HISTORY AND MANAGEMENT INSTITUTIONS FOR FORESTS AND PASTURES OF NORWAY.

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Abstract
The paper presents some observations on the historical development of legal institutions for management of forests and pastures in the Norway, discussing the motivations shaping them and outlining the principles currently embedded in them.
The goals of the lawmaker are seen as equity in access, economic performance of the industries, and protection of the resource productivity. To implement these goals three design principles can be deduced:
1) Power sharing between state and appropriators,
2) Resource specific regulations of technology and quantity harvested,
3) Variable geographical boundaries for access and enjoyment of benefits.

INTRODUCTION

The present paper will take a look at the public management of forests and pastures in Norway. The goal is to identify the basic principles giving the institutional framework its particular shape.

The current management system of forests and pastures in Norway has many layers. Its most ancient core, the rules for governing common lands, has a continuous history in written law of at least 8-900 years[1]. Thus, to understand the current situation we need to understand some of the history shaping it. During the period from ca 1350 to 1905 the Norwegian history is intertwined with its neighbours, and some of the layers have been added as a consequence of the international struggles and shifting alliances among the ruling powers of the countries we now know as Russia, Finland, Sweden, Norway and Denmark. During the period from 1380 Norway was in union with Denmark (1380-1814) and with Sweden (1319-1363; 1397-1434/1523; 1814-1905). The four

[1] The legislation is believed to have been written down for the first time around 1100. The oldest texts available today date from around 1200. The legal history of commons in Norway makes if fair to say that they are examples of "indigenous" knowledge applied to resource management. No legal entities have a longer uninterrupted history in Norway. Students of the rights of common are unable to find any trace of foreign impact on the development of the rights of common (see e.g. Rygg 1972). Also the legislation on saltwater fisheries can in principle trace its roots to medieval times. The reindeer herding legislation is younger. But still the “The Lapp Codicill” of 1751, regulating the movements of Sámi between Denmark-Norway and Sweden-Finland, is part of the legal framework. The Codicill has never been annulled. After 1883 it has, however, increasingly been replaced by new legislation: first in 1883 by an act enacted both in Norway and Sweden, then in 1905 by the Karlstad treaty (the separation of Norway from Sweden), then again in 1919 by the reindeer herding convention with amendments in 1949, and finally in 1972 by the current reindeer herding convention. The fact that the 1751 Codicill still is law, even though suspended, together with the view it gives on how the rulers in 1751 regarded the Sámi, has made it into an important source for arguments in the current debate about the rights of the Sámi to land and water in Northern Fenno-Scandia.

countries Finland, Sweden, Norway and Denmark are sometimes called Fenno-Scandia. Northern Fenno-Scandia is sparsely populated. Most of the area is covered by forest of some type, but to the north and west bare mountains dominate. Agriculture works on the margin of what is economically and biologically feasible. Only animal husbandry is able to produce a sufficient surplus of calories. Sheep, cattle and reindeer herding are important. For Norway as far north as Trøndelag, the most important criterion for establishing a farm was the possibility of cultivating grain, and grain was grown on most farms far into the 20th century. Further north the possibility of fishing was a similar criterion for establishing a farm. Thus mixed farming has been typical for most parts of Norway.

There is a long debate on the emergence of property rights in land and whether individual or collective rights were first[2]. Today it would seem a reasonable hypothesis that the two types of rights emerge together in a dialectic integrated in the evolution of the basic institutions of society. In historical time in Fenno-Scandia the conclusion is that arable land close to settlements was controlled by families or households. Land further away from the settlement had progressively more collective management systems (Sundberg 2002, Widgren 1995). The land in between settlements was open access until demand for their resources resulted in conflicts. Out of these conflicts a system of commons arose. Even today more than one third of the area of Norway is burdened with rights of common[3] of various types (Sevatdal 1985). But most of this is not forestland. Mountains and mountain pastures are more important. In Finnmark, the northern-most county of Norway, more than 90% of the area is considered to be state property. In response to the

[2]Grossi 1977 presents a survey of the debate in a passionate defence of collective forms of property.

[3] Rights of common are defined as rights to remove something of value from another owner's property (Black et.al. 1990, Lawson and Rudden 1982:130). These “profits-à-prendre” (today called profits) can be classified into 4 types:

Rights vest	Inalienable	Alienable
In land	Appendant	Appurtenant
In persons	All men's rights (a public easement)	In gross

In England Simpson (1986:108-113) recognizes three varieties of profits: 1) “Profits appendant”: the right to the resource is inalienably attached to some holding or farm unit. Appendant profits were in England exclusively rights of pasture (Simpson 1986:111). If the holding were split up the appendant rights would also be subdivided (Simpson 1986:112). 2) “profits appurtenant”: the right to the resource is attached to some holding, but alienable, 3) “profits in gross”: the right to the resource belongs to some legal person in ordinary ownership (Simpson 1986:107-114).

Simpson’s discussion of "profits" does not contain any category where the right is inalienably attached to a person like citizen rights or human rights are. However, the right to kill ground game is vested inalienably in the occupier of the land where the game is found, and the right to kill other game is usually vested in the freeholder (Lawson and Rudden 1982, p.74).

In Norway and Sweden the "All men's rights" (Allemannsretten) to such goods in the outfields as right of way, camping, and picking of berries and mushrooms can be described as an inalienable personal profit. Technically they may be called public easements on all lands. The all men's rights have no restrictions on who can enjoy them, but of course there are clear limits on how to enjoy them. Some other rights vest inalienably in persons as long as they are citizens of Norway, or are registered as living in a certain area or are members of a certain household.

The principle of all men's rights as defined in Scandinavia seems to be unknown in the USA and England, but fairly common - although with variations - elsewhere in Europe (Steinsholt 1995). The struggle to keep and extend the rights of way tied to the system of footpaths and to establish a freedom to wander in England is vividly described by Marion Shoard (1987). In the USA public rights of access varies widely from region to region. The only places public rights are assured are on the beaches below the mean high tide mark where the public has rights of navigation, fishing and recreational uses, including bathing, swimming, and other shore activities (Singer 1993:249-258). Fishing could here be described as an inalienable personal profit.

Sámi demand for property rights to "the lands which they traditionally occupy" the government has recently proposed to change the status of its land in Finnmark to a new type of commons (NOU 1997: 4, Austenå 1998, Ot.prp. nr. 53 (2002 – 2003), Berge 2003). Continuing until today a large part of northern Fenno-Scandia has been covered by a complicated system of rights of common regulating the access and harvesting of forest and pasture as well as other resources. The reindeer herding Sámi play an important part in this. For the rest of the paper we are mainly concerned with the situation in Norway.

ON THE RELATION OF LAW AND SOCIETY

It is a fact that Norwegian forests in general and forest commons in particular have survived and been productive until today. It also is a reasonable assumption that destroying forests is an easy task given time and enough cattle and people with unmanaged access to the forest. The continued survival of forest commons is thus taken as an indicator that the forest management has been able to adapt to changing ecological, technological and social circumstances. However, the fact that the forest management has been able to adapt in the past does not warrant an assumption that they will continue to do so in the future, particularly so if changes in ecological, technological and social circumstances come at an increasing frequency. To improve on the chance of successful adaptation those able to change the management system needs better knowledge about why and how forest management has avoided forest destruction and improved on productivity in different circumstances. Thus the question asked here is: why have the Norwegian forests survived as productive assets? There is no presumption that a full answer can be presented either here or in the near future. The present work is based on the conjecture that part of the answer can be found in the formal institutions circumscribing the activities of the people pursuing particular interests in forest resources. Thus the goal of the paper is to look at the legislation on forests and non-arable lands in an effort to identify design principles.

Of course, there is no reason to believe that the Norwegian King in 1274, or the Danish-Norwegian king in 1740, or the Norwegian Parliament in 1992, or the lawmaker at any point in time actually had any particular design principles to guide them in fashioning the legislation. It is, however, reasonable to assume that they had goals they wanted to achieve with the legislation, and that they consciously shaped the legislation in efforts to reach their goals. But the goals of a lawmaker are difficult to know, and besides, there is no simple path from the goals of a lawmaker to the outcomes obtained. The law is an intermediate tool and seldom (if ever) under the complete control of the lawmaker. At the very least, law needs to be interpreted and enforced by people often very remote from the lawmaker.

Often legislation has a longer life than any particular person involved in its making. Thus it may be reasonable to see law as an outcome from an evolutionary process where the actual legislation from time to time is renegotiated among the relevant power blocks. Besides the goals of the lawmaker it would seem relevant to look for the goals achieved by the actual legislation. As outcomes obtain, intended or unintended, some actors inevitably profited more than others. Such actors can be assumed to be powerful supporters of continuity in the legislation.

Over time many forces will affect the particular shape of a formal institution. Some element or aspects of the legislation may serve long term collective purposes without offending any particular

coalition of power enough to be removed. Such elements or aspects of the legislation may be used, reinterpreted, or extended during the periodic negotiations about the law. If for example such elements or aspects serve to limit the access to the resource, or the quantity removed of it, if they improve the monitoring or provide a forum for deciding on collective action in relation to the resource, the element will be called a design principle. The principle is not necessarily there because the lawmaker decided to use it for this purpose, but it came to do so as an outcome of an evolutionary process. Looking back on history we will try to interpret the legislation to determine the design principles used and the goals served on the road to the status in the early 1990ies.

ON THE HISTORY OF FOREST LEGISLATION

Since early modern time timber for ship and house building was the most important forest resource for the government of Denmark-Norway. Since early in the 16th and well into our own century, the supply and quality of timber, fuel wood, and charcoal for smelting were main concerns of the government's effort to develop management institutions for forest resources[4]. In developing these institutions the government had to find ways of accommodating the needs of local communities and to incorporate new concerns about the destruction of forest resources. This was for centuries a gradual seesaw process between the Crown and the local communities. The traditional access and use rights of the local communities were modified by public regulations.

After taking over the church lands in 1537 the Crown was by far the largest landowner in Norway. It has been estimated that in 1661 the Crown owned 52% of the taxable land (Bjørkvik and Holmsen 1978:100), and from this, the same proportion of rights in the non-arable lands including the commons. The rights of common were the rights enjoyed by the local population from old on such as the rights to timber, pasture, hunting, fishing, and iron smelting. The Crown's activities were at this time to an increasing degree based on the view that the commons was "the King's Commons". The meaning of this was, however, fluid. The activities can be described as an effort to change the rights of common from a property right to a use right. Probably the actual content of the idea to a large extent was determined by what the King's henchmen were able to enforce. Efforts to increase the King's control of and use of the commons had low legitimacy, and monitoring was difficult and costly. The most effective instrument seems to have been to invoke Crown regalia ("jura regalia") such as the right to establish new farms in the commons (leading to Crown property in the new farm), or to grant privilege to use particular localized resources (e.g. start sawmills or mining/ smelting operations[5]). Getting acceptance that minerals and metals found in the commons were Crown regalia can be interpreted as an important step towards the final outcome where the

[4]In southern Scandinavia, deforestation started in the 15th and 16th centuries due to growth of population and economy. The growth led to increased demand for forest products and land to cultivate. However, the divided property rights to forest resources, and Norway being a resource for Denmark, can explain the continuing deforestation of Denmark during the following centuries. Even though the forest was public land, the landowners had property rights (rights of common) to the tall trees, especially oak and beech (the over-wood), while the tenant farmers had property rights to the pasture and the shrubs (the under-wood). As the upper classes increased the commercial exploitation of the over-wood, the lower classes increased the pasturing and cutting of the under-wood, thus preventing the regrowth of the over-wood (Fritzbøger 1994).

[5] In an amendment from 22 Feb 1358 Håkon VI Magnusson made the right to make iron into an all persons' right, not just a right of common. Iron made from bog-ore was produced across most of the country for about 2500 years. Shifts in technology have been noted around 700 and 1400, but the oldest way of production was practiced until about mid 19th century (Fryjordet 2003).

Crown settled for a type of land lordship we can translate as ownership of the ground and remainder[6], accepting the customary use rights as legitimate. The evolution of this new perception of the differences between the rights of the Crown and the rights of the commoners is theoretically interesting. It seems reasonable to conclude that the new practice and cultural understanding emerged out of struggles over rights to income from the timber and mining industry. The importance of being granted the right to ground and remainder became apparent in the 20th century in determining the distribution of income from the generation of hydroelectric power.

Four periods in the development of forest regulations in Norway

Since the first regional law codes were put into writing some time early in the 12th century, the development of legislation shaping forest usage can conveniently be divided into four periods.

1. 1100-1660 – resource governance at a distance
2. 1660-1814 – resource governance by fiat
3. 1814-1857 – democracy ponders the problems of forest management
4. 1857-1992 – from control by property rights to control by regulation

- ***The period 1100-1660 – Resource governance at a distance***

In this paper not much will be said about the management of forests and pastures until the last century of the period, 1550-1660. In theory the regulation of forest usage until 1687 is based on medieval regional (landscape) and customary laws as these were unified and codified in 1274 by Magnus Lagabøter. The law code of 1274 with amendments was the basic source of law until 1687 and even after that. The rules about the commons were expanded and incorporated in the 1687 and later legislation.

However, the seeming stability cannot say very much about the actual situation at the level of the commoners exploiting the resources of the commons. For example, the 1274 law code was never printed. It was available to the courts only in a few handwritten copies. This may not have mattered much since its language by the 16th century was understood only by a handful of those who could read. Only private unauthorized translations were available to the courts if anything was available at all. Furthermore, most of the officers of the higher courts were either Danish or educated in Denmark and thus familiar with Danish legislation rather than Norwegian. This was different in the lower courts where farmers and their elected officers ("lagrettemenn") ruled. It does not seem likely that the 1274 law code (including later amendments) was a significant source of law for governing the commons, at least seen from the perspective of the state. But from the commoners' perspective one may say that since the 1274 law basically was a codification of customary law and as far as the usages of the commons stayed within the broad parameters of medieval society, the customs would be maintained through the interpretations of customs of the lower courts. Thus the codification would be valid even if no one could read the legal text any more.

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[6] "Ground and remainder" is a modern expression describing the Norwegian outcome of the struggle between landlords and tenants for well defined property rights in land. Since the Crown from about 1537 is such a dominant landlord, it is basically a struggle between the crown and the farmers. The ground (or soil) is the abstract surface as depicted by the rapidly developing science of mapmaking. The remainder is all that which is not positively established as rights either through contract or custom, including the surplus after the contract was executed.

The necessary adaptations would have to arise mostly by local initiative. The continuous tradition of local self-governance would make this feasible (Imsen 1990, 1994). And if a problem was not solved locally, the adaptation would come in a case by case (re-)interpretation of the legal code, sometimes to the obvious advantage of the King's official. After judicial reforms in the 1590ies and the publication of Christian IV' Norwegian Law of 1604, the rule-of-law seen from the perspective of the state started to improve[7].

As may be seen in contemporary cases, the stability of a system of commons starts to deteriorate when market forces change the relative prices of various commodities harvested in the commons. From about 1550 the timber trade and saw milling reached a scale where their impact on the forests became noticeable, particularly those the King identified as his, that is the old Crown lands, the "King's commons", and the church land taken over by the Crown after the reformation in 1537. The King's commercial interests in sawmilling and later on in mining are also apparent. In 1568 there is a general prohibition of logging that may damage the forest. In 1587 the King prohibits all commercial logging on Crown lands and orders the destruction of all sawmills not used by the King (Fryjordet 1968:118). From the early 17th century increased demand for wood used in mining and smelting industries adds to the demand of the sawmills. In 1627 for the first time a mining company gets privilege to forest resources within the "circumference" of its mine (44 km). The timber demands of these new industries were seen as competing with the traditional demands for high quality timbers for shipbuilding, particularly military vessels. The period 1550-1660 therefore experienced increasing public interventions to protect forest resources. The interventions are often export prohibitions of timber qualities that can be useful in building ships.

Table 1 and the text below provide more details for the last three periods.

[7] King Christian IV's law book for Norway of 1604 is basically a translation of the 1274 law code incorporating relevant amendments issued in the intervening centuries. The low ambition for the law code and the not very faithful execution of the translation is seen as evidence of a low level of legal scholarship in Norway at that time (see Hallager and Brandt 1855 in their introduction to an edition of the original law code). However, Hallager and Brandt also believe that it greatly improved the rule-of-law in the country. The translation came in a period of reform of the judicial system. From about 1590 there are clear signs of centralization and professionalization of the court system (Næss, Hans Eyvind (red.) 1991, Österberg, Eva og Sølvi Sogner (eds.) 2000)

TABLE 1 Summary table of forest management efforts in Norway

Ca 1550	Regulations (mostly export prohibition) to protect forest resources as a production factor in war industries and for building material in expanding towns and manorial estates. Taxes on production were enacted. It is important to see Denmark-Norway and the duchies Slesvig-Holstein as belonging to one state in this respect. The forests in Denmark were heavily reduced during the demographic and economic expansion of the 15th and 16th centuries. Thanks to forest resources in Norway, Scania, and the Baltics, the consumption of forest products in Denmark could continue. The first signs of crises in Denmark appear in the first half of the 17th century. The long war period strained both people and resources. The forests in Norway became more interesting, and export prohibitions more important in the time to come.
1550-1600	Between 1568-87 there are promulgated several statutes prohibiting logging for commercial purposes on crown and church property. Only logging for household needs was allowed. The restrictions did not apply to the commons in general.
1568	Prohibition of logging damaging the forest (”hogge skogen til uplikt”). Repeated in 1583.
1587	Sawmills on Crown and Church lands other than those used by King’s were ordered destroyed.
1602	Export prohibition of oak and timber for ship masts
1604	Christian IV’ Norwegian Law gives a translation of the 1274 law code including amendments
1627	The Iron Company Post and Krefting got for the first time privilege to buy all timber it needed in a 44 km circumference of their mine.
1660--	After expensive wars, sale of Crown lands (including King's commons) to the Kings creditors.
1682-87	Statutes on forestry, sawmills, mining, illegal logging, and misuse of timber in Norway are promulgated. They are imprecise in the regulations and difficult to enforce. The mining ordinance of 23 June 1683 enacted shortly after the forestry ordinance (of 12 May 1683) gave mining companies general rights to forest products on Crown lands within their circumference and also some rights outside. On private lands they got rights to buy wood for a reasonable price. The rights of the mines were extended in an amendment of 25 Aug 1687. The interests of mining enterprises were given priority over saw mills. Saw mills close to newly established mines had to sell to the mine, for a reasonable price, the wood needed for its operation.
1687	Christian V’ Norwegian Law. Farmers are prohibited from logging more in the commons than they can use on their farms. The same applied to state employees living on Crown lands.
1688	To secure the long-term interests of the state, saw mill regulations are introduced in southern Norway. They need concessions to operate and quotas of timber are set.
1693	Niels Knag, the King's sheriff in Alta, promulgates regulations of logging in the King's forest and commons in Alta. Only people from Finnmark were allowed to take timber from the forest, and then only after permission. New regulations were written in 1753 by the new county governor Mathias Collett and extended to Karasjok and Tana in 1776. From 1762 to 1845 and again from 1892 to 1925 a policy of no export of timber from the north to south was enforced.
1720--	After expensive wars, sale of churches and their lands to the Kings creditors who later resold it, often to farmers.
1725	First government commission on forestry and saw milling.
1726	The county governor Christian Reitzer in Trondheim expresses worries that the forests would be ruined. He appeared as a spokesman for the mining interests in his district, and managed to get a royal ban on logging in forest commons adjoining the mining district.
1726-1740	Four enactments on forestry: 20 August 1726, 7 October 1728, 8 December 1733, and 8 March 1740. The aims were to regulate logging and to further the conditions for the export industry. A continuous political debate on forestry in the period, the sawmill interests being the strongest. For the Crown the preservation of the forests was the most important, although the export interests were to be considered. A forest service of German model was on the agenda from 1735 onwards.
1739-1746	The older "Generalforstamt" - the General Forestry Office - the first attempt to establish a professional forest service.
1750	Sawmill regulations in Mid- and Northern Norway.
1750--	Sale of lands of the monasteries. The farmers get first right to buy at a reasonable price.
1740-1780	Gradual introduction of a special tax on logging in the King's commons, first in Nordland and Finnmark, later also for the rest of the country.

1760-1771	The younger "Generalforstamt" - the General Forestry Office - the second attempt to establish a professional forest service
1795	Saw mill regulations liberalised
1815	Forest owners allowed to saw timber from their own woods
1821	Act regulating the sale of state property. The sale of the King's commons was exempted, requiring special legislation. The Parliament expressed a restrictive attitude towards dividing forests from the farm units they belonged to. For the government private property was the ideal for sustainable resource management. Act on Land consolidation.
1825-1838	Government fails in its attempts to give new regulations on the use of the commons.
1848	The paragraph in the act of 1821 exempting the commons from sale was abolished. The 19th century state was a poor state, and the government searched for new sources of income. An administrative investigation of the commons was carried out prior to this deregulation, giving a complex picture of the resource situation and the management of the commons throughout the country.
1849	A forest commission establishes a foundation for legislation and management in the following years
1857	12. Oct. Act on forests owned in common. For bygd commons[8] it introduced mandatory local governance to manage common rights in general, and, in particular to stint the activities of right holders to ensure the future utility of the forest. For state commons not managed by a public servant the same rules were applied. 12 Oct. Act on dissolving common property in land and forest.
1863	22 Jun. Act on forest management continues the 1857 act by giving detailed rules about 1) exercise of and compulsory termination of easements (use rights of various kinds) in a forest; prohibition against creation of such rights as can be compulsory terminated, 2) the kind of bylaws the bygd commons have to enact, the bylaws require approval of the national government, 3) dividing private commons between owners and commoners, 4) giving the state commons similar management as bygd commons with the same kind of goals, 5) applying similar rules as bygd commons for the forests of the farms allocated for the use of public servants (Crown and Church lands), changes in previous legislation such as the 1848 rule making possible sale of King's commons. The requirements of the bygd commons bylaws may illustrate the concerns of the government at this time. The bylaws should ensure a) protection against logging for a suitable part of the forest (primarily young forest), b) rules furthering sustainability in the exercise of such rights as can be compulsory terminated in private forests, c) use of dry wood and windfalls, d) logging furthering sustainability, e) timing and monitoring of logging, f) equality in rights and duties between owners and commoners, g) exercise of owner rights (to the remainder) shall observe the rights of both the commoners and the sustainability of the forest (the concern about sustainability must here be read as a concern about the long term economic output from

[8] If those buying the ground represented more than 50% of those with rights of common the area burdened with rights of common was called a "bygd commons". If they were fewer than 50% it was called a "private commons". The rest of the King's commons are today known as state commons. “Bygd” is a Norwegian word, which in the context of commons doesn't translate well to English. Sevatdal (1985) translates “bygd” commons as “parish common lands”. But it has in connection with commons nothing to do with parish as usually understood. The concept “bygd” has been used in legal texts at least since Magnus Lagabøter's (1238-80) “Landslov” (“law of the realm” from 1274 (see also page 61-66 in Solnørdal (1958)). The meaning of “bygd” is literally “settlement” meaning a small local community. In most contexts village or local community will be the correct translation. Current usage of the word would suggest some kind of local community independent of more formally defined units such as school districts, parishes, or municipalities. Earlier in our history bygd would be used for the smallest administrative unit, the local law district, and later the parish. In Sweden the word would mean the same. But in conjunction with commons this translation will not give the right associations. Because the areas burdened with rights of common throughout our history usually were tied to users from some specific local community (the bygd), the bygd became tied to a certain area recognized as “their” commons. During the past 800 years the original usage of the word “bygd” in the legal language has turned around, and today the bygd, in relation to commons, is defined as comprising of those farm enterprises which have rights of common in the area recognized in law as a “commons” (both state and bygd commons). This way of delimiting the units with rights of common has been in the law since 1687. Since translation of “bygd” to English in this case is seen as inadequate, the word "bygd" will be used.

	the forest)
1874	Government commission to propose new act on forestry registered forest resources over the whole country
1875	National forestry service established
1892-1895	Act on forestry enacted. The public debate during the 1880's decimated the proposal significantly.
1900	Early 1900: local/regional regulations of forests
1920	Act on rights in state commons ("The mountain law") The act was revised in 1975.
1932	Act on forest protection. Several of the proposals from the 1874 commission were reintroduced such as duty to ensure re-growth and regulation of protective zones of the forest.
1965	Act on forest production and protection. The act strengthening the duty to ensure re-growth. The act was revised in 1976 incorporating considerations for outdoor recreation.
1965-92	An increasing volume of environmental regulations affecting all kinds land
1992	Acts on bygd commons and forestry in state commons
Sources:	Flock and Lassen 2000, Fryjordet 1968, 2003, Smith 1828, Tretvik 2000, 2002a, 2002b, 2004a, Vevstad 1992

The period 1660-1814 – Resource management by fiat

In 1660 the King abolished the council of the realm and inaugurated the period of absolutist rule in Denmark-Norway. The period is characterized by public interventions from the absolutist state and privatization of resources from sale of King's commons.

Three processes shaped the development of subsequent forest legislation significantly. The most important for Norway was that the King began to sell off "his commons" in the 17th century. The second is the rapidly increasing timber trade and the requirement for wood and charcoal in the mining industry from the same time. And the third is the actions to redress problems created by the two former processes.

Already in a letter from 1540 the King promised rights in fee simple to anyone who would settle on abandoned farms. In this the King exercised his ancient right to permit settlement in the commons. The object was to increase the tax base. In the 1660ies and later privatization was a result of the large debts incurred by wars. In these sales the King could sell only what belonged to the Crown: the ground and the remainder[9]. The rights of common remained (in theory) undisturbed. The

[9] One may, perhaps, for the 17th century hypothesize a bifurcation of the interests of the Crown. On the one hand there is an evolution of what we may call the powers of governance: the rights of the sovereign to issue rules, regulations and to impose taxes. On the other hand there is an evolution in the thinking about property rights and ownership making clearer the distinction between for example the King's personal property and that which belonged to the Crown, or between the rights of a landlord and those of his/her tenants. The relationship between what we would call the King's private property and the extent of his control over the property he managed as the sovereign is an interesting topic. The expression "the King's commons" should not be taken to mean anything like his private property. In Denmark-Norway the distinction between the private property of the king and the property of the sovereign was not always clear, but at least there were two different officers handling the two types of fund. It is clear that the sovereign throughout the centuries after about 1600 rather consistently worked to increase the share of profit falling to the state to the detriment of the commoners. This may at the start have been an interest in securing the commons for the Crown. But the emphasis shifted from direct commercial activity to taxes and customs. It also seems clear that the Swedish king had more success in taking control of the commons than the Danish-Norwegian king during the important 18th and 19th centuries. Rian (1992:pp.117-159) argues like several others in recent Norwegian historiography that from old the King was more the King of the farmers (yeomen) than the King of the nobility, and that the King first of all was the embodiment of law and order, the rule-of-law.

repercussions of these sales are felt even today[10].

The rapidly growing mining industry as well as the demand for timber for ship and house building throughout Europe led to what was perceived at the time as large-scale deforestation. New technology and/ or new markets can make established regulations ineffective. Both in the early 18th century and later in the middle of the 19th, inadequate regulation of access to timber in the commons and good timber markets evidently led to overuse. The actions taken by the Crown to guard against this incipient tragedy of the commons (Solnørdal 1958:43-46) are important. It is also important to note that the problem was not perceived as a threat to the ecosystem (and certainly not talked about as a tragedy of the commons), but as a threat to the defence and future economy of the realm. While the first general director of the "General Forestry Office" (J.G. von Langen 1739-46) arguably held an ecological interest in the forest system (Kremser 1990), the goals of the Crown are best seen as purely self-interested. Both interests met in an effort to secure the long-term survival of forests. One source legitimizing new actions to protect the forests was a new paragraph in the law of commons in Christian V's Norwegian Law of 1687. The paragraph limited the rights of common to timber and fuel wood to the needs of the farm. Since the last half of the 16th century there had been attempts to introduce a rule limiting logging to the needs of the farm, first in 1572 for ecclesiastic and public servants (Fryjordet 1968:118). The reason for the rule was probably to extend the rights of the Crown to the resources in the "King's commons" (enlarging the remainder) and to further the interests of owners of saw-mills. But owners of the ground did not have to observe such rules. Both the Crown and the private investors who bought a part of the "King's commons" were logging as much as they managed. And neither of them put up enough resources to enforce the limitations on the commoners (where rights of common to timber existed). A situation resembling the tragedy of the commons developed both in the commons and in privately owned forests. The rule limiting the timber rights of commoners to the amount needed on the farm came in the 18th century to be seen as a tool for the regeneration of the forests and enforced more strictly. From about the same time the number of sheep and cattle the farm could feed during winter increasingly came to be seen as the upper limit for pasturing on the commons.

The most active legislative periods were the 1680'ies and 1720-1750[11]. Legislation in the 1680'ies was part of a mercantilist policy giving privileges to the few and putting restrictions on the many. But the effectiveness of the restrictions can be questioned. The latter period is at least partly an effort to redress problems created by the earlier period. Due to less forest and slow growth deforestation was more easily seen as a problem in the northern part of Norway. In 1693 the King's sheriff promulgated rules to protect the King's forest and commons in Alta. From the 1720-40 we

[10] The case of Skjerstad was judged in the special court on the mountains of Nordland and Troms 26 April 1990, and in the High Court of Norway 19 November 1991 (Norsk Retstidende Vol 156, 1991 part II: 1311-1334). The origin of the case can be traced to 1666. In 1666 the King sold his lands in Nordland and Troms to Joachim Irgens, but bought them back in 1682. This sale was in the 19th century used as argument for the stipulation that the state lands in Nordland and Troms were not state commons. The conclusion of the Skjerstad judgement, crudely put, is that while the state lands of Nordland and Troms must be considered to be state commons, the injustices done during the preceding 200 years by preventing the local population from enjoying their former rights of common, has removed all rights of common except the rights of pasture.

[11] Smith (1828) lists 33 statutes concerning forests between 1664 and 1812. Of these, 17 were promulgated between 1721 and 1752. Between 1687 and 1720 none are listed.

find concern about the conditions of the forests in several statutes (Acts of 20 August 1726, 7 October 1728, 8 December 1733, and 8 March 1740). The 1740 act is a general statute on forestry. The goal is a sustainable forest practice. During 1739-46 and again during 1760-71 there were efforts to establish a professional public forest service. At least the first attempt is deemed to have failed because of antagonism in the established public administration, among timber traders and owners of sawmills as well as non-compliance of forest owners and farmers (Fryjordet 1968). Both the older "General Forestry Office" from 1739-1746, and the younger "General Forestry Office" from 1760-1771 were modelled on German experiences. They can be seen as part of a centralization of the Norwegian administration and were met with massive protests from the old civil service as well as resistance from rich forest owners and farmers (see Opsal 1956, 1957, 1958, Fryjordet 1968, Eliassen 1972, and Vevstad 1992:12). Not until the latter part of the 19th century, after the second period with public alarms over depletion of forests (ca1840-1870), did the professional forest service get established.

The period 1814-1857 – Democracy ponders the problems of forest management

In 1814 after the Napoleonic wars Norway was "given" to the Swedish crown, but gained its constitution and parliament in the process. The period is characterized by democratic control of legislation guided by public poverty and ideological liberalism. There is increasing deforestation as well as government efforts to do something about it.

While the process of forest destruction in the period 1720-1740 led to an effort to establish a professional forest administration, one response in the mid 19th century was to remove the prohibition of privatization of state commons. During this period ideologically motivated liberalism led to a partial break with the "local commons" management (co-management), which until then had had increasing recognition and protection. The break can be observed both in the salt-water fisheries[12] and the forest legislation. In the legislation on forestry the break can be seen in the 1845 removal of the export prohibition on timber from northern Norway and in the act from 5 August 1848 terminating §38 in the act of 15 August 1821 which said "The forest commons owned by the state shall until further notice not be subject to sale or alienation". The act of 1821 dealt with the sale of state property, and the commons were exempted, due to need for special legislation. But new legislation did not appear until 1857. The decision to allow privatization of the commons can partly be seen as a response to problems of (economically) sustainable usage. However, the 19th century liberalism and the economic poverty of the state are important to bear in mind. And of course, as in earlier centuries, the state could sell only what belonged to the state: the ground and remainder. The local management of forest commons was reintroduced and legally circumscribed by the 1857-1863 legislation. The co-management approach taken at this time is apparently a continuation of an

[12] In the legislation on salt-water fisheries the break came in the Act of 13 Sep 1830 "On Fisheries in Finnmark" (Robberstad 1978, Pedersen 1994). Later, in the 1890'ies, some aspects of local commons management were reintroduced in a few special districts with local powers for regulation of technology and coordination of appropriation. See Jentoft 1989 on the Lofoten district. The development of technology in the coastal fishery was significant but not large between 1830 and 1890. From then it was picking up speed. Coordination of activities became necessary. These developments made some involvement from the fishers themselves necessary and facilitated the reintroduction of local management powers. But it never developed further. In our century the rapidly growing faith in the ability of the state to regulate the activities of its citizens has been the foundation of the legislation on salt-water fisheries.

established tradition in the relationship between farmers and Crown, visible both in medieval times and in later centuries (Imsen 1994:41). The approach taken is "legalistic" rather than "paternalistic". Rather than negotiating rules district by district the commoners are given a legal framework for deciding on activities and solving conflicts.

The period 1857-1992 – From control by property rights to control by regulation

The modern legislation on forest resources is gradually developed, starting with acts in 1857 on forests owned in common and continued in the 1863 act on management of forests. The 1857 act defines bygd commons (without naming them, the name comes in the 1863 act) and introduces a mandatory board for making decisions binding for both owners and commoners. The 1863 act presents rules for all forests where servitudes of any kind might create collective action problems or impinge on the necessary management decisions of the owner(s). The 1863 act also details the governance of bygd, private, and state commons. Some servitudes such as the rights of burning parts of the forest for agricultural purposes (swidden or shifting agriculture), burning heather (to improve pasture), and barking (from birch it was used in roof construction) were allowed compulsory termination on private lands and circumscribed by requiring consideration of the future viability of the forest in the commons.

The medieval legislation included in Christian V's law code remained. The new legislation is an elaboration and addition to it, replacing only the rules in §3-14-34-37 on the rights to forest resources of farmers on Crown lands. However, the bygd, private[13], and even state commons are in practice new entities in the social fabric.

The emergence of bygd and state commons is a direct result of the Crown's sale of common land during the previous centuries. This had created new legal realities. In many cases those with rights of common (or a subgroup of them) had become owners of the ground on which they had rights of common (and then they became the owners of the remainder after the rights of common were accounted for). The new realities were recognized in the act from 1857. The new reality had come about in three ways:

- Through the recognition that long usage of a part of the King's commons in other ways than what was implied by the rights of common, defined property rights to the ground for the users (adverse possession), or
- Through buying of a part of the King's commons from the Crown, or
- Through buying the ground from the investors the Crown first sold it to (usually after it was logged).

Since 1857 three turns in the legislation can be seen. First on the agenda was forest protection. The 1863 act reversed the sales policy on public lands and introduced public guidance of forestry

[13] In the act from 22 June 1863 private commons were required to go through a land consolidation process dividing the forest area between the owners of the ground and the commoners. If an area was left with rights of common, it became a bygd commons. All private commons where the rights of common included rights to timber are believed to have been dissolved in this way. However, there exists private commons with rights of common to pasture, fishing and hunting of small game. One such, Meråker almenning, is discussed in NOU 1985:32,pp.36-38. Presumably there are more of them. How many is not known. Acts enacted since 1863 have to an increasing degree disregarded their existence, since their significance was declining.

activities for all forestland, both private and public. In 1854 the first professional forester came into state service and a permanent administration of public forests got established from 1860. It was extended to cover private forests in 1875 (Vevstad 1992:13). Prohibition of timber export from Northern Norway was reintroduced in 1892 and remained in force until 1925. Legislation making sale of land difficult was also part of this effort. The act on concession for sale of forest from 1909 was the first of its kind in Norway. Its major goal was to make it difficult for foreign citizens to buy forestland by requiring buyers to settle on the property. Another goal was to stop the consolidation of forestland into large estates. Small-scale forestry in conjunction with farming was seen as necessary for the viability of rural Norway. To the same end an act from 1915 prohibited sale of forests separately from arable land. The interest in forest protection resulted in a rather weak act on forestry in 1895 and a stronger one in 1932.
The second shift of focus for the forest legislation came around 1930. The goal of legislation changed from forest protection to forest production (Vevstad 1992) resulting in the 1965 act on forest usage and protection. From about 1970 one may see a third shift. Now an ecologically motivated concern about nature protection and use of natural resources gained foothold in the Act on forestry (1976 revision of Act of 21 May 1965 on forest usage and forest protection).

The situation ca 1992
In 1992 the Norwegian parliament enacted new acts on bygd commons and forestry in state commons. The basic form of the legal regulations is still medieval, but of course greatly expanded in details.

The co-management approach started in the 1857 act has been continued. In bygd commons and state commons with forests the board of owners and commoners are still the responsible actor on behalf of the various stakeholders, but circumscribed by the legal guidelines and increasingly by general regulations applying to all kinds of land.

The distinctions of activities and instruments included in the law are indicators of the kind of problems perceived and the kind of solutions to problems recommended. Over time the evolution of legal classifications of types of actors, types of resources, and types of techniques used to resolve problems and allocate rights and duties may be used to shed light on the society creating the rules as is usual in history. It may also contain more general management principles. Rules that survive for centuries despite changing circumstances may be of interest for a more general theory of nature management. Comparative studies of long lasting rules for nature management are not very common. This paper is not more than a preliminary step investigating the possibilities in Norwegian forest management.

The current situation for the legislation on resources in non-arable lands held in common in terms of distinctions (variables) used to differentiate among resource users, and resource usage systems are given in table 2. To this one should add the increasing amount of legislation modifying the operation of the legislation on the commons such as the legislation on recreation and nature protection.

TABLE 2 Summary table of distinctions used by the legislation on forest and mountain resources in Norway

VARIABLE	CATEGORIES OF VARIABLE	RELEVANT RESOURCE USAGE SYSTEM (numbers refers to numbers in column 2)
Type of management unit responsible for resource system	1) Actor system 2) State bureaucracy 3) Municipality 4) Co-managed (this is not exactly a "unit", but a way of managing where more than one unit has responsibilities)	1) Bygd commons, forest in state commons 2) Reindeer herding 3) State commons except forest 4) Forests in state commons
Appropriator units	1) Legal person (citizen, firm) 2) Cadastral unit (farm, fishing vessel, herding unit 3) Registered person (individual according to registered residence)	1) State commons 2) Bygd/ state commons, reindeer herding 3) Bygd/ state commons, reindeer herding
Powers of local choic	1) Yes 2) No	1) Bygd commons, state commons, 2) Reindeer herding
Professional administration	1) Required of appropriator units 2) Supplied by state bureaucracy 3) Both 1) and 2)	1) Bygd commons, 2) Reindeer herding, 3) State commons
Basic resource classe	1) Ground and remainder 2) Pasture, timber, fuel wood, 3) Hunting of small game (except beaver) 4) Hunting of big game 5) Anadromous species 6) Fresh water fish except anadromous species	1) Bygd/ state commons 2) Bygd/ state commons, reindeer herding 3) Bygd/ state commons, reindeer herding 4) Bygd/ state commons 5) Bygd commons 6) Bygd/ state commons
Rights of common	Rights of common	Bygd/ state commons, reindeer herding
Economic activity	1) Collective required 2) Individual or collective by choice	1) Bygd commons, forest in state commons 2) Reindeer herding
Form of ownership o resource	1) Fee simple 2) In common, fractional interest 3) Joint, equal interest	Varies by resource class and resource usage system
Alienability	1) Inalienable 2) Alienable	Resources are in general inalienable from appropriator units, but appropriator units are alienable
Quantity regulation	Varies by resource class and resource usage system	
Technology for harvesting	Varies by resource class and resource usage system	
Duties to local societ	No duties	Norwegian resource usage systems

DISCUSSION

Three design principles

The forest and mountain commons of Norway have existed since pre-medieval times in one form or another. They have changed from being the open access "wastelands" around the local communities in pre-medieval time to being the King's commons open to be used by the people of the local communities. The current system grew out of the struggle for control of the various forest resources among the king of the absolute state, the local farmers, and the growing group of capitalists looking for investment opportunities and profit. The shifting fortunes of monarchy, the industrialization of the economy, and democratization of the polity all affected the system of forest commons that

emerged. From the history and current status of the legislation three principles can be said to be embedded in the legal system. They are
1) Power sharing between state and appropriators,
2) Resource specific regulations of technology and quantity harvested, and
3) Variable geographical boundaries for access and enjoyment of benefits.

Power sharing in forest governance

A major historical legacy of resource usage systems in Norway is the co-management (On the current political status of co-management see Baland and Platteau 1996, ch 13), the division of power between the state (the Crown at the start) and the local population (the "commoners") (see e.g. Imsen 1990:193,1994:41)[14]. This legacy can be seen in a "strong form" in the bygd and state commons, but also, even if weaker, in the boards of the reindeer herding areas.

In its general form the co-management is based on differentiation of rights and duties by type of rights holder, area and resource type. The units exercising rights of common are selected among the actors of the economic system. They are persons or economic units in the primary industries seen as legal entities and going concerns (farms, reindeer herding units). Stockholding companies or other kinds of economic actors have been barred in Norway. The conceptualization of the units able to hold rights in the commons reveal a lot about the political objectives of the society. Residence of persons or location of appropriators (farms, herding units) is used to distinguish between those who legitimately can appropriate from a specified resource and those who cannot.

The Norwegian resource legislation has a rather bewildering complexity in the various local constellations of resources, users and institutions. In regulating the use of forest and mountain resources the character of the various resources and the technology of utilizing them combine to present unique problems for the regulator. General rules for resource management cannot in general be expected to work well. The result in Norway has been resource specific regimes of regulation.

Resource specific regulations

Counting the ground and remainder as a separate resource, current Norwegian legislation on

[14] Its origin goes back at least to the 11th century. At that time the commoners elected the King of Norway and he was given certain powers to go with his office. Mainly it was activities in war. For the commons he pledged to keep them as they had been from old on. But he was also given some rights of coordination among the commoners. The first one may have been the right to give settlers permission to settle in the commons and make their home there. From that time on the kings powers, gradually generalized to state power, has grown in bounds and leaps, but also with significant setbacks. Sometimes the government has taken some powers from the commoners, at other times, when the government was busy elsewhere, the commoners have taken rights back or gotten themselves new rights through prescription. Both Rian (1992:pp.117-159) for Norway and Hein (pp.34-41) for Finland, discussing the period 1550-1750, find that the basic stand of the general public towards the government was defensive. They can be described as fighting a non-violent rearguard battle against increasing taxation and confiscator policies, sometimes initiated by the King, sometimes by self-serving government servants. Their powers of local choice was waxing and waning, but the strong medieval tradition was never eradicated.
Today the relations between state and various types of commoners are formalized. The difference in governance between state commons and "bygd" commons is substantial. The state has no particular powers for decision making in the bygd commons but quite large in the state commons. The company STATSKOG in the state commons manages the interests of the ground owner, while the management and coordination of the interests of the commoners have been delegated to the local municipalities in their "mountain board".

resource management in forest and mountain commons can be said to comprise 5 different legal regimes. They are
1) Ground and remainder,
2) Pasture, timber, and fuel wood,
3) Fishing and hunting of small game except beaver,
4) Hunting of big game and beaver, and
5) Pasture and wood for reindeer herding.

TABLE 3 Resource specific property rights regimes in Norwegian forest commons

	Ground and remainder	Pasture, timber, and fuel wood	Fishing and hunting of small game excep beaver	Hunting of big game and beaver	Pasture and wood for reindee herding
Rights of common	No	Yes	Yes	Yes	Yes
Co-ownership	In common	Joint	Joint	Joint	Joint
Unit holding rights	Cadastral unit	Cadastral uni	Registered persons	Registered persons	Reindeer herding unit registered in the local reindee herding district
Use and quantity regulatio	Internal ("Owner decision")	Internal ("needs of th farm")	Internal ("owner decision")	External ("publicly decided quotas	Internal ("Needs of the industry")
Alienability	Inalienable	Inalienable	Inalienable	Inalienable	Inalienable
Power of local choice	Yes	Yes	Yes	Yes	Yes

In the Swedish forest commons four legal regimes can be identified. They are the same as the Norwegian except that pasture, timber and fuel wood are not treated separately. Pasture, timber and fuel wood belong to the owner of the ground[15].

The 5 regimes in Norway share the characteristic that the rights are inalienable and that there are powers of local choice defined in relation to their utilization. They differ in type of co-ownership, the kind of units, which are rights holders, and how quantity regulations come about. The search for variables capturing the variation in resource usage systems has shown that ownership of “ground and remainder” plays a decisive role for coordination of activities, form and prevalence of co-management, distribution of benefits, and the form of resource specific systems of rights and duties cutting across the social categories distributing the benefits from the resources (local population, commoners, owners). Other resource types seem to be differentiated primarily after the ecological

[15] The Swedish forest commons were created during the years 1861-1918, partly as a result of state interest in developing viable local communities and timber suppliers and partly as an answer to problems remaining from the land consolidation process, which had been going on since the 17th century. (See Carlsson 1995, and 1996, Act on "Häradsallmänningar av 18 April 1952", and Act on "Allmänningsskogar i Norrland och Dalarna av 18 April 1952"). The only rights of common defined for them are the rights of the Sámi villages to the pasture, wood, fishing and hunting of small game they traditionally have enjoyed as reindeer herders. The rest of the resources of the forest commons are enjoyed as a consequence of being registered as an owner of one of the cadastral units to which ownership rights in the commons are attached. The most important of the remainder is timber and hydroelectric power. They generate fairly large incomes for the commons and are the basis of extensive and variable economic activities. There are different regimes for the hunting of big game and for fishing and hunting of small game. Pasture has never been important in the forest commons. The right to use the few patches from which fodder could be collected ("ströängar") have never been resolved legally. Thus for the Swedish forest commons there seems to be four resource specific regimes: 1) Ground and remainder, 2) Fishing and hunting of small game, 3) Hunting of big game and 4) Pasture, wood, fishing and hunting of small game for reindeer herding.

dynamic of their regeneration (woods are different from wild game). The dynamic has implications for how to allocate rights of enjoyment as well as control of technology used in their appropriation. Secondarily they are differentiated according to economic value. This has implications for who gets allocated the right of enjoyment.

Variable geographical boundaries for access and enjoyment of benefits.

The distribution of benefits is most of all historically determined. The benefits vary systematically according to type of unit holding rights (individuals, households or cadastral units such as farms or reindeer herds), and its geographical location (the number and extent of rights increase with declining distance to the resource system[16].

THE GOALS OF REGULATIONS IN RESOURCE USAGE SYSTEMS

The lawmaker will always have goals for acts enacted and even more significant; the public servants will have goals in interpreting the law. Judging from the first known written law (from the 13th century), the major concern for rules about resources was equity and the procedural implications of that[17]. Later on, from about the 17th century, concern about limiting the removal of timber was used to reinterpret the law to increase the King's share of its resources. The 19th century brought concern about economic performance. And in the 20th century a concern about the sustainability of wild game populations was introduced.

However, general rules for resource management seem to be absent from the legal framework. Some of the recent legislation such as the Act on nature protection from 1970 or the Act on Anadromous species and fresh water fish from 1992 contain statements of a goal to manage resources to preserve diversity and productivity of nature. But the rules of how to do this are rather specific and their relation to the goal far from obvious. The level of resource specific details varies enormously from one resource usage system to another. Distinctions used in acts for systems on land are less detailed than those for systems in the sea[18]

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[16] The separation of ground and remainder from the various specified resources is the main principle of differentiation among various types of commons in Norway. In a state common the state is the owner of the ground, in the "bygd" and the private commons it is the commoners who own it. What distinguishes "bygd" and private commons from a private co-ownership is that not all the commoners are owners of the ground. This is different from Sweden where all commoners also are owners of the ground (Carlsson 1995).

The importance of the ownership of the ground and the separation of this from rights of common lies in the stipulation that the ground contains what is called the remainder. This means that all rights which are not positively accounted for as rights of common belong to the owner of the ground. In Norway for example hydroelectric power is one of these remainder rights. Waterfalls were of limited value until a new technology appeared. The separation has facilitated the division of benefits as these have arisen throughout history, but it has not in any way prevented the owner from mismanaging the resource.

[17] Looking at one of our oldest written law codes, we find in the Frostatings Law, written down around 1100, that the very first line in the first paragaph in the section on the Commons, is the same as the one we find in Magnus Lagabøters Law of the realm of 1274, in Christian IV´s Lawbook of 1604, and in Christian V´s Lawbook of 1687. And throughout the numerous changes in the Commons Act during the 19th and 20th century the first line in the first paragraph has been standing unchanged until 1992 when it was removed. This line reads: "The King's Commons shall remain as they have been of old, ...". A reasonable interpretation of this line is to see it as the King's (and later the Crown's and the state's) commitment to defend the rights of the commoners against trespass .In practice this would mean that local public opinion would be the defining factor for trespass, rarely the King.

[18] On land such distinctions as that between timber and fuel wood, or between small game except beaver and big game are used. The act on salt-water fisheries contains much more detail. Here we find regulations for single species

The act on reindeer herding states explicitly that the goal is to secure the well being of reindeer herders and the status of reindeer herding as an important aspect of Sámi culture. The acts on forest and mountain commons do not say anything explicitly about the goal of the lawmaker. But implicitly the purpose obviously is to secure sustainable conditions for an industry. Resources are regulated to create the best possible returns to the industry with one major limitation. Fair access to a resource appears to be more important than maximizing returns for the industry. The concern about fair access can be seen as evidence that politics takes precedence over economic performance in shaping institutions as North (1990) suggest will be the case.

It seems fair to say that the lawmaker with some significant deviations throughout our history has tried (or been forced) to pursue the following, not always compatible, goals, and, usually, also in this order in case of conflict.

- Equity,
- Economic performance, and
- Ecological maintenance

Implementing the goals

It's not easy to reconcile the various goals, but one already mentioned technique used for some of the rights of common is to tie them to units such as a farm or a reindeer-herding unit. Other rights are tied to persons in various ways. The rights of timber are for example tied to the farm while the rights of hunting are tied to the farmer and the persons in his household. Defining a farm as the unit able to exercise rights in the commons, suggests a concern with the viability of the farm as an economic enterprise as well as a practical mechanism (at least for farms) for stinting the usage of the commons. The concern about the viability of the farm goes back to medieval society and is directly tied to the need for taxes. In medieval society the tax was supplied in kind mainly as soldiers and warships during wartime, during peacetime mainly in commodities (butter, grain, fish, fur).

Defining a farm or a reindeer-herding unit as capable of holding some rights of common is tied to the stipulation of inalienability of the rights of common. The idea is strengthened with the stipulation that the rights cannot be enjoyed to a larger extent than what the “farm” or “herd” needs. A farmer cannot take more timber than he can use in building or repairing the houses on his farm.

A second basic technique in the design of the management system is the differentiation of rights of common according to geographical location. When persons are defined as the units holding rights, they are limited by geographical boundaries. These may be the boundaries of the household running the farm business, the boundaries of the “bygd” where the farm is located, of the local municipality where rights are to be exercised, or of the state of Norway. A few rights are given to any person that legitimately can visit the country. The way rights are limited can be interpreted as a compromise between considerations of equity of access and probability of overuse (rights to hunt belong to owners of the ground, but anyone can pick berries, in the commons rules for allocating rights to

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(e.g. seaweed, shellfish, whale, seal, lobster, crab, crayfish, shrimp, herring, cod, haddock, halibut, mackerel, angler, coalfish, capelin, ling, rosefish, sea scorpion). One reason for the difference between sea and land might be the growth in public regulations of nature and land usage in other parts of the law not applicable at sea (e.g. Act on Nature Protection of 19 June 1970).

hunt big game is more restricted than rights to hunt small game).

More recent ideas about resource management have not been integrated with the legislation on the commons, but have been laid down as resource specific rules applying to all lands whether commons or private lands. One reason for such a system of crosscutting management rules might be the variations in size of the area needed to manage a resource effectively. Variations in rules for various types of game illustrate this. The increasing number of large game in the 20th century may be seen as a result of this approach even if it is not the only causal factor.

The goals, and the various design principles and mechanisms used to achieve the goals create a complex web of regimes. There are particular rules for the enjoyment of housing timbers, fuel wood, pasture, housing in the commons, fishing, and hunting of small game, beaver, lynx, and big game. The enjoyment rules are further cut across by the resource specific management regimes. The several levels of decision making and the various ways of sharing power adds to the complexity.

CONCLUSION

The variety of forest management institutions in Norway has not been described exhaustively. But the results so far, taken together with studies of similar institutions in the Alps (Netting 1981, Price 1988, Stevenson 1991) suggest that a broader study of the variety of management institutions, relating them to the economic and social outcomes, might give interesting data on which design principles give the more desirable outcomes.

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