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COMMON PROPERTY RIGHTS IN SWISS ALPINE PASTURES

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## A. COMMON PROPERTY IN NATURAL RESOURCES - A TRAGEDY ?

A pasture open to all, overgrazed, ruined by the aggregated actions of all the users, each of them pursuing his own best interest: this is the example that Garrett Hardin chose to explain what he called the "tragedy of the commons". Each herdsman calculates a positive utility for himself of one additional animal that he puts on the commons. The negative effect that results from overgrazing is but a fraction of his benefit because it is spread over all herdsmen. "But this is the conclusion reached by each and every rational herdsman sharing the commons.. ..Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. ...Freedom in a commons brings ruin to all." (Hardin, 1968: 20).

Having identified common property as the source of the problem, Hardin sees only two possible solutions: Conversion to private or public property (Hardin, 1968; 21). This opinion is shared by many other scholars (1). But contrary to Hardin's example of an overgrazed and ruined pasture under common property and contrary to theories that see common property as a source of a host of ills from rent dissipation to technological backwardness and poverty of users, many examples exist in the real world where neither state nor single private owner control of a resource prevails, but where common property arrangements coincide with successful resource preservation (2). Examples can be found for fisheries, water basins, forests, irrigation systems, and grazing areas. The latter are the subject of this paper.

One of the main reasons for the divergence between these examples and the above mentioned pessimistic predictions is that results observed and conclusions drawn from situations in which no property exists (open access resources) are applied to resources that are managed by a group of owners who have firm property rights in the resource and join together in regulating its use.

While the tragedies of open access have been analysed extensively

in the literature (3), the existence of successful common property management has until present not found strong resonance in the writings of economists including those using the property rights approach, although this approach promises to be particularly useful in understanding the origins, functioning and effectiveness of different common property organisations.

The purpose of this paper is, first, to describe common property organisations that exist in Switzerland for the management of alpine pastures and to categorize their main features in familiar property rights language (part B). Second, it is asked why common rather than individual property has developed for many Swiss alpine pastures. The factors analysed here are natural risks, production and transaction costs and the distribution of wealth and economic power (part C). Third, the question of efficient investment levels in common property situations will be addressed (part D).

## B. A PROPERTY-RIGHTS APPROACH TO SWISS GRAZING COMMONS

### 1. Common Property in Swiss Alpine Pastures: An Overview

The common property arrangements I want to present (4) have existed in Switzerland for centuries. One of the oldest documents mentioning a cooperative alp stems from 1240 (Carlen: 1970). The expression "alp" might cause confusion, because we are used to call the whole mountain area "the Alps". The alps with which I am concerned are pastures in a mountain area with plants and growing periods of high level climatic zones. Over many centuries the alps have been integrated parts of the peasants' farmsteads that were used only during the summer, roughly from June to September, during the growing period of the grass.

Bringing the cattle to an alp allows the peasants to use the fields and meadows in lower regions for purposes other than feeding cattle during the summer: they can use them for cropping and for making hay to feed the cattle during the winter. Besides that it is often mentioned that the alpine grasses and the staying in high altitudes makes cattle healthy and strong. The alp should not be imagined as a plateau. In many cases the alp itself consists of various meadows in different altitudes, called "Staffel", each of them being equipped with the necessary buildings and each of them having a special grass quality and period of vegetation, which is the shorter the higher the meadow lies.

Alps were and are used for different kinds of animals: cows, heifers, oxen, sheep, goats and horses, often also pigs, which are fed with the wastes of cheese production. Production of cheese or other dairy-products, which are then consumed by the owner of the cattle or sold on markets is by no means the only purpose of using the alps. Alps are also used for raising cattle with the purpose of meat-production, of selling young cattle, or of using the cattle as draught animals for the fields in the valley.

Various ownership arrangements can be found for Swiss alpine pastures (Werthemann and Imboden, 1982: 78/80). The alps may belong to a

- community
- corporation
- cooperative (share rights alp)
  
- single private owner or a group of co-owners
- Kanton (Swiss state), the central government, a private corporation or foundation.

The first three groups, representing common property, are the ones that are addressed in this paper. They are the most

important ones numerically, covering about 80% of all alp-territory. There are, however, regional differences in the ownership structures. For instance, in the northern alpine foothills, that were cleared the latest, single owner alps dominate. Individually owned alps account for 54% of all alpine pastures, but they cover only 18 % of the pasture areas (Werthemann and Imboden, 1982: 78). Alps in individual ownership may be operated by the owner and his family, by hired personnel, or by a renter. Owner and renter may have their own cattle on the alp, or a mixture of own cattle and cattle accepted for fee (Stevenson, 1984)

Community alps belong to one of several community types, of which the most important ones are the territorial community and the Buergergemeinde (community of citizens). In the territorial community all residents have political rights; in the Buergergemeinde, which traditionally fulfilled all community tasks, only citizens, not all the residents, have political rights and rights to use community property. Citizens are those who stem from ancient lineages. As a result of Napoleon's conquest and his impact on community law these Buergergemeinden today have only limited tasks: They manage their property (consisting mainly of alps, forests and valley land) and they decide on applications for community-naturalisation, which is the prerequisite for cantonal citizenship. In most of the Kantone territorial communities and Buergergemeinden exist side by side, with a substantial part of real estate ownership being vested in the Buergergemeinden.

The members of corporations also stem from ancient lineages and closely resemble the Buergergemeinden in their organisation and size, with two exceptions: these are the corporations of the Kantone Uri and Schwyz. Oberallmeindkorporation Schwyz has 6700 members, stemming from 94 families that are named in the statutes, and owns 85 alps and other real estate. Korporation Uri covers as much as 90% of the Kanton's alp territory. These

relatively huge corporations are organized like representative governments. The members meet only once every one or two years to revise statutes and to elect representatives. Additionally for each alp separate, decentralized user groups are formed. I don't want to go into details here. It is enough to state that major investment- and improvement-decisions are made by a centralized management, and that the influence of the single member is weaker in these organisations than in the smaller ones.

The cooperative or share rights alps differ from the above mentioned organisations insofar as membership is not limited to residents or to offsprings of ancient lineages. Everybody may become a member who buys a share, and the number of shares a member holds determines his use rights. Concerning internal organisation, however, the cooperatives are very similar to communities and corporations.

For a better understanding of the respective property rights I will consider not only the ownership structures, but also the operating structures. There are three basic operating systems, which can be found on share rights, community and corporation alps:

First, the system of joint operation, in which not only the use of land and buildings, but also the pasturing of the animals, the milking of the cows and the making and selling of dairy-products are organized by the group, which means, for example, that the members hire personnel for the tasks of pasturing, milking and dairy production.

Second, the dispersed units system, in which the pasture is commonly used, but users have their own or rented buildings and care for their animals individually.

Third, the rental system, in which the whole alp territory is rented to one renter, or else it is divided up in parts that are separately rented to a small number of renters.

Matrix 1 below shows how ownership structures and operational systems combine to form nine basic common property arrangements that can be found for Swiss alpine pastures. The combinations A,B,C,D will be analysed in detail in the following chapter.

Matrix 1 - Basic Types of Common Property in Swiss Alpine Pastures

	system of joint operation	dispersed units system	rental system
community	A		B
corporation		D	
cooperative	C		

## 2. Property Rights in Community, Cooperative, and Corporation Alps

Community alps, cooperative alps and corporation alps can be characterized by their institutional arrangements, i.e., by the set of rights and obligations they have developed to obtain certain results. In this paper I am especially interested in property rights that can be defined as "behavioral relations among men that arise from the existence of things and pertain to their use" (Pejovich, 1975: 40). They convey to persons, or to groups of persons, bundles of socially recognized rights of action. Property rights allocate the benefits and harms resulting from a decision and by this confront the decision-maker with certain structures of costs and rewards that systematically affect his choices (De Alessi, 1980: 3). They constitute a collection of social codes, legal remedies, and societal

protection or sanctions (Dahlmann, 1980:70).

The property rights in a resource may comprise the right to

- use an asset or resource in the sense of withdrawing use units (usus);
- appropriate returns from an asset in case the owner doesn't use the resource himself (usus fructus);
- change the asset's form and substance (abusus) which implies the legal freedom to transfer all or some rights in the asset (transfer rights);
- participate in the management (management rights).

Usus, usus fructus and abusus are the elements most frequently mentioned in definitions of property rights. Normally they are only used with reference to individual ownership. In this paper the right to use, to appropriate returns, and to transfer are applied both to individual and to group ownership rights. This extension is necessary, because in common property organisations rights are not only defined with reference to individuals, but also with reference to groups. Where individuals form organisations to pursue joint interests, they develop systems of representation and of division of labor in management, with single members or member subgroups fulfilling various management tasks. The right to participate in the management of an organisation is therefore added to the above list to take account of this special feature of group action.

The first common property arrangement that I want to present here is a traditional community alp with a system of joint operation (Type A in Matrix 1). It can be called traditional because it combines two features that are of diminishing significance today, but before had been almost unquestioned in many parts of Switzerland: the identity of owners and users, and the strict



limitation of ownership and use rights to residents.

Traditional community alp with system of joint operation  
(Type A)

**Usus:** All the community residents are eligible to use the alp, if they fulfil certain prerequisites (for example, having an own household, or ownership of the cattle). The amount that an individual can claim has in many communities been fixed according to the wintering rule, which says that nobody can put more cows on the alp than he can feed during the winter on the village territory.

**Usus fructus:** The community member who ceases to use the alp can get no direct compensation for the use value forgone.

**Transfer:** The individual community member can not transfer any of his rights to anybody else. Only the assembly of all community members as a body can decide on the transfer of alp territory to a new owner (today for example to a power company) or to a new use (as a skiing resort), thus changing the resource in it's substance.

**Management:** Kantonal community laws prescribe statutes according to which officials are elected and communal administrations are built up, leaving however a great deal of flexibility. In most of the Kantone the assembly of all residents (citizens) is the main decision making body in all questions of some importance, also on alp matters. The daily management within the frame of the alp-regulations (which are set up by the assembly), however, is in the domain of an elected body of 4-5 persons. They organize necessary

maintenance work, collect fees and penalties, count animals, hire personnel and so on. Major projects of investments and improvements go through the community meeting. Today an ever shrinking part of residents belongs to the group of peasants and alp users. For the decision on some questions that are only of interest for themselves these users may assemble separately, to fix the date of opening the alp, for example.

The second type of common property arrangement advanced here may be called the modern successor of the traditional community type. It is characterized by the fact that the owners of the alp, the community members, are not users any more. Instead, they rent the whole alp to a person who even need not be a member of the community (Type B in Matrix 1).

#### Community Alp Rented (Type B)

Usus: A private renter

Usus fructus: The community, with the assembly having the right to decide on the utilization of profits ( or the covering of deficits)

Transfer: The community, with the assembly as the main decision making forum, just like above.

Management: Partly elected officials, partly the assembly, and partly the private renter.

The third arrangement presented here is the cooperative, which differs from community type organisations by the fact that use and ownership rights are transferable. The cooperative system is not an invention of this century nor is it the preferred

organisation in regions with strong and early involvement in markets (Type C in Matrix 1).

Cooperative Alp with System of Joint Operation (Type C)

Usus: The members can use the alp according to the number of shares they hold and depending on how many animals per share are permitted.

Usus fructus: The individual members may rent shares they do not use to the cooperative, to other members, or to non-members. The assembly of members can decide on renting out the whole alp to a single renter.

Transfer: Individual member can sell, bequeath and give away shares. Only the cooperative as a whole (the assembly of members) can decide on the transfer of the whole alp.

Management: Formed by an elected or rotationally appointed body of 4-5 persons that manages the alp within the phramework of the alp regulations. Major decisions go through the assembly of owners. Where the group of owners differs strongly from the group of users, the latter may have their own assemblies and elected personel to take over certain management functions. The share rights holders are the ultimate source of authority. They elect officials, set up statutes and regulations and are involved in major decisions. They fix the animals per share ratio according to the changing capacity of the alp.

The forth and last type is a corporation alp with dispersed units system (Type D in Matrix 1). Note that this is not an alp belonging to one of the big corporations that exist in the Kantone Uri and Schwyz. The corporation described here has many

features in common with community organisations. What is different in the following example is the system of operation. The system displayed below is a dispersed unit system of operation, where the corporation members use the pasture together (there are no fences dividing the units), with the pasturing of the animals, the milking and so on being conducted by the hut owners individually.

Corporation Alp with Dispersed Units System (Type D)

Usus: Corporation members with hut rights (with a hut right implying the right to put a certain maximum number of cows to the alp).

Usus fructus: Members can rent their hut rights to other members. And they can take cattle for fee from other members if they cannot fully use their hut right.

Transfer: Members can sell hut rights (only to other members). Only the assembly of all corporation members can decide on the selling of the whole alp.

Management: Members with hut rights as a group and individually, renters of hut rights, elected officials, assembly of all corporation members in questions of some importance. The assembly of members sets up and revises statutes and regulations.

All four systems show a high degree of specification of exclusive individual or group property rights, which are internally enforced and backed by the external legal system. Individual transferability is only fully guaranteed in the cooperative alps, and with some restrictions also in the corporations with hut rights. Rentals and transfers authorized by the group are possible in all four systems. All of them show a high degree of institutional autonomy for the group managing the pastures, which

manifests itself in statutes and group-decision making on all matters of importance: fixing the capacity of the alp, fixing dates of opening and closing the alp, determining use rights and modes of their distribution within the group, fixing work duties and/or payments for maintenance work on the alp, creating positions for elected or rotating officials who are responsible for daily management, fixing of charges for members who break the rules and institutionalizing control mechanisms.

The described common property arrangements differ markedly from open access situations, in which no property rights exist and/or regulations for use are missing. In many situations where authors identify common property as the source of inefficiency and resource depletion and propose a conversion to single owner or public control, they actually deal with a situation of open access or - put differently - with a situation that is characterized by insufficient property rights. With their recommendation of single owner or public control they completely bypass real common property in the sense of a fully specified combination of group and individual transfer, use and appropriation rights, which might be an alternative to both single owner and public control. Ironically an author might even suggest public control in a situation where the state already holds parts of the property rights bundle (5), failing to fulfil his task of regulating access effectively, and leaving a group of users severely restricted in the formation of viable group arrangements.

### C. DETERMINANTS OF INDIVIDUAL AND COMMON PROPERTY CHOICE IN SWISS ALPINE PASTURES

In the previous part I characterized common property arrangements in Swiss alpine pastures as a combination of firm and exclusive property rights vested in individuals and in groups. In this part I try to answer the question why common property rather than individual ownership developed in so many cases and has persisted as an institutional arrangement.

In Switzerland, different property rights regimes for land have been known and practised for centuries. Individual and common property are known in the summer alps, common property also exists in valley pastures or arable land, side by side with individual property of the arable, of meadows, of pastures and of gardens. Both individual and common property have been well defined and enforcable rights. A switch from one form of common property to any individual property arrangement, or a switch from one common property arrangement to another (for example, a transformation from community ownership to a cooperative system) was always possible, and actually took place, without changes in the broader legal framework. One may conclude that institutional flexibility in Switzerland is relatively strong compared, for example, to countries where land rights are held by groups and a change to individual property is impossible because the existing property rights regime does not offer land registration and enforcement of individual property rights (see, for example, in Feder and Noronha, 1987). Thus, in Switzerland the costs of change may not have posed unsurmountable obstacles to institutional change in which direction soever. In situations as described by Feder and Noronha, in turn, common property may have been the only alternative, and the property rights regime there is a binding constraint that precludes adaptations into the direction of individual property, although economic factors might press in this direction.

Before I move on a decision has to be made on which forms of individual and common property shall be included in the following analysis of the choice between individual and common property. The overview in part B has given an impression of the variety of institutions that can be subsumed under the terms of individual and common property with regard to summer grazing: An individually owned alp might be used by its owner or rented out, common property might be organized communally, corporatively or cooperatively (as a share rights system); communal, corporation and cooperative alps may be used by their owners, by single

renters of the whole alp, or by a mixture of owners and non-owners. For the present analysis I have chosen the pure forms in which alp property is used by the owners, be it individually owned, cooperative, communal or corporation alps. Concerning common property, these owner-user combinations were the prevailing form in many parts of Switzerland for centuries. And they are the ones that have the interesting features of jointness-in-use and the existence of co-equal use rights, which are the often cited characteristics of commons situations (Stevenson, 1984: 79; Ciriacy-Wantrup and Bishop, 1975: 715).

Let me now come to the analysis of factors influencing the choice of common or private property in Swiss alpine pastures.

### 1. Natural Risks

One very important factor being conducive to common property seems to be the natural environment. In the literature on alp management it is frequently mentioned that single owner alps lie in more favorable regions and in lower altitudes than the commonly owned ones. Single owner alps are also smaller. 54% of all alpine meadows are individually owned, but they cover only 18% of the Swiss alpine pasture area (Werthemann and Imboden, 1982: 78). Netting observed that on common property alps the areas required for effective use are normally larger (which implies lower grass quality), the possibilities of range improvements and intensification are lower, and the variability of yields is greater than on single owner holdings. (Netting, 1981: 68)

In a comprehensive study of property arrangements in the Bernese alps Stevenson analysed the conditions under which individual rather than common property emerges. Among the natural factors included in the test were soil quality and grass condition, surface form (slope), drinking water availability, exposure (compass direction that the mountain side faces), elevation, precipitation, potential for land slides and debris

accumulation. From his results he concludes that areas with better soil, fewer swampy spots, better grass quality and exposure to the sun are more likely to be individual property. Areas with poor precipitation conditions, strong prevailing north and east winds and poor exposure to the sun, in turn, discourage individual property (1984: 259). Elevation, which is mentioned by others as a relevant factor, was not significant in this study.

The importance of natural factors for the choice of ownership structures can also be assessed if one compares alpine pastures and valley land. In the valleys the soils can be put to different uses (pastures, meadows, grainfields, vineyards gardens) and allow intensive cultivation. Netting (1981: 64) observed for the village of Törbel that these farmed lands were privately held, hereditary and marketable from early historical periods on, while in the alpine pastures used by the Törbel citizens common property prevailed.

Natural conditions, thus, seem to exert an influence on which property arrangement is chosen. Nature imposes considerable risks on the peasants in alpine grazing areas: a high variability of yields from spot to spot on the alp and the dangers of avalanches and landslides destroying buildings, fences, grazing areas, paths and roads. It would go beyond the financial scope of a single peasant and his family if they would have to carry the burdens of repair or irretrievably lost grazing grounds. The spreading of risks by the pooling of efforts into a common property arrangement that covers a big grazing area is a solution to this problem, especially in the light of the simple fact that insurance against natural catastrophes was not available during most of the time that alpine meadows existed.

Small scale peasants may, thus, reduce their personal risks by



forming common property arrangements for larger areas instead of holding individual property in small spots. The same effect of neutralizing risks could, however, also be achieved by a sole owner of large alp territory. In the following paragraph I will ask why common property rather than sole ownership of large territories dominates in Switzerland.

## 2. Distributional Considerations

If individual property as an alternative to common property is considered, two alternatives have to be taken into account: the grazing ground could be divided among the same number of peasants who alternatively form the common property group, or the whole area could be in the hands of a sole owner who takes cattle for fee. Even if common property has advantages over multiple ownership, it may nevertheless be inferior to sole ownership, which also allows the neutralising of risks as well as the saving of production and transaction costs, as will be shown below. Why then did sole ownership not develop on a broad scale?

While common property may coincide with subsistence that prevailed even until this century in some remote Swiss regions (Netting, 1981), sole ownership would have presumed the accumulation of capital on the basis of functioning markets. Where this accumulation could not take place, sole ownership could not develop as an alternative.

Furthermore, with common property a large number of small scale peasants had firm ownership rights in summer grazing grounds. In case of sole ownership these peasants would have been forced to secure their summer grazing over market transactions. This could have implied considerable risks if markets had not been enough developed to preclude local monopolist positions of the sole owners. In such a context common property can be seen as a remedy against market power and a means of securing access to a very important productive resource for a large number of peasants.

Sole ownership and common property imply two different distributions of wealth and economic power, with common property no doubt corresponding better to the ideals of the Swiss confederates.

Sole ownership, thus, was not a viable alternative to common property, except in regions that early opened themselves to markets, like Kanton Glarus. Here, where peasantry was not the only way to earn a living and accumulation of capital was possible, sole ownership developed, mostly emerging out of cooperative alps when one member bought the shares of the others (Hösli, 1948: 157/158). Today the securing of summer grazing over markets is no problem any more also in other parts of Switzerland. And the aim of securing access for a large number of peasants becomes less and less important: the number of peasants diminishes, and the remaining ones conduct larger enterprises. This development, which implies distributional changes in the agricultural sector, is also reflected by the changes within the different common property organisations: the owner-user identity vanishes, and where the owners do not need grazing rights any more, they rent out the alp as whole.

### 3. Production Costs

Given the relatively low capacity of a single small scale peasant to raise capital and to mobilize labor for the alp enterprise there is a strong rationale for all peasants to combine their efforts to economize on certain costs that would be higher in a multiple owner situation.

These are the costs of fencing, which, at least for centuries, were considerable. Fences were constructed from wood taken out of the forests surrounding the alps, or they were constructed with stones that were collected from the grazing areas, thereby also improving grass quality. These fences had to be repaired in spring, the wooden ones often were demolished in autumn and newly

erected in spring. With a big and fenceless area instead of a big number of private parcels fencing costs could be considerably reduced both concerning labor and material needed, because there are no fences needed to demarcate property internally. Fences are only needed in places where cattle is in great danger to fall into depth, to demarcate property were two adjacent grazing areas touch each other, and to separate day and night grazing areas. Beyond that common property also allows savings in the construction of paths and roads, which are similarly exposed to destruction by natural forces as fences and also need considerable inputs for construction and maintenance. In the case of a system of joint operation two other factors may be added: economies of scale in the herding of animals and savings on construction costs for the necessary alp buildings, because a smaller number of buildings is needed.

These cost reductions can be achieved in any natural environment, favorable or unfavorable. However, they get even greater weight under unfavorable conditions, since these imply that larger grazing areas are needed for a certain amount of fodder. For a given yield a private owner would have to fence a larger area and, thus, he saves more if he combines his efforts with others than in case of favorable conditions. Note that the savings made with common property could also be achieved by sole ownership.

Today the fencing costs are not of this importance any more. Electrical fences substituted the wooden and stone ones in many places. They are easily erected and demolished.

#### 4. Transaction Costs

In this chapter I ask if it is cheaper to run an alp enterprise under individual or under collective property in the light of transaction costs. The following conditions are assumed to prevail:

- Economies of scale in herding and cost reductions for fences, paths and buildings speak for large open ranges.
- The range that normally exists of a big number of smaller zones in different altitudes displays a high variability of yields and is exposed to natural dangers to a varying degree. Water and forest resources are not equally distributed.
- A single peasant wanting to conduct a viable alp enterprise needs access to water (in different altitudes) and to a forest for construction and firewood (at least this was the case for centuries); he needs to have plots of pastureland in different altitudes so that the herd can progress upwards with the growth of the grass from one Stafel to the next; and he needs paths that allow him to migrate with his cattle.
- Small scale peasantry prevails.

Transaction costs are costs of establishing and protecting property rights, costs of establishing viable organisations, costs of decision making with respect to the use of a scarce resource and of policing and implementing these decisions (Dahlmann, 1981: 116).

Dahlmann states for the common wastelands in the English open field system, that the costs of establishing and protecting collective property rights will be considerably lower than of establishing rights for a large number of individually owned parcels. This holds as long as the community of users is well defined and outsiders can be kept at bay (1981: 117), which is a condition that holds for the Swiss crazing commons. The wastelands are comparable to the Swiss grazing commons. They were common grazing areas for the villagers' cattle, with well-

defined use rights of the single peasant. Normally a herder was hired to care for these animals and to make use of the economies of scale of herding. Thus, with regard to the costs of establishing and maintaining property rights common property has an advantage.

But how about the other costs? In analogy to what Dahlmann has done for the English waste (1980:115-121), but applying it to the special circumstances of alpine grazing, I want to consider a situation in which a large alpine area is divided into individually owned parcels. Given economies of scale in herding and possible cost-savings in fencing and others, it is likely that the owners would join together to negotiate contracts about the use of each other's land, water and forest resources. Each individual owner would have to transact with each and every one of the others to find an agreement on proper compensation for the respective quality of the soil, for possible damages, for the availability of special facilities that are not evenly distributed and for right of way. The costs of these transactions would be substantial, and there is a high probability that the owners will create some kind of an organisation to economize on these costs. Taking into account the high costs that an individual following a hold out strategy may inflict onto other parties, it is likely that some kind of majority rule will be established by which the owners decide on the fees for grazing and on compensations for damages. The organisation created will closely resemble the common property arrangements and will have comparable costs of decision making. The crucial difference between a common property arrangement and a multiple owner organisation lies in the costs of setting up and preserving a joint decision making institution:

- The multiple owners will have to establish some kind of refunding mechanism in case they agree to establish a charge per animal that is oriented at the value of the grazing area as a whole. This refunding mechanism is necessary to compensate the peasants according to the quality of their

spot. If this does not take place, owners of better quality spots have a lower incentive to participate. In order to be able to establish this mechanism (or to fix fees directly for each spot as an alternative), the value of each parcel has to be estimated and fixed. This will rarely happen without debate and quarrel. In the case of common property no refunding mechanism is necessary, since fees can be fixed on the basis of the whole grazing area's value.

- With common property none of the co-owners has an identifiable piece of land. He never is in the position to draw his property away from the use of the others. In case of multiple parcels an individual may want to hold a bargaining position towards the others and try to appropriate some of their gains by threatening to withdraw. In this respect, common property is conflict reducing and cheaper (Dahlmann, 1981: 119-120).

There is another question that has to be solved: Will the establishment of individually owned parcels and related arrangements as suggested above eliminate the problem of overstocking? The answer is clearly no. Each individual farmer will have a strong incentive to put additional animals onto the pasture, for the costs of these additional animals would be borne by all the others (Dahlmann, 1980: 120-121). It would be necessary to control and regulate access just as it is the case with common property. The setting up of these regulations would again be rather complicated in comparison to the common property situation.

The list of advantages of common property becomes even longer, if the transfer of property rights is considered. In a common property situation the transfer of individual rights takes place without the grazing area being diminished. In a cooperative system, the individual has the right to sell, to bequeath, or to

give away his share. In the case of community and corporation alps some give up their rights and others take their place. Imagine for a change the difficulties that could emerge in a multiple ownership situation in case of a transfer. Depending on the statutes, of course, the situation might be similar to the withdrawal of a co-owner from a small industrial firm that confronts the rest with bankruptcy, or with a successor they do not know and who might cause major disruptions in the organisation.

Taking these arguments together, a multiple owner situation for alpine grazing land is very unlikely, given the assumptions made above concerning natural conditions as well as the needs that have to be met for each and every peasant. If such a situation ever existed, it would have tended to convert into a common property situation in which the individuals firmly invest parts of their property rights bundle, preclude hold out strategies and reduce conflicts.

Let me briefly come back to the question of sole ownership as an alternative to common property or multiple ownership. Sole ownership clearly has some advantages over both common and multiple private ownership with regard to transaction cost, if the conditions set out above are met, which pertained to the existence of well functioning markets (see page 16-17). In this situation the costs of using the market mechanism for buying and selling use rights may be lower than the advantages of sole ownership which lie in reduced costs of organisation: decisions can be easily and quickly made without formal procedures and without lengthy discussions. The fact that a sole owner has to hire and monitor personnel for work that could otherwise be done by perhaps stronger motivated owners does not really count, since today on commonly owned alps work duties are more and more substituted by pecuniary payments and the necessary work is done by hired personnel. Nevertheless, common property alps still exist and there are no signs that this might change, although the economic and social conditions surrounding them have been

changing dramatically within the last hundred years. Maybe this is partly due to the fact that they have advantages with respect to raising capital (23).

#### D. EFFICIENCY ASPECTS OF COMMON PROPERTY

Having shown that the choosing of common property arrangements may be the consequence of optimization behavior within a given natural environment and under special economic and social conditions, I now want to address questions of efficiency. Related statements in the property rights literature postulate effects of common property on the capital/labor ratio, on output, on the organisation of inputs, on production techniques and on investments (De Alessi, 1980; Cheung, 1970; Feder and Noronha, 1987).

The following analysis deals with investments which are said to be lower in commons situations, because their benefits are spread over many, which might reduce the individual's endeavor to contribute labor, capital and time for necessary investments. "Thus, since the individual lacks exclusive rights to the output of any investment he might make on the commonly owned resource, he has less incentive to invest this way. ...Common property typically implies reduced investment on the commons... ." (De Alessi, 1980: 6). Many authors who argue along this line have open access situations in mind (Cheung, 1970: 52). The question here is, whether a lack of incentives to invest can also be attributed to common property in the sense I have developed it in this paper, i. e. to a situation where well defined, exclusive individual and group rights exist.

As was pointed out above, there are differences between communal and corporation alps on the one side, and cooperative alps on the other side concerning the transfer of individual shares. The members of the communities and corporations cannot individually transfer any right that they have in the resource, with one



exception: if a dispersed units operational system with tradable hut rights exists, use rights may be at least tradable within the community or corporation. Otherwise corporation and communally held alps closely resemble the Yugoslav Labor Managed Firm (LMF) in its basic structures, and for this type of organisation a lack of incentives was stated by many authors (e.g. Schlicht and von Weizsäcker, 1977; Furubotn, 1980; Bjuggren, 1980). Both the owners of the LMF and the members of communities and corporations have ultimate authority in deciding on the use of the firms assets or the alpine meadows respectively. Both cannot transfer the rights they acquired by investing into the enterprise. This means that the worker/peasant must stay in the organisation to have a claim to the created income stream or to the use units available on the alp. No absentee ownership exists, and limits are set on the portion of the income and use-unit stream that a single member might acquire. And the member cannot acquire the more benefits by investing more. In the case of communal and corporation alps, his grazing rights are limited by the needs of the others.

The lack of transferability will lead to the inability of the individual member to capitalize future income streams which, in turn, has negative effects on the degree of self-financing of investments and/or on the endeavor to contribute labor and to take personal risks in case that outside credit is taken.

These disincentives are the stronger, the shorter the time period is that the worker/peasant plans to be a member of the organisation. The shorter the time horizon, the less benefits the individual member can reap for himself especially if an investment pays only over a long time period. From this it follows that the actual disincentive was not of great importance for Swiss communal and corporative grazing, at least as long most of the peasants knew that they would stay in their village for their lifetime and that their children would take over what they left behind when they died. Nowadays, however, more and more peasants leave the agricultural sector and leave the village

where they were born and have use rights. They do not get any compensation when they leave.

In the cooperatives (share rights systems) this is different. A member deciding to stop use can either rent or sell the share to another member or to a non-member. In both cases he can capitalize improvements that were made with his contribution. Thus, I expect that today, when long time horizons of either using the alp or staying in the village were one has use rights cannot be assumed for the majority of the people any more, differences exist between communal or corporation and cooperative alps with respect to the amount of investment and the profitability of the alp. Cooperative alps are likely to be more efficiently managed than communal or corporation alps.

Yet, while there may be good reason to believe that in communal and corporation alp organisations the amount of investment does not always meet efficiency criteria, this should not lead to the conclusion that these organisations are not better than open access. There are at least two factors that may contribute to a much better performance of these organisations than would be expected from open access situations. The first one is that community members, especially in small villages, are in a position of relatively strong residual claimants, due to the strong position of the assembly of community members in the communal decision making process. Having to decide on financial matters, on investments, on tax burdens and on communal benefits, the community members may be driven to consider the long run efficiency of alternative projects, the more so, the longer they want to be members of the community. The second point refers to the fact that transfer is not per se precluded and, thus, the individuals forming the assembly have to calculate alternative uses and the values attached to the resource by potential buyers and renters collectively. From the lack of individual transfer rights it does not follow that there are no incentives for efficiency oriented investments at all. The level of investment may be lower than in a system with individually

transferable rights, but they are certainly stronger than in a situations of open access.

#### E. CONCLUSIONS

Common property arrangements in Swiss alpine pastures are characterized by a firm and well-defined set of use, appropriation, transfer, and management rights. Variations among different types of common property result from differences in the attachment of parts of the property rights bundle. Rights may be vested in the common property group, in individual group members, or in non-members if they are ready to pay for them. A major distinction between different types can be made with respect to transfer and appropriation rights. While in the cooperatives individual members may appropriate returns and transfer ownership by renting or selling shares, these rights are vested in the assembly of all owners in corporation and communal alp organisations. There is, thus, reason to believe that the cooperatives with their individually transferable shares are superior to both of the other types as far as incentives for efficient investment levels are concerned.

The emergence of these common property arrangements and their stability over centuries in which social and economic conditions changed considerably may be explained by the predominance of relatively unfavorable natural conditions, by possible savings of transaction and production costs, and by the will to secure access to very important productive resources for large numbers of small scale peasants. Common property does not seem to be a historical accident, but the result of optimization behavior, with individual property being always present as an alternative. Not even today there are signs of a broad scale conversion of these alp organisations to individual ownership. However, internal organisational adaptations have been taking place, which reflect the diminishing identity of owners and users, the changing needs of the peasants and new modes of operating alp enterprises.

## FOOTNOTES

(1) For an overview see (Ostrom, 1988), and Schlager and Ostrom (1987).

(2) Examples of successful common property management are described for example in Ciriacy-Wantrup and Bishop (1975), and in the Proceedings of the Conference on Common Property Resource Management (1985).

(3) For an overview see Stevenson (1984).

(4) Details about the different common property arrangements can be found in Froedin (1941), Geiger (1950), Hösli (1948), Gruenenfelder (1941), Meylan, et al. (1973), Netting (1981), Odermatt (1981), Weiss (1941), Werthemann and Imboden (1982). An overview of institutional details in English language is given by Stevenson (1984).

(5) That common property organisations seem to have better opportunities of raising capital than individual owners was mentioned to me by an official of the Kantonale Alpkommission of Glarus.

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