tiltak som kan utføres uten tillatelse, kan det fastsettes meldeplikt, og den høring som ordinært ville være nødvendig før meldeplikten ble fastsatt, kan foretas i etterhånd. Melding i samsvar med meldeplikten kan så om nødvendig gi grunnlag for å vedta midlertidig vern etter § 45. Disse virkemidlene kan etter Kongens

¹³¹ Naturreservater etter naturmangfoldloven vil derfor i stor grad dekke vernekategorien geotopvernområde etter svalbardmiljøloven og naturminner etter naturvernloven 1970 (men eksisterende naturminner blir stående ved lag, jf. nml. § 77).

¹³² Se havressurslova § 19 om marine beskyttede områder.

¹³³ Se særlig Ramsarkonvensjonen art. 4 nr. 2.

¹³⁴ Se forskr. 26. juni 2009 nr. 855 om konsekvensutredninger § 2 første ledd bokstav h.

bestemmelse også anvendes før et verneforslag er kunngjort dersom sentrale offentlige myndigheter har satt i gang samlet planlegging for vern.

7.4 Skjøtselstiltak og forvaltningsplaner

Naturvernloven 1970 hadde generelle hjemler for det offentlige til å foreta skjøtsel i verneområder, men det var ofte uklart hvor langt skjøtelsadgangen strakte seg.¹³⁵ Dette har nå § 47 annet ledd nærmere regler om. Skjøtselstiltak kan f.eks. gå ut på å fjerne vegetasjon eller fremmede treslag, enkel tilrettelegging for å kanalisere ferdselen i verneområdet eller restaurering etter naturinngrep. Oppsetting av rugeholker må komme i samme stilling. Men § 47 gir ikke adgang til å foreta noen vesentlig endring i naturtilstanden sammenlignet med tilstanden da vernearbeidet tok til, eller skjøtselstiltak som innebærer høsting av naturressurser (f.eks. beiting). Det samme gjelder f.eks. for bygging av utsiktstårn i et fuglereservat. Hvis det er behov for slike videregående skjøtselstiltak og grunneieren ikke er villig til å inngå avtale om det, er det nå åpnet adgang til å foreta ekspropriasjon etter oreigningsl. § 2 første ledd nr. 55.¹³⁶

Samtidig søker § 47 å legge til rette for samarbeid mellom grunneieren og forvaltningsmyndigheten og å styrke grunneierens stilling. Som hovedregel skal et utkast til skjøtelsplan bli lagt frem når verneforskriften vedtas (§ 47 femte ledd og – mer ubetinget for visse naturreservater – § 37 fjerde ledd). Det legges opp til at forvaltningsmyndigheten fortrinnsvis skal inngå avtale med grunneieren om skjøtselstiltak. En slik avtale kan også inngås med et lokalt naturvernlag eller andre interesserte. Ved skjøtselstiltak på privat eiendom har grunneieren krav på forhåndsvarsel om mulig. Uansett skal økonomiske fordeler ved skjøtelsen (f.eks. felt trevirke) stilles til rådighet for grunneieren (eventuelt rettighetshaveren).

En forvaltningsplan er en plan for hvordan naturforvaltningsmyndigheten tenker å benytte den kom-

petanse som verneforskriften gir. Det har betydning bl.a. for vurderingen av aktuelle dispensasjonssaker, noe som igjen kan ha betydning for erstatningsfastsettingen etter § 50. Det er nytt at et utkast til forvaltningsplan skal legges frem samtidig med at en verneforskrift for nasjonalpark eller landskapsvernområde blir fastsatt, og at den i tilfelle skal omfatte utkast til skjøtelsplan. Er bruk av området en forutsetning for at verneformålet skal bli ivaretatt, skal det også legges frem et utkast til skjøtelsplan. Det vil være naturlig å sende grunneiere utkastene til forvaltningsplan og skjøtelsplan samtidig med underretning om vernevedtaket etter § 46 annet ledd.

7.5 Dispensasjon fra vernevedtak

Reglene i § 48 om dispensasjon betyr en innstramming for å unngå uthuling av vernevedtaket. Men innstrammingen er ikke så sterk som Biomangfoldlovutvalget foreslo.

Dispensasjon forutsetter at minst ett av følgende tre grunnvilkår er oppfylt: at det omsøkte tiltaket ikke strider mot vernevedtakets formål og heller ikke kan påvirke verneverdiene nevneverdig, at sikkerhets hensyn gjør det nødvendig, eller at vesentlige samfunnsinteresser gjør det nødvendig. Hvorvidt tiltaket er "nødvendig", må ses i lys av om et mindre inngripende og bedre miljøtilpasset tiltak kan være tilstrekkelig.

Er et grunnvilkår oppfylt, beror det på et forvaltningsskjønn om dispensasjon bør gis. Her må det også tas hensyn til eventuelle forutsetninger da verneforskriften ble fastsatt, hvis ikke forholdene har endret seg i tiden etterpå. Avveiningen må ellers skje i lys av de alminnelige prinsippene i §§ 8 til 12. For tiltak som oppfyller det førstnevnte grunnvilkåret, kan særlig prinsippet om samlet belastning (§ 10) få betydning, iallfall hvis flere lignende dispensasjonssøknader kan ventes. For avveiningen mellom verneverdiene og andre vesentlige samfunnsinteresser har § 48 annet ledd nærmere retningslinjer og dessuten en hjemmel for å pålegge tiltakshaveren å bidra til etableringen av et nytt verneområde som kompensasjon.

¹³⁵ Jf. Backer 1986 s. 241-54.

¹³⁶ Lov 23. oktober 1959 nr. 3 om oreigning av fast eiendom.

Det stilles større krav til begrunnelsen for dispensasjonsvedtak enn forvaltningsloven setter: Den skal vise hvordan forvaltningsmyndigheten har vurdert tiltakets virkninger for verneverdiene, og hvilken vekt som er lagt på dette (§ 48 fjerde ledd annet punktum).

I mange tilfelle kan et tiltak trenge både dispensasjon fra verneforskriften og tillatelse etter annen lovgivning. Velger tiltakshaveren å sende søknadene parallelt, følger det av § 48 tredje ledd at søknaden om dispensasjon fra verneforskriften normalt skal avgjøres først. Hensikten med dette er å unngå at en tillatelse etter annen lovgivning kommer til å virke som et press for å dispensere fra verneforskriften.

8 Utvalgte naturtyper

Utvalgte naturtyper er et helt nytt virkemiddel i naturmangfoldloven til å stanse tap av naturens mangfold. Det springer ut av anbefalinger etter Bernkonvensjonen og EUs fugledirektiv og habitatdirektiv samt programmet Natura 2000, som skulle sikre et nettverk av økologiske funksjonsområder for artene. Det er samtidig et virkemiddel med større grad av lokal forankring og påvirkning enn tradisjonelt områdevern, som blir forberedt og vedtatt i sentralforvaltningen.

Det er Kongen i statsråd som etter § 52 fastsetter at en bestemt naturtype skal være utvalgt. Ved en naturtype forstås etter definisjonen i § 3 bokstav j bl.a. en ensartet type natur som omfatter alle levende organismer og de miljøfaktorene som virker der (f.eks. kalkfuruskog, slåttemark og brakkvannsdelta), og spesielle typer naturforekomster (f.eks. dammer og åkerholmer). Forskriften kan begrenses til å gjelde bare for en del av landet (eventuelt territorialfarvannet) eller bare for forekomster av naturtypen som har visse kjennetegn. Naturforvaltningsmyndighetene har plikt til å vurdere utvelgelse hvis det foreligger dokumentasjon for at en naturtype har en tilstand eller utvikling som strider mot forvaltningsmålet i § 4, typisk hvis den står i fare for å forsvinne. Avgjørelsen beror på et forvaltningskjønn, der loven også angir tre andre

kriterier som har særlig vekt: hvilken betydning naturtypen har for prioriterte arter, om den har en vesentlig del av sin utbredelse i Norge, og om Norge har noen internasjonale forpliktelser til å ta vare på den. Kriteriene er parallelle med dem som gjelder for prioritering av arter etter § 23.

Utvalgte naturtyper blir altså fastsatt på nasjonalt nivå. I tillegg kan den enkelte kommune gi forskrift om at rettsvirkningene for utvalgte naturtyper skal gjelde for visse andre naturtyper i kommunen. Men dette vil bare gjelde for myndighetsutøving og eiendomsforvaltning som kommunens egne organer står for, ikke for statlige eller fylkeskommunale organer (§ 53 femte ledd).

Rettsvirkningene av at en naturtype er utvalgt, følger av §§ 53 til 56. Utvelgingen medfører en skjerpet aktsomhetsplikt etter § 6 og et særskilt hensyns- og utredningskrav ved offentlige beslutninger om inngrep og tilskudd, enten de innebærer myndighetsutøving eller forvaltning av offentlig eiendom (§ 53 første og annet ledd). Den utgjør en bindende retningslinje for forvaltningens skjønnsutøving etter annen lovgivning. Blir det gitt tillatelse til inngrep i forekomster av en utvalgt naturtype, må den kunnngjøres etter reglene i § 56, og ved klagebehandling skal en overordnet miljøvernmyndighet alltid få uttale seg til klagen. Etter §§ 54 og 55 medfører utvelgingen meldeplikt for skogbruks- og jordbrukstiltak som berører en forekomst (hvis ikke tiltaket inngår i en miljøplan¹³⁷ som er godkjent av kommunen etter § 55 annet ledd).

En rettslig bindende arealplan for en forekomst, vedtatt etter utvelgingen, går etter § 53 fjerde ledd foran og setter til side rettsvirkningene av utvelgingen hvis gjennomføring av planen entydig utelukker at forekomsten av naturtypen blir bevart. Av den grunn vil utlegging til LNFR-område¹³⁸ i kommuneplanens

¹³⁷ Miljøplanen utarbeides i samsvar med forskr. 15. januar 2003 nr. 54 om miljøplan, som er gitt med hjemmel i jordlova 12. mai 1995 nr. 23 §§ 3 og 18.

¹³⁸ LNFR=Landbruks-, natur- og friluftsmål samt rein-drift. jf. plan- og bygningsloven 2008 § 11-7 nr. 5.

arealdel normalt ikke være nok til å sette reglene i kap. VI ut av spill. Langt på vei er det opp til kommunen selv å avgjøre gjennom arealplanleggingen hvilke forekomster av den utvalgte naturtypen i kommunen som skal ha den beskyttelse som §§ 53 til 56 gir. Men hensyns- og utredningskravet vil gjelde når kommunen forbereder planen.

9 Erstatning til grunneiere og rettighets- havere

Som hovedregel kan miljøreguleringer og andre reguleringer av rådigheten over fast eiendom skje erstatningsfritt.¹³⁹ Det er ikke grunnlag for noen analogisk anvendelse av Grunnloven § 105 om retten til erstatning ved ekspropriasjon.

Særskilte bestemmelser kan imidlertid medføre erstatningsplikt for det offentlige. Naturvernloven 1970 fikk i 1985 regler om erstatning for fredning som naturreservat, biotopfredning og naturminne, i hovedsak som ved ekspropriasjon.¹⁴⁰ Etter naturmangfoldloven § 19 skal staten erstatte de tap som skyldes rovviltskader på husdyr og tamrein. Denne erstatningsordningen er nærmere regulert i forskrift,¹⁴¹ og ble ikke vurdert under arbeidet med naturmangfoldloven.

Naturmangfoldloven betyr en vesentlig omlegging av erstatningsreglene ved områdevern. Biomangfoldlovutvalget la til grunn at ca. 30 % av statens samlede utgifter til erstatningsordningen ble brukt til advokathonorarer og andre transaksjonskostnader.¹⁴² Et siktemål med reformen var å sikre at dette beløpet i stedet mest mulig kommer grunneiere og rettighets-

havere til gode. For å oppnå dette er både de materielle reglene om erstatning og fremgangsmåten ved fastsettingen lagt om. Det setter nok rådighetsreguleringer ved områdevern i en særstilling, og det er klart forutsatt i forarbeidene at reglene i naturmangfoldloven ikke kan overføres til eller på annen måte utvide erstatningsplikten ved andre rådighetsreguleringer.¹⁴³

Etter § 50 gjelder erstatningsplikten ved områdevern uavhengig av vernekategori (men ikke for midlertidig vern). Det tar brodden av den kritikk som ble reist mot at enkelte landskapsvernområder hadde vernebestemmelser som nærmest lå på reservatnivå, uten at det ga rett til erstatning som for et naturreservat. På den annen side begrenser § 50 hva det gis erstatning for, sammenlignet med naturvernlovens regler for reservaterstatning. Etter § 50 første ledd gis erstatning bare for økonomisk tap som skyldes at vernevedtaket medfører en vanskeliggjøring av igangværende bruk. Ikke enhver ulempe kan imidlertid betegnes som en vanskeliggjøring, noe også det generelle aktsomhetskravet i § 6 indikerer. Siden erstatningsplikten nå er knyttet til virkninger for igangværende bruk, bortfaller de prosessdrivende påregnelighetsvurderinger etter tidligere regler. Men uttrykket "igangværende bruk" gir nok opphav til tvil på enkelte andre punkter. Det er noe mer romslig enn den "pågående" bruk som etter § 36 alltid kan fortsette i landskapsvernområder. I proposisjonen gis det uttrykk for at skogbruk alltid må anses som igangværende bruk der skogen gir grunnlag for det.¹⁴⁴ For øvrig må det bero bl.a. på tid, sted og intensitet om en bruk kan regnes som "igangværende",¹⁴⁵ og det kan lett oppstå bevissspørsmål om hvilken aktivitet som faktisk har funnet sted. Trenger bruken tillatelse fra offentlig myndighet (f.eks. byggetillatelse), gis det erstatning bare hvis tillatelsen forelå før verneforslaget

¹³⁹ Se senest *Rt. 2005 s. 469*. Rettsstillingen er behandlet nærmere av bl.a. Frode Innjord: Erstatning for rådighetsreguleringer etter naturvernloven, inntatt i NOU 2004:28 vedlegg 6 (s. 718-45).

¹⁴⁰ Naturvernloven 1970 § 20, behandlet bl.a. av Innjord op.cit. og Bugge 2009 s. 176-77 (1. utg. 2006 s. 156-58).

¹⁴¹ Se nå forskr. 2. juli 1999 nr. 720 (husdyr) og 4. mai 2001 nr. 468 (tamrein).

¹⁴² Se NOU 2004:28 s. 405-06.

¹⁴³ Se prp. s. 427. Kritisk til omleggingen er Hans Chr. Bugge: Erstatning for rådighetsinnskrenkninger. Står vi ved et "paradigmeskifte"? Lov og Rett 2009 s. 257-58.

¹⁴⁴ Prp. s. 427-28.

¹⁴⁵ For petroleumsvirksomhet, bergverk og mineralutvinning har § 50 tredje ledd en egen hjemmel for forskrift om hva som skal regnes som igangværende bruk.

ble kunngjort etter § 42. Når det foreligger erstatningsplikt, skal utmålingen skje etter vederlagslovens regler for ekspropriasjon.¹⁴⁶

Fremgangsmåten ved fastsetting av erstatning er regulert i § 51. Staten skal senest ett år etter vernevedtaket gi tilbud om erstatning til grunneiere og rettighetshavere som har krevd det innen fire måneder etter vernevedtaket. De har seks måneder på seg til å akseptere tilbudet eller kreve rettslig skjønn. At forvaltningsplanen skal foreligge sammen med vernevedtaket, vil gi et bedre grunnlag for å vurdere erstatningsspørsmålet. Mener staten at det ikke foreligger erstatningsplikt, kan tilbudet gå ut på null kroner.¹⁴⁷

Skjønnsbegjæringen tas ut av staten, og skjønnet holdes etter skjønnslovens alminnelige regler.¹⁴⁸ For underskjønnet ved tingretten er hovedregelen at staten dekker grunneierens nødvendige kostnader, jf. skjønnsloven § 42. Begjærer staten overskjønn, må den alltid dekke grunneierens nødvendige kostnader. Er overskjønnet begjært av grunneieren, bestemmer § 51 tredje ledd – for å motvirke unødige overskjønnsbegjæringer – at sakskostnadene avgjøres etter de alminnelige regler i tvisteloven 17. juni 2005 nr. 90 kap. 20.

For utvalgte naturtyper etter nml. kap. VI er det ingen lovfestede erstatningsregler. Erstatningsspørsmålet må da avgjøres ut fra de ulovfestede regler om erstatning for rådighetsreguleringer. I praksis vil det si at det her ikke foreligger noen erstatningsplikt.

Heller ikke for økologiske funksjonsområder for prioriterte arter (§ 24 første ledd bokstav b) er det lovfestet noen erstatningsplikt. Men blir igangværende bruk vesentlig vanskeliggjort og det oppstår et vesentlig tap, kan grunneieren kreve områdevern i stedet (hvis ikke det gjøres unntak som tillater bru-

ken). Områdevernet vil så gi rett til erstatning etter § 50. I realiteten foreligger det altså en erstatningsplikt for slike økologiske funksjonsområder, men med en høyere terskel enn for områdevern etter kap. V.

10 Tilgang til genetisk materiale

Reglene om tilgang til genetisk materiale i kap. VII omhandler uttak (bioprospektering) og utnyttning (§ 58), offentlige samlinger av genetisk materiale (§ 59) og genetisk materiale innhentet fra andre land (§§ 60 og 61). De henger nøye sammen med biomangfoldkonvensjonen og dens mål om en rettferdig ressursfordeling mellom statene, særlig i forholdet mellom utviklingsland og industrialiserte land og overfor urfolk og lokalsamfunn. Bestemmelsene kan dermed også tilgodese samiske interesser.

Kapittel VII åpner med en prinsipperklæring om forvaltning av genetisk materiale i § 57. Den rettslige betydningen kan være usikker. Prinsipperklæringen inneholder retningslinjer for utnyttning av genetisk materiale og fastslår at genetisk materiale i naturen er en felles ressurs som forvaltes av staten. Men det er ikke til hinder for at en grunneier utnytter genetisk materiale i naturressurser som vedkommende har eiendomsretten til, og det samme gjelder for den som kan høste av naturen i kraft av en begrenset rett eller allemannsrett.

Biomangfoldlovutvalget anså det urealistisk å innføre en kontroll med uttak av naturressurser og genetisk materiale. Historien om hvordan jordprøver fra Hardangervidda ga grunnlag for å utvikle et avgjørende medikament for transplantasjonskirurgien er illustrerende¹⁴⁹ – hvordan skulle man i praksis hindre en turist ansatt i et legemiddelfirma i å ta med seg noen slike prøver? Den videre lovbehandling førte til et annet standpunkt. Etter § 58 kan Kongen fastsette i forskrift at det trengs tillatelse til å ta ut biologisk materiale med sikte på å utnytte det genetiske materia-

¹⁴⁶ Se lov 6. april 1984 nr. 17 om vederlag ved oreigning av fast egedom.

¹⁴⁷ Sml. som eksempel fra tidligere rettspraksis *Rt. 1989 s. 245* (holmer og skjær på Sørlandskysten fredet som sjøfugl-reservat).

¹⁴⁸ Lov 1. juni 1917 nr. 1 om skjønn og ekspropriasjonssaker.

¹⁴⁹ Se f.eks. NOU 2004:28 s. 496 og Hanne Svarstad and Shivcharn S. Dhillion (eds.): *Responding to bioprospecting* (Oslo 2000) s. 9.

let (bioprospektering), og likeledes at det kreves tillatelse til å utnytte genetisk materiale. En slik tillatelse kan likevel ikke kreves for uttak til naturhistoriske museer og andre offentlige samlinger eller for uttak til bruk og videreføring i jord- og skogbruk. Blir det gitt tillatelse, har den ikke noen ekspropriasjonsvirkning – en grunneier har fortsatt i behold sin enerett til de naturressurser som måtte inneholde det aktuelle genetiske materialet. Prosedyren med tillatelse vil særlig ha til formål å sette krav om fordeling av overskuddet fra utnyttingen av det genetiske materialet.

Bestemmelsen om offentlige samlinger av genetisk materiale (§ 59) skal særlig sikre at den som får genetisk materiale fra en slik samling, ikke krever noen enerett som begrenser andres bruk av materialet. Denne regelen er med på å realisere prinsippklæringen om genetisk materiale fra naturen som en felles ressurs.

Når genetisk materiale fra utlandet blir innført eller utnyttet i Norge, skal det etter § 60 skje i samsvar med de vilkår som opprinnelsesstaten eller leverandørstaten har satt. Det skal også følge med opplysninger om hvilken stat som er leverandørland eller opprinnelsesland og at det foreligger nødvendig samtykke derfra til uttaket. Lignende opplysningskrav er innført for patentsøknader for oppfinnelser som gjelder eller anvender biologisk materiale.¹⁵⁰

11 Administrative bestemmelser, håndheving og sanksjoner

Reglene om kontroll, håndheving og sanksjoner i kap. VIII og IX bygger mye på annen miljøvernlovgivning, særlig forurensningsloven, vannressursloven og svalbardmiljøloven. Det innebærer i seg selv en vesentlig modernisering sammenlignet med naturvernloven 1970.

En nyhet er miljøvedtaksregisteret etter § 68. Det

skal omfatte vernevedtak etter loven og dispensasjoner fra dem, både områdevern og prioriterte arter, og dessuten tillatelser som blir gitt til tiltak i forekomster av utvalgte naturtyper. Et slikt allment tilgjengelig miljøvedtaksregister vil gjøre det mulig for miljøinteresserte og andre å følge med i forvaltningspraksis og gi bedre grunnlag for kontroll med om den blir respektert og bidrar til å oppfylle de forskjellige forvaltningsmålene. Den forskriften som skal gis om miljøvedtaksregisteret, kan utvide registeret til å omfatte vedtak etter andre miljøvernlover.

Skal naturmangfoldet sikres, må rettsstillingen kunne justeres med den faktiske utvikling. Etter mønster av forurl. § 18 åpner § 67 derfor en ganske vid adgang til å endre og eventuelt tilbakekalle dispensasjoner og andre tillatelser. Har en lovlig virksomhet vesentlige uforutsette konsekvenser for naturmangfoldet, inntreder det etter § 70 en plikt til å treffe "rimelige" tiltak uavhengig av pålegg fra myndighetene. Forholdet mellom denne regelen og omgjøringsbestemmelsen i § 67 er ikke helt klart. Er loven (eller vedtak truffet i medhold av den) overtrådt, kan det gis pålegg om retting eller avbøtende tiltak i medhold av § 69. Alt etter overtredelsens karakter kan det bli tale om høyst forskjellige tiltak, medregnet planering og utfylling, nyplanting og avliving av fremmede organismer.

Forvaltningen kan selv sørge for fullbyrding av lovens regler og vedtak med hjemmel i den ved direkte gjennomføring etter §§ 71 og 72 eller tvangsmulkt etter § 73. Det er en nyskaping at tvangsmulkt mot et konsernselskap også kan inndrives hos morselskapet. – Alternativt kan fullbyrding skje på grunnlag av tvangsfullbyrdsloven etter vanlig søksmål og dom.

Sanksjonene etter naturmangfoldloven er miljøerstatning og straff. Loven har ingen bestemmelse om overtredelsesgebyr i stedet for straff. Det vil eventuelt bli vurdert på grunnlag av oppfølgingen av Sanksjonsutvalgets utredning om forvaltningssanksjoner (NOU 2003:15), men det kan nok hevdes at overtredelsesgebyr har liten funksjon ved siden av reglene

¹⁵⁰ Se patentloven 15. desember 1969 nr. 7 § 8 b etter endringsloven 19. desember 2003 nr. 127.

om miljøerstatning.

Miljøerstatningen (§ 74) er innført etter mønster av svalbardmiljøloven. Erstatningsbeløpet går imidlertid inn i statskassen i stedet for i et særskilt fond til bruk for naturforvaltningsformål, og det kan nok påvirke erstatningsordningens legitimitet.¹⁵¹ Erstatningsbeløpet for en overtredelse fastsettes i første hånd ved forvaltningsvedtak på grunnlag av samtlige omstendigheter i saken, men både spørsmålet om det overhodet skal pålegges erstatning og erstatningsbeløpets størrelse kan prøves fullt ut av domstolene. Miljøverdiens betydning og miljøskadens omfang og varighet vil stå sentralt i vurderingen, og likeledes om overtrederen er møtt med andre reaksjoner. Bruk av miljøerstatning vil være særlig aktuelt dersom overtredelsen ellers ikke ville møte noen reaksjon. Det er ikke noe vilkår at overtrederen har utvist subjektiv skyld, men det kan ha betydning for både erstatningsplikten og erstatningens størrelse. Er overtredelsen skjedd på vegne av en juridisk person, må denne kunne pålegges miljøerstatning etter mønster av det erstatningsrettslige arbeidsgiveransvaret. Det kan gis forskrift om standardsatser for visse overtredelser.

Straffansvaret etter § 75 er knyttet til overtredelse av angitte bestemmelser. Det er i tråd med retningslinjene utformet i samband med straffeloven 2005. Den ordinære strafferammen er bot eller fengsel inntil ett år, og den øvre strafferammen er skjerpet til fengsel i tre år ved grov overtredelse. Skyldkravet er forsett eller vanlig uaktsomhet. De mest alvorlige overtredelsene kan straffes som alvorlig miljøkriminalitet etter straffeloven 1902 § 152 b, som vil avløst av straffeloven 2005 § 240.

12 Avslutning

Klima og biologisk mangfold står fra norsk synspunkt

¹⁵¹ Etter svalbardmiljøloven § 95 går miljøerstatninger inn i Svalbards miljøvernfond, som etter § 98 bare kan brukes til visse tiltak for å beskytte miljøet på Svalbard. En slik ordning betyr en øremerking av midler, noe Finansdepartementet har prinsipielle motforestillinger mot.

som de aller største miljøutfordringene i dagens samfunn. Naturmangfoldloven vil i tiden fremover være det rettslige hovedgrunnlaget for å ta vare på biologisk mangfold i Norge. Den er kommet for sent til å bety noe for å nå målet om å stanse tap av biologisk mangfold innen 2010, men det vil likevel være naturlig å måle lovens virkninger i forhold til målet om å stanse nedgangen i biologisk mangfold.

Lovens virkninger vil bero på i hvilken grad og på hvilken måte fullmaktene i loven blir brukt. Når det gjelder bevaring av biologisk mangfold, er det særlig grunn til å følge bruken av de nye reglene om prioriterte arter og utvalgte naturtyper (avsnitt 5.5 og 8 foran). På den annen side kan bestandsutviklingen bli påvirket av faktorer utenfor norsk jurisdiksjon, som prinsipielt ligger utenfor hva naturmangfoldloven kan påvirke, f.eks. for trekkende arter. Hvis manglende måloppnåelse skyldes forhold utenfor Norges grenser, kan det spørres om naturmangfoldloven likevel virker positivt ved å tjene som mønster for tilsvarende virkemidler i andre lands rett. I dette perspektivet kan det spørres om naturmangfoldloven betyr et reelt bidrag til å konkretisere og operasjonalisere de mål og forpliktelser som følger av biomangfoldkonvensjonen.

Diskusjonen om lovens virkeområde til havs (avsnitt 3.2 foran) gir grunn til å følge hvilke utredninger og vurderinger som i de kommende år blir foretatt om en utvidelse av lovens virkefelt. Forvaltningsmålene etter naturmangfoldloven (avsnitt 4.1 og 3.2 foran) gjelder også for marine organismer, men de konkrete virkemidlene gjelder ikke utenfor tolvmilsgrensen. Det er derfor en særlig grunn til å følge utviklingen i det marine biologiske mangfold for eventuelt å vurdere om den gir grunn til å ta i bruk naturmangfoldlovens virkemidler og helt eller delvis la miljøvernmyndighetene få det administrative ansvar for dette i stedet for fiskerimyndighetene.

Dette reiser også et generelt spørsmål om lovens betydning som tverrgående lov: I hvilken grad, og hvordan, vil de lovfestede miljørettslige prinsippene (avsnitt 4.3 foran) påvirke forståelsen og anvendelsen av annen lovgivning? Det kan også gi grunnlag for

mer generelle rettsvitenskapelige analyser av forholdet mellom *lex generalis* og *lex specialis*.

Når ordningen med miljøvedtaksregister (avsnitt 11 foran) blir satt i verk, vil det gi en enklere tilgang til viktige deler av forvaltningspraksis etter naturmangfoldloven. Miljørettsvitenskapen kan da få et grunnlag som nærmer seg situasjonen i Sverige og Danmark, for å studere norsk praksis og klarlegge om forvaltningspraksis utvikler seg i tråd med lovens formål.

Naturmangfoldloven trekker opp flere nye linjer for samspillet mellom miljøhensyn og grunneierinteresser. Det reiser rettsdogmatiske spørsmål om tolking av reglene (f.eks. den generelle aktsomhetsplikten, jf. avsnitt 4.2 foran, og vilkårene for erstatning for områdevern, jf. avsnitt 9 foran) og mer samfunnsfaglige spørsmål om betydningen for konfliktnivået

mellom grunneiere og miljøverninteresser. En konkret problemstilling med støtte i lovens forarbeider er om de samlede statlige utbetalinger i samband med erstatning for områdevern vil være uendret samtidig som en større andel av utbetalingene tilfaller grunneierne (jf. avsnitt 9 foran). Når loven går lenger i å tillate bærekraftig bruk i verneområder enn tidligere praksis, reiser det på sin side spørsmål om det faktisk skjer uten skade på de aktuelle miljøverdiene.

Den nye naturmangfoldloven skal gjøre at naturmangfoldet i Norge blir tatt bedre vare på og gi bred aksept blant folk for at dette er viktig. Så generelle mål må gjerne presiseres og konkretiseres for å være forskbare. Det er uansett et tema for fremtidig miljørettsforskning å bidra med kunnskap til at målene kan nås og klarlegge i hvilken grad de faktisk blir nådd.

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

Kai T. Kokko

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

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 biodiversiteettihjelman 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 policy⁹. 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 policy¹¹. 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?

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 hyväksyttävyyden murroksessa? Millä oikeudella? Luonnonvarojen hallinnan legitimitetti*, 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.

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

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 juhla-kirja (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.

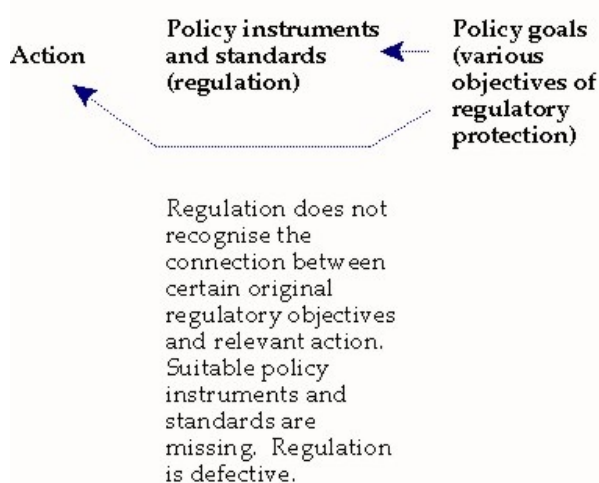
²⁰ I Bowles, D Downes, D Clark and M Guérin-McManus, *Economic incentives and legal tools for private sector conservation* (Environmental Law & Policy), 1998, 238.

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* (Lakimiesliiton 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 biodiversi-

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.

ty.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

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).

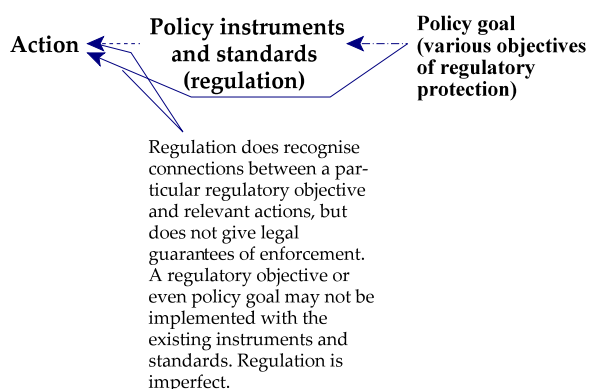
²⁷ P Sand (edit.), *The effectiveness of international environmental agreements* (UNEP, Grotius publications limited), 1992. In international environmental law studies, formal (judicial/political) effectiveness is assessed by asking whether, and how, treaty obligations may effectively be implemented 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 words, other interests bypass the *ratio legis* in practice. (*Defects in the regulation, chapter 3.*);

(2) The policy instruments and standards²⁸ 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*



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

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.

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 regula-

tory 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 juristischen 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 suojeleminen 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 them³⁷, 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 effects³⁹ 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 practices⁴¹. 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’ behaviour⁴⁴, 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

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.

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

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 actors⁴⁹ 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

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 kestävä metsätalouden rahoituksesta hyväksytyyn lain mukaiset tukitoimenpiteet sivuutetaan vaarantaen metsäluonnon monimuotoisuudet turvaaminen.")

⁵¹ See Kiviniemi (n37) 319. From 1997 to 2002, 179 permits

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 straightforward⁵⁶. In any case, the civil sanctions should be strong enough to ensure the agreed protection of biodiversity; otherwise

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 forests⁵⁸. 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 ympäristötukisopimukseen 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 end⁶⁶ 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 biodiversity⁶⁷ 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 agreements⁶⁹ 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

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 Pölonen, *Ympäristövaikutusten arviointimenettely – Tutkimus YVA-menettelyn oikeudellisesta asemasta ja kehittämistarpeista ympäristöllisen vaikuttavuuden näkökulmasta* (SLY), 2007.

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.

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

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 fulfilled	5	16	7
Human error or error in communication between parties	-	10	3

⁷⁵Not 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 particular 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.

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.

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.

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

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

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*, METSO:n jäljillä (ed. P Horne), 2006, 75.

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

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 provisions⁸⁷, 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
<i>Conservationists</i>	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
<i>Neutrals</i>	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
<i>Timber-market oriented</i>	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 regulation⁹⁷ 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 baseline¹⁰¹ 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.

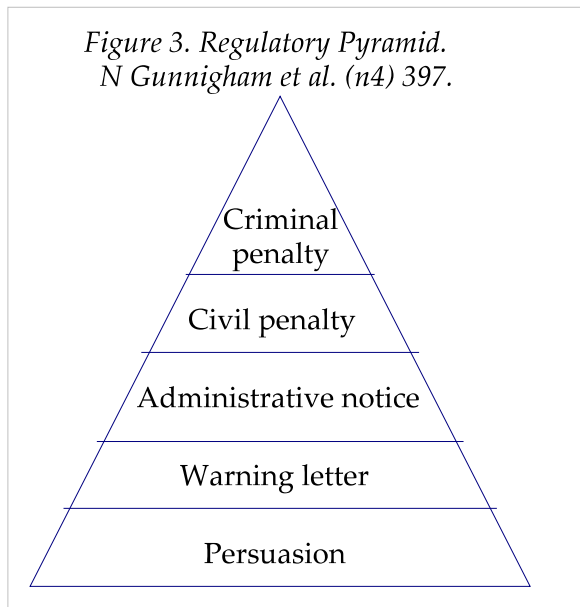
¹⁰¹ N Gunningham and P Grabosky (n4) 433.

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



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

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.

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 standards¹⁰⁶. 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

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 shown¹⁰⁷.

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 volun-

tary 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, but-tressing 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 de

pendent on the cultural, institutional, social and economic environment in each country.¹¹¹

These considerations 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.

Europeisk reglering av koldioxidlagring: analys utifrån miljörettsliga aspekter

David Langlet

*What is needed is nothing
short of an energy revolution.*

1 Introduktion^{1 2}

För att undvika, eller åtminstone minska risken för, dramatiska klimatförändringar krävs en omvälvande omställning av hur mänskliga samhällen producerar och konsumerar energi. I dagsläget ger förbränning av fossilbränslen upphov till närmare 3/4 av de antropogena utsläppen av koldioxid (CO₂).³ Kompletterande tekniker och metoder behöver utvecklas för att fasa ut fossilbränslena.⁴ Samtidigt blir det alltmer uppenbart att de flesta alternativa tekniker för energiproduktion är behäftade med ekonomiska, sociala och/eller miljömässiga problem.⁵

¹ Författaren är jur. dr, tf. universitetslektor och forskare vid Juridiska institutionen, Handelshögskolan vid Göteborgs universitet. Artikeln har möjliggjorts av forskningsfinansiering från Adlerbertska forskningsstiftelsen och Interreg IVA. Författaren har behandlat de internationellrättsliga aspekterna av koldioxidlagring i Langlet, D., *Safe Return to the Underground? – The Role of International Law in Subsurface Storage of Carbon Dioxide*, 18 (3) *Review of European Community and International Environmental Law* (2009), s. 286-303. Författaren är tacksam för värdefulla synpunkter från fil. dr Jenny T. Grönwall, Stockholm Resilience Centre, forskningsingenjör Jan Kjärstad, Chalmers Tekniska Högskola samt från Nordisk Miljörettslig Tidskrifts anonyma peer review-granskare.

² Citatet ovan från *World Energy Outlook 2008*, OECD/International Energy Agency, 2008, s. 37.

³ IPCC, 2005: *IPCC Special Report on Carbon Dioxide Capture and Storage*, prepared by Working Group III of the Intergovernmental Panel on Climate Change, Cambridge, 2005, s. 55.

⁴ A.a., s. 20.

⁵ Att kärnkraften är omstridd beroende på miljö- och hälsoriskerna är välbekant sedan länge. Likaså är det, inte minst i en svensk kontext, bekant att vattenkraft kan generera allvarliga konflikter mellan ekonomiska intressen och naturvårdsintressen. Andra förnybara energikällor som sol och vind möter ofta också motstånd grundat på konkurrerande anspråk på marken, liksom estetiskt grundade

Många ifrågasätter det ekonomiskt rimliga och politiskt möjliga i att få stater att avstå från att utvinna och använda de väldiga energiresurser som fortfarande finns tillgängliga i form av fossila bränslen, däribland miljömässigt mycket problematiska former som kol och tjärsand.⁶ Prognoser talar i stället om fortsatt, eller t.o.m. ökad, användning av fossilbränslen, framför allt i de snabbt expanderande utvecklingsekonomierna.⁷

Även om prognoser om energikällor och energikonsumtion bör betraktas med viss skepsis, eftersom de med nödvändighet baseras på många, och ofta högst osäkra, antaganden, belyser de vissa avgörande frågor.⁸ Är det rimligt att tro att teknikutveckling och politisk vilja kan styra mänskligheten bort från fossilbränslen tillräckligt snabbt för att undvika (en oacceptabelt stor risk för) omfattande skador på

invändningar. De är även förenade med tekniska utmaningar som beror på att produktionen av el varierar kraftigt över tid (på grund av tillgängligheten av solljus resp. vind). Den på senare tid mest uppmärksammade konflikten är väl annars den kring användningen av jordbruksmark för produktion av biobränslen. Något som många uppfattar som ett direkt, och akut, hot mot många människors möjlighet att försörja sig.

⁶ Angående tillgång till, och användning av, kol i Indien, Kina och USA, se *The Future of Coal: Options for a Carbon-constrained World*, An interdisciplinary MIT study, Massachusetts Institute of Technology, 2007, s. 6 och kap. 5. Om kolets roll i Europa och europeisk "kolpolitik" se Hansson, A., *Kolets återkomst – koldioxidavskiljning och lagring i vetenskap och politik*, Linköping Studies in Arts and Science, No 436, s. 77 ff.

⁷ *The Future of Coal: Options for a Carbon-constrained World*, a.a., s. ix samt *World Energy Outlook 2008*, a.a., s. 38.

⁸ Jaccard, M., *Sustainable Fossil Fuels: The Unusual Suspect in the Quest for Clean and Enduring Energy*, Cambridge, 2005, s. 31 f.

ekosystem och mänskliga samhällen?⁹ Alternativt, bör vi acceptera fossilbränsleanvändning som en oundviklig del av energiproduktionen under överskådlig framtid och därför i stället, eller snarare också, satsa på att minimera klimateffekterna av sådan verksamhet?

Utgångspunkten för den här artikeln är att ekonomiska aktörer och politiker på många håll, inte minst inom EU, har svarat jakande på den andra frågan och vidtar omfattande åtgärder för att möjliggöra fortsatt användning av fossilbränslen samtidigt som klimatmålen uppnås.¹⁰ Förhoppningen står huvudsakligen till tekniker för infångande och lagring av koldioxid, vanligen benämnda med den engelska akronymen CCS (carbon capture and storage). EU har beslutat om omfattande ekonomiskt stöd för att utveckla och tillämpa CCS och nyligen även vidtagit lagstiftningsåtgärder för att främja dess användning på ett konkurrenskraftigt och säkert sätt.¹¹ I Norge är utveckling av CCS ett av statsmakterna särskilt prioriterat forskningsområde.¹² Det saknas dock inte kritiker av satsningarna på CCS.¹³

⁹ Angående "spårbindenhet" och inläsningseffekter hos stora energisystem se Hansson, a.a., s. 45 f.

¹⁰ Angående kommissionens inställning till CCS se Meddelande från kommissionen till Europaparlamentet, rådet, europeiska ekonomiska och sociala kommittén samt regionkommittén, Stöd till tidig demonstration av hållbar energiutvinning från fossila bränslen, 23.1.2008, KOM(2008) 13 slutlig.

¹¹ Bland annat ska upp till 300 miljoner utsläppsrätter i reserven för nya deltagare i EU:s "cap-and-trade" system för utsläppsrätter (handelssystemet) fram till den 31 december 2015 hållas tillgängliga för att stimulera uppförande och drift av upp till 12 kommersiella demonstrationsprojekt för CCS. Europaparlamentets och rådets direktiv 2009/29/EG av den 23 april 2009 om ändring av direktiv 2003/87/EG i avsikt att förbättra och utvidga gemenskapsystemet för handel med utsläppsrätter för växthusgaser, EUT L 140, 5.6.2009, s. 63, art. 10a (8). Åtgärder för miljösäker CCS är också ett av de områden till vilka intäkterna från auktionering av utsläppsrätter inom handelssystemet ska användas. Ibid., art. 10 (3) (e). Målet är att gratis tilldelning ska minskas gradvis för att helt fasas ut 2027. Ibid., ingressens 21 punkt.

¹² St.meld. nr. 1 (2008–2009), Nasjonalbudsjettet 2009, s. 113.

¹³ Se bl.a. The Illusion of Clean Coal och Briefing: Carbon Capture and Storage, The Economist, March 7th 2009, s. 17-18 respektive 64-65; Rochon, E. et al., False Hope: Why Carbon Capture and Storage Won't Save the Climate, Greenpeace International, May 2008, tillgänglig på

Syftet med artikeln är att, med fokus på gemenskapsrätten, presentera det rättsliga ramverk som håller på att etableras för CCS och undersöka hur det förhåller sig till, från ett miljörettsligt perspektiv, grundläggande principer som försiktighet, att förorenaren ska betala, samt det övergripande målet om hållbar utveckling. Först ges dock en kort introduktion till själva tekniken och de risker med vilka den är förknippad. Därpå följer en presentation och analys av det rättsliga regelverket vilken avslutas med en diskussion om dess relation till hållbar utveckling.

2 Tekniken

Detta är inte platsen för en ingående beskrivning av CCS-tekniken.¹⁴ Helt kortfattat kan sägas att CCS består av tre, eller fyra, steg, beroende på hur man räknar. Det första steget är avskiljning eller infångande av koldioxid. Detta kan ske antingen före eller efter förbränningen av bränslet. Den teknik som idag finns tillgänglig, eller befinner sig under utveckling, lämpar sig för användning vid stora punktkällor för koldioxid som stål- och cementindustrier, raffinaderier och värmekraftverk.¹⁵

Nästa steg handlar om transport av koldioxiden till en lämplig lagringsplats. Med hänsyn till de stora volymer som måste hanteras för att CCS ska vara ekonomiskt och miljömässigt motiverat sker transporten lämpligen i rörledningar och/eller med fartyg. Detta ställer krav på en omfattande infrastruktur som inte finns tillgänglig idag. Dock finns stora likheter mellan de tekniklösningar som idag används för naturgas och vad som skulle krävas för storskalig transport av

¹⁴ <<http://www.greenpeace.org/usa/press-center/reports4/false-hope-why-carbon-capture>> (16 maj 2009). För en bredare kritisk diskussion om europeisk "CCS-politik" se Hansson, a.a., kap. 4.

¹⁵ Se istället bl.a. IPPC 2005, s.19 ff samt Gode, J. & Hovsenius, G., Avskiljning och lagring av koldioxid i ett nordiskt systemperspektiv, oktober 2005, Elforsk rapport 05:27.

¹⁶ Den svenska regeringen identifierar stålindustrin, oljeindustrin, cementindustrin och ett flertal större massabruk som branscher eller anläggningar med så stora punkttutsläpp av koldioxid eller så hög koncentration av koldioxid i avgående gaser att det kan vara intressant att överväga CCS. Prop 2008/09:163, En sammanhållen klimat- och energipolitik - Energi, s. 37.

koldioxid.¹⁶

Sista steget, som ibland delas i två, är injektion och lagring av koldioxiden i en lämplig geologisk formation. Också för detta finns olika alternativ. Det volymmässigt mest intressanta, och även mest aktuella i ett skandinaviskt perspektiv, är att pumpa ned koldioxiden i s.k. saltvattenakvifärer, dvs. områden med porös sandsten innehållande saltvatten och avgränsade av tätare berglager.¹⁷

Sannolikt lämpliga geologiska formationer finns bland annat i södra Östersjön, sydöstra Skåne, södra Kattegatt och flera områden i Danmark.¹⁸ Utanför Norges kust används just en sådan formation, kallad Utsira, för ett av de första storskaliga försöken med lagring av koldioxid. Där lagras kontinuerligt, sedan drygt tio år, betydande mängder koldioxid som avskiljts vid naturgasutvinning, 800 meter under Nordsjöns botten.¹⁹ Den största potentialen i Europa för koldioxidlagring bedöms också finnas under södra och norra Nordsjön.²⁰ Det bedrivs också ett antal projekt i nordnorge syftande till geologisk koldioxidlagring.²¹

En annan möjlighet, som har tydliga ekonomiska fördelar, är att använda koldioxiden för att öka utvinningen av gas eller olja. Vid så kallad Enhanced Hydrocarbon Recovery (EHR)²² kan till exempel koldioxid pumpas ned i ett olje- eller gasfält för att möjliggöra utvinning av större volymer olja eller gas

¹⁶ Se generellt IPPC 2005, kap. 4 samt Ekström, C. m.fl., CO₂-lagring i Sverige, juni 2004, Elforsk rapport 04:27, kap. 5.

¹⁷ Ekström a.a. Om akviferer se Erlström M., Lagring av koldioxid i djupa akviferer - Lagringsmöjligheter i Sverige och Danmark, december 2008, Elforsk rapport 08:84, s. 3 ff.

¹⁸ Erlström, a.a., s. 15-16, 37 och 45.

¹⁹ Ekström m.fl., a.a., s. 9 samt National Inventory Report 2009 Norway, TA-2507/2009, tillgänglig på <http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/4771.php> (14 maj 2009), s. 114 ff.

²⁰ Hovsenius, G., Avskiljning och lagring av CO₂. Kunskap av strategiskt värde för den svenska energisektorn, September 2008, Elforsk rapport 08:58, s. 20.

²¹ För en överblick över CCS-projekt i nordnorge se Hovsenius, a.a., s. 27-30.

²² Ofta används istället "Enhanced Oil Recovery (EOR)" när det rör sig om just olja respektive "Enhanced Gas Recovery (EGR)" när det handlar om utvinning av gas.

än vad som annars hade varit möjligt.²³ Den uppenbara fördelen är att koldioxiden då nyttiggörs och får ett ekonomiskt värde. Erfarenheter av EHR med koldioxid finns i dag framför allt från Nordamerika.²⁴ Många oljekällor i Nordsjön som nått sin produktionstopp bör vara lämpliga kandidater för tillämpning av tekniken. Dock finns problem eller frågetecken kring bl.a. tidsaspekter och volymer.²⁵

När koldioxiden väl har pumpats ner i den geologiska formationen och denna har förslutits vidtar själva lagringsfasen. Lagring är egentligen ett missvisande begrepp eftersom syftet är att koldioxiden ska bli kvar permanent, eller åtminstone under en från ett mänskligt perspektiv obegränsad tid. Härefter består samhällets intresse i att lagringsplatsen övervakas i nödvändig omfattning så att oförutsedda rörelser i koldioxiden upptäcks och eventuella läckage förhindras eller åtgärdas. På grund av fysikaliska och kemiska mekanismer bör koldioxiden över tid bli allt mindre rörlig.²⁶

Möjligheten finns också att avskilja och lagra koldioxid från förbränning av biobränslen. Det ger upphov till vad som från klimatperspektiv brukar betecknas som "negativa utsläpp", det vill säga att koldioxid tas ut från den aktiva kolcykeln.²⁷ Detta möjliggör i princip för verksamheter som använder fossila bränslen att bli helt koldioxidneutrala trots att avskiljningssteget i CCS-processen lämnar kvar 5-25% av koldioxiden som därför går ut i atmosfären.²⁸ Avskiljningsprocessen kräver också energi vilket

²³ För en beskrivning av EHR se IPPC 2005, a.a., s. 215-216.

²⁴ Legal Aspects of Storing CO₂ - Update and Recommendations, OECD/IEA, 2007, hämtad från <http://www.iea.org/Textbase/publications/free_new_Des.c.asp?PUBS_ID=1928> (12 maj 2009), s. 20.

²⁵ The Future of Coal: Options for a Carbon-constrained World, a.a., s. xii.

²⁶ Erlström, a.a., s. 14.

²⁷ Azar, C. m.fl., Carbon Capture and Storage From Fossil Fuels and Biomass - Costs and Potential Role in Stabilizing the Atmosphere, 74 Climatic Change (2006), s. 47, på s. 68; samt Rhodes J. S. & Keith, D. W., Biomass with Capture: negative emissions within social and environmental constraints: an editorial comment, 87 Climatic Change (2008), s. 326.

²⁸ Hovsenius, a.a., s. 2.

innebär att mer bränsle måste användas jämfört med en anläggning utan avskiljning. CCS med biobränsle skulle kunna kompensera för detta så att en verksamhets totala effekt på klimatet ändå blir noll. Om inga fossila bränslen används inom verksamheten blir resultatet istället en minskning av koldioxid i atmosfären.

3 Risker

Inte heller risker ska här ges någon utförlig beskrivning.²⁹ En viktig distinktion måste emellertid göras; den mellan klimatrisker och andra risker. Båda är direkt kopplade till risken för läckage av koldioxid i samband med avskiljning, transport, injektion eller lagring. Risken från ett klimatperspektiv är helt enkelt att läckage av koldioxid undergräver nyttan med CCS, vars enda syfte är att minska koldioxidutsläppen. Om modeller och policys baseras på antaganden om effektiv avskiljning men detta inte uppnås, kan det få långtgående konsekvenser för möjligheten att nå uppställda klimatmål. De andra riskerna är av mer lokal och omedelbar natur och handlar om effekterna på människor och ekosystem i närheten av ett läckage.

Koldioxid är, till skillnad från metan (dvs. naturgas), inte explosivt. Däremot är det tyngre än luft och ansamlas i slutna utrymmen eller lågt liggande områden. Effekten på människor är, med stigande halter, andningssvårigheter, medvetlöshet och kvävning.³⁰ Effekten på djur antas vara likartad. Också växter tar skada av att under längre tid utsättas för förhöjda koldioxidhalter. Koldioxid som blandas med grundvatten kan resultera i sänkt pH-värde och att tungmetaller löses ut och gör vattnet skadligt för människor och djur.³¹ Mindre läckage till havet förväntas få begränsade effekter men kan utgöra en risk för vissa marina livsformer. Storskaliga utsläpp skulle bidra till den pågående förändringen av havens pH-värde med välkända skador på bland annat koraller och andra skalbyggande djur som följd.

²⁹ Se istället IPPC 2005, avsnitt 4.4 och 5.7 och Ekström m.fl., a.a., kapitel 6.

³⁰ Ekström m.fl., a.a. s. 36.

³¹ A.a., s. 37-38.

Genom stratifiering kan läckande koldioxid stängas inne i en begränsad vattenvolym och därmed få större effekt. Marina ekosystems motståndskraft mot förhöjda koldioxidnivåer är inte väl utforskad.³²

4 Rättslig reglering av CCS i EU

Eftersom erfarenheterna av avskiljning och framför allt lagring av koldioxid är begränsade, finns få rättsliga regelverk som är specifikt anpassade till dessa verksamheter. En del relevanta analogier finns dock, bland annat hantering av naturgas och lagring av flytande eller gasformigt avfall.³³ De länder som påbörjat större försök med CCS, däribland Norge, har i stor utsträckning använt existerande regelverk, med vissa modifieringar.³⁴ Det rör sig ofta om regler för olje- och gasutvinning samt för transporter av sådana produkter.

Att inordna CCS i existerande regelverk var också utgångspunkten när kommissionen presenterade sitt förslag till CCS-lagstiftning våren 2008.³⁵ Förslaget hade bl.a. föregåtts av ett Internetbaserat samråd³⁶ och diskussioner i Europeiska Klimatförändringspanelens arbetsgrupp III.³⁷ Riskerna med avskiljning och

³² IPCC 2005, a.a., s. 249; samt Risk Assessment and Management Framework for CO₂ Sequestration in Sub-seabed Geological Structures (CS-SGS), Annex 3 till Report of the Meeting of the SG Intersessional Technical Working Group on CO₂ Sequestration, 3 May 2006, LC/SG-CO2 1/7, s. 15.

³³ IPCC 2005, a.a., s. 210 ff.

³⁴ Angående Norge se Hallenstvedt, N., Current CCS Regulation in Norway, hämtad från <http://www.ucl.ac.uk/ccip/pdf/CCS_in_Norway_April2008.pdf> (1 juni 2009). Om Australien se Fahey, J. & Lyster, R., Geosequestration in Australia: Existing and Proposed Regulatory Mechanisms, 4 Journal for European Environmental & Planning Law (2007), s. 378-392.

³⁵ Förslag till europaparlamentets och rådets direktiv om geologisk lagring av koldioxid och ändring av rådets direktiv 85/337/EEG, 96/61/EG, direktiv 2000/60/EG, 2001/80/EG, 2004/35/EG, 2006/12/EG och förordning (EG) nr 1013/2006, 23.1.2008, KOM(2008) 18 slutlig. Angående den politiska bakgrunden till förslaget se Hansson, a.a., s. 78 ff.

³⁶ Analysis and interpretation of responses from the carbon capture and storage internet consultation, September 2007, ICF International, hämtad från <http://ec.europa.eu/environment/climat/ccs/eccp1_en.htm> (29 juni 2009).

³⁷ Final Report of Working Group 3: Carbon Capture and

transport av koldioxid ansågs vara så likartade riskerna med existerande verksamheter, framför allt hantering av naturgas, att befintliga regelverk är tillräckliga. Vissa mindre ändringar ansågs dock nödvändiga för att passa in de olika delarna av CCS-tekniken.³⁸ För reglering av lagringsfasen övervägdes flera alternativ, inklusive att reglera riskerna genom direktivet om handel med utsläppsrätter,³⁹ IPPC-direktivet,⁴⁰ eller avfallsagstiftningen. I samtliga fall fann man emellertid att regelverken skulle behöva ändras avsevärt för att åstadkomma en effektiv och ändamålsenlig reglering av koldioxidlagring. Förslaget blev därför att skapa en ny rättslig ram för just lagringen, kompletterad med modifieringar av vissa existerande rättsakter.⁴¹

Behandlingen i Europaparlamentet (EP) resulterade i ett antal modifieringar, som bland annat förtydligar att CCS ska ses som en övergångsteknik och inte får konkurrera ut andra åtgärder som satsningar på energieffektivisering och förnybara energislag.⁴²

En överenskommelse mellan rådet och EP nåddes efter parlamentets första behandling av förslaget, vilket därför kunde antas slutligt av rådet i april 2009 och publiceras ett par månader senare som direktiv 2009/31/EG om geologisk lagring av koldioxid

Geological Storage (CCS), The Second European Climate Change Programme, as adopted on 1 June 2006, tillgänglig på <http://circa.europa.eu/Public/irc/env/eccp_2/library?l=/geological_storage/final_reportdoc/_EN_1.0_> (29 juni 2009). Angående konsultationsprocessen, se Accompanying Document to the Proposal for a directive of the European Parliament And of the Council on the Geological Storage of Carbon Dioxide, Commission Staff Working Document, 23.1. 2008, COM(2008) XXX, s. 9-11.

³⁸ Accompanying Document, COM(2008) XXX, a.a. s. 23-26.

³⁹ Europaparlamentets och rådets direktiv 2003/87/EG av den 13 oktober 2003 om ett system för handel med utsläppsrätter för växthusgaser inom gemenskapen och om ändring av rådets direktiv 96/61/EG, EUT L 275, 25.10.2003, s. 32

⁴⁰ Europaparlamentets och rådets direktiv 2008/1/EG av den 15 januari 2008 om samordnade åtgärder för att förebygga och begränsa föroreningar, EUT L 24, 29.1.2008, s. 8.

⁴¹ KOM(2008) 18 slutlig, a.a., s. 5. Se även analysen i Accompanying Document, COM(2008) XXX, a.a., s. 27-34.

⁴² Europaparlamentets ståndpunkt fastställd vid första behandlingen den 17 december 2008 inför antagandet av Europaparlamentets och rådets direktiv 2009/.../EG om geologisk lagring av koldioxid ... , P6_TC1-COD(2008)0015, ingressens 4:e skäl.

(härefter "lagringsdirektivet").⁴³ Direktivet är avsett att gälla i hela EES, dvs. förutom i EU också i Norge, Liechtenstein och på Island.⁴⁴

Förutom att skapa en ny och omfattande reglering av geologisk lagring av koldioxid innehåller direktivet också ändringar av en rad existerande rättsakter, bland annat direktivet om miljökonsekvensbeskrivningar (MKB),⁴⁵ IPPC-direktivet och miljöansvarsdirektivet.⁴⁶ Lagringsdirektivet ska vara genomfört i medlemsstaterna senast den 25 juni 2011.⁴⁷ I en separat men samordnad process, beslutades också om ändringar av direktivet om handel med utsläppsrätter, vilka innebär att såväl koldioxid som avskiljs vid förbränning som eventuellt läckage vid avskiljning, transport eller lagring räknas in i handelssystemet.⁴⁸

I det följande presenteras den gemenskrätsliga regleringen av CCS utifrån de funktionella stegen avskiljning, transport och lagring (injektion och förvaring). Den som redan är förtrogen med regelverket kan med fördel gå direkt till analysen i avsnitt 7 nedan.

4.1 Avskiljning

Vad gäller klimataspekten och den ekonomiska bärkraften hos CCS är inkluderandet av koldioxidavskiljning i handelssystemet av största betydelse.⁴⁹

⁴³ Det fullständiga namnet är Europaparlamentets och rådets direktiv 2009/31/EG av den 23 april 2009 om geologisk lagring av koldioxid och ändring av rådets direktiv 85/337/EEG, Europaparlamentets och rådets direktiv 2000/60/EG, 2001/80/EG, 2004/35/EG, 2006/12/EG och 2008/1/EG samt förordning (EG) nr 1013/2006, EUT L 140, 5.6.2009, s. 114.

⁴⁴ Detta framgår av rubriken till direktiv 2009/31.

⁴⁵ Rådets direktiv 85/337/EEG av den 27 juni 1985 om bedömning av inverkan på miljön av vissa offentliga och privata projekt, EGT L 175, 5.7.1985, s. 40.

⁴⁶ Europaparlamentets och rådets direktiv 2004/35/EG av den 21 april 2004 om miljöansvar för att förebygga och avhjälpa miljöskador, EUT L 143, 30.4.2004, s. 56.

⁴⁷ Direktiv 2009/31, art. 39 (1). Vissa övergångsregler gäller för befintliga lagringsplatser.

⁴⁸ Europaparlamentets och rådets direktiv 2009/29/EG av den 23 april 2009 om ändring av direktiv 2003/87/EG i avsikt att förbättra och utvidga gemenskapssystemet för handel med utsläppsrätter för växthusgaser, EUT L 140, 5.6.2009, s. 63.

⁴⁹ För en introduktion till hur handelssystemet fungerar, se

Verksamheter som ingår i systemet får därmed direkt ekonomisk nytta av minskningar som åstadkoms genom tillämpning av CCS. Det sker antingen genom att tilldelade utsläppsrätter som p.g.a. CCS inte behöver användas kan säljas på marknaden eller genom att man undviker kostnaden för att köpa utsläppsrätter, i de fall detta hade varit nödvändigt utan CCS.⁵⁰ Från den 1 januari 2013 ska inga utsläppsrätter behöva lämnas för utsläpp som verifieras som avskilda och transporterade för permanent lagring i enlighet med lagringsdirektivet.⁵¹

Redan idag finns det möjlighet att beakta de utsläppsminskningar som åstadkoms med CCS inom handelssystemet genom möjligheten för enskilda medlemsstater till unilateralt införande av ytterligare verksamheter.⁵² Det är dock ingen långsiktigt lämplig lösning. Efter utvärdering av alternativa förhållnings sätt till CCS fann kommissionen att generell inkludering av alla CCS-projekt i handelssystemet var det långsiktigt mest lovande, framför allt med hänsyn till behovet av att skapa förutsägbarhet och främja investeringar i tekniken. Det förutsätter emellertid robusta övervaknings- och rapporteringsmekanismer.⁵³ Också utsläpp av koldioxid, till exempel genom läckage, vid avskiljning, transport och geologisk lagring, inkluderas i handelssystemet och kommer att

Olsen Lundh, C., Det gemensamma åtagandet, svenska klimatambitioner och EU-ETS, i Cramér, P., Gustavsson, S. & Oxelheim, L. (red.) EU och den globala klimatfrågan, Santérus, Stockholm, 2008, s. 79.

⁵⁰ Tilldelningen varierar mellan olika medlemsländer och sektorer. De flesta inkluderade industrier, förutom elproduktion, får i dagsläget gratis tilldelning av utsläppsrätter, baserad på historiska utsläpp. Denna minskar dock gradvis över tid.

⁵¹ Direktiv 2003/87/EG, art. 12 (b) (3a) (ändrad enligt direktiv 2009/29/EG).

⁵² Direktiv 2003/87/EG, art. 24 (1). Kommissionen måste godkänna ett sådant inkluderande och ska då beakta bl.a. möjliga snedvridningar av konkurrensen, systemets miljömässiga integritet och det planerade övervaknings- och rapporteringssystemets tillförlitlighet.

⁵³ Commission staff working document – Accompanying document to the Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system – Impact assessment {COM (2008) 16 final} SEC/2007/0052 final, stycke 3.5.4 - 3.5.5.

behöva täckas av motsvarande utsläppsrätter.

Användning av koldioxidavskiljningsteknik är i första hand ett alternativ vid etablering av nya anläggningar för till exempel elproduktion. Installation vid befintliga förbrännings- eller industrianläggningar är ofta förenat med betydande kostnader och praktiska problem.⁵⁴

För förbränningsanläggningar med en nominell elektrisk effekt på 300 megawatt eller mer som ges tillstånd efter maj 2009 krävs att driftsansvariga gör ett antal bedömningar avseende tillämpbarheten av CCS. Det som ska bedömas är huruvida lämpliga lagringsplatser för koldioxid finns tillgängliga; om transport från anläggningen till lagringsplatsen är tekniskt och ekonomiskt genomförbar; samt om det är tekniskt och ekonomiskt möjligt att eftermontera utrustning för koldioxidavskiljning.⁵⁵ Om svaret är jakande på samtliga punkter ska myndigheterna se till att lämpligt utrymme avsätts vid anläggningen för installation av utrustning för koldioxidavskiljning och -komprimering.⁵⁶ Något krav på att sådan utrustning faktiskt ska installeras ger gemenskapsrätten i nuläget inte stöd för.

Krav på användning av CCS vid vissa anläggningar har diskuterats som ett alternativ till att skapa ekonomiska incitament genom inkludering av CCS i handelsdirektivet. Frågan ska ses över inom en relativt snar framtid. Om CCS visar sig vara säker och ekonomiskt genomförbart ska kommissionen, senast i mars 2015, rapportera om huruvida det är nödvändigt och praktiskt möjligt att fastställa obligatoriska utsläppsnormer för nya elproducerande stora förbränningsanläggningar.⁵⁷ Sådana utsläppsnormer skulle kunna innebära att det blir tekniskt omöjligt att till exempel producera el genom förbränning av kol utan användning av CCS. Det skulle i så fall innebära ett

⁵⁴ Gode & Hovsenius, a.a., s. 32.

⁵⁵ Europaparlamentets och rådets direktiv 2001/80/EG av den 23 oktober 2001 om begränsning av utsläpp till luften av vissa föroreningar från stora förbränningsanläggningar, EGT L 309, 27.11.2001, s. 1, art. 9a (1) (ändrad enligt direktiv 2009/31).

⁵⁶ Direktiv 2009/31, art. 9a (2).

⁵⁷ Direktiv 2009/31, art. 18 (7). Andra tolkningar är också möjliga.....

avsteg från principen bakom handelsdirektivet, dvs. att det är ekonomiska mekanismer som ska avgöra hur det beslutade utsläppsutrymmet fördelas mellan olika typer av verksamheter. Dock innebär redan idag mekanismerna för tilldelning av utsläppsrätter undantag från den principen.⁵⁸

När koldioxid avskiljs från en anläggning som i sig (dvs. oaktat avskiljningen av koldioxid) är föremål för obligatorisk miljökonsekvensbedömning – t.ex. värmekraftverk med en värmeproduktion på 300 megawatt eller mer – blir även anläggningen för koldioxidavskiljning föremål för krav på en sådan bedömning. Möjlighet finns till undantag i enskilda fall. Detsamma gäller andra avskiljningsanläggningar där minst 1,5 megaton koldioxid avskiljs årligen. I båda fallen förutsätts att avskiljningen sker för geologisk lagring enligt lagringsdirektivet.⁵⁹ När det gäller avskiljningsanläggningar som inte avskiljer koldioxid från en MKB-pliktig anläggning och där den årliga avskiljningen är mindre än 1,5 megaton får medlemsstaterna själva bedöma, från fall till fall eller utifrån kriterier som de lägger fast, om en miljökonsekvensbedömning ska krävas.⁶⁰

Avskiljning av koldioxid faller vidare under IPPC-direktivet om avskiljningen sker från en anläggning som i sig faller under det direktivet.⁶¹ Det medför bland annat att användning av bästa tillgängliga teknik och effektiv energianvändning ska säkerställas vid tillståndsgivning.⁶² Verksamheten ska heller inte

tillåtas orsaka någon betydande förorening. Det omfattar alla typer av föroreningar som verksamheten kan ge upphov till, inte bara sådana som är direkt kopplade till koldioxiden.⁶³

En viktig fråga har varit huruvida avskiljd koldioxid ska betraktas som avfall. Sedan tidigare är "gasformiga utsläpp till luften" undantagna från avfallsdirektivets tillämpningsområde.⁶⁴ Att det undantaget skulle vara tillämpligt på avskiljd koldioxid är dock tveksamt och vid vissa avskiljningstekniker i princip uteslutet. Lagstiftarens syfte har varit att koldioxid som avskiljts för geologisk lagring i enlighet med lagringsdirektivet inte ska betraktas som avfall.⁶⁵ En ändring av avfallsdirektivet har därför beslutats. Den nya texten kan, i den svenska språkversionen, tolkas som att det är först när den avskiljda koldioxiden transporterats till lagringsplatsen, och eventuellt också lagrats, som den upphör att omfattas av direktivet.⁶⁶ En sådan tolkning är dock svår att förena med ingressen till lagringsdirektivet samt med den ändring som gjorts av förordningen om transport av avfall.⁶⁷ Den perfektform – "avskilt och transporterats" – som ger detta intryck på svenska har heller inte samma effekt i den engelska språkversionen och används inte alls i den danska eller tyska.⁶⁸ Den

Direktiv om industriutsläpp (IPPC-direktivet), s. 2.

⁵⁸ Direktiv 2008/1, art. 3 (1). Angående begreppet "förorening", se art. 2, punkt 2.

⁵⁹ Direktiv 2006/12, art. 2 (1) (a).

⁶⁰ Direktiv 2009/31, ingressens 46 stycke.

⁶¹ Det aktuella stycket lyder "koldioxid som avskilts och transporterats för geologisk lagring och som lagrats geologiskt i enlighet med" lagringsdirektivet, omfattas inte av avfallsdirektivet. (kursivering ej i original) Direktiv 2006/12, art. 2 (1) (a) (ändrad genom direktiv 2009/31, art. 35). Undantaget gäller också koldioxid som avskilts och transporterats för volymmässigt begränsad lagring för forsknings- och utvecklingsändamål och som därför faller utanför tillämpningsområdet för direktiv 2009/31.

⁶² Enligt ingressens 46:e skäl bör "koldioxid som avskiljs och transporteras för geologisk lagring" undantas från avfallsreglerna. Angående förordningen om transport av avfall se avsnitt 4.2 nedan.

⁶³ Den engelska versionen lyder "carbon dioxide captured and transported for the purposes of geological storage and geologically stored in accordance with Directive 2009/31/EC". Directive 2009/31, art. 35; den danska lyder "kuldioxid, der opsamles og transporteres med henblik på geologisk lagring, og som lagres geologisk i overensstemmelse med Europa-Parlamentets og Rådets direktiv

⁵⁸ Se bl.a. direktiv 2003/87/EG, art. 10 och 10a.

⁵⁹ Direktiv 85/337/EEG, bilaga I, punkt 24 (ändrad genom direktiv 2009/31) och art. 4(1).

⁶⁰ Ibid., bilaga II, punkt 3 (j) (ändrad genom direktiv 2009/31) och art. 4(2).

⁶¹ Närmare bestämt som är listad i bilaga I till IPPC-direktivet. Direktiv 2008/1, bilaga I, punkten 6.9.

⁶² Angående planerade förändringar av hur bästa tillgängliga teknik (BAT) ska tillämpas och hur genomförandet ska kunna göras mer enhetligt och konsekvent i hela Unionen, delvis genom att ge s.k. BAT-referensdokument (BATREF) en tydligare rättslig roll, se Förslag till Europaparlamentets och Rådets direktiv om industriutsläpp (samordnade åtgärder för att förebygga och begränsa föroreningar), (Omarbetning) 21.12.2007, KOM(2007) 844 slutlig, s. 10; Europaparlamentets lagstiftningsresolution av den 10 mars 2009 om förslaget till Europaparlamentets och rådets direktiv om industriutsläpp, C6-0002/2008 – 2007/0286(COD)); samt Faktapromemoria 2008/09:FPM2.

rimliga tolkningen är således att koldioxiden faller utanför avfallsdirektivet redan från den tidpunkt då den avskiljs, förutsatt att syftet är att den ska bli föremål för geologisk lagring. Hur detta syfte ska fastställas framgår inte av direktivet. Att enbart gå på innehavarens uttalade avsikt är knappast tillräckligt för att den skyddsnivå som avfallsagstiftningen syftar till ska upprätthållas. Däremot bör en bedömning kunna göras av huruvida avskild koldioxid lagras och hanteras inom ramen för ett system och en infrastruktur som användas för sådan lagring.

4.2 Transport

Som ovan nämnts är, med tanke på volymerna, rörledningarna och fartyg de rimliga alternativen för transport av avskild koldioxid.⁶⁹ Genom en ändring av MKB-direktivet ställs krav på miljökonsekvensbedömning av rörledningarna för transport av koldioxid för geologisk lagring om ledningarna har en diameter på mer än 800 millimeter och en längd på över 40 kilometer. Detta motsvarar vad som sedan tidigare gäller för naturgasledningarna.⁷⁰ Kravet gäller också tillhörande tryckstegringsstationer.⁷¹ För mindre rörledningarna som tjänar samma syfte gäller att medlemsstaterna själva ska bedöma, från fall till fall eller utifrån kriterier som de lägger fast, om en miljökonsekvensbedömning krävs.⁷² Som jämförelse kan nämnas att transport av koldioxid 60 km från ett större olje- eller koleldat kraftverk (cirka 5 miljoner ton/år) beräknas kräva en rörledning med en diameter på 500 millimeter.⁷³ De ledningar som kommer att falla under det obligatoriska MKB-kravet kan alltså förmodas bli sådana som samlar upp koldioxid från flera anläggningar för transport till en lagringsplats.

2009/31/EF". Direktiv 2009/31/EF, art. 35. Se också Richtlinie 2009/31, art. 35.

⁶⁹ Om dessa två transporttekniker, se vidare Accompanying Document, COM(2008) XXX, a.a. s. 23-26.

⁷⁰ A.a. s. 24.

⁷¹ Direktiv 85/337/EEG, bilaga I, punkt 16 (ändrad genom direktiv 2009/31) och art. 4(1).

⁷² Direktiv 85/337/EEG, bilaga II, punkt 10 (i) (ändrad genom direktiv 2009/31) och art. 4(2).

⁷³ Ekström m.fl., a.a. s. 23 och 30.

Efter en ändring faller transporter av koldioxid inte under förordningen om transport av avfall så länge de sker för geologisk lagring enligt lagringsdirektivet.⁷⁴ Inte heller faller sådana transporter i dagsläget under det så kallade Sevesodirektivet om åtgärder för att förebygga och begränsa följderna av allvarliga olyckshändelser där farliga ämnen ingår.⁷⁵ Säkerheten kring fartygstransporter av koldioxid regleras genom flera internationella och vissa gemenskapsrättsliga regelverk. Dessa behandlas inte närmare här.⁷⁶

4.3 Lagring

Som nämnts ovan skapar gemenskapen ett helt nytt regelverk, i form av lagringsdirektivet, för "miljömässigt säker geologisk lagring av koldioxid".⁷⁷ Syftet med sådan lagring är "permanent inneslutning av koldioxid på ett sätt som förhindrar och, där detta inte är möjligt, i möjligaste mån eliminerar negativa effekter och eventuella risker för miljön och människors hälsa".⁷⁸ Direktivet är tillämpligt på geologisk koldioxidlagring inom medlemsstaternas territorier, i deras ekonomiska zoner⁷⁹ liksom på deras kontinental-

⁷⁴ Europaparlamentets och rådets förordning (EG) nr 1013/2006 av den 14 juni 2006 om transport av avfall, EUT L 190, 12.7.2006, s. 1, art. 3 (1) (h).

⁷⁵ Rådets direktiv 96/82/EG av den 9 december 1996 om åtgärder för att förebygga och begränsa följderna av allvarliga olyckshändelser där farliga ämnen ingår, EGT L 10, 14.1.1997, s. 13. Om Sevesodirektivets eventuella framtida tillämpning, se vidare avsnitt 4.3 nedan.

⁷⁶ Se istället Accompanying Document, COM(2008) XXX, a.a. s. 25-26 och Raine, A., *Transboundary Transportation of CO₂ Associated with Carbon Capture and Storage Projects: An Analysis of Issues under International Law*, *Carbon & Climate Law Review*, no 4, 2008, s. 358.

⁷⁷ Direktiv 2009/31, art. 1 (1).

⁷⁸ Direktiv 2009/31, art. 1 (2).

⁷⁹ Den ekonomiska zonen stäcker sig, givet att kuststaten har hävdats en sådan zon, maximalt 200 sjömil (ca 37 mil) från baslinjen. FN:s havsrättskonvention, Montego Bay, 10 december 1982, SÖ 2000:1, art. 57. Baslinjen är antingen detsamma som lågvattenlinjen utmed kusten eller, där kusten är väldigt oregelbunden, räta linjer som dragits mellan lämpliga punkter, t.ex. öar. *Ibid.*, art. 5-7. När två motstående kuststater ligger mindre än 400 sjömil från varandra (dvs. utrymme saknas för två fulla 200-milzoner) ska gränsen för deras ekonomiska zoner bestämmas genom en överenskommelse baserad på internationell rätt. *Ibid.*, art. 74.

socklar⁸⁰ (enligt definitionen i havsrättskonventionen).⁸¹ Lagring i ett geologiskt område (lagringskomplex)⁸² som sträcker sig utöver dessa områden ska inte tillåtas.⁸³ Någon skillnad mellan lagring i geologiska formationer på land och under havet görs i stort sett inte. Lagring i själva havet, det vill säga att koldioxid pumpas ut i vattenpelaren, är däremot inte tillåten.⁸⁴ Det återspeglar ett motsvarande förbud som tidigare beslutats av parterna till OSPAR-konventionen avseende Nordostatlantens.⁸⁵

Från effektivitetssynpunkt, det vill säga önskan att optimera förutsättningarna för tillämpning av miljömässigt säker CCS inom EU, hade det sannolikt varit önskvärt med ett gemensamt system för att identifiera och utnyttja lämpliga lagringsplatser. Dock skulle det innebära ganska långtgående inskränkningar av medlemsstaternas kontroll över det egna territoriet.⁸⁶ I stället har en modell valts som lämnar till de enskilda medlemsstaterna att bestämma om, och i så fall var, lagring av koldioxid ska få förekomma inom deras territorium eller jurisdiktionszoner. De har en otvetydig rätt att helt avstå från att identifiera eller utnyttja

⁸⁰ Kontinentalsockeln utgörs av havsbotten och dess underlag i området utanför kuststatens territorialhav. Den sträcker sig 200 sjömil från baslinjen eller till den så kallade kontinentalrandens ytterkant, dock maximalt 350 sjömil från baslinjen. Med kontinentalrand avses landmassans förlängning under vattnet. Beroende på de geologiska omständigheterna kan kontinentalsockeln dock i vissa fall sträcka sig ännu längre. Havsrättskonventionen, art. 76.

⁸¹ Direktiv 2009/31, art. 2 (1).

⁸² Med "lagringskomplex" förstås enl. direktivet lagringsplatsen och omgivande geologiskt område som kan påverka lagringsintegriteten och -säkerheten (dvs. sekundära lagringsformationer). Direktiv 2009/31, art. 3 punkt 6.

⁸³ Direktiv 2009/31, art. 2 (3).

⁸⁴ Direktiv 2009/31, art. 2 (4).

⁸⁵ Konventionen för skydd av den marina miljön i Nordostatlantens, Paris, 22 september 1992, SÖ 1994:25; OSPAR Decision 2007/1 to Prohibit the Storage of Carbon Dioxide Streams in the Water Column or on the Sea-bed. Om den havsrättsliga regleringen av CCS se vidare Langlet, a.a., s. 291.

⁸⁶ Notera även att medlemsstaterna i EG-fördraget har behållit en möjlighet att utöva vetorätt mot miljölagstiftning som påverkar bland annat markanvändning och strukturen på medlemsstaternas energiförsörjning. EGF, art. 175.

eventuella lämpliga lagringsplatser.⁸⁷ Stater som avser att tillåta geologisk lagring ska göra en bedömning av tillgänglig lagringskapacitet, för hela eller delar av territoriet. Det är även medlemsstaterna som fattar beslut om faktiskt lagring i enskilda fall. Mer om det nedan.⁸⁸

Lagringsdirektivet innehåller ett antal kriterier för bedömningen av en geologisk formations lämplighet som lagringsplats.⁸⁹ Om det för att identifiera en lämplig plats krävs en undersökning av potentiella platser som inbegriper borrhning, injektionstester och liknande åtgärder, får en sådan komma till stånd bara med ett särskilt undersökningstillstånd. Alla som förfogar över den kapacitet som krävs har rätt att söka tillstånd och få en prövning enligt objektiva och icke-diskriminerande kriterier. Under tillståndets giltighetstid har innehavaren ensamrätt på att undersöka potentiella lagringskomplex inom det område som tillståndet avser.⁹⁰

4.3.1 Vad som lagras

Det som lagras är, med direktivets terminologi, en koldioxidström. Med det avses ett flöde av substanser som är resultatet av processer för koldioxidavskiljning.⁹¹ Vid avskiljning erhåller man vanligen inte helt ren koldioxid. Istället är den uppblandad med andra ämnen, t.ex. från rökgaser eller medel som använts vid avskiljningen.⁹² Det finns en oro för att koldioxidlagring ska användas för att bli av med olika typer av avfall genom att tillsätta dem till koldioxidströmmen.⁹³ Det skulle i många fall innebära ett kringgående av avfalls- och dumpningsregler och även kunna påverka säkerheten. Inget avfall eller andra substanser får därför tillsättas koldioxidströmmen i syfte att bortskaf-

⁸⁷ Direktiv 2009/31, art. 4 (1).

⁸⁸ Se avsnitt 4.3.2 nedan.

⁸⁹ Direktiv 2009/31, bilaga I.

⁹⁰ Direktiv 2009/31, art. 5.

⁹¹ Direktiv 2009/31, art. 3 punkt 13.

⁹² Accompanying Document, COM(2008) XXX, a.a. s. 70.

⁹³ A.a., s. 70 och 'Risk Assessment and Management Framework for CO₂ Sequestration in Sub-seabed Geological Structures (CS-SSGS)', a.a., s. 11.

fa dem. En koldioxidström måste också, för att få lagras, bestå huvudsakligen av koldioxid. Bland övriga krav på strömmens sammansättning finns att den inte får innehålla andra substanser än koldioxid i en omfattning som skulle kunna ha negativa effekter på lagringsplatsens integritet eller utgöra en betydande risk för miljön eller människors hälsa.⁹⁴ I begreppet "lagringsplats" inkluderas, förutom den volym inom en geologisk formation där koldioxiden lagras, även ytanläggningar och injektionsanläggningar.⁹⁵ Kommissionen ska, när så är lämpligt, anta riktlinjer för tillämpning av kraven på koldioxidströmmens sammansättning.⁹⁶

4.3.2 Tillstånd

För geologisk lagring av koldioxid krävs normalt tillstånd. Undantag från tillståndskravet gäller för planerad lagring av mindre än 100 kiloton koldioxid för forskning och utveckling eller provning av nya produkter och processer.⁹⁷ Det kan jämföras med de ca 5 milj. ton som ett större olje- eller koleldat kraftverk genererar årligen eller med de 1 500 ton som existerande fraktfartyg för koldioxid kan transportera.⁹⁸ Innan tillståndsprövning kan ske måste en miljökonsekvensbedömning göras i enlighet med MKB-direktivets krav.⁹⁹ Om lagringen sker inom en medlemsstats territorium och riskerar att beröra grundvatten måste den geologiska formation som väljs vara "permanent olämplig för andra ändamål", eftersom injektion av en koldioxidström annars inte är tillåten enligt de åtgärdsprogram som medlemsstaterna ska upprätta enligt vattendirektivet.¹⁰⁰

⁹⁴ Direktiv 2009/31, art. 12 (1).

⁹⁵ Direktiv 2009/31, art. 3, punkt 3.

⁹⁶ Direktiv 2009/31, art. 12 (2).

⁹⁷ Direktiv 2009/31, art. 2 (2).

⁹⁸ Ekström m.fl., a.a. s. 23 och 28. Dock finns planer på fartyg som kan frakta 20 000 ton.

⁹⁹ Direktiv 85/337, art. 4.1 och bilaga I, punkt 23 (ändrad genom direktiv 2009/31).

¹⁰⁰ Europaparlamentets och rådets direktiv 2000/60/EG av den 23 oktober 2000 om upprättande av en ram för gemenskapens åtgärder på vattenpolitikens område, EGT L 327, 22.12.2000, s. 1, art. 11 (3) (j), fjärde strecksatsen (ändrad

Vid prövning av en ansökan om att driva en lagringsplats gäller samma krav på öppenhet och icke-diskriminering som för undersökningstillstånd. En ansökan om lagringstillstånd, ställd till den behöriga myndigheten i den aktuella medlemsstaten (nedan "myndigheten"),¹⁰¹ ska bland annat innehålla bevis på sökandens tekniska kompetens, en beskrivning av lagringskomplexet och den förväntade säkerheten, den totala mängden koldioxid som ska lagras, transportmetoder, koldioxidströmmens sammansättning och åtgärder för att förhindra betydande störningar.¹⁰²

En viktig grund för bedömningen av den föreslagna lagringsplatsens lämplighet är den tredimensionella statisk-geologiska modell som ska konstrueras. Modellen ska beskriva lagringskomplexet i termer av bl.a. area och djup och spricksystem samt reservoarens geomekaniska, geokemiska och flödesmässiga egenskaper. Den ska baseras på uppgifter som samlas in i enlighet med kriterier i direktivet. Modellen är tänkt att ge information om bl.a. lagringskapacitet, koldioxidens spridning över tid, mekanismer för och omfattning av koldioxidinfångning, risken för sprickbildning i lagringsformationer och takbergarter samt risken för läckage från lagringsplatsen.¹⁰³

En viss geologisk formation får väljas som lagringsplats bara om det inte, under de planerade användningsförhållandena, medför någon "betydande risk" för läckage eller för miljön eller människors hälsa.¹⁰⁴ Vad som närmare krävs för att detta kriterium ska anses uppfyllt är dock långt ifrån tydligt.¹⁰⁵

genom direktiv 2009/31).

¹⁰¹ Som är brukligt i gemenskapslagstiftningen åläggs medlemsstaterna att utse en, eller flera, behörig(a) myndighet(er) som ska ansvara för att de skyldigheter som direktivet fastställer fullgörs. Direktiv 2009/31, art. 23.

¹⁰² Direktiv 2009/31, art. 7.

¹⁰³ Direktiv 2009/31, art. 7 (3) och 4 (3) samt bilaga I.

¹⁰⁴ Direktiv 2009/31, art. 4 (4).

¹⁰⁵ Med "betydande risk" avses "en kombination av en sannolikhet att skada ska uppkomma och skada av en omfattning som inte kan förbises utan att direktivets syfte när det gäller den berörda lagringsplatsen ifrågasätts". direktiv 2009/31, art. 3, punkt 18. Den svenska språkversionen är sannolikt missvisande då den ger intryck av att det bara är skadas omfattning som inte ska kunna förbises utan att direktivets syfte kan ifrågasättas. En sådan tolkning

För svensk del har regeringen pekat på behovet av att utnyttja befintliga mätdata som Statens geologisk undersökning (SGU) erhållit vid tidigare prospektering. Förhoppningen är att dessa ska indikera var lämpliga geologiska strukturer finns och minska behovet av nya och mycket kostsamma undersökningar för att lokalisera potentiella lagringsplatser.¹⁰⁶ Norge har ingått ett avtal med Storbritannien om gemensam kartläggning av potential för koldioxidlag-

innebär att själva sannolikheten för att skada ska uppkomma förblir odefinierad. En rimligare tolkning, som också är väl förenlig med de danska och engelska språkversionerna, är att det är kombinationen av sannolikheten och omfattningen som inte ska kunna förbises utan att syftet kan ifrågasättas. I den danska versionen definieras "väsentlig risiko" som "en kombination af en sandsynlighed for, at en skade indtræffer, og et omfang af skade, som der ikke kan ses bort fra, uden at der sættes spørgsmålstegn ved dette direktivs formål for så vidt angår den pågældende lagringslokalitet". Det stämmer också överens med en vedertagen förståelse av begreppet risk. Dessvärre blir begreppet "betydande risk" svårfångat även med denna tolkning eftersom direktivets syfte är långt ifrån glasklart. Direktivets syfte synes, som noterats ovan, vara "miljömässigt säker geologisk lagring av koldioxid för att bidra till att bekämpa klimatförändringar." Syftet med "miljömässigt säker geologisk lagring" av koldioxid är i sin tur "permanent inneslutning av koldioxid på ett sätt som förhindrar och, där detta inte är möjligt, i möjligaste mån eliminerar negativa effekter och eventuella risker för miljön och människors hälsa." För att vara betydande ska en risk alltså innebära att möjligheten att bidra till att bekämpa klimatförändringar genom geologisk lagring av koldioxid, varvid negativa effekter förhindras eller, när det inte är möjligt, i möjligaste mån elimineras, kan sättas i fråga. En risk är förstås alltid möjlig att förhindra genom att inte tillåta lagringen. Detta krävs dock inte, vilket är helt naturligt eftersom de sannolikt skulle omöjliggöra varje geologisk koldioxidlagring eftersom risken knappast någonsin kan visas vara noll. Det som måste bedömas tycks bli om en risk hotar möjligheten att i möjligaste mån eliminera risker som inte kan undvikas. Otydligheten öppnar upp för en ganska fri bedömning, även om direktivet kan anses sända en signal om att försiktigt ska råda. Ramverket för utvärdering och hantering av risker relaterade till koldioxidlagring under OSPAR-konventionen talar i stället om "the risk of CO₂ (and incidental associated substances) escaping from the formation is reduced to an insignificant level." Framework for Risk Assessment and Management of Storage of CO₂ Streams in Geological Formations (FRAM), Annex 1 till OSPAR Guidelines for Risk Assessment and Management of Storage of CO₂ Streams in Geological Formations, Annex 7 till Meeting of the OSPAR Commission, Ostend: 25 - 29 June 2007, Summary Record, OSPAR 07/24/1-E, para. 6.4.

¹⁰⁶ Prop. 2008/09:170 En sammanhållen svensk havspolitik, s. 83.

ring under Nordsjön.¹⁰⁷

För att få utfärda ett lagringstillstånd måste myndigheten i den aktuella medlemsstaten ha försäkrat sig om att alla relevanta krav i lagringsdirektivet och övrig gemenskapslagstiftning är uppfyllda och att verksamhetsutövaren¹⁰⁸ är ekonomiskt stabil och teknisk kompetent.¹⁰⁹ Någon form av finansiell säkerhet ska också ställas av den potentiella verksamhetsutövaren enligt villkor som medlemsstaten beslutar. Den ska sedan regelbundet anpassas med beaktande av ändringar i de bedömda riskerna och kostnaderna för de skyldigheter som åligger verksamhetsutövaren. Säkerheten ska förbli giltig så länge verksamhetsutövaren ansvarar för lagringsplatsen.¹¹⁰

Om fler ansöker om tillstånd för samma plats ska företräde normalt ges till innehavaren av ett undersökningstillstånd för området.¹¹¹ I de flesta fall lär det också vara svårt att uppfylla kraven på en ansökan utan att inneha, eller åtminstone ha innehaft, ett sådant tillstånd och därmed fått genomföra mer omfattande undersökningar i området.

Myndigheten har att upprätta ett utkast till lagringstillstånd och sända det till kommissionen tillsammans med annat material som myndigheten beaktar när den fattar beslut om att godkänna en lagringsplats. Kommissionen har fyra månader på sig att avge ett icke-bindande yttrande över utkastet, men kan också avstå.¹¹² Den nationella myndigheten måste beakta ett

¹⁰⁷ Norsk-britisk erklaring om kartläggning av CO₂-lagring, Nyhet, 29.05.2009, tillgänglig på <<http://www.regjeringen.no/nb/dep/oed/aktuelt/nyheter/2009/norsk-britisk-avtale-om-kartlegging-av-c.html?id=564211>> (21 september 2009).

¹⁰⁸ Verksamhetsutövare definieras som "en fysisk eller juridisk, privat eller offentlig person som driver eller har kontrollen över lagringsplatsen eller till vilken de avgörande ekonomiska befogenheterna över lagringsplatsens tekniska drift har delegerats enligt nationell lagstiftning". Direktiv 2009/31, art. 3 punkt 10. I detta skede avses dock rimligen den som har för avsikt att bli verksamhetsutövare om tillstånd beviljas.

¹⁰⁹ Direktiv 2009/31, art. 8 (1).

¹¹⁰ Direktiv 2009/31, art. 19. Angående övergång av ansvar från verksamhetsutövaren till medlemsstaten, se avsnitt 4.3.7 nedan.

¹¹¹ Direktiv 2009/31, art. 6.

¹¹² Direktiv 2009/31, art. 10 (1).

eventuellt yttrande och motivera avvikelser från det när den utfärdar tillståndet.¹¹³

I tillståndet ska en rad tekniska krav fastställas, bland annat den totala mängden koldioxid som får lagras, högsta tillåtna injektionstakt och injektionsstryck, samt koldioxidströmmens sammansättning (dvs. godtagbar förekomst av föroreningar).¹¹⁴ Ytterligare villkor presenteras nedan, i sina respektive sammanhang.¹¹⁵ Den behöriga myndigheten ska informeras om alla planerade förändringar av driften av lagringsplatsen och ska, när så är lämpligt, uppdatera prövningstillståndet eller villkor för tillståndet. Inga väsentliga förändringar får genomföras utan ett nytt eller uppdaterat tillstånd.¹¹⁶

Tillståndet skall vidare uppdateras eller, som sista utväg, återkallas, bland annat om myndigheten har uppmärksammat på läckage eller betydande störningar, eller om den fått kännedom om att verksamhetsutövaren underlåtit att uppfylla tillståndsvillkoren. Ett beslut om återkallande kan också tas om det bedöms som nödvändigt på grundval av den vetenskapliga och tekniska utvecklingen. Under alla omständigheter ska uppdatering ske fem år efter tillståndets utfärdande och därefter vart tionde år.¹¹⁷

Ur ett svenskt perspektiv kan det vara intressant att jämföra detta med reglerna om tillståndsrättskraft i miljöbalken som inte tillåter återkallande av ett tillstånd på grund av teknisk och vetenskaplig utveckling. Efterlevnad av direktivet kan dock, i vissa fall, åstadkommas genom den generella rätt till återkallande som finns när det behövs för att efterleva Sveriges förpliktelser enligt EG-rätten.¹¹⁸ Det kan dock uppstå problem eftersom detta endast blir tillämpligt om ett återkallande "behövs" enligt gemenskapsrätten, snarare än när myndigheten själv anser att ett

sådant är befogat. När ett återkallande eventuellt behövs är dessutom inte tydligt i direktivet. Möjligheten att återkalla ett lagringstillstånd på grundval av den vetenskapliga och tekniska utvecklingen bör därför förtydligas när direktivet implementeras i nationell rätt.

Hantering av koldioxid medför idag inga skyldigheter enligt det så kallade Sevesodirektivet om åtgärder för att förebygga och begränsa följderna av allvarliga olyckshändelser där farliga ämnen ingår.¹¹⁹ Kommissionen avser dock att undersöka behovet av att inkludera koldioxid under direktivet inom ramen för den revidering av Sevesodirektivet som snart ska ske. Den preliminära bedömningen är att riskerna inte motiverar en sådan ändring.¹²⁰

Verksamhetsutövare får bara injektera koldioxidströmmar som har analyserats med avseende på sammansättning och om eventuella kontaminationsnivåer överensstämmer med direktivets krav. De måste också hålla ett register över de injekterade strömmarnas kvantitet och egenskaper.¹²¹

4.3.3 Övervakning

Verksamhetsutövaren ska övervaka injektionsanläggningen, lagringskomplexet och, i tillämpliga fall, omgivningen. Övervakningen ska syfta till att bland annat jämföra koldioxidens faktiska och modellerade beteende på lagringsplatsen, att upptäcka om koldioxiden migrerar och/eller läcker, samt att upptäcka betydande negativa effekter på den omgivande miljön, särskilt på dricksvatten, för människor eller användare av den kringliggande biosfären. Utifrån övervakningen ska också göras en uppdaterad bedömning av lagringskomplexets säkerhet och integritet på lång och kort sikt.¹²²

¹¹³ Direktiv 2009/31, art. 8 (2) och 10 (2).

¹¹⁴ Direktiv 2009/31, art. 9 (3)-(4).

¹¹⁵ Det rör sig bl.a. om en godkänd plan för s.k. korrigerande åtgärder och villkor för stängning av lagringsplatsen. Om detta se vidare avsnitt 4.3.4 och 4.3.6 nedan.

¹¹⁶ Direktiv 2009/31, art. 11 (1)-(2).

¹¹⁷ Direktiv 2009/31, art. 11 (3).

¹¹⁸ Miljöbalk (1998:808) 24 kap 3 § punkt 7.

¹¹⁹ Rådets direktiv 96/82/EG av den 9 december 1996 om åtgärder för att förebygga och begränsa följderna av allvarliga olyckshändelser där farliga ämnen ingår, EGT L 10, 14.1.1997, s. 13.

¹²⁰ Statement by the Commission on whether carbon dioxide should be a named substance with suitable thresholds in a revised Seveso-Directive, bilaga till Europaparlamentets ståndpunkt, P6_TC1-COD(2008)0015, a.a.

¹²¹ Direktiv 2009/31, art. 12 (3).

¹²² Direktiv 2009/31, art. 13 (1).

Övervakningen sker enligt en plan som verksamhetsutövaren utarbetar i enlighet med krav i direktivet, och som ska godkännas av den behöriga myndigheten. Planen ska uppdateras och godkännas minst vart femte år.¹²³ Minst en gång om året ska verksamhetsutövaren också rapportera till myndigheten, bland annat resultat av övervakningen och uppgifter om de koldioxidströmmar som tagits emot och injekterats.¹²⁴ Direktivet uppställer också krav på regelbundna inspektioner.¹²⁵

4.3.4 Åtgärdande av läckage och störningar

Om ett läckage eller en störning som kan innebära risk för läckage, risk för miljön eller människors hälsa (s.k. betydande störning) inträffar, ska verksamhetsutövaren anmäla det till den behöriga myndigheten och vidta de åtgärder som krävs för att avhjälpa störningarna och förhindra eller stoppa utsläpp av koldioxid.¹²⁶ Med läckage avses inte bara att koldioxid kommer ut i luften, havet eller grundvattnet utan varje utsläpp från lagringskomplexet räknas hit.¹²⁷ För varje lagringsverksamhet ska det också finnas en plan för hur betydande störningar ska avhjälpas, läckor förslutas och koldioxidutsläpp förhindras (s.k. korrigerande åtgärder), upprättad av verksamhetsutövaren och godkänd av den behöriga myndigheten.¹²⁸

De åtgärder som vidtas ska minst motsvara vad som följer av planen. Den behöriga myndigheten kan också när som helst kräva att verksamhetsutövaren vidtar, eller själv vidta, nödvändiga åtgärder för att förhindra störningar eller stoppa utsläpp eller skydda människors hälsa, även om de går utöver planen. Om verksamhetsutövaren försummar att vidta de åtgärder som krävs åligger det myndigheten att vidta dem. Om myndigheten själv vidtar åtgärder ska den begära ersättning för kostnaderna från verksamhetsutövaren.

¹²³ Direktiv 2009/31, art. 13 (2).

¹²⁴ Direktiv 2009/31, art. 14.

¹²⁵ Direktiv 2009/31, art. 15.

¹²⁶ Direktiv 2009/31, art. 16 (1) och art. 3 punkt 17 och 19.

¹²⁷ Direktiv 2009/31, art. 3 punkt 5-6.

¹²⁸ Direktiv 2009/31, art. 16 (2).

¹²⁹ Något krav på att myndigheten först ska invänta att verksamhetsutövaren ska vidta åtgärderna, för att därefter, vid eventuellt konstaterad underlåtenhet, själv agera finns inte.

4.3.5 Ansvar för läckage och skador

Den som driver en lagringsplats för koldioxid ansvarar för att förebygga och avhjälpa eventuella miljöskador enligt det så kallade miljöskadedirektivet.¹³⁰ Det innebär bl.a. att verksamhetsutövaren måste vidta nödvändiga förebyggande åtgärder om det finns ett överhängande hot om att en miljöskada ska uppkomma.¹³¹ Har en sådan skada redan uppkommit måste verksamhetsutövaren vidta åtgärder för att omedelbart hantera de aktuella förorenande ämnena eller andra skadefaktorer för att begränsa eller förhindra ytterligare skada och negativa effekter på människors hälsa.¹³² Åtgärder ska också vidtas för att återställa, sanera eller ersätta skadade naturresurser eller försämrade funktioner¹³³ (s.k. hjälpåtgärder). Sådana åtgärder ska beslutas av den i detta sammanhang behöriga myndigheten på förslag av verksamhetsutövaren.¹³⁴

Med "miljöskador" avses inte varje skada på den yttre, fysiska miljön utan ett antal i lagstiftningen definierade skadetyper. Dessa omfattar skador på arter och naturliga livsmiljöer som är föremål för särskilt skydd i gemenskapsrätten,¹³⁵ skador som har

¹²⁹ Direktiv 2009/31, art. 16 (3)-(5).

¹³⁰ Europaparlamentets och rådets direktiv 2004/35/EG av den 21 april 2004 om miljöansvar för att förebygga och avhjälpa miljöskador, EUT L 143, 30.4.2004, s. 56, bilaga III, punkt 14 (ändrad genom direktiv 2009/31).

¹³¹ Direktiv 2004/35, art. 5 (1).

¹³² Direktiv 2004/35, art. 6 (1) (a).

¹³³ Med "funktioner" avses de funktioner en naturresurs har till förmån för en annan naturresurs och/eller allmänheten. Direktiv 2004/35, art. 2, punkt 13.

¹³⁴ Direktiv 2004/35, art. 6 (1) (b) och art. 7 (1)-(2).

¹³⁵ Mer exakt rör det sig om arter och miljöer som är skyddade enligt Rådets direktiv 79/409/EEG av den 2 april 1979 om bevarande av vilda fåglar, EGT L 103, 25.4.1979, s. 1 (Svensk specialutgåva Område 15 Volym 2 s. 161) (fågelskyddsdirektivet) eller Rådets direktiv 92/43/EEG av den 21 maj 1992 om bevarande av livsmiljöer samt vilda djur och växter, EGT L 59, 8.3.1996, s. 63 (habitatdirektivet).

betydande negativa effekter på vatten samt markförorening som medför risk för att människors hälsa ska påverkas negativt.¹³⁶ Vad gäller skador på vatten bör noteras att det i havet enbart är vattnet upp till en sjömil ut från baslinjen¹³⁷ som omfattas.¹³⁸ Annat havsvatten faller utanför miljöskadedirektivets tillämpningsområde. Det hindrar emellertid inte kuststaten från att utöva jurisdiktion över eventuella skador så länge det sker i enlighet med havsrättens regler.¹³⁹

Av stor betydelse är att miljöskadedirektivets ansvarsregler, avseende bl.a. lagringsplatser för koldioxid, inte baseras på uppsåt eller försummelse från verksamhetsutövaren.¹⁴⁰ Ansvar är i princip strikt, det vill säga det inträder så fort en skada, som omfattas av direktivet, har inträffat eller då det finns ett överhängande hot att en sådan kan inträffa. Dock undantas från tillämpningsområdet sådana skador som orsakats av exceptionella och oundvikliga naturfenomen, som det inte är möjligt att skydda sig mot.¹⁴¹ Om skada orsakats av en förorening av diffus karaktär, gäller ansvar bara om det är möjligt att fastställa ett orsakssamband mellan skadan och enskilda verksamhetsutövarers verksamhet.¹⁴² Det innebär till exempel att klimateffekter av en verksamhet inte genererar något ansvar enligt direktivet. Man kan också tänka sig situationer med läckage av

koldioxid från en ledning eller ett förvar där det kan ha bidragit till höjd, och skadlig, koldioxidhalt i en vattenmassa utan att det går att fastställa ett samband t.ex. p.g.a. förekomsten av många potentiella källor.

Medlemsstaterna är oförhindrade att tillämpa mer långtgående regler om ansvar för miljöskador, till exempel genom att göra fler typer av skador till föremål för krav på förebyggande och avhjälpande.¹⁴³ Vad gäller skyddade arter och områden kan medlemsstaterna själva besluta om att lägga till ytterligare sådana som då omfattas av direktivets regler.¹⁴⁴

Andra typer av skador än miljöskador, så som saksador och personskador,¹⁴⁵ hanteras inte av gemenskapsrätten. Ansvar för sådana skador regleras av medlemsstaterna i enlighet med deras nationella skadeståndsrätt.

4.3.6 Stängning av lagringsplatsen

Av betydelse för ansvaret för en lagringsplats är när platsen stängs. Själva begreppet "stängning" kan vålla förvirring.¹⁴⁶ Det definieras i direktivet helt enkelt som "definitivt upphörande av koldioxidinjektion" vid lagringsplatsen.¹⁴⁷ Emellertid är det, så som det används, inte en rent faktisk beskrivning av att ingen injektion längre sker eller kommer att ske framöver. Det är i stället ett rättsligt definierat tillstånd som inträder under vissa förutsättningar. En lagringsplats kan nämligen stängas om villkoren för detta i tillstån-

¹³⁶ För de exakta definitionerna, med tillämpliga kvalifikationer och undantag, se direktiv 2004/35, art. 2 (1).

¹³⁷ Ang. definition av baslinjen, se not 79 ovan.

¹³⁸ Direktiv 2004/35, art. 2 punkt 5 samt direktiv 2000/60, art. 1 (a) och art. 2 punkt 7.

¹³⁹ Om gränserna för kuststatens jurisdiktion se Haver, G. & Bugge, H. C., *Transboundary Chains for CCS: Allocation of Rights and Obligations between the State Parties within the Climate Regime*, 4 *Journal for European Environmental & Planning Law* (2007), 367 på s. 371 samt Churchill, R.R. & Lowe, A. V., *The Law of the Sea*, 3rd ed., Manchester, 1999, s. 92 ff och 166 ff.

¹⁴⁰ Detta gäller alla de verksamheter som förtecknas i direktivets bilaga III. Utövare av icke-listade yrkesverksamheter kan också bli ansvariga enligt direktivet, men då bara på grund av fel eller försummelse och endast avseende skada på skyddade arter och livsmiljöer. Direktiv 2004/35, art. 3 (1).

¹⁴¹ Direktiv 2004/35, art. 4 (1).

¹⁴² Direktiv 2004/35, art. 4 (5).

¹⁴³ Direktiv 2004/35, art. 16.

¹⁴⁴ I Sverige har till exempel alla arter som fridlysts och fortplantningsområden som skyddats enligt miljöbalken inkluderats i direktivets tillämpningsområde oberoende av arternas eventuella skydd enligt gemenskapsrätten. Miljöbalken (1998:808) 10 kap 1§ punkt 3. Se vidare prop. 2006/07:95, Ett utvidgat miljöansvar, s. 43 och 45.

¹⁴⁵ Dvs. fysiska skador på fastigheter och lösa föremål respektive fysiska och psykiska skador på människor. Om begreppen se vidare Hellner, J. & Radetzki, M., *Skadeståndsrätt*, 7 uppl., Norstedts juridik, 2006, s. 103.

¹⁴⁶ Att dess tillämpning i direktivet inte är konsekvent påpekades i rapporten från Europaparlamentets Utskott för miljö, folkhälsa och livsmedelssäkerhet. Betänkande om förslaget till Europaparlamentets och rådets direktiv om geologisk lagring av koldioxid ..., Utskottet för miljö, folkhälsa och livsmedelssäkerhet, 16.10.2008, A6-0414/2008, s. 29-30. Det tycks dock inte ha resulterat i någon åtgärd.

¹⁴⁷ Direktiv 2004/35, art 3, punkt 20.

det för verksamheten har uppfyllts eller i annat fall på verksamhetsutövarens motiverade begäran, förutsatt att den godkänns av den behöriga myndigheten. Att verksamhetsutövaren helt enkelt slutar injektera koldioxid och saknar avsikt att återuppta sådan verksamhet i framtiden, till exempel manifesterad genom att injektionsanläggningarna avlägsnas, räcker alltså inte för att lagringsplatsen ska anses stängd. Myndigheten kan också besluta om stängning om den har återkallat lagringstillståndet, t.ex. på grund av att verksamhetsutövaren underlåtit att uppfylla tillståndsvillkoren.¹⁴⁸

När lagringsplatsen är stängd åligger det verksamhetsutövaren att försluta den och avlägsna injektionsanläggningarna. Såvida inte tillståndet är återkallat försätter verksamhetsutövaren att ansvara för övervakning, rapportering och nödvändiga åtgärder vid läckage och störningar (s.k. korrigerande åtgärder). Det samma gäller ansvaret under utsläppshandelsdirektivet och miljöskadedirektivet. Ansvaret ska utövas i enlighet med en "plan för underhåll m.m. efter stängning" som verksamhetsutövaren utformar, i enlighet med vissa krav i direktivet,¹⁴⁹ och som ska godkännas av den behöriga myndigheten före stängningen.¹⁵⁰ Om lagringstillståndet har återkallats är det myndigheten som får bära ansvaret i enlighet med planen; dock på verksamhetsutövarens bekostnad, om möjligt.¹⁵¹

4.3.7 Ansvarsöverföring

Verksamhetsutövarens ansvar för lagringsplatsen gäller inte på obegränsad tid. Direktivet bygger på idén att eftersom en lagringsplats kan vara förenad med risker som kräver övervakning och eventuella åtgärder under mycket lång tid är det inte realistiskt att ansvaret för detta ligger på en enskild ekonomisk aktör. Principen är i stället att ansvaret, när vissa

kriterier är uppfyllda, övergår på medlemsstaten. Huruvida staten kan tänkas bestå, som en igenkännbar politisk och geografisk enhet under den aktuella tidsrymden, är förstås också högst osäkert, för att inte säga osannolikt. Den problematiken berörs dock inte av direktivet.¹⁵²

En grundförutsättning för att ansvaret för lagringsplatsen ska gå över från verksamhetsutövaren till myndigheten är att alla tillgängliga uppgifter visar att den lagrade koldioxiden kommer att förbli fullständigt och varaktigt innesluten. Verksamhetsutövaren ska visa att så är fallet i en rapport till myndigheten. Rapporten måste minst visa att den injekterade koldioxidens beteende överensstämmer med det modellerade beteendet; att det inte finns något påvisbart läckage; samt att lagringsplatsen utvecklas i riktning mot en situation med långsiktig stabilitet. Något formellt hinder mot att uppställa mer omfattande krav finns inte. För att ansvaret ska gå över måste vidare lagringsplatsen ha förslutits, injektionsanläggningarna avlägsnats och vissa finansiella skyldigheter fullgjorts av verksamhetsutövaren.¹⁵³

Verksamhetsutövarens rapport om lagringsplatsen och annat relevant material ska göras tillgängligt för kommissionen. Den ska också informeras om, och ha möjlighet att yttra sig över, ett utkast till beslut om överföring av ansvar. Ett eventuellt yttrande är inte bindande men medlemsstaten måste, liksom med lagringstillståndet ovan, motivera eventuella avvikelser ifrån det i sitt slutliga beslut.¹⁵⁴

Ansvaret ska som utgångspunkt inte överföras till staten förrän tidigast 20 år efter stängningen av lagringsplatsen. Under den tiden fortsätter alltså verksamhetsutövaren att ansvara fullt ut. Den behöriga myndigheten är fri att fastställa en längre tidsperiod. Den kan emellertid också besluta om en kortare period, under förutsättning att alla tillgängliga uppgifter visar att koldioxiden kommer att förbli

¹⁴⁸ Direktiv 2009/31, art. 17 (1).

¹⁴⁹ Se bilaga II till direktivet.

¹⁵⁰ En preliminär plan måste godkännas redan i samband med att lagringsverksamheten tillståndsprövas. Den ska sedan efter behov uppdateras under verksamhetens drift i ljuset av den övervakning som sker.

¹⁵¹ Direktiv 2009/31, art. 17 (3)-(5).

¹⁵² För en vidare analys se avsnitt 7.5 nedan.

¹⁵³ Direktiv 2009/31, art. 18 (1)-(2). Kommissionen har bemyndigats att anta riktlinjer för bedömningen av om de tre förutsättningarna är uppfyllda.

¹⁵⁴ Direktiv 2009/31, art. 18 (3)-(4).

fullständigt och varaktigt innesluten.¹⁵⁵ Detta öppnar för olika policys i olika medlemsstater, även om kommissionens granskning och yttranden kan ha en viss harmoniserande effekt.

4.3.8 *Situationen efter överföring av ansvar*

Efter överföring av ansvaret får kontrollen av lagringsplatsen minskas från den tidigare nivån, men den måste fortfarande möjliggöra upptäckt av läckage eller betydande störningar.¹⁵⁶

När ansvarsöverföring har skett ska myndigheten normalt inte begära ersättning från verksamhetsutövaren för sina kostnader. Dock finns två viktiga mekanismer för att kanalisera kostnader till verksamhetsutövaren även när de uppstår efter att ansvaret har överförts. Om verksamhetsutövaren har begått ett fel, till exempel genom att undanhålla relevant information eller brista i omsorg, ska myndigheten kräva ersättning för kostnader orsakade av detta också efter att ansvaret överförts.¹⁵⁷ Den andra mekanismen består i ett krav på att verksamhetsutövaren ställer ett ekonomiskt bidrag till den behöriga myndighetens förfogande innan ansvaret för lagringsplatsen övergår. Bidraget, som ska beräknas utifrån vissa kriterier, ska minst täcka den förväntade kostnaden för övervakning i 30 år.¹⁵⁸ Kommissionen har bemyndigats att, i samråd med medlemsstaterna, ta fram riktlinjer för uppskattningen av de aktuella kostnaderna för att främja öppenhet och förutsebarhet för verksamhetsutövarena.

¹⁵⁵ Direktiv 2009/31, art. 18 (1) (b)

¹⁵⁶ Direktiv 2009/31, art. 18 (6).

¹⁵⁷ Andra tolkningar är också möjliga. Direktivet definierar inte vilka kostnader som avses men det är rimligt att utgå ifrån att det enbart handlar om kostnader som kan kopplas till felet. Detta är något som måste tydliggöras vid nationell implementering eftersom stadgandet annars öppnar upp för en möjlighet att kräva ersättning för alla framtida kostnader som myndigheterna har, oberoende av deras relation till det fel som begåtts. Det skapar osäkerhet och kan få betydande konsekvenser för möjligheterna för verksamhetsutövare att försäkra sig. Den svenska regeringens tolkning tycks vara att det är skada direkt orsakad av felet som omfattas. Prop 2008/09:162, En sammanhållen klimat- och energipolitik – Klimat, s. 103.

¹⁵⁸ Direktiv 2009/31, art. 20.

5 Tillträde till infrastruktur

Som har framgått tidigare kräver en effektiv tillämpning av CCS en omfattande infrastruktur, inte minst i form av pipelines och eventuellt också terminaler och hamnar. Det innebär att omfattande investeringar måste genomföras om CCS ska kunna användas i meningsfull omfattning. En möjlighet är förstås att de intressenter som avser att använda infrastrukturen går samman i någon form och låter bygga de installationer som behövs. Mest sannolikt är dock att de ägs och drivs av en enskild aktör som sedan upplåter kapacitet till dem som genererar avskild koldioxid.¹⁵⁹ Detta gäller i kanske ännu högre grad för själva lagringsplatsen vars utveckling och drift kräver omfattande specialkunskaper. En för gemenskapslagstiftaren viktig fråga är att infrastrukturen inte blir konkurrens-hindrare och i praktiken stänger ute vissa, till exempel nya aktörer, från möjligheten att kostnadseffektivt tillämpa CCS. Lagringsdirektivet innehåller därför regler om tillträde till transportnät och lagringsplatser.¹⁶⁰ De är emellertid inte särskilt precisa. Medlemsstaterna ska se till att tillträde beviljas på ett transparent och icke-diskriminerande sätt. Hur det ska ske närmare är upp till medlemstaterna själva att besluta. Målsättningen är att beslut om tillträde ska beakta bl.a. vilken lagringskapacitet som är eller rimligen kan göras tillgänglig inom de områden som medlemstaten beslutat ska komma i fråga för koldioxidlagring, hur stor andel av den skyldighet medlemstaten har internationellt och enligt gemenskapsrätten att minska sina koldioxidutsläpp som den avser att uppfylla genom CCS, samt de välmotiverade och rimliga behov som ägaren till eller verksamhetsutövaren av lagringsplatsen eller transportnätet har, liksom andra användares intressen.¹⁶¹

Den som driver transportnät eller en lagringsplats får alltid neka tillträde med hänvisning till bristande kapacitet men måste kunna motivera beslutet. Om så sker ska den aktuella medlemstaten vidta de åtgärder som krävs för att se till att verksamhetsutövaren gör

¹⁵⁹ Accompanying Document, COM(2008) XXX, a.a., s. 45.

¹⁶⁰ Direktiv 2009/31, art. 21.

¹⁶¹ Direktiv 2009/31, art. 21 (2).

de eventuella förbättringar som krävs för att öka kapaciteten i den mån det kan motiveras ekonomiskt. Om en potentiell kund är villig att betala förbättringarna ska de genomföras, förutsatt det inte inverkar negativt på miljösäkerheten.¹⁶² Verksamhetsutövare kan alltså inte fulltut råda över utformningen och kapaciteten hos sina anläggningar om det skulle resultera i ett diskriminerande eller icke-optimalt utnyttjande av lagrings- eller transportresurserna.

Kommissionen övervägde från början mer långtgående regler för hur tillträde till infrastrukturen ska garanteras. Utgångspunkten var existerande regelverk för elnät och för distribution av gas.¹⁶³ Man bedömde dock att CCS-tekniken befinner sig i ett så pass tidigt skede att det inte är proportionellt med en mer ingripande reglering i nuläget.¹⁶⁴

Medlemsstaterna ska även se till att det finns tvistlösningsförfaranden som snabbt kan lösa eventuella tvister rörande tillträde till transportnät och lagringsplatser. Vid sådan tvistlösning ska samma faktorer beaktas som vid beslut om tillträde, dvs. bl.a. den lagringskapacitet som kan göras tillgänglig inom relevant del av medlemsstaten samt ägares, verksamhetsutövers och andra intressenters rimliga behov.¹⁶⁵

6 Relationen mellan medlemsstaterna och gemenskapen

Många av lagringsdirektivets krav är formulerade som minimiregler där medlemsstaterna är fria att fylla på med ytterligare krav eller preciseringar. Hela direktivet är dessutom baserat på artikel 175 i EG-fördraget, den rättsliga grunden för gemenskapens miljöpolitik, vilket medför en generell rätt för medlemsstaterna att

¹⁶² Direktiv 2009/31, art. 21 (3)-(4).

¹⁶³ Se avseende el Europaparlamentets och rådets direktiv 2003/54/EG av den 26 juni 2003 om gemensamma regler för den inre marknaden för el och om upphävande av direktiv 96/92/EG, EUT L 176, 15.7.2003, s. 37, samt avseende naturgas Europaparlamentets och rådets direktiv 2003/55/EG av den 26 juni 2003 om gemensamma regler för den inre marknaden för naturgas och om upphävande av direktiv 98/30/EG, EUT L 176, 15.7.2003, s. 57.

¹⁶⁴ Accompanying Document, COM(2008) XXX, a.a., s. 45.

¹⁶⁵ Direktiv 2009/31, art. 22.

vidta längre gående skyddsåtgärder i direktivets anda.¹⁶⁶ Det samma gäller bl.a. miljöskadedirektivet och IPPC-direktivet, med den skillnaden att de redan ska vara genomförda i medlemsstaternas rättsordningar. Potentiella verksamhetsutövare kan alltså inte ur lagringsdirektivet utläsa den totala omfattningen av de krav som kommer att behöva uppfyllas. Vetskap om det kan fås först när direktivet har genomförts i de olika nationella rättsordningarna. Dock finns, som vi sett ovan, vissa mekanismer för att främja öppenhet och enhetlighet i hur reglerna tillämpas. Det gäller framför allt kommissionens rätt att ta del av, och yttra sig över, utkast till lagringstillstånd och utkast till beslut om överföring av ansvar innan dessa antas slutgiltigt. I båda fallen är kommissionens synpunkter av icke-bindande natur men om medlemsstaten i fråga väljer att avvika från yttrandet är den skyldig att motivera varför.¹⁶⁷ Hit kan också räknas kommissionens möjlighet att, när så är lämpligt, anta riktlinjer för tillämpning av kraven på koldioxidströmmens sammansättning.¹⁶⁸ Dessa regler innebär naturligtvis inte någon garanti för att direktivet tillämpas på ett enhetligt sätt av de olika medlemsstaterna. Däremot bör de möjliggöra identifikation av betydande diskrepanser så att dessa kan bli föremål för diskussion och eventuellt föranleda ändringar av regelverket.

Det är också viktigt att notera vad direktivet, eller gemenskapsrätten i övrigt, inte alls reglerar. Hit hör skadestånd i den mån det faller utanför ramarna för miljöskadedirektivet samt frågor om användning av och tillträde till mark, t.ex. regler om expropriation, fastighetsindelning och markplanering. Även medlemsstaternas övergripande prioriteringar mellan olika energislag är, med undantag för målsättningar om förnyelsebar energi, huvudsakligen nationella angelägenheter.

7 CCS och hållbar utveckling

Är tillämpning av CCS med geologisk lagring av

¹⁶⁶ EG-fördraget, art. 176.

¹⁶⁷ Direktiv 2009/31, art. 8 (2), 10 (1)-(2), samt 18 (3)-(4).

¹⁶⁸ Direktiv 2009/31, art. 12 (1)-(2).

koldioxid förenligt med principen om hållbar utveckling? Frågan är egentligen inte möjlig att besvara utan att först tillhandahålla en omfattande definition av begreppet hållbar utveckling.¹⁶⁹ Den skulle sedan behöva prövas empiriskt mot de olika aspekterna av CCS, något som knappast låter sig göras med tanke på det tidiga skede i vilket tekniken befinner sig och de många osäkerheter med vilka den är behäftad, till exempel vad gäller kostnader, risker och effekt på alternativa klimatåtgärder. Vad som kan göras i detta sammanhang är att peka på några av grundelementen i hållbar utveckling samt på några etablerade miljörettsliga principer, vilka delvis får anses syfta till uppnåendet av hållbar utveckling, och betrakta den nuvarande kunskapen om CCS i ljuset av dessa.

En ofrånkomlig referenspunkt för förståelse av hållbar utveckling är den definition som tillhandahölls av den s.k. Brundtlandkommissionen, dvs. att det är sådan utveckling som tillgodoser nuvarande generationers behov utan att inkräkta på framtida generationers möjligheter att möta sina behov.¹⁷⁰ Satt i relation till just CCS handlar det främst om hur skador på klimatet, och därmed på framtida miljömässiga och sociala förhållanden, kan undvikas, samtidigt som de ekonomiska (utvecklings)behoven för nuvarande och kommande generationer tillgodoses. Det kräver en avvägning mellan å ena sidan riskerna för en skadlig klimatförändring och dess konsekvenser, och å andra sidan de uppoffringar och kostnader som är nödvändiga i dag, och indirekt i framtiden, för att undvika dessa effekter. Därvid bör beaktas den i och för sig

¹⁶⁹ Begreppet används flitigt i rättsliga sammanhang både nationellt och internationellt. Hållbar utveckling är bl.a. en målsättning för statsmakten enligt den svenska regeringsformen (RF 1:2 3st) samt ett av målen för såväl EU som EG (FEU, art. 2, FEG, art. 2). Något klart besked om vad begreppet innebär ges dock inte i dessa rättsakter. Den norska Grundloven (§ 110 b) använder inte begreppet men fastslår att "Enhver har Ret til et Milieu som sikrer Sundhed og til en Natur hvis Produktionsævine og Mangfold bevares. Naturens Ressourcer skulle disponeres ud fra en langsigtig og alsidig Betragtning, der ivaretager denne Ret ogsaa for Efterslægten" vilket får anses beskriva åtminstone en aspekt av hållbar utveckling.

¹⁷⁰ "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Our Common Future: Report of the World Commission on Environment and Development, UN Doc. A/42/427, kap. 2 (vi), st 1.

bristfälliga kunskapen om tröskeeffekter och irreversibla förändringar i naturliga system, vilka gör att sådana avvägningar i slutändan alltid görs på naturens villkor, även om vi människor inte alltid accepterar det innan vi erfar konsekvenserna.¹⁷¹ Om bedömningen av huruvida någonting bidrar till hållbar utveckling ska ha bäring på verkligheten, och inte vara rent principiell, måste den emellertid också beakta sådana realiteter som trögheten i befintliga system och människors motvilja mot förändringar som upplevs som kostsamma.¹⁷²

En realistisk uppfattning om teknikens förhållande till hållbar utveckling fås först om den placeras in i den rådande tekniska och politiska verkligheten. Om CCS t.ex. kan lämna ett betydande bidrag till fortsatt ekonomisk utveckling som primärt kommer fattigare människor till del, utan att detta får dramatiska effekter på klimatet, bör det rimligen väga tungt till teknikens fördel. Det faktum att det är betydligt mer kostsamt att installera teknik för avskiljning av koldioxid vid befintliga anläggningar jämfört med vid nybyggnation talar också för att det är i regioner med kraftig expansion av energisektorn - typiskt sett länder som håller på att industrialiseras eller nyligen har industrialiserats - som CCS kan bli mest kostnadseffektivt. Dock lär det dröja innan tekniken får någon mer omfattande tillämpning i t.ex. Indien eller Kina, om det någonsin sker.¹⁷³ Användning av CCS i många utvecklingsländer är också i stor utsträckning, åtminstone på kort och medellång sikt, avhängig av omfattande tekniköverföring. Detta hindras ofta av bl.a. patent, äganderätter och motstånd mot att avhända sig kontrollen över ekonomiskt intressanta tekniker. Även för industriländernas del kan CCS vara mycket betydelsefullt om man bedömer att tekniken ökar sannolikheten att undvika betydande klimatförändringar.

¹⁷¹ Angående tröskeeffekter och irreversibla förändringar se bl.a. Climate Change 2007: Synthesis Report, adopted at Intergovernmental Panel on Climate Change Plenary XXVII, November 2007, tillgänglig på <<http://www.ipcc.ch/ipccreports/ar4-syr.htm>> (20 maj 2009), s. 64.

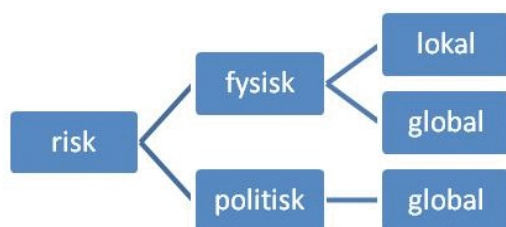
¹⁷² Angående trögheten i stora energisystem se, som ovan, Hansson, a.a., s. 45 f.

¹⁷³ Angående Indien och Kina, se The Future of Coal: Options for a Carbon-constrained World, a.a., s. xv.

rändringar. Flera bedömare menar att målet om högst 2 graders antropogen uppvärmning av jorden inte kan nås utan användning av CCS, alternativt att kostnaden ökar kraftigt, vilket i sin tur ökar risken att det visar sig politiskt mycket svårt att vidta nödvändiga åtgärder.¹⁷⁴ Mot detta bör ställas de risker som tekniken är, eller befaras vara, förenad med.

7.1 Kategorisering av risker

De eventuella riskerna med CCS blir mer hanterbara om de delas in i kategorier. Två sådana indelningar är särskilt betydelsefulla. Det handlar dels om skillnaden mellan direkta, fysiska risker och indirekta, politiska eller psykologiska risker. Dels om distinktionen mellan de risker som är lokala och tidsmässigt begränsade och de som handlar om klimatet på lång sikt. De risker vi här kallar politiska är främst globala – de handlar om effekter på klimatet, medan de fysiska riskerna kan vara globala såväl som lokala.



7.2 Politiska risker

Om vi börjar med de politiska riskerna avses med detta främst möjligheten att CCS tar stora resurser i anspråk, såväl ekonomiska som vetenskapliga och i termer av politiskt fokus och engagemang, på bekostnad av alternativa åtgärder. Detta är särskilt problematiskt mot bakgrund av att CCS inte i sig innebär att samhället upphör att generera fossil koldioxid utan endast att de skadliga effekterna mildras genom att en stor del av koldioxiden – genom kostsamma och tekniskt avancerade åtgärder – hålls borta från atmosfären. Det handlar alltså om symtomlindring

snarare än bot. Om tekniska problem, höga kostnader och/eller omfattande samhälleligt motstånd mot tekniken hindrar CCS från att bidra påtagligt till arbetet mot klimatförändringar kommer de resurser som har satsats på CCS att ha varit huvudsakligen förgäves. De har dessutom avletts från andra, alternativa, klimatåtgärder.¹⁷⁵

Gemenskapen är tydlig med att CCS är ett av många instrument för att uppnå klimatmålen. Det beskrivs bl.a. som en "övergångslösning".¹⁷⁶ Man kommer dock inte ifrån att de omfattande investeringar och den infrastrukturutbyggnad som krävs för tillämpning av CCS i större skala skapar starka incitament för fortsatt bruk av tekniken under lång tid. Lagringsdirektivet bör dock sättas in i sitt sammanhang, tillsammans med bl.a. gemenskapens utsläppshandelssystem och målet om förnybara energikällor.¹⁷⁷ Det faktum att tekniken är kostsam innebär också att det finns ekonomiska incitament för utveckling av konkurrerande, kostnadseffektiva alternativ. Under alla omständigheter är detta frågor som bör hanteras på mellan- eller överstatlig nivå eftersom betydande positiva effekter av CCS förutsätter storskalig tillämpning.

Storskalighet är även en förutsättning för att få ned kostnaden, något som är avgörande för om CCS ska få genomslag och åstadkomma någon mer betydande effekt. En svensk uppskattning har utpekat intervallet 360-490 kr/ton lagrad koldioxid som den totala kostnaden för CCS vid elproduktion i Sverige på 2020-talet.¹⁷⁸ Internationella studier har pekat på att koldioxidpriset skulle behöva vara allt från USD 30¹⁷⁹

¹⁷⁵ Azar m.fl., a.a., s. 66 och 74.

¹⁷⁶ Direktiv 2009/31, ingressens fjärde skäl.

¹⁷⁷ Se bl.a. direktiv 2003/87/ som etablerar systemet för handel med utsläppsrätter för växthusgaser och direktiv 2009/28/EG av den 23 april 2009 om främjande av användningen av energi från förnybara energikällor ..., EUT L 140, 5.6.2009, s. 16.

¹⁷⁸ Hovsenius, a.a., s. 23.

¹⁷⁹ IPCC 2005, s. 341 och The Future of Coal: Options for a Carbon-constrained World, s. xi. Distributed Collection and Transmission of CO₂, GASTEC AT CRE Ltd GaC3484, IEA Greenhouse Gas R&D Programme, 2007, IEA/CON/06/125, para. 9.4.3. anger spannet USD 31-60 i en studie av betydelsefulla punktkällor i Liverpool.

¹⁷⁴ EG-kommissionen menar i sitt förslag till direktiv om geologisk lagring av koldioxid att en 50 procentig minskning av gemenskapens, eller för den delen världens, koldioxidutsläpp till 2050 – något som anses nödvändigt för att nå 2-gradersmålet – inte är möjligt utan användning av CCS. KOM(2008) 18 slutlig, a.a., s. 2; se även The Future of Coal: Options for a Carbon-constrained World, a.a., s. x.

till € 35-50¹⁸⁰ per ton lagrad koldioxid för att göra CCS ekonomiskt motiverat för industrin i Europa och Nordamerika. Detta kan jämföras med priset inom EU:s system för handel med utsläppsrätter som under 2008 varierade mellan ungefär €15 och € 30 per ton koldioxid.¹⁸¹ Om CCS ska få genomslag i de större utvecklingsländerna och nyligen industrialiserade ekonomierna krävs sannolikt att kostnaderna blir lägre än vad som kan accepteras i t.ex. EU.

Ur detta perspektiv är det positivt att EU tar ett gemensamt grepp om CCS. Ännu tydligare samordning skulle förmodligen ha ökat möjligheten att fullt ut utnyttja förutsättningarna för CCS på ett kostnadseffektivt sätt, t.ex. genom att på gemenskapsnivå utpeka lämpliga lagringsplatser och möjligen även fördela lagringspotentialen mellan staterna. Dock finns klara nackdelar med en sådan modell. Inte minst det politiskt känsliga i att lägga ett sådant beslut utanför de berörda staterna själva. Även bl.a. G8-länderna har gjort tydligt att de stöder satsningar på CCS som en av flera åtgärder för att hantera klimatproblemet.¹⁸²

7.3 Fysiska risker

De fysiska riskerna är, så som beskrivits ovan, dels relaterade till den omedelbara skadan på människor, djur, växter och ekosystem, vilken kan orsakas av läckage, och dels till risken att läckage underminerar den positiva klimateffekten av CCS. De lokala riskerna är avsevärt mer påtagliga för berörda människor jämfört med de globala. Emellertid hanteras de globala

riskerna delvis genom samma mekanismer som de lokala. Ett förhindrat eller minimerat utsläpp av koldioxid undviker förstås både lokala och globala negativa effekter. Dessutom inkluderas utsläpp – givet att de upptäcks och omfattningen mäts/uppskattas korrekt – i handelssystemet, vilket innebär att de måste täckas av utsläppsrätter. Det innebär i sig ingen garanti mot skadliga klimateffekter men skapar ytterligare incitament för att minimera utsläpp och innebär också att de utsläppsrätter som därmed konsumeras inte kan användas för att täcka andra koldioxidutsläpp. En osäkerhetsfaktor är förstås hur länge systemet för tilldelning av och handel med utsläppsrätter kan tänkas bestå. På lång sikt, om omställningen till ett samhälle fritt från fossil koldioxid lyckas, bör dock vissa utsläpp i form av eventuellt läckage från lagringsplatser vara av mindre betydelse.¹⁸³

Det faktum att nyttan, mot vilken riskerna måste vägas, är långsiktig och storskalig kan göra en avvägning mot riskerna svår och tala mot användning av CCS i det enskilda fallet även om tekniken i sig skulle betraktas som önskvärd. Det är t.ex. fullt tänkbart att de lokala riskerna, till exempel för skador på lokala ekosystem eller människor vid läckage, blir svåra att motivera i relation till den marginella nyttan av ett enskilt, mindre lager. Det gäller i första hand geologiska lager på land där eventuella läckor riskerar att direkt påverka människor utanför lagringsanläggningen. Detta kan, för svensk del, jämföras med de resonemang som brukar föras kring avvägningsregeln för vattenverksamheter i miljöbalken.¹⁸⁴ Något krav på, eller instrument för, en motsvarande avvägning finns inte för CCS som sådant. Däremot talar även detta för ett samordnat internationellt förhållningssätt

¹⁸⁰ Carbon Capture and Storage: Assessing the Economics, McKinsey & Company, 2008, tillgänglig på <http://www.mckinsey.com/client-service/ccsi/pdf/CCS_Assessing_the_Economics.pdf> (16 april 2008), s. 6. Från 2030 räknar McKinsey med att det nödvändiga priset skulle falla till €30 - 45/ton. Kommissionen menar att € 35 skulle göra anläggningar med CCS konkurrenskraftiga från 2020 eller snart därefter. Meddelande från kommissionen, KOM(2008) 13 slutlig, a.a., s. 6.

¹⁸¹ Utvecklingen på utsläppsrättsmarknaden 2008, Statens energimyndighet, ER 2008:28, s. 29.

¹⁸² G8 Hokkaido Tokyo Summit 2008, Declaration of Leaders Meeting of Major Economies on Energy Security and Climate Change, tillgänglig på <http://www.mofa.go.jp/policy/economy/summit/2008/doc/doc080709_10_en.html> (15 maj 2009), para. 8.

¹⁸³ För olika perspektiv på nyttan med icke-permanent lagring, se IPCC 2005, a.a., s. 373 ff.

¹⁸⁴ Enligt MB kap 11 § 6 gäller att en vattenverksamhet får bedrivas endast om dess fördelar från allmän och enskild synpunkt överväger kostnaderna samt skadorna och olägenheterna av den. Detta har bland annat lett till att så kallade minikraftverk nekats tillstånd därför att den i och för sig begränsade skadan anses oproportionerligt stor i relation till den mycket begränsade nyttan i form av producerad el. Se bl.a. NJA 1989 s. 581 som avsåg en liknande regel i tidigare lagstiftning samt NJA 2008 s. 3.

till tekniken så att lokala och globala aspekter kan vägas på ett informerat och meningsfullt sätt.

7.4 Den rättsliga hanteringen av fysiska risker

Beräkningar som gjorts av risker för mer omfattande läckage av geologiskt lagrad koldioxid tyder på att dessa är små. Enligt den mest citerade uppskattningen är det *mycket sannolikt* att minst 99 procent av koldioxiden är kvar i lagret efter 100 år. Det bedömdes också som *sannolikt* att 99 procent skulle finnas kvar efter 1 000 år. Beräkningen förutsätter dock att lagringsplatserna är noggrant utvalda, välkonstruerade, kompetent använda, väl underhållna och noggrant övervakade.¹⁸⁵ Därtill är beräkningar av den här typen, särskilt när det gäller en teknik som befinner sig i ett tidigt utvecklingskede, behäftade med stora osäkerheter.

Detta kan jämföras med lagringsdirektivets krav på att en geologisk formation bara får väljas som lagringsplats om det, under de planerade användningsförhållandena, inte finns någon betydande risk för läckage eller någon betydande risk för miljön eller människors hälsa. Ett problem är att "betydande risk" är så vagt definierat att det inte etablerar något tydligt golv för medlemstaterna i detta avseende.¹⁸⁶ Av större betydelse är dock förmodligen de konkreta undersökningar som görs och villkor som uppställs. Bedömningen av ett koldioxidlagers tillåtlighet görs utifrån undersökningar och dokumentation som sökanden tillhandahåller. Relativt omfattande krav finns på vad som ska ingå. Däremot finns, av naturliga skäl, ännu så länge lite erfarenhet av att praktiskt tillämpa sådana krav. Utfallet kommer sannolikt i stor utsträckning att bero på de nationella myndigheternas kompetens och avvägningar mellan säkerhetsaspekter och viljan att få till stånd fungerade lagringsplatser. En sådan avvägning är i praktiken oundviklig, eftersom krav på

¹⁸⁵ "For large-scale operational CO₂ storage projects, assuming that sites are well selected, designed, operated and appropriately monitored, the balance of available evidence suggests the following:

- It is very likely the fraction of stored CO₂ retained is more than 99% over the first 100 years.
- It is likely the fraction of stored CO₂ retained is more than 99% over the first 1000 years." IPCC 2005, a.a., s. 246.

¹⁸⁶ För en diskussion om denna otydlighet och dess konsekvenser se not 105 ovan.

ytterligare och mer omfattande undersökningar alltid kan ställas. Här kan kommissionens granskning få en harmoniserande och, i bästa fall, kvalitetssäkrande funktion. Framväxten av tekniska standarder och best practices kan också bli väsentlig för kvaliteten.¹⁸⁷

Någon explicit hänvisning till försiktighetsprincipen finns inte i lagringsdirektivet. Däremot utgör den en grund för all gemenskapslagstiftning som syftar till att skydda miljön.¹⁸⁸ Medlemsstaterna har stort utrymme att beakta den när de fattar beslut om huruvida lagring ska tillåtas i ett visst fall, liksom när de beslutar om de överhuvudtaget ska tillåta geologisk koldioxidlagring inom sina respektive territorier. Det finns också krav på att koldioxiden inte får vara blandad med andra ämnen i sådan grad att det kan utgöra en fara för lagringsplatsens integritet.¹⁸⁹

Verksamhetsutövaren ska, som vi tidigare sett, övervaka lagringsplatsen i syfte att upptäcka eventuella avvikelser. Det ska ske i enlighet med en plan som godkänts av den behöriga myndigheten. Myndigheterna är också skyldiga att genomföra egna inspektioner på plats. Om läckage sker, eller andra hot mot säkerheten uppdragas, har myndigheterna betydande befogenheter att ingripa och kräva, eller själva vidta, korrigerande åtgärder.¹⁹⁰ De kan till och med återkalla ett tillstånd utan att någon faktisk, säkerhetshotande incident har inträffat, enbart på grundval av nya tekniska eller vetenskapliga insikter. Under vilka omständigheter de eventuellt måste ingripa, är dock mindre klart.¹⁹¹

Övervakningen ska ske med de bästa metoder som finns att tillgå när den utformas.¹⁹² Den, tillsammans

¹⁸⁷ Det Norske Veritas AS (DNV) har fått i uppdrag av kommissionen att bistå med etablerandet av ett nätverk av CCS-demonstrationsanläggningar (CCS Project Network). Inom ramen för detta ska bl.a. best practices utvecklas. Clean coal technologies and Carbon Capture and Storage, European Commission Energy <http://ec.europa.eu/energy/coal/sustainable_coal/ccs_en.htm> (21 september 2009).

¹⁸⁸ EG-fördraget, art. 174 (2).

¹⁸⁹ Angående koldioxidens renhet se avsnitt 4.3.1 ovan.

¹⁹⁰ Se avsnitt 4.3.3 och 4.3.4 ovan.

¹⁹¹ Se avsnitt 4.3.2 ovan.

¹⁹² Direktiv 2009/31, bilaga II, 1.1.

med myndigheternas befogenheter, ger betydande möjligheter att ingripa som svar på fysiska eller kunskapsmässiga förändringar. Åtminstone i teorin. I praktiken finns ett betydande mått av irreversibilitet i själva lagringstekniken. Även om direktivet uppställer möjligheten att revidera eller till och med återkalla ett givet tillstånd innebär ju inte det att problemet med ett eventuellt läckande koldioxidlager är löst. Tvärtom finns det goda skäl att anta att det är såväl tekniskt komplicerat som mycket kostsamt att åtgärda mer betydande problem som uppstår efter det att en lagringsplats tagits i bruk. Det gäller i än högre grad sedan lagret stängts och den tekniska infrastrukturen avlägsnats.¹⁹³ Den myndighet som återkallar ett tillstånd under pågående verksamhet riskerar dessutom att få en omfattande och tekniskt komplicerad verksamhet "i knät". De undersökningar och bedömningar som görs i samband med tillståndsprovning och stängning av en lagringsplats är därför mycket viktiga. Återigen gäller att omfattningen och kvaliteten på underlaget beror mycket på verksamhetsutövarens och myndighetens kompetens och ambitionsnivå. Svårigheterna med att ingripa mot problem som uppstår i ett sent skede stöder också uppställandet av höga krav och ett betydande mått av försiktighet vid platsval och teknisk utformning av förvar.

7.5 Framtida generationer

Ett av de stora frågetecknen vad gäller lagring av koldioxid är tidsaspekten. Lagringen innebär att de negativa effekterna av en för nuvarande generationer huvudsakligen nyttig verksamhet – energiproduktion i vid mening – delvis vältras över på kommande generationer. Hur lång tid lagrad koldioxid kommer att kunna utgöra en signifikant risk är oklart och beror dessutom mycket på lagringsförhållandena.¹⁹⁴ Själva lagret med den inestängda koldioxiden bör dock i vissa fall bestå för evigt – åtminstone med mänskliga

mått.¹⁹⁵ Uppenbart är att det rör sig om tidsrymder som vida överstiger dem som normalt beaktas vid mänskligt beslutsfattande. Bl.a. OECD har pekat på att effekter som sträcker sig längre än en eller ett par generationer framåt i tiden i praktiken sällan beaktas.¹⁹⁶ De beräkningar, eller uppskattningar, som hittills gjorts av risken för läckage sträcker sig dock upp till tusen år framåt.¹⁹⁷ Vad gäller övervakning finns det olika uppfattningar om hur länge det är motiverat att övervaka en lagringsplats, tusentals år eller bara så länge det finns tecken på att koldioxiden rör sig.¹⁹⁸ Rimligen måste utgångspunkten vara att anläggningarna ska utformas så att behovet av övervakning över långa tidsrymder minimeras. Inte minst med tanke på att vi i dag inte kan garantera vare sig existensen av eller kvaliteten på eventuell övervakning i framtiden.

De principiella övervägandena påminner om dem vid kärnavfallshantering, varför en jämförelse med regelverk för sådan verksamhet kan vara intressant. Enligt IAEA-konventionen om hantering av använt kärnbränsle gäller att staterna ska eftersträva att inte belasta kommande generationer med större, förutsebara risker än dem som belastar den nuvarande generationen. De ska också allmänt försöka undvika att belasta framtida generationer med icke nödvändiga risker.¹⁹⁹ Frågan blir alltså vad som kan anses nödvändigt och hur risker nu och i framtiden kan bedömas och jämföras.

Anläggandet av ett långt tidsperspektiv kan tyckas tala mot tillämpning av CCS. Även om risken för ett mer betydande utsläpp av lagrad koldioxid skulle vara mycket liten blir den relativt sett mycket betydelsefull om man tar i beaktande att tiotals eller hundratals generationer kan komma att exponeras för den.

¹⁹⁵ IPCC:s rapport om CCS talar om miljontals år. IPCC 2005, a.a., s. 241.

¹⁹⁶ Sustainable Development: Critical Issues, Organisation for Economic Co-operation and Development, 2001, s. 45.

¹⁹⁷ Se avsnitt 7.4 ovan.

¹⁹⁸ IPCC 2005, a.a., s. 241.

¹⁹⁹ Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, Wien, 5 September 1997, art. 11 (vi) och (vii).

¹⁹³ Framework for Risk Assessment and Management (FRAM), a.a., s. 10; och Risk Assessment and Management Framework (CS-SSGS), a.a., s. 7.

¹⁹⁴ Damen, K., Faaij, A. & Turkenburg, W., Health, Safety and Environmental Risks of Underground CO₂ Storage – Overview of Mechanisms and Current Knowledge, 74 Climatic Change (2006) s. 289, på s. 314.

Emellertid tvingas vi att ställa detta mot den notoriskt svårkvantifierade risken att icke-tillämpning av CCS skulle bidra till omfattande förändringar av klimatet. Effekterna av sådana skador kan också vara mycket långsiktiga, dels i form av plågsamma omställningar av, eller rent av förflyttningar av, mänskliga samhälle, dels i form av ändrade förutsättningar för växt och djurliv på stora delar av planeten.

En fråga som lagringsdirektivet inte berör är hur information om lagringsplatser ska kunna dokumenteras och föras vidare till generationer långt in i framtiden. Relativt omfattande information bör vara en förutsättning för adekvat övervakning, om sådan är nödvändig. På en mer grundläggande nivå handlar det även om att undvika att lagringsplatser blir föremål för borring, gruvbrytning eller liknande åtgärder som riskerar att orsaka utsläpp och fara för människor.²⁰⁰

7.6 Förorenaren betalar?

IAEA har också formulerat principer och etiska överväganden. Däribland ingår att de generationer som dragit nytta av en viss teknik ska bära ansvaret för att hantera det avfall som eventuellt uppstår.²⁰¹ Detta återspeglar principen om att förorenaren bör bekosta undvikandet av, och kompensera för, eventuella skador. Hur förhåller sig då gemenskapsrätten för CCS till denna "förorenaren betalar"-princip?

I princip är "förorenaren" alla som använder kraft producerad med fossila bränslen. I praktiken fokuserar regelverket på den som ansvarar för själva förvaringen och förutsätter att denne för kostnaden uppåt i kedjan mot dem som drar fördel av fossilkraften. Lagringsdirektivet sätter en tidshorisont på några få decennier för det ekonomiska ansvaret efter att en lagringsplats har stängts. Därefter går ansvaret över på staten. Förutsättningen för ansvarsövergång är dock att alla tillgängliga uppgifter visar att den lagrade koldioxiden kommer att förbli fullständigt och

varaktigt innesluten.²⁰² Vissa möjligheter finns att ålägga den tidigare verksamhetsutövaren ekonomiskt ansvar även i senare skeden. Det förutsätter förstås att verksamhetsutövaren fortfarande existerar när det blir aktuellt. Över de tidsrymder som är aktuella måste även statens existens betraktas som högst osäker. Både principen om att förorenaren ska betala och önskan att garantera att medel, så långt möjligt, ska finnas tillgängliga vid behov i framtiden talar för att någon form av fondering av medel från verksamhetsutövare vore önskvärt.²⁰³ Det kan i så fall ske enligt ett mellanstatligt arrangemang liknande dem som finns för olje- och nukleära skador. Samtidigt måste vi erkänna att verksamheten skapar risker som sträcker sig långt bortom de tidshorisonter som nuvarande samhälle kan överblicka eller planera för.

8 Slutsatser

Som påpekades inledningsvis är det inte möjligt, särskilt inte utifrån ett rättsligt perspektiv, att komma till någon slutsats avseende CCS och hållbar utveckling. De perspektiv som lagts på problemet här tycks dock visa på relativt goda förutsättningar för informerat beslutsfattande inom gemenskapen. Dock återstår att fylla ett antal vida eller otydliga begrepp med mer konkret innehåll. Den tekniska utvecklingen och ökad vetenskaplig förståelse kommer säkert också att påverka regelverkets tillämpning och utformning framöver. Det finns också ett stort utrymme för nationella myndigheter att definiera omfattningen av de undersökningar och försiktighetsåtgärder som vidtas och att göra olika avvägningar mellan försiktighet och önskan om att inte förhindra eller försena tillämpning av CCS. Verksamhetsutövarnas och myndigheternas kompetens och ambitionsnivå lär bli viktiga faktorer liksom utvecklingen av tekniska standarder och regleringsmässiga riktlinjer.

En viktig slutsats är att beslut om CCS bör ske i samspel mellan lokal och regional, eller rent av global

²⁰⁰ IPCC 2005, s. 247.

²⁰¹ The Principles of Radioactive Waste Management, Safety Series No. 111-F, International Atomic Energy Agency, 1995, s. 7.

²⁰² Se avsnitt 4.3.7 ovan.

²⁰³ Angående metoder för att bekosta åtgärder på längre sikt, se Legal Aspects of Storing CO₂, a.a., s. 42 och The Future of Coal: Options for a Carbon-constrained World, a.a., s. 58.

nivå. De väldiga tidsrymderna talar också för att beslutsfattare bör eftersträva betydande försiktighet i de åtgärder som vidtas för att inte, i praktiken, skjuta över oproportionerliga risker och kostnader på kommande generationer.

En viktig parameter som inte kommer med när man fokuserar på lagringen är de miljö- och hälsoproblem som är förknippade med själva förbränningen av fossilbränslen, framför allt kol. Dessa, och de tekniska och ekonomiska förutsättningarna för att minimera dem, måste också finnas med i kalkylen när strategiska beslut om CCS fattas.

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Europaparlamentets lagstiftningsresolution av den 10 mars 2009 om förslaget till Europaparlamentets och rådets direktiv om industriutsläpp, C6-0002/2008 – 2007/0286(COD)

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The Generic Environmental Act

Staffan Westerlund

In 2009, a long time project on legislating for ecological sustainability resulted in a model act and an accompanying book on this. It is done in Swedish and published digitally.²⁰⁴ This article presents the generic environmental act as regards a number of its principles and functions etc.²⁰⁵

Introduction

1. During the 1960s, environmental awareness turned sincerely ecological, global and future-oriented, at the same time as human rights to the environment were put in focus. The world human population was about half as that of today and is supposed to reach and perhaps level out at 9 billion by 2050. Biodiversity is today still generally declining, climate changes are expected and no country has still achieved ecological sustainability for itself. Instead, all countries still cause larger ecological footprints than what is sustainable. Consequently, for each year of too large such footprints, ecological resources for future generations are degraded. Or in other words, the biosphere shrinks resource-wise.

A large number of academic disciplines have since the 1960s approached mankind's environmental situation. The concept of sustainable development was coined in the 1980s and made the fundament of the Rio summit 1992. It is today referred to, or even prescribed, in many international documents and national legal orders. In human and social science, this has resulted in a lot of research. Most of this has not proved adequate for really achieving sustainability. Much seems to be affected by denial as regards the biosphere's factual limited capacity in relation to

mankind, maybe because the different disciplines do not possess theory framework sufficient for ecological sustainability. This seems *inter alia* to have resulted in poorly based ideas about soft and hard sustainability.

But it has also led to very confusing human and social scientific maps of *environmental control*, often based on a misunderstanding of how modern democratic states under the Rule of Law *really* function with regard to anthropogenic environmental impact.

This confusion together with that no state has so far achieved ecological sustainability not only calls, but roars, for the understanding of a relevant paradigm for sustainability control.

2. Sweden came out early with rather holistic environmental pollution control law (1969) and law on hazardous substances and products (1973) and might be regarded as one of the pioneer countries in this respect. To a major extent, however, this environmental law focussed generally on sources and products rather than on environmental qualities as such. Best available technology (BAT) and substitution of hazardous substances and substituting problematic geographical sitings with less hazardous ones, combined with a precautionary principle, was made the main force. Mere prohibitions were very few and generally based on balancing of interests.

In this legal context, the Swedish academic environmental law discipline emerged along mainly two lines. One was old legal thinking applied on new environmental laws and problems. The other was environmental problem-oriented that implicitly, later explicitly, searched for solutions to the seemingly ever growing environmental problems. In the first stage of this, academic studies were rather similar no matter which line was followed. However, when after a few years the problem-orientation turned explicit, the academic results of the two lines became more and more different. The problem-orientation resulted in the second line being regarded as rather methodologi-

²⁰⁴ <<http://www.imir.com/mrg/mbutv.htm>>, from where one navigates to the different documents.

²⁰⁵ Staffan Westerlund is a retired professor of environmental law, previously with Uppsala university, now partly with IMIR. Professor Gabriel Michanek has given very good comments for the improvement. Comments have also been given by a referee.

cal and was later labelled environmental law methodology.

When sustainable development was internationally brought into the front line,²⁰⁶ it turned out that Swedish environmental and land use law was insufficient. A committee proposal, SOU 1983:56, on how to improve the legal situation was turned down in the parliament, and it was not until Sweden joined the European Union that for example more modern biodiversity and environmental quality law was to be implemented in the country. This was done only partly and very reluctantly, although an Environmental Code was passed 1998.²⁰⁷ The two lines in the environmental law discipline had by then become so different, so that they did no longer have a common paradigm.²⁰⁸

3. For environmental law methodology after Rio 1992, the concept of sustainable development had to be very clear. One way to do this was to focus on *why* such development should be achieved. Another way was to format it into legally manageable language. Rationally, the first one had to be made clear and then the second one followed, so to say.

In the WCED report it was made clear that the biosphere should be maintained so that no future generations were without biospherical resources sufficient for *their* needs. This report also understood that mankind needs nature and that laws of nature cannot be changed by humans. Maintaining sufficient biospherical resources means *ecological sustainability*. Recognising that humans are biological organisms, such sustainability is necessary and without it, mankind will sooner or later undergo an ecological

crash.

4. Furthermore, economic and social sustainability were made parts of sustainable development. It follows from #3 that such sustainabilities require ecological sustainability.

Here a large number of writers and others have gone more or less wrong when claiming that sustainable development consists of three different sustainabilities. It is no use to go into different presented views here, since nobody can reasonably deny that humans are biological organisms, that food comes ultimately from photosynthesis and that laws of nature cannot be changed. I refer the readers to Decleris' book 2000²⁰⁹ and the implications expressed in it about biospherical and social systems etc. It is scientifically impossible to assume that mankind can go on without nature.

Instead, recognising basic natural science, any principle or rule for sustainable development must first deal with ecological sustainability. One way to do this is to formulate a legal principle on it.²¹⁰ This should in turn be the framework for a principle on societal sustainability which in turn should be the framework for a principle of development. Any diversion from the understanding that ecological sustainability is a *necessary* precondition for the rest will, as long as we understand humans as biological organisms, constitute a diversion from aiming at sustainable development.

This conclusion is simple, easy to defend scientifically, and still based upon many years of efforts to develop environmental law methodology.²¹¹

²⁰⁶ The main document being the book 1987 *Our future* by the World Commission on Environment and Development (WCED).

²⁰⁷ There are several studies made, published in Swedish, which together support these conclusions, see as regards part of them footnote 8.

²⁰⁸ Westerlund, S: *En hållbar rättsordning*. Iustus 1997. The paradigmatic shift followed the problematisation. Interestingly, methodology does not overlook positive law research as such, while pure positive law as such does not manage methodology related to ecological sustainability problems, as will be illuminated later in this article.

²⁰⁹ Decleris, M: *The Law of Sustainable Development. General Principles*. <http://europa.eu.int/comm/environment/law/pdf/sustlaw.pdf> (2000).

²¹⁰ Westerlund, S: *Legal Scholarship under Biospherical Challenge* in *Europarättslig tidskrift* 2008:2.

²¹¹ As early as 1971 my first little book *Miljöskyddslagstiftning och välfärden* aimed at what later was known as sustainable development. My doctoral dissertation 1975 had a concluding chapter that outlined the limits of Swedish environmental law. After that, studies were made of US law parallel with theoretical efforts to understand environmental legal techniques. 1987 my book *Miljörettsliga grundfrågor*, Tapir forlag, collected what was by then found. After that,

5. But is the conclusion really relevant regarded from the viewpoint of *legal science*? Three answers are worth considering.

First answer: A principle of sustainable development is generally recognised by many. Much more seldom, however, is this explicitly connected with how ecological and other sustainabilities do with each others. In international law, any principle of sustainable development seems often to be regarded as part of the soft law. This answer is primarily related to *positive law as generally accepted*. It might, however, be somewhat modified if we regard countries where judges can develop compatibility with ecological sustainability. Such a legal technical solution is, on the other hand, although with fundament in the WCED report, related to the existence of such judges and the general acceptance of such application of law even when other generally fundamental rights seem to be jeopardised.

Second answer: A principle of sustainable development, when rational, can go back to the WCED report as the basis for Rio 1992. This reports does not allow for jeopardising future generations on behalf of present generations (hence the intergenerational equity) and it also recognises the natural basis as necessary for mankind. Since the latter conforms with natural science, and provided that future generations shall not lack resources for fulfilling their needs, legal science can deal with how this can be achieved, no matter which is the law of today. This is the *methodology answer*.

The third answer goes back to *balancing*, in this case balancing between present and future generations and balancing between ecological, social and economic sustainabilities. However, balancing between generations must not jeopardise any generation's possibilities to fulfill its needs – this follows from *inter alia* the

Swedish academic environmental law gathered some speed and during the 1990s, a number of doctoral dissertations more or less circling around sustainability came (Jonas Ebbesson, Charlotta Zetterberg, Lena Gipperth, Jonas Christensen and, more lately, Aðalheiður Jóhannsdóttir). 1997 my book *En hållbar rättsordning* was published and 2003 came my *Miljörättsliga grundfrågor 2.0*, Åmyra förlag. Presently an increased version in English is under preparation.

intergenerational equity considered to be inherent in sustainable development (not to mention the word 'sustainable') and mankind's inevitable need for a natural base.

6. The conclusion upon which environmental law methodology, as referred to above, rests is the second answer.²¹² It is the only one of the three which recognises both natural scientific basics and intergenerational equity and it also conforms with how the WCED regarded these aspects. What now follows in this article shall be understood accordingly.

Old and new environmental law

7. Gradually starting in the 1970s, the ecological role of law and legislation came into Swedish academic methodology. Years of research within both positive environmental law and legislating techniques had given quite a clear picture of why Swedish environmental policy did not include real progress towards sustainability. The BAT approach in the environment protection act and the balancing approaches besides that, without environmental quality standards, had proved quite insufficient.²¹³ The structure of the legal system was fractured and inconsistent and included also rights for the government to decide contrary to the substantive standards of the environmental laws. Expropriation and environmental licensing were to a considerable extent more or less mixed without the environmental standards fully ruling. Increasing decentralisation to the municipalities as regarded landuse law decisions (planning) and environmental supervision added even more to the problems. Academic environmental law became more and more questioned and set aside by politicians and administrators, the more academic law oriented itself towards sustainability and full implementation of EC environmental law.²¹⁴

²¹² In countries with judges who strive to apply ecological sustainability, the first answer has some weight, but it does not reach the levels that the second answer would.

²¹³ Westerlund 1975, chapter 23.

²¹⁴ To be presented in an article in Swedish.

8. Looking abroad, different environmental control approaches were developed in a few countries, and some important methodological improvements had come up during the 1970s. This included environmental impact assessments, environmental quality standards and some examples of rather radical biodiversity law. The need for codification in order to structure environmental law better was in the 1980s brought forward. The WCED report and later Rio 1992 made legislators and academics include sustainability in their thinking. New Zealand's Resource Management Act 1991 aimed at sustainability and was an example of far reaching structuring.²¹⁵

However, as I have already mentioned, the concept of sustainable development had almost immediately been thrown into a malstrom of interpretation, deconstruction and what have you, and no country turned its legal orders ecologically sustainable. When Sweden enacted its environmental code of 1998, sustainable development was made the over all objective (expressed in the first article) but the substantive law of the code was not in conformity with this and the structure of the code was to a high extent similar to the fractured structure of Swedish law as of earlier.²¹⁶

9. In Swedish environmental law research at the beginning of the 1990s this led to one major understanding, namely of law as a problem for environment protection in Rule of Law states. Some important Swedish doctoral theses were written during that decade,²¹⁷ and participation in foreign legislative projects and environmental policy implementation added to the understanding. A project idea on model environmental legislation for sustainability gradually

²¹⁵ Carlman I. (2007). *The Resource Management Act 1991 through External Eyes*, in New Zealand Journal of Environmental Law, Vol. 11, pp. 181-210.

²¹⁶ Such deficits are referred to as environmental legal deficits, see Westerlund, S: *Det svenska miljörettsliga underskottet. En undersökning av påstådd och reell svensk miljöpolitik i belysning av svensk miljölagstiftnings kvalitet.* <<http://www.imir.com/pdf-filer/u-skott.pdf>>

²¹⁷ Jonas Ebbesson, Charlotta Zetterberg, Lena Gipperth and Jonas Christensen.

grew into theory, more extended methodology and later my work on a model holistic law for sustainability.²¹⁸ In translation, the name of this model law became '*The Generic Environmental Act*' (GEA). It was digitally published (in Swedish) in spring 2009 together with an equally digital book about this law, containing theory and methodological considerations.

This article will now briefly present GEA and some of the most important theoretical and methodological thinking behind it.

Some fundamental parts and functions of GEA

10. Ecological sustainability for the sake of sustainable development is the over all objective for GEA. Legally, a principle of sustainable development consisting of three principles, the basic one regarding ecological sustainability, reflects this. This means *inter alia* that when in interpretation trouble occurs, the ecologically most sustainable option shall be chosen.

Consequently, the act cannot be set aside by any other law except for a constitution. If on the other hand the constitution is unsustainable in any way, it should be improved.

GEA It shall apply together with other laws and rules and it shall take over whenever a conflict occurs. GEA contains rules on its own interpretation. It lays down environmental legal principles and includes also other rules contributing to the formation of *general doctrines* for the act. In other words, GEA legislates the core of its own general doctrines.

11. GEA lays down *rights* including fundamental ones, which are limited for the sake of sustainability. Property rights regarding land (including water covered ground) are legislated not to include any inherent fundamental right to unsustainable landuse. Causing negative impact on environmental qualities or ecological preconditions for sustainability is no fundamental right. Landowners are by GEA legislated

²¹⁸ Some more researchers were meant to participate in the final part of the project, but time was not sufficient for them. This illustrates *inter alia* the poor research situations in Swedish academic law.

to be equal, which means that developers and other entrepreneurs do not have any superior property rights as compared with those landowners (and similar persons) who might be affected by environmental impact. Property rights are also the same, disregarding whether an issue concerns landuse for building (physical or spatial planning) or environmentally hazardous landuse or activities. Polluter pays principles are increased into user pays principles. Normal everyday life (house holds) based on general precaution is generally allowed but is subject to the substantive rules. Anyone who intends to live or go beyond such behaviour, might under legally prescribed conditions be allowed to do that. But such a license can only be temporary and does not in itself include any fundamental rights.

12. Managing different rights within a limit of ecological sustainability puts the *substantive* part of the law in focus. GEA makes a clear difference between fundamental rights (which as was just said do not include any right to act unsustainably) and other rights. The other rights, temporary and conditional as they are, must of course conform with the substantive rules of the act.

These rules follow a double approach. One is actor-related rules on precaution etc. The other one is environment-related rules laying down limits of different kinds, such as environmental quality and quantity standards. The actor-related rules are always to be complied with, but if any environment-related limit standard is not met – no matter why – compliance with the actor-related rules is not sufficient; GEA then stops (by means of a non-degradation standard which automatically becomes binding) all new, or expansion of, possibly affecting landuse, activities etc. But it also automatically orders *implementation planning* in order for the limit standards to be met. GEA contains on the other hand an offset mechanism, which is further elaborated in #32.

13. The importance of the substantive part of the act is virtually unlimited. The over all function of GEA is to give the legal basis for legally binding limits of

different kinds. These limits, be they quality standards or quantities of living resources or whatever relevant for ecological sustainability, must be fully legally operational. This has called for *legal operationalisation*²¹⁹ of such standards by means of *feedback functions* in the law, which switch into active mode automatically, namely when a limit standard is not met.

However, ecological sustainability is only a part – although a necessary part – of sustainable development, and GEA aims at sustainable development. For that reason, even when the environment is better than the limits, *full precaution* shall still be taken as prescribed in the actor-related rules. These are as a main rule based on BAT objectively defined, and include also *inter alia* rules on best available siting and use of least harmful substances etc. When this functions well, a maximum of *development space* should occur.

The trade and products problem

14. A major problem affecting not only the structure of GEA, but also of environmental methodology as such, is products etc. They are the centre of trade and market law. GEA singles them out and brings them under the umbrella of two important environmental law principles, one on *market rationality* and the other on *environmental rationality*.

Most lawyers will probably claim that this is completely incompatible with WTO and EC law and they are probably right. However, without GEA's distinction, marketing and trade will be in almost total conflict with ecological sustainability. The solution, chosen in GEA, is logical. Marketing is ruled by the principle of market rationality. Marketing *as such* should not really affect the environment. It is when the marketed goods is stored, transported or put into actual use etc., that environmental impact can occur. But then the principle of environmental rationality applies, not the principle of market rationality.

The GEA project illustrates that virtually all significant environmental problems related to goods etc. ought to be manageable this way. This will cause considerable effects for those in trade, but these effects

²¹⁹ Gipperth 1999.

are actually necessary because of environment and ecological sustainability.

This solution to the clash between market and trade on one hand, and ecological sustainability on the other hand, might cause uproar in market circles. Anyone who finds a better way to solve this, will bring environmental law even more forward. However, such a solution must to at least the same extent protect ecological sustainability (equally timely), as the one in GEA. If not, it simply does not count.

Holism and systemic aspects of and in GEA – in brief

15. Summarised so far, much of it – if viewed one by one – might seem rather traditional. There are however also over all and systemic factors in GEA which are very important when striving for ecological sustainability under Rule of Law.

First, law must be perfectly adapted to ecological sustainability. If not, law supports the opposite.

Second, and as a consequence, environmental law must not be set aside by any other law (#10). If the constitution includes unsustainable law, it should be improved for the sake of ecological sustainability.

Third, ecosystems are small and large, smaller normally forming components of larger systems. Ecosystems are mostly more or less open. The biggest one is the biosphere, at least if regarded from mankind's point of view. A biosphere approach is therefore necessary, at the same time as it raises very serious environmental control problems. These problems are to a high extent due to international law as of today (#50).

16. Ecosystems, or nature as a whole, are – as already pointed out – necessary for mankind and mankind's systems. But it is not the other way around. Mankind and its systems cause however environmental impact (anthropogenic impact). This must be sufficiently controlled. Here lies the environmental methodology challenge. It requires understanding of not only natural science but also *inter alia* system theory and the role of law, together with environmental control

systems, their possible components and interactions.

17. One critical element in environmental control law is its substantive parts, since under Rule of Law the conduct of persons can only be decided by authorities and governments based on law. This law must therefore be environment related, with legally binding ecological limits etc.

Another core element, that is very clear in the concept of sustainable law, is societal sustainability and development. They require far reaching precaution and cooperation, including instruments for environmental impact assessments and rational management of nature and its resources. The latter is in GEA based on *environmental planning* within a regulated, tiered system. In this system, the limits are decided top-down but the space within the limits are open for regional and local decisions which, however, must fully comply with all substantive environmental law and with superior environmental plans.

18. This moves the already (#11) mentioned fundamental and other rights into the spotlight. The right to one's own life, property rights and the rights to one's home are prominent examples. GEA adapts these *through legislation* to ecological sustainability, as already mentioned, but also to elementary legal and economic rationality.

Among these three kinds of rationalities, the one of ecological sustainability is most easy to explain and defend. Legal and economic rationalities are more hazy. The reason for this lies in legal science and economics.

GEA's legal logic strives at making for example property rights as such equal, no matter who is the holder of the right and no matter what this holder intends to do.

GEA's economic logic is most probably compatible with elementary welfare economics and with the polluter pays principle, all of this however adapted to ecological sustainability.

Both legal science and economics are internally rather contradicting. The views in the GEA project on these rationalities should be understood as stipulated

for the project and adaptable to ecological sustainability. Opposition against this is valuable if, but only if, it brings forward or opens for options which are at least equal as regards *ecological* sustainability.

Environmental impact beyond fundamental rights

19. Now, if and when fundamental rights are carved out, or even stipulated, how can possibilities be introduced for landuse, activities and products which do not find room within such rights?

This question is very important since the answer to it will have very heavy bearing upon development. How heavy, depends partly on the level of technologies. The ultimate technology is perfectly clean and used without any environmental impact but it will still mean use of land and water areas. Such technologies are almost non-existent today. A large part of the world's more than 6,5 billion population does not have a sufficient basic welfare. Cities grow. Much has to be taken care of, even though clean technologies are normally not available. GEA must of course manage this.

20. Such problems were known already in old neighbour law. The problems were approached by on one hand expropriation, on the other hand licensing (concessions), partly in combination with economic liability for larger (civil) damage. These approaches were basically intragenerational. Now we also need intergenerational rationality which requires the preservation of a sufficient biosphere with adequate environmental qualities – for today and for the future.

GEA does not only apply equal property rights but it also opens for additional although temporary rights. The latter rights are however fully subject to the substantive environmental law on precaution and environmental limits etc. This substantive law includes *inter alia* economic assessments and environmental law compensation. When, however, someone is permitted to not only affect his environment, but to *use* anything belonging to someone else (or otherwise under someone else's rights), expropriation shall be

chosen, if the possibly affected right holder does not agree in a contract.

21. This reflects GEA's very strict limits between on one hand environmental permissibility, on the other hand expropriation. In the book about GEA, property rights issues, landuse planning, environmental permissibility and expropriation have been considered. The results, included in GEA, are really rather simple as regards legal and economic rationalities, namely:

- property rights are property rights
- whatever humans intend to do that might cause environmental impact, shall be in compliance with GEA
- whenever an activity or whatever, that might cause environmental impact, includes some kind of *use* of property belonging to someone else, it must also be in compliance with expropriation law.

This taken together means that anyone who negatively affects something he does not own, not only has to comply with the substantive law of GEA, but also strictly compensate economically for the negative impact on others *if it lies above a tolerance level*.²²⁰ If someone else's land will be used and not only affected, the expropriation choice is mandatory (unless a contract is agreed between the impactor and those, whose land is to be used).

22. The arguments for this are also very simple. I have already briefly explained equal treatment of property rights (#11). It is nothing curious that environmental impact is subject to environmental law (like GEA). When we touch at expropriation, however, the solution might seem very rational, but it will probably imply needs for improving expropriation legislation. Because if all use of others' property (unless contracted) is brought in under expropriation (in a broad

²²⁰ The tolerance level(s) mark the difference between on one hand normal variations in environmental qualities not affected by anyone beyond his basic right to cause impact, and on the other hand qualities worse than that, *provided* that the qualities are in no way hazardous for the environment or human health. The parallel with old time neighbour law is in this respect significant.

sense), economic compensation will have to be paid (except for what is under a tolerance limit). This is simply an application of a user pays principle.

If then some people think that this means undue burdens on those who carry out activities, these people actually resist that activities shall bear full economic burdens for external impact and intrusion.

GEA's management of malfunctioning

23. With so many new or modified rights, concepts and functions, the risk of malfunctioning would be immense. However, ecological sustainability is in one meaning something absolute. This is true even though decisions about where the limits are will be very problematic (briefly elaborated in #47).

Any environmental condition below ecological sustainability means an implementation deficit, which in at least two ways is negative. One is for the present generation of people who suffer from it. The other is that each day of implementation deficit most probably reduces the ecological capacity for the future generations.²²¹ It is therefore absolutely necessary for law to be capable of fully and timely counteracting implementation deficits.

Here lies the probably most intricate methodological problem. Research has unveiled a considerable number of legal obstacles against counteracting such deficits. GEA therefore not only uses ecological sustainability as its point of departure, but also stipulates general doctrines and adapts different rights so as not to counteract such sustainability. It also leans on different kinds of environmental limit rules, implementation planning, environmental proactive planning and feedback in GEA as such.

24. In some environmental controls sectors, valuable efforts have been made earlier, like with air quality standards in the US Clean Air Act of 1970 and later.

²²¹ The time issue in relation to resilience and ecological thresholds etc. is elaborated in my coming book *Fundamentals of Environmental Law Methodology*. As regards the present generation, the ecological capacity is also reduced, of course, but then because of the overuse of the biosphere by the same generation.

To some extent, air quality standards were there made legally operational.

The more environmental law is adapted to non-linearities, the better can the legal systems be. Gipperth (1999)²²² put order into this environmental control theory problem. She defined the concept of legal operationalisation of environment-related goals and standards. She succeeded because of her understanding of non-linearities in nature and of how to deal with them by means of implementation planning and feedback in the law as such.

Parallel in time, Jonas Christensen wrote his doctoral dissertation on phosphorus, law and recycling.²²³ Among other things he brought thermodynamics into environmental law theory.

These two dissertations simplified and improved methodological theory on implementation of ecological sustainability. They assimilated systemic thinking and made it easier to understand the significance of time, resilience, and processes in legal and other societal systems. This indicated rather clearly a need for some kind of *selfregulation* in the legal system, where the feedback function in the law itself, once partly tried with some success in USA, is further developed by means of being made fully inherent in the concept of legal operationalisation.

25. Why is this so important?

The answer is simple. When law decides which environmental qualities are legal, it regulates something that mostly are results from non-linear effects of much anthropogenic impact, and nature's reactions on that. Legislators cannot order water as an addressee to be clean, but nor can legislators successfully find one or few impactors who "really" were the ones who caused poor quality. The few exceptions are in GEA dealt with as linear. Environmental law methodology must therefore find a way to *transform*, or rather *rectify*, reactions and conditions in nature situations into fully *effective* (linear and enforceable) substantive law with *persons* as addressees. Such solutions must manage the

²²² Gipperth 1999.

²²³ Christensen, J: *Rätt och kretslopp*. Iustus 2000.

non-linearities between actions and effects.

The rectifier must therefore receive (or otherwise be informed about) the environmental data and rectify this into substantive, enforceable actor-related rules.

Implementation plans, provided properly regulated in law, can do that. Such proper regulation states that whenever for example an environmental quality standard is not met, the special implementation procedures shall start and at the same time a non-degradation standard shall enter into active mode.

26. This is included in GEA. Its possible significance is probably absolute since there are no other ways known, which would manage implementation deficits with the same legal effectivity. The function calls for a number of sub-functions defined in law. This includes *inter alia* mandatory regular reviews of the implementation plan and of the relevant environmental situation, clear rules stating that an implementation plan *shall* be sufficient for achieving and maintaining the quality standard or what is at issue, and no loopholes for anyone to slip beyond the substantive rules of the plan. Procedure-wise, openness with full public participation and possibilities for judicial review of a plan is included.

27. Those who are familiar with US air quality standards will recognise the elements in this thinking. GEA goes however further with respect to loyalty to environmental goals and quality standards etc, fully applying the theory of legal operationalisation and of self-regulating law based on mandatory feedback functions, and consequently fully applying the understanding of nature's non-linearities.

Implementation planning is on the other hand a kind of *reactive* instrument, since it is to be used when a limit is passed or when the environmental quality tendencies more or less clearly go towards such passing. It can, provided a good construction, be very useful for managing different kinds of malfunctions ranging from pure corruption to scientific mistakes.

However, a fundamental flaw in most environmental control systems seems, according to much research, to be an over all reliance on reaction and much, much

less on proaction. To some extent, old time legal thinking and liberal approaches might be found among the reasons. Planning economies have added, understandably, to scepticism against proaction. On the other hand has different kinds of environmental or resource planning been tried without necessary elements of planning economy. I have already mentioned New Zealand's Resource Management Act and its tiered planning system. More examples, although less clearly developed, can be found.²²⁴ Environmental planning, more or less defined, seems also to be appreciated in advisements to developing countries.

Environmental planning in GEA

28. An assimilation of the biospherical understanding and of nature's non-linearities, the principle of sustainable development (the fundament of which is the principle of ecological sustainability), intergenerational equity and human population growth, cannot lead to any other assumption than that adequate limits for ecological sustainability must be legally protected in full. The instruments for this are different kinds of limit values regarding environmental qualities and quantities, including living and other flowing resources (such as energy). When understanding basics of resilience and ecological thresholds together with thermodynamics, it also comes out that proactivity overrides reactivity, but that reactivity must be included for the management of flaws and unexpected changes etc.

This lies behind the emphasis in GEA on environmental planning. Such planning shall be tiered and compulsory. On the national level, the really important environmental goals and limits shall be decided, either explicitly or by means of criteria which are easy to understand in the different regions and consequently easy to make more precise in the regional environmental plans.

The regional environmental plans are constructed

²²⁴ Like planning in Denmark and the Netherlands and government ideas in Sweden in the 1960s and 1970s about national physical planning.

to be mainly proactive, setting more defined environmental (including land and water areas) limits and also – as possibilities – criteria for permissibility for certain areas and/or landuse or activities. All this shall, however, be in compliance with all the substantive GEA law unless GEA itself allows for exceptions.

29. Regional environmental plans, although primarily proactive, shall however not be constructed as *commands* for private persons (and industry) about what to do, where to do it and how to do it. The basic function is instead to lay down *limits* for what to do and for where to do it. The third question, *how to do it*, will be subject to the substantive law and only under certain conditions as expressed in GEA may a regional environmental plan define also that.

In other words, the plan will as the main rule not decide that a certain thing *shall* be done in a certain area, but only decide that a certain area (for example) *is available from environmental and sustainability aspects* for a certain thing. Thereby, no problems normally related to economic planning should have to occur.

For this to be possible, it is important that the knowledge and data relevant for the planning are well investigated, assessed and included in the plan. GEA is rather explicit on this (19 articles) including also certain demographic facts (including changes during the year, in- and out-moving, and the changes for the last ten years).

30. The possible potential in this kind of planning is very great. Still, mistakes and unexpected changes will occur, new technologies will be developed etc. Regional environmental planning must therefore be reviewed regularly (and with full respect to the over all ecological sustainability objectives). GEA orders and regulates this. Since also implementation planning is clearly regulated and not set aside by the rules on environmental planning, there should be sufficient functions for at least countries with low level corruption to be able to handle what ecological sustainability requires as connected with landuse and other more or less place-bound activities etc.

For the sake of safety additions, transparency and

justice, GEA includes far reaching general procedural rules which also apply in planning and will *inter alia* add to the environmental planning system part of GEA. On the other hand, appeals against the plan can only take place after the regional environmental planning authority has decided on the plan. So, only one appeal period per plan.

This is the main rule. GEA allows however for partial changes in the plan and then of course an appeal possibility (regarding the changes) occurs.

Additional instruments

31. As mentioned before (#15 and following), GEA is a system and therefore also environmental planning, although extremely important, shall be regarded in its systemic context. If we regard control instruments as soft, economic and legal, it is easy to see that they can work together as a control system in which the legal parts can catch what the other two parts do not handle sufficiently.

This calls of course for the legal parts to combine effectiveness with room for options *within* the effectiveness and therefore, as much as possible, to express (lay down) *limits*. As already mentioned, this is the main technique for regional environmental plans. This opens for not only options but also for different methods to implement the plans. GEA therefore includes chapters on different ways to cooperate and in other ways take over some or all responsibilities, although generally bound by the environmental plans. Also implementation planning includes possibilities for this.

32. One important instrument, developed from US clean air legislation, applies a kind of offset technique. The term for this in GEA is *improvement surplus*. Its functionality requires certain contents in the legal system as such, especially the very problematic *rights to already operating, licenced* activities.

Such rights are by GEA only temporary. There are several reasons for this, most of which we do not have to elaborate here. One, however, is that it can be very costly – even if no compensation is to be paid – simply

to shut down something which has been licensed. A probably smoother approach includes economic incentives hopefully leading to improved technologies.

Suppose for example an industry with a license based on BAT. Then it is observed that water quality standards in the lake, which *inter alia* is the recipient for the industry's waste water, are not met. The lake receives a lot of impact and nothing indicates that this industry (applying BAT) is the only sinner. Implementation planning is then required by GEA. Now, if the industrialist one way or another finds ways to reduce the industry's pollution further than what the license requires, the difference between what the licence allows based on BAT, and the lower quantity that the new efforts will result in, constitutes an improvement surplus. *Two thirds* of this constitutes an amount, over which the industrialist decides and he can also sell it. The third third "goes to the environment".

Improvement surplus gives rights, which are clearly legislated in GEA. This kind of instrument, partly known from foreign practice, seems to give good possibilities for streamlining environmental quality improvement in situations worse than what quality standards allow for. Its functionality depends however on several factors, each of which is not easy to deal with effectively in law. One is the technological innovativeness available for the polluter, another is which use the polluter can have from the two thirds of possible improvement surplus. It is also important to have a good registering of this, including good but simple evaluations of the improvement surplus as such. GEA regulates this in a hopefully clear and sufficient way.

33. Also other instruments are included in GEA, like different kinds of cooperation, agreements etc., and programmes for certain biodiversity objectives. An identified category of impactors, who together cause the quality situation in for example a smaller water basin may agree (it is voluntary) to undertake to improve this water basin up to a defined level which does not violate any quality standard. GEA regulates this and adds rules which kick in, if the impactors do

not fulfill what they are to fulfill. The will to agree is improved by the law, which states that otherwise a real command and control situation occurs for this water basin.

Managing land use development and decentralisation

34. Two of the most difficult obstacles for ecological sustainability are (1) decentralisation ideas and (2) economic assessments (such assessments were briefly set aside in #5).

Decentralisation seems to have been more and more accentuated in many countries, especially as regards planning and connected decisions on landuse, in the first place for building, often referred to as "development".

Suppose that we put the Swedish environmental code and the Swedish planning and building act next to each others and ask: Can these two laws go together in one and the same country?

Which would be the answer?

The code's over all objective is sustainable development and consequently ecological sustainability, but its substantive law does not go that far. The Swedish planning and building act's objective is on the other hand mainly on land development and connected planning issues. Its substantive law lies even further from sustainability, although sustainability is mentioned in the act's introductory article.²²⁵

The real lack in the Swedish planning and building act is its total disregard of ecological connections beyond municipal borders in combination with an almost total possibility for the municipalities to decide without effective corrections from above. This means that planning and building law decisions are not only mostly disconnected from the environmental code, but can also be in conflict with it.

This is simply not possible if sustainability is to be achieved. Even systemic theory can explain this by means of Ashby's law on requisite variety (which I will briefly get back to in #42).

²²⁵ Christensen, J: *Kretsloppspropositionen. En rättslig Potemkin-kuliss?* in Miljörättslig tidskrift 1994:1.

35. GEA solves this kind of problem in the most simple, and theoretically most easily explained, way, namely by making also landuse for building etc. fully subject to GEA.

Legal technically, this is primarily taken care of in GEA as such, namely by making clear that also this kind of landuse falls under it. Many rules on building and buildings, which do not primarily concern environment etc., shall then be included in a special building act. Its content must however not conflict with GEA.

This is very easy, provided that we disregard all those people who for one or another reason claim that they believe that municipal politicians can take care of ecological sustainability. Ecological systems are however generally more or less open, and much depends on how the ecological situations are also outside a specific municipality. That fact alone kills any idea of municipalities as primary caretakers of ecological sustainability. But they can be caretakers by delegation, so to say, namely within the framework of the planning system of GEA. They can (and should) also take ecological care when deciding on issues, the consequences of which are only temporary and restricted to within the municipality in question.

Consequently, also such issues as sub-division of land are to be subordinated GEA.

Managing sectoral environmental impactors

36. One major problem in Sweden, probably also in several other countries, has to do with industrial and landuse sectoring and with how this has been handled by legislators. GEA makes a very strict distinction between on one hand different kinds of industry and landuse (like forestry, agriculture etc.), and on the other hand environment and its reactions to anthropogenic impact. The GEA project presumes special laws on forestry, agriculture, fishery, building (mentioned in #16-17), traffic etc. However, such laws shall only be purely actor related and *not* contain its own environmental law. The latter is instead found in, and under, GEA.

This solution follows the holistic approach behind

GEA which in turn is necessary for the sake of ecological sustainability. As an example, rules about who has the right to hunt etc. are to be put in a hunting act, while rules about *what* may be hunted and *when* and *how* belong to the environmental part of law.

37. In order for this to function, a good central and regional authority structure is needed. GEA puts forward a national environment protection agency, with regional and maybe local offices, as the authority with full responsibility for what GEA is about.

As an alternative, one could consider the environmental ministry in the government (some states give strong decision power to ministers, other states do not). This would however probably be in some conflict with the Rule of Law approach, upon which GEA is constructed and intended to function.

38. Water, then? EC law now includes the framework water directive. How would that fit into the GEA thinking?

First, the regional environmental planning areas are to follow water divides. Furthermore, water is necessary to be controlled for the sake of ecological sustainability. Therefore, GEA's regional environmental planning can take care of whatever water planning etc. that the directive calls for.

Thirdly, however, water is complex also from legal points of view. Water is a fluid, or vapour, or ice etc., but it can also as such be an ecosystem or at least be a necessary component in different ecosystems. But this is not all. Water is also normally *flowing*. Also other resources are flowing, including living resources and of course wind and other forms of or results from energy.

In order to handle this, GEA specifies in itself a certain kind of rights called *flow rights*. Also such rights are to be observed and managed in regional environmental planning.

So, in conclusion, the EC framework directive will be fully implemented under a system of regional environmental planning like the one under GEA. Specific law on water projects concerning other things

than environmental, is to be put in a special law next to laws on forestry, hunting etc.

Discussion

39. The book on GEA covers 245 pages and the GEA as such 552 pages. This article can pick only certain central issues. I begin with the systemic approach.

GEA's first part contains an introductory chapter, and then chapters with legally defined concepts, environmental principles, different kinds of rules in GEA, planning rules and certain other common rules – altogether six chapters.

Part 2 has chapters on environmental rights, rights to land and water areas, flow rights, public rights, improvement surplus, priority, environmental permissibility, and other right-related issues – altogether eight chapters.

Part 3 has two chapters – on landuse rules and product rules.

Part 4 includes actor-related substantive rules in four chapters, one on basic precautionary rules, one on landuse for housing, one on products and one with limit rules in linear situations.

Part 5 turns the perspective into reactor-related rules. One chapter lays down environment-related rules, one concerns protection and management of living resources, and one management of other flows – altogether three chapters.

Part 6 deals with land control, has seven chapters, and starts with a chapter on land reserves followed by a chapter on national environmental planning followed by two chapters on regional environmental planning, after which one chapter deals with local environmental planning and one with implementation planning. The last chapter in this part includes other rules on plans and planning.

Part 7 starts with a chapter on voluntary solutions followed by one chapter on management, one on preservation programmes and one on cooperation – altogether four chapters.

Part 8 has three chapters, one on additional control instruments, one on economic instruments and one on other special control instruments.

Part 9 is on procedure. It has seven chapters. The first one is the big chapter on procedure, followed by the chapter on Environmental Impact Assessment, one on licensing, one on planning, one on assessment of environmental permissibility, one on final go ahead decisions, and one with other procedural rules.

Part 10 has two chapters, one on compensation and one on compensation and environment funds.

Part 11 has a chapter on supervision and one on sanctions.

Part 12, finally, includes miscellaneous chapters, one on the tasks of public organs, one on environmental information, one with special additional rules and one with general excepting rules.

40. All this forms a system for ecological sustainability suitable for sustainable development. It declares its own concepts, principles and rules in ways which are intended to put forward general doctrines for environment protection and ecological sustainability. It distinguishes between environment and who might affect it but connects them by means of a far reaching planning system with both proactive and reactive plans plus area-related reserves etc. and flow-related management law. The safety system, although somewhat belated in its functions, should in the long run and provided authorities, who work under good rule of law standards, function for ecological sustainability. The subrights related to priority and improvement surplus should not counteract this, priority being neutral in this respect and improvement surplus having the possibilities to speed up environmental improvement. The different possibilities to apply softer instruments are intended to be well secured within the substantive environment-related law. Errors will occur but GEA has functions which, with some delay, can be used to repair for this.

These are functions and effects which are considered normal and problematic in environmental control. However, GEA includes also another, and maybe more questioned, group of principles and rules.

41. One of them is about property rights to land etc. GEA adapts these rights to ecological sustainability

but keeps them as property rights. However, and as a main rule, this is not expressed in commands but as precautionary requirements, limits and to some extent prohibitions. This – when for the purpose of ecological sustainability – shall never give rights to economic compensation when something is restricted or even prohibited.

With such law, property rights can go together with ecological sustainability, provided that expropriation law is made as broad as presumed in this project. If however compensation should be paid to proprietors (and similar persons) when they are not allowed to act unsustainably, it would mean that the state (the taxpayers) were to carry the economic burden of proprietors' ownership of land, but without taking the land. This would not go well together with the polluter pays principle and it also conserves ownership of land as inherently ecologically unsustainable.

42. Another important function of GEA is that it brings local physical planning, zoning etc. in under GEA's substantive and planning law for the sake of ecological sustainability. This follows from Ashby's law on requisite variety when understood that ecological impact does not stop at a municipal border and that it normally is not temporary and insignificant. Without bringing such landuse issues in under the same legal control as other impact, ecological sustainability cannot be achieved.²²⁶

43. The broad and tiered environmental planning system is necessary for ecological sustainability within economic rationality. All available resources and all problems can then be collected, assessed and economised with. Within the fundamental rights, possible development space can be defined and allowed for use. Public organs can be commanded to launch or proceed programmes, and to take other actions. Possibilities for alternative solutions can be identified.

All this is however fenced inside environmental

limits expressed as quality and quantity standards and the like. It is also subject to the actor-related substantive rules in GEA. However, since the entire region (or part of it) often, maybe generally, is too limited for all ideas about development etc., but the planning makes it possible to overlook the entity when deciding for what it may be used, the substantive law of GEA will be applied in, and adapted for, a holistic process – the planning.

Virtually all countries would have considerable financial costs for turning into environmental planning. On the economically positive side, however, lies considerable opportunities for rational decisions over the total resources and their possible use but also, and this is equally important, possibilities to prevent non-attainment of environment-related standards etc, *id est* to function proactively.

44. Laying down limits of different kinds, including geographical limits (and development space inside them) in a holistic planning process, is not only a rational way to use ecological resources efficiently but also a good way for all involved people to assess and claim their environmental and resource-related rights. However, the more one can find alternative instruments which still meet the same needs that are intended to be secured through planning, but more cost-efficiently or in nicer ways, the better. GEA as constructed so far gives much possibilities for this, and it can also be the basis for further development of the environmental control system.

45. What, then, if GEA and the environmental planning system, together with limits as goals and sub-goals for ecological sustainability, result in the finding that a region simply has no development space?

Two answers need to be considered.

The first one is that if so, the law and the planning system etc. finally made clear that the ecological situation in the region is unsustainable.

The second one is that if so, the GEA approach must be abandoned because no development can take place.

Anyone who understands ecological sustainability

²²⁶ Carlman, I: *Control System for Sustainable Development*, in Dubois, D.M (ed): *Computing Anticipatory Systems. Casys'07 – Eighth International Conference Liège, Belgium 6 – 11 August 2007*. American Institute of Physics 2008.

basics understands that the first answer must be chosen, since the second one will lead to continuous ecological unsustainability and consequently no sustainable development.

Provided the first answer, we then must go back to GEA and see whether it can do something about such a problematic sustainability situation.

46. First of all, the implementation planning law in GEA is combined with rules on improvement surplus which gives opportunities for development either by means of improved technology, or extra costs. The technology improvement is primarily beneficial for the operator who created the surplus, but it results in a better technology in general and will (provided that economy allows) therefore give more general environmental improvement. The possible extra cost will be accepted if the economic benefits are high enough. Consequently, this system ought to give possibilities for development but at a higher standard than the general BAT one.

Secondly, the more effective the alternative control methods become, the lower the cost ought to be for environmental improvement.

However, if both the first and second developments just mentioned fail, ecological sustainability is ecological sustainability and since that is necessary for other sustainabilities, then one cannot set ecological sustainability aside.

47. One issue has gone through this article, and the GEA, but perhaps still without really being focussed upon, namely fundamental ecological sustainability as such. In this summing up part, this must be done. It is rather simple, although indicating severe difficulties.

The simplicity comes from what is already said about the rights of all future generations to have a sufficient nature basis for *their* needs. The scientific simplicity of this takes us to natural sciences. The difficulties, on the other hand, is about defining time after time what is ecologically sustainable and then really achieving and maintaining it.

Ecological sustainability must most probably

always be defined by means of goals and subgoals with limits etc. relating to the environment and the biosphere as a whole. This must be done under uncertainties which in turn calls for regular reviews of the goals and limits, but also of how to achieve them. The feedback function in GEA should keep this as *law*, and the procedures around it should give transparency and possibilities for judicial review. There is rather much theory about this in *inter alia* environmental law methodology.²²⁷ The basis of this is that when it is fairly understood that something is ecologically unsustainable, it has to be seriously approached through, or based upon, the law and in the environmental planning etc. Some elementary parallels can be found in *inter alia* US clean air law.

The difficulties cannot be circumvented, and GEA is constructed for really managing them. Nature reacts in its different, normally non-linear ways and humans simply have to cope with that. This is why fundamental rights cannot be absolute, but relative to ecological sustainability. This is also why environmental planning (or something with the same potential) is necessary. But any environmental policy might collapse if implementation deficits are not taken care of *in the law itself*. For this purpose, the well known technique with mandatory and law controlled implementation planning for ecological sustainability, together with the automatic activation of non-degradation standards, is even more developed.

Two important, not to say sustainability inimical, issues have not found any real solution in GEA, namely *international law* and *population growth*.

48. Since the biosphere includes the planet Earth, a control system for that large eco-system is needed. Mankind does not have that yet. International law defaults, outlined by Aðalheiður Jóhannsdóttir in the biodiversity context,²²⁸ are generally pre-environmen-

²²⁷ Westerlund 2003 and the coming book *Fundamentals of Environmental Law Methodology*.

²²⁸ Aðalheiður Jóhannsdóttir: The Significance of the Default. A study in environmental law methodology on ecological sustainability and international biodiversity law. Uppsala university 2009.

tal and conflicting with ecological sustainability. As long as that is a fact, international law is a problem and not a solution. GEA approaches this to some extent.

Partly it is done by developing the principle of sustainable development as a complex of three principles where the one on ecological sustainability is the primary one (and therefore necessary for the two others). Partly it is also done by developing the distinction between market and environmental rationalities. And partly it is done by laying down rules on interpretation where international (and EC) law are to be presumed not to counteract countries' work for ecological sustainability with respect also to the entire biosphere. This is not sufficient, but without improvement of international law as such, this was what could be done at this time. What can be imagined from between the lines here is that international law constitutes an enormous sustainability problem, which simply must be dealt with by i.a. legal scientists.

49. Population growth is one of the really threatening factors for sustainability that is more or less set aside in politics and today's scientific discourse. It does not matter whether this is because of sheer denial or something else. 9 billion people in 2050 is an enormous population which cannot exist and develop without a sufficient and sustainable biosphere.

GEA has nothing about population growth control. The country which has so far done most for at least slowing down population growth is China. The criticism against China's efforts is normally not connected with any realistic alternative, except for some kind of hope that when people reach good living standards, the number of births will go down.

Such living standards call, however, for *inter alia* a sufficient nature basis, good politics, and economic techniques which are not requiring more and more people in order for economy to function. Not even within the wide sustainability framework of the GEA project has it seemed possible to really approach these issues. The most simple way would of course to develop a one child policy that China, at least until now, has – more or less effectively – applied since

decades.

50. And this statement brings this article to its scientific end. The construction of a GEA model is a scientific effort to outline what, in Rule of Law states, the legal system must contain – although leaving aside population growth issues and such social science, which needs to improve its theory frameworks to be compatible with ecological sustainability.

As for law, GEA has done this by including *inter alia* adequate concepts, principles, interpretation rules, rights, substantive reactor-related law and substantive environment-related law, landuse control instruments, environmental planning and implementation planning and softer but effective instruments etc. The GEA construction must also be understood as a system with many interior functions including, most important of all, automatic feedback functions etc.

Any change in the construction, which does not counteract the systemic functions of GEA, and which also otherwise is at least equal with the GEA model as regards ecological sustainability, is important forenvironmental law methodology and theory. On the other hand, any change which is less good for ecological sustainability, must be turned down since ecological sustainability is something necessary. Remember then that delays in time are ecologically and economically more costly than if no such delay occurs. Furthermore, any modification of a component in the system must still fit into the system, otherwise the system as such will not function sustainably.

51. Two final comments might be necessary here. One concerns to which extent a generic act like this could be useful in different kinds of legal systems and the other concerns the general approach to ecological sustainability.

A generic model act for sustainability has purposes related to conditions which are not restricted to a specific country, even if examples may be taken from some countries. These purposes relate to ecological sustainability for the sake of sustainable development. The ideas in a model act like this can be modified in order to fit into also quite different, although Rule of

Law based, systems. Such modifications are to be checked for ecological sustainability including how they will function in the legal system in question (and how this legal systems must be adapted for sustainability).

From this follows that ecological sustainability

shall, and must, be obtained – or development is not sustainable. We cannot avoid that conclusion. Anyone, who in spite of this balances ecological sustainability against economy, social issues or whatever else, thereby leaves the entire idea of sustainable development.