

Multi-layered Natural Resources Management in Open and Closed Commons:

A case study on the right of access and
the state, community and farm commons in Norway

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1. Purpose of study

With the growing importance of sustainable management and use of natural resources, expectations for the role of the commons have been increasingly raised (Murota 2009). There are various arguments regarding the definition of the commons. In this paper, however, we use the term commons to refer to institutionalized systems for the collective management and use of natural resources, as well as natural resources themselves as targets. Thus, commons here not only denotes the specific commons which historically existed and are still existing in England and Wales but also the commons institutions in various nations and regions, including *iriai* in Japan, *alp* in Switzerland and *sasi* in East Indies. Studies on the commons in such context have been implemented worldwide (Ostrom 1990). In particular, a great deal of discussion has taken place regarding the local commons in developing countries.

However, when discussing the commons in today's advanced industrial countries, it is not realistic to assume that they are existing in complete isolation from outside influence. It is increasingly essential to discuss to what extent the involvement of interested parties outside the commons can be allowed (Mitsumata, Morimoto and Murota 2008). To do so, this paper adopts a concept of open and closed commons.

This paper defines the closed commons as a commons which is equipped with strict membership requirements and rules based on a regional relationship for managing and using available natural resources. *Iriai*¹ in Japan is an example of this (Ostrom 1990; McKean 1992). There also exists in Norway closed commons, such as the state commons (*statsallmenning*), the community commons (*bygdeallmenning*²) and the farm commons (*realsameie*³). These have been selected as a case study of a closed commons

¹ Refer to Shimada (2008) for the study discussing the *iriai* in Japan with a focus on membership.

² *Bygd* refers to parish or community. In this paper, community is adopted.

³ Falkanger (1998) dealt with only the state commons and the community commons when discussing the commons in Norway. Controversy exists among researchers over the farm commons, as *realsameie*, meaning farm commons in

in this paper⁴.

The open commons, on the other hand, refers to a commons which does not have such strict rules and membership requirements for the use and management of its resources. It can be considered closer to an open access commons⁵. In Norway, there has been a customary law called the right of access⁶, under which people can freely walk on somebody else's land, regardless of whether it is privately-owned or publicly-owned, and enjoy the natural environment under the condition of not disturbing the landowner and others, or causing any damage to the land. This paper will discuss the right of access as an example of the open commons. Aside from the right of land ownership, various forms of rights regarding the use of natural resources are stipulated around one piece of land at multiple levels.

Norwegian, does not include the expression of *allmenning*, which refers to commons. On the other hand, Sevatdal (1998); Berge (2002); Sevatdal and Grimstad (2003); and Grimstad and Sevatdal (2007) classify them into different types with the farm commons included. *Realsameie* involves the meaning of collectively-owned land (details are described in 4.4.). As the farm commons is consistent with the definition of 'commons' adopted in this paper, the three commons mentioned above will be discussed here.

⁴ In Norway, there also exists a commons where the *Sami* people have traditionally been engaged in reindeer herding. The conflict between the *Sami* people and the Norwegian government, which occurred in the 19th century, involved an important issue seen around the world today – that of the resource use and livelihood of minority groups being threatened by expanding industries – (Jentoft 1998). However, as the nature of the issue is different from the major argument of this paper, we will examine it at another time.

⁵ We should point out that not all the commons can be clearly classified into open commons and closed commons. In reality, most commons are positioned, to a varying degree, in between open and closed commons. For example, there is a case where commons with strict rules and membership requirements give silent approval to use by non-members in actual resource management. Historically, there were closed commons which became open commons through the increased demand for recreation, or open commons which became closed commons through the increased pressure towards resources. It can be said that commons have been wavering between open and closed commons.

⁶ In Japan, there also exists a resource use comparatively similar to 'the right of access'. Saito (2005) pointed out the practice of gathering edible wild plants and mushrooms as an example. A movement advocating that everyone has the right of access to the seashore in various forms has been emerging since the 1970s (Takasaki and Kihara 1976) under the name of 'the right of common access to the shore' (*Irihama-ken*).

We aim to clarify the multilayered structure of the open and closed commons in natural resources management, with a focus on the institutional aspect.

2. Outline of Norway

The mechanism of the commons in Norway has resulted from the Norwegian people's relationship with nature and has developed as a common practice over many years. The method of management and use of natural resources depends on the conditions of the natural environment, as well as the structure of agriculture, forestry, fisheries and the local community in Norway. Accordingly, we think that it is important to first examine these issues, and then to further the discussion.

Norway, with a total area of 385,199 square kilometres (Main land: 323,802 square kilometres; Svalbard Archipelago: 61,020 square kilometres; Jan Mayen Island: 377 square kilometres), is located between 58 degrees and 71 degrees north latitude, with the southern limit line of the arctic region, the Arctic Circle (66°33'), crossing the country. Due to the North Atlantic warm current, which flows from the equator towards the Norwegian Sea, the climate of Norway is comparatively mild for its northern location. A marine west coast climate, which belongs to the temperate climate, dominates along the west coast of Norway, reaching across the Arctic. In contrast, a tundra climate dominates the mountain inland area, which is located to the south of the Arctic Circle.

Table 1 Number of people engaging in agriculture and forestry by year

year	(1)Total agricultural area in use	(2)Total population	(3)Resident population in densely populated area	(4)Persons engaged	(5)No. engaged in agriculture	(6)No. engaged in forestry	*1 %	*2 %
1701	–	504,000	40,000	–	–	–	7.9	–
1801	–	883,603	88,404	–	–	–	10.0	–
1900	9,880	2,240,032	800,198	887,440	290,009	21,420	35.7	35.1
1950	10,447	3,278,546	1,711,628	1,388,144	250,455	39,595	52.2	20.9
1960	10,135	3,591,234	2,052,634	1,406,358	188,431	31,153	57.2	15.6
1970	9,227	3,874,133	2,554,913	1,462,159	130,833	11,773	65.9	9.8
1980	9,358	4,091,132	2,874,990	1,453,783	91,406	5,360	70.3	6.7

1990	9,941	4,247,546	3,056,194	1,467,546	66,264	7,891	72.0	5.1
2000	10,436	4,478,497	3,396,382	1,797,676	45,084	4,616	75.8	2.8
2008	10,241	4,737,171	3,722,786	–	–	–	78.6	–

*1 : ratio of the resident population in densely populated area to the total population

*2: ratio of those engaged in agriculture and forestry to the persons engaged

Note: The figures of (4),(5),(6) shown in 2000 are substituted by those in 2001.

This table was prepared by the authors based on the Statistics Norway (1994; 2001; 2009).

Norway's population is 4,737,171 (as of 2008), about 80 per cent of which reside in coastal regions. Urban areas make up only about one per cent, with three per cent comprising farmland, and 22 per cent economically utilizable forest land. More than 70 per cent of the remaining land is uncultivable (Norwegian Ministry of Foreign Affairs, 2006).

Until about the eighteenth century, almost 90 per cent of Norwegian people engaged in agricultural work of some form. As land in Norway is generally not suitable for cultivation, its agricultural industry is largely dependent on livestock farming. Most of the closed commons have developed as systems or institutions for using land for livestock farming. Besides livestock farming, grains such as wheat, barley and oats are grown in south-eastern Norway. Norway's agriculture has been affected by a harsh environment, a result of its natural and geographical conditions as mentioned above.

On the other hand, fisheries, forestry, mining and shipping have developed in ways that take advantage of the country's geographical characteristics, pushing Norway's economy forward. In the seventeenth century, the timber trade became a major industry, and timber products were exported throughout Europe. In the late nineteenth century, Norway expanded its exports of timber and marine products in response to economic growth in the UK, which further promoted the shipping industry of Norway. In the first half of the twentieth century, wood processing grew to become a competitive industry, and became Norway's largest export industry by the middle of the twentieth century. Forestry and wood processing are currently one of the major forms of operation of the closed commons, specifically that of the community commons. In the early twentieth century, abundant electricity generated by hydropower in mountain regions enabled the development of power-intensive metal and chemical industries. When North Sea oil

started to make a profit in the 1970s, the oil industry developed to become the nation's largest industry within a short period of time.

Conversely, only 2.8 per cent of the total labour force was engaged in agriculture and forestry in 2000 as shown in Table 1, which was a significant decline from the seventeenth and eighteenth centuries when almost 90 per cent of the total population was engaged in agriculture. With rapidly proceeding urbanization during that period, the number of residents in densely-populated areas greatly increased, from only 7.9 per cent in 1701 to 78.6 per cent in 2008 (Table 1). Such a significant change of situation surrounding agriculture and forestry, as well as the progress of urbanization, has diverse impacts on the commons in Norway. As an example, the right of access, which was traditionally acknowledged by people in the local community as necessary for their working and daily lives, is starting to take on a more recreational character after the advent of urbanization, while retaining its long tradition of benefitting the community.

Lastly, we would like to describe the land use in Norway which is important for understanding the open and closed commons in Norway. According to Grimstad and Sevstad (2007), land use in the farming villages of Norway can be divided into three main categories: in-fields, out-fields and mountainous out-fields. In-fields, located on relatively flat land close to the ocean, lakes and rivers, are used for the intensive production of grains and fodder. They are basically privately owned, thus, not a target for conducting resource use as an open and closed commons.

Out-fields, located at a slightly higher altitude than in-fields, are highly productive forestry lands, and also provide good quality grazing and fodder. They are basically privately owned or collectively owned, and subject to the right of access. Many of the community commons and farm commons are found in out-fields.

Mountainous out-fields are generally located above the timber line, where summer grazing, hunting, fishing and gathering activities take place. They are basically collectively owned or publicly owned, and subject to the right of access. Most of the state commons, as well as many farm commons, exist here. In this manner, as the altitude becomes higher, from in-fields to mountainous out-fields, the type of land ownership shifts from privately owned to collectively owned, and collectively owned to publicly owned, with the type of use shifting from closed to open.

3. The right of access functioning as an open commons

3.1 Institutional framework of the right of access

The right of access has been a long-standing right in Norway under which everyone can enter the land owned by others and enjoy the natural environment and outdoor life so far as they do not disturb the landowner and others, or cause any damage to the land⁷. This right under customary law was codified into the Outdoor Recreation Act (*Friluftsloven*) in 1957 (Berge 2006). The relevant laws are the Nature Diversity Act, the Wild Life Act and the General Civil Penal Code. In places in which the right of access applies, picking berries⁸, mushrooms and flowers is permitted in principle. In addition, the gathering of firewood is allowed during the period between the middle of September and the middle of April (Norwegian Ministry of Agriculture, 2003).

In the following, we will discuss the institutional framework of the right of access based on the Outdoor Recreation Act. Article 1 of the act classifies land into cultivated land (*innmark*) and uncultivated land (*utmark*). Cultivated land (*innmark*) and its equivalent stipulated by the Outdoor Recreation Act are “farmyards, plots around houses and cabins (*hytte*)⁹, tilled fields, hay meadows, cultivated pasture, young plantations and similar areas where public access would unduly hinder the owner or user”. “Small uncultivated plots of land lying in tilled land or hay meadows or fenced in together with such areas are also considered to be equivalent to cultivated land. The same applies to areas set aside for industrial or other special purposes where public access would unduly hinder the owner, user or others.”

On the other hand, uncultivated land (*utmark*) refers to land which is not cultivated and does not correspond to the above mentioned land. Following the classification, the Outdoor Recreation Act specifically sets out the right of use regarding cultivated and uncultivated land.

Regarding the use of uncultivated land, Article 2 stipulates that “any person is entitled to access to and passage through uncultivated land at all times of year, provided that

⁷ Similar rights exist in other Nordic countries (Shimada, Saito and Mitsumata 2010).

⁸ Berries in this paper are those commonly called berries, not those botanically classified as berries. Thus, they include not only cranberries and blueberries but also blackberries and raspberries.

⁹ *Hytte* means a small house used as a vacation home in Norway. Unlike Japanese vacation homes, which are mainly owned by wealthy people, relatively many Norwegian people own this type of house.

consideration and due care is shown. The same applies to access and passage on horseback or with a packhorse, sledge, bicycle or the like on roads and paths across uncultivated land and in all uncultivated mountain areas, provided that the municipality, with the consent of the owner or user, has not prohibited such passage along specified routes.”

Regarding the use of cultivated land, Article 3 stipulates that “any person is entitled to access to and passage through cultivated land when the ground is frozen or snow-covered¹⁰, but not in the period from 30 April to 14 October. However, this right of access does not apply to farmyards or plots around houses and cabins, fenced gardens or parks or other areas fenced in for special purposes where public access in winter would unduly hinder the owner or user.” It also stipulates that “The owner or user may, regardless of whether the area is fenced, prohibit passage across gardens, young plantations, autumn-sown fields and newly-established meadows even when the ground is frozen or snow-covered, provided that such passage is liable to cause significant damage.”

Regulations regarding various nature-based activities, such as driving an automobile, horse riding, water transport, bathing, hiking and camping, etc., are stipulated in Article 4, 5, 7, 8 and 9 of the Outdoor Recreation Act. For example, “a tent must not be pitched so close to an inhabited house (cabin) that it disturbs the occupants, and in any case no closer than 150 metres.”

In this way, the act stipulates regulations in detail regarding the places, time and ways of using nature so that people’s access to nature under the right of access does not lead to the hindrance of landowners, users and others, as well as the destruction of nature. Regarding picking berries and mushrooms, the Outdoor Recreation Act does not provide any regulations, but the General Civil Penal Code stipulates that such picking activity is in principle not be liable to a penalty if it is carried out in places not surrounded by fences (Norwegian Ministry of Justice, 2006).

In order that the right of access can function appropriately, the Outdoor Recreation Act provides various institutions such as those regarding the enforcement and curtailment of the right, roles of the administration, land closure and procurement and penalties for

¹⁰ Such a right is not admitted from April 30 to October 14, even if the ground is frozen or snow-covered.

offenders.

Article 11 of the act stipulates that “any person who passes through or spends time on another person’s property or on the sea off another person’s property shall behave considerately and with due care in order not to cause damage or inconvenience for the owner, user or others, or damage to the environment,” and also that “the owner or user of the land has the right to expel persons who act inconsiderately or who by improper conduct cause damage or inconvenience to the property or rightful interests.” Furthermore, Article 12 stipulates that damage and inconvenience that occurred by executing the right of access shall be compensated in accordance with the provisions of general laws regarding compensation.

Regulations regarding the putting up of fences or signs, and the collection of usage fees are defined in Article 13, 14, 15, 16 and 40. Basically, behaviour of landowners which may violate the legally protected right of access, such as preventing entry by putting up fences or signs and the collection of usage fees without good reason, are not allowed. However, landowners are permitted to collect usage fees, block an entrance or close the land if they have good reason for doing so, such as the land being damaged due to excessive access. Article 18 also stipulates that when measures to curb excessive use of land through restriction or closure fail, landowners will then be able to request the local government to buy up the relevant land.

3.2 Environmental policies and the right of access

The Norwegian government is treating the right of access as one of the centerpieces of the government’s environmental policy, considering that the right of access maintains a relationship between humans and nature, and also enhances people’s awareness of environmental issues (Norwegian Ministry of the Environment, 2005). The government adopted the following national targets regarding outdoor recreation. (1) “The tradition of outdoor recreation based on the right of access to uncultivated land shall be kept up by all sections of the population.” (2) “Children and young people shall be given the opportunity to develop skills in outdoor recreation activities.” (3) “Areas of value for outdoor recreation shall be safeguarded so that environmentally-friendly access and passage and harvesting of natural resources is promoted and the natural resource base is maintained.” (4) “Near housing, schools and day care centres, there shall be adequate opportunities for safe access and play and other activities in a varied and continuous green structure, and ready access to surrounding areas of countryside.” In order to achieve these targets, the government set up policies such as strengthening the legal

basis for outdoor recreation, conserving vast tracts of land for people's outdoor recreation and securing the right to partake in outdoor recreation in places which the Norwegian Defense Force no longer use.

Sandell (2006) discussed the right of access from the aspect of the environmental policy. He states that "in democracies, public understanding, motivation and inspiration are crucial for the long-term acceptance of an effective environmental policy. Territorial affinity is perhaps a necessary mental prerequisite for environmental awareness, in terms of making environmental problems palpable and understandable. In such a human-ecological context it may be argued that nature-oriented recreation activities and public access to the countryside are crucial for the development of urban dwellers' perceptions, attitudes and activities with regard to future sustainable human-nature relationships" (Sandell 2006, 98).

Sandell (2006) pointed out the significance of the right of access which generates the relationship between humans and nature, stating that it is important to seek answers to environmental issues from people's positive involvement with nature, not from the protection of nature separated from people. The Norwegian government has been aware of this from comparatively early times. Nils Faarlund, a member of the committee regarding outdoor recreation in the Norwegian government, clearly stated that "the White Paper on environmental policy in 1981 declared that "*friluftsliv* is of great importance in stimulating an environmental concern" (Faarlund 1993, 167)¹¹.

4. State commons, community commons and farm commons, functioning as closed commons

4.1 The origin of commons in Norway

According to Sevattal and Grimstad (2003, 95), closed commons in Norway is "a (more or less well) defined area wherein landholders (some or all) of a locality, or the local residents as such, have rights to activities such as grazing stock, cultivation, building of summer farms, extracting forest products like timber, fuel-wood, etc." Berge (1998, 125) stated that "it is the needs of the farm, not the farmer, which define the extent of

¹¹ In this regard, the root of deep ecology concepts attracts interest. The term deep ecology was coined in 1973 by Norwegian philosopher Arne Dekke Eide Naess. The concept was diversely expanded and has become one of today's major environmental viewpoints. As Naess admitted himself, the root of deep ecology concepts can be found in the tradition of Norwegian people's outdoor life (Naess 1973), and the right of access has institutionally underpinned it.

the rights of common for pasture and wood resources”. As Berge (2006, 66) also stated that “the resources found in the mountains, basically pasture for sheep and goats, and wildlife for hunting, were an integral part of what made farming possible here near the margins of agriculture”, resources of the closed commons in the mountainous area were of great importance for the development of agriculture in Norway. In this paper, we confine the discussion of the closed commons to the state commons, community commons and farm commons.

The origin of the closed commons in Norway, except for the areas collectively used by farmers in neighbouring communities, dates back to before the time when vast forest and mountainous areas became a target for ownership. At that time, the rights of common were considered as rights to freely cut trees, graze, hunt and fish, etc. The first formalised description of the commons were made in regional laws under the several different kingship. Norway was gradually united under one king during the 11th and 12th centuries. In 1274 the first Norwegian national law was made, in which the commons and the user rights of the local community were acknowledged.

It was in the eighteenth and nineteenth centuries that such resource use, similar to that of the open commons, was transformed into the present time resource use as a closed commons. In Norway at that time, when the country was annexed to Sweden, the rapid increase in population enhanced the demand for resources from uncultivated land, such as timber and pasture. As the competition regarding the utilization of uncultivated land grew stronger, land use in surrounding areas started to be dominated by the community residents and over time the structure of the closed commons, such as qualifications and rules for using the resources, has gradually developed in the form of exclusive rights of the local population (Grimstad and Sevatdal 2007).

4.2 State commons

At present, exact figures are not available regarding the number of state commons present in Nordland, Troms and Finnmark, the three northernmost province of Norway. However, it is thought that there are up to approximately 20,000 square kilometres of state commons in each of Nordland and Troms, and approximately 38,000 square kilometres in Finnmark. In addition, other than the commons mentioned above, and the commons located in the middle of Norway, which are considered to have been converted from the state commons to other types of commons in recent years, there exist state commons in 195 places with a total area of about 26,600 square kilometres, and about 20,000 farming households have right of use. Thus, the total area of state

commons covers about 100,000 square kilometres, which is almost one third of the total area of mainland Norway (Sevatdal and Grimstad 2003).

State commons are situated on less productive land than community commons. Due to their location above the timber line, most of the state commons are mountain regions, and are used as pasture land (Gundersen 2000). The co-author of this paper visited one of the state commons, also located above the timber line, in the north of Lillehammer City on 27 June 2007, where sheep grazing and renting sites for *hytte* were conducted.

For individuals to qualify for the rights of use in the state commons or the community commons, they must be residents of the local community to which the commons belong, and they must own or lease a farmland in the local community to which the commons belong.

State commons are operated in deference with the interests of various groups of stakeholders, which include the local community to which the commons belong and the group of farming households in the community, as well as the nation and the general public. The management of forest resources such as timber and firewood, pasture land, summer farming, hay and silage, fisheries, hunting, resource use in tourism and recreation, and hydropower is conducted in the state commons.

A right regarding traditional use of resources in a certain area belongs to the specific local community. “The rights in the common may vary from instance to instance. The actual contents depend upon usage. One important limitation should be noted: the rights may be exercised only to meet the requirements of the individual farm (for example, a right regarding wood or timber is limited to what can reasonably be used on the farm for purposes compatible with farming, such as wood fuel or building material” (Falkanger 1998, 134-135). In short, the resources of the state commons may only be harvested for subsistence use. It is not permitted to harvest resources for the purpose of selling, except for the selling of milk and meat from animals grazed in the state commons.

The user rights related to farming are reserved for the farming population. On the other hand, regarding specific resources for hunting and fishing, people living in the area have equal user rights. The user rights to hunting and fishing have also been gradually shifted to include the general public. At present, anyone living in Norway can engage in hunting and fishing in the state commons by paying a usage fee, though the usage fee

varies between the local residents and others (Falkanger 1998).

The relationship between the farmers who own the rights of common and the nation which owns the land is as follows: “If for example the forest yield exceeds the quantities the farmers are entitled to, the state will profit in respect of the excess. And second, if it is possible to utilize the land in a manner not contrary to the farmers’ rights (as defined usage), the state may do so. Thus the benefits derived from leasing plots for building fall to the state, and, to give one more example, the state may develop waterfalls for production of electricity without compensation to the farmers” (Falkanger 1998, 135).

The management of the state commons is conducted by three organizations. The Norwegian State Forest Corporation (*Statskog SF*) is mainly in charge of logging and forest management, cultivation, road maintenance and improvement, quarrying, management of water resources (including hydropower resources), as well as supervising various events occurring within the state commons.

The Mountain Board (*Fjellstyre*) mainly works on the management of the state commons located above the timber line, dealing with all the issues not covered by the Norwegian State Forest Cooperation, such as hunting, fishing, grazing and other uses of natural resources. The members of the Mountain Board are selected from among local assembly members, but under the condition that the majority of the members reside within the community of the relevant area. The Commons Board (*allmenningsstyre*) deals with issues regarding productive forest. The members are selected from among those who hold user rights to the forest, and are responsible for all the decision making regarding the collective use of the forest resources.

4.3 Community commons

Community commons, largely located at a lower altitude than the state commons, exist in 51 places with a total area of approximately 5,500 square kilometres, 31 per cent (about 1,700 square kilometres) of which is productive forest, and offer a good potential for generating cash income. The number of the qualified farming households is as many as about 17,000 (Sevatdal and Grimstad 2003).

Specific rules, such as who can use the resource, are set for different types of resources. For example, the number of livestock which can be grazed is limited to the number

which one can graze on a farm during the winter season¹², and the right regarding timber is restricted to the timber necessary for the farm. In this way, the rights of the common are closely related to the farm, and “many of the important rights of common run inalienably with the land and the farm” (Berge 2002, 23).

The community commons practically have the rights of common, and are owned by active farms. Thus, if a farm ceases its function as a farm, it loses the right of use in the commons¹³. In addition, it will lose its ownership right to the commons though it is not clearly specified by law. On the other hand, these rights can be reacquired when farming is resumed. The operation and management of the community commons are conducted by the Commons Board, selected from among the users and owners of the commons. If a member of the Commons Board or a user of the commons does not act in line with the rules or plans regulated by law or designed in the commons, the member or the user must pay a fine, or be stripped of the right of use for a certain period of time.

Most of the large-scale community commons run their own sawmill. Profits must be used primarily for maximizing the productivity of the commons and for satisfying the future need of the right holders. In addition, the profits can be distributed to the constituent members after receiving authorization from the agricultural minister. The members can purchase timber from the commons’ sawmill at a reduced price. The community commons have expanded employment and supported the business promotion in the local communities. It has also provided community welfare activities, such as the building of community assembly halls, and the supply of electricity. These activities offer a variety of benefits, which go beyond the right holders of the community commons.

4.4 Farm commons

As the farm commons are not yet registered as property units, figures regarding the total area, the number of places and right holders are not available. However, the total area and the number of right holders are considered to be larger than those of the total of the

¹² Such a restriction is not specific to Norwegian commons. The common appendant, one of the rights of commons in England, usually involves ‘*levant and couchant*’ (rising up and lying down), which limits the number of cattle for grazing so that the pasture can be maintained during the winter (Murota and Mitsumata 2004, 107).

¹³ According to an interview with advisors of the Ministry of Environment, Mr. Gante Voight Hanssen and Ms. Elisabeth Harbo-Lervik, conducted at the Ministry of Environment in Norway on June 29, 2007.

two commons previously described. The land ownership of the farm commons is “the predominant type of ownership in mountainous areas in southern Norway”(Sevatdal 1998, 152).

As mentioned above, the requirements for the right of use in the state and community commons are the possession of residency, and ownership or leasehold of the farm land in the local community to which the commons belong. On the other hand, the requirements for user rights in the farm commons are different. In farm commons, user rights are directly linked to the right of a share. The difference can be understood more clearly by assuming the case when individuals move out, and no longer reside and utilize a piece of farmland in the local community. In the case of the state and community commons, people will lose the right of use in the commons when moving out, while in the farm commons, the right of a share will not be extinguished wherever an owner lives or whatever an owner does. The right of a share will remain regardless of whether or not an owner lives within the community or is engaged in farming.

Most of the farm commons are found in the mountainous areas near the timber line of the conifer trees, and are mainly used for summer grazing. In these areas, hunting, fishing and the development of holiday cabins (*hytte*) are of major economic interest. There are few official or written documents regarding the organizations which operate and manage the farm commons, and the actual situation of the farm commons is little known. It is considered that each farm commons is operated in its own way (Sevatdal and Grimstad 2003).

To conclude, we would like to point out that the resource use in such closed commons is playing an important role in conservation of landscape and biodiversity. For example, use of pasture land produces a high biodiversity area by forming a semi-natural grassland. The semi-natural grassland in Norway serves as a sanctuary for grassland species which are becoming rarer in Europe. Furthermore, such semi-natural grassland, if not utilized by farming, will become forest through succession, which will result in lower biodiversity and as a consequence provide a highly homogeneous environment. In view of this, Olsson, Austheim and Grenne (2000) pointed out that the conservation of semi-natural grassland and biodiversity should be considered in association with the preservation of agricultural activities such as grazing, etc. Moreover, such a system of agriculture will lead to sustainable production of agricultural commodities.

Table 2 Operation and management of the state, community and farm commons

		State commons	Community commons	Farm commons
State of land		7%: productive forest remaining: mountainous areas above the timber line	31%: productive forest remaining: mountainous areas above the timber line	Most of the land is near the timber line.
Total area/ No. of commons		26,622km ² /195	5,500km ² /51	No data
No. of farms with right of use		Approx. 20,000	Approx. 17,000	More than 50,000 (estimated)
Land owner		The State	Group of registered farms	Specific farm units
Resources to which user groups have access	Pasture, summer farm, cultivated land	According to the need of a farm	According to the need of a farm	According to the right of a share of the right holder
	Timber	According to the need of a farm The remaining belongs to the state.	According to the need of a farm The surplus is sold and the profit is distributed.	
	Income from hydropower	The State	Land owing farms	
	Hunting, fishing	All the local community population All the general public (differentiated according to the usage fees)	All the local population	
Management body	Decision-making regarding general issues including commercial logging, hydropower, national parks, and environmental issues	Norwegian State Forest Corporation (<i>Statskog SF</i>)	Locally elected Commons Board (<i>allmenningsstyre</i>)	Majority group of the holders of the right of a share, and locally elected committee
	Issues regarding hunting, fishing, grazing and tourism	Locally elected Mountain Board (<i>Fjellstyre</i>)		
	Woodcutting for subsistence, etc.	Locally elected Commons Board (<i>allmenningsstyre</i>)		
Main usage type		Individual use	Collective use (running of sawmill, etc.)	Individual use
Assignment and transfer of right		User rights are not salable, and cannot be separated from the farmland. Commons cannot be divided.	Same as state commons	Right of a share can be sold with the farmland. User rights can be divided by the Land Consolidation Board.

Note: The total area of the state commons does not include Nordland, Troms, Finnmark and commons in central Norway, where state commons have been shifted to other types of commons in recent years. *This table was prepared by the authors according to Sevatdal (1998); Sevatdal and Grimstad (2003).

5 Discussion – Multilayered management and use of natural resources –

So far, we have discussed the right of access functioning as an open commons, and the three types of commons as a closed commons, with a focus on a multilayered management and use of natural resources. Through the discussion, we were able to identify that in a society where various land ownership types such as publicly-owned, collectively-owned and privately-owned types exist, the right of land ownership is not an exclusive ownership right, but a right with various commons rights as a closed commons, and a right of access as an open commons, being layered on the land ownership right at multiple levels.

Table 3 Multilayered structure of land ownership and use seen in the state commons

Ownership and use	The state	Farm in the local community	Local population	General public
Landowning	Yes			
Hydropower development, land lease out*	Yes			
Woodcutting	Yes (commercial)	Yes (subsistence)		
Grazing		Yes		
Hunting, fishing		Yes	Yes	Yes and No**
Outdoor recreation (passage, stay, berry and mushroom picking)		Yes	Yes	Yes

Note: * lease out of *hytte* included

** General public has started to have access to hunting and fishing, but the usage fee is differentiated from that of the local population.

Remark: Table 3 was prepared by the authors based on the discussions in Section 3 and 4.

Now, we would like to examine this multilayered structure with a focus on the state commons¹⁴. As shown in Table 3, land ownership belongs to the state in the state

¹⁴ We have discussed and clarified the multi-layered structure of the state commons in this paper. It will be our future task to discuss to what extent such a multi-layered structure is seen in the community and farm commons, or what kind

commons, but this does not mean that the state exclusively uses the land. There is a system under which various entities, other than the landowner (the state), utilize the resources of the land in a multilayered way depending on the characteristics of the resources.

For example, hydropower and tourism facilities are operated by the state through the Norwegian State Forest Corporation (*Statskog SF*). Commercial woodcutting is also carried out by the state through *Statskog SF*, while the farming population in the community, in other words the constituent members of the closed commons, have exclusive user rights to timber for local consumption, such as wood fuel and building materials. The user rights to grazing also belong only to the members of the closed commons. In this way, resources with a relatively high degree of rivalness have been used by the closed commons whose membership qualification is clear and explicit. Consequently, excessive resource utilization has been prevented by closing the commons through exclusive membership.

Ostrom (1990) presented a counter-argument to the concept of the Tragedy of the Commons (Hardin 1968), which states that resource use as a commons will inevitably bring about major problems through excess use. In contrast, Ostrom formulated principles for designing a long enduring commons through a number of case studies from around the world. The first principle is clarification of membership as to who can use the resources. She pointed out the importance of closing the commons in order to eliminate the use by people other than the members. In this regard, the mechanism of avoiding the excessive resource use of the closed commons of Norway is consistent with the argument of commons which is being developed worldwide.

On the other hand, it is not only the members of the closed commons who are allowed to engage in hunting and fishing activities in the state commons; indeed, everyone living in the region is allowed. As the qualification of the constituent member of the closed commons is that the person must have residency, at the same time ownership or leasehold of an active farm in the local community to which the commons belong, the difference between a member and a resident depends on whether or not a person owns, or uses, a farm. Considering that the right of closed commons is established for the sake of the resources which are needed for farming in the farmland, it can be said that

of multi-layered characteristics these commons have, if they are different from those of the state commons.

the differentiation reflects actual necessity. The general public of Norway is also allowed to have access to hunting and fishing in a limited way, such as through payment of a usage fee, etc. Thus, this type of resource use is positioned midway between that of closed commons and open commons.

When looking at the land used and managed as the state commons, as the object of outdoor recreation, for example when the land is used by hikers or cyclists, or by those picking wild mushrooms and berries, the user rights have been granted to everyone including the members of the closed commons and local residents, as well as the general public, as they do in an open commons. It should be reaffirmed that the right of access is granted not only in the state-owned land but also in communal and private land, as long as the land is an uncultivated land (*utmark*), as stipulated by the Outdoor Recreation Act. This means that, in the use of natural resources with a lower degree of rivalness, the open commons system under which a variety of people have access to nature can exist by opening the public, communal and private land to everyone without exclusively exercising the right of land ownership.

As this paper has discussed, in the system of resource use in Norway, the open commons, in which the management of nonrivalrous resources through a right of access enables the relationship between a diversity of people and nature, and the closed commons, in which the management of resources with high degree of rivalness through defined membership prevents excessive use of natural resources, are co-existing. We believe that such multi-layered natural resource use will offer some suggestions to the arguments on the commons, particularly regarding the closing or opening of the commons.

Yet, we should add that there have been some conflicts over the commons and the right of access in Norway. For example, there is a case in which demand for recreation becomes a threat to the privacy of landowners¹⁴. In-depth clarification of the multi-layered structure of the commons in Norway through analyzing such case studies will be our task for the future. It is also our task for the future to employ analytical tools for analysing property rights that are available in the commons literatures.

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