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**CHALLENGES OF PASTORALISM:
Exchange of innovative experiences for a
sustainable development in mountain areas.**

Study realised within the call for projects from the
French Ministry of Agriculture and Fisheries

"Development and Atractiveness of Rural
Areas. Supporting Initiatives under the
French Rural Area Development Act".

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List of abbreviations

AFP = Association Foncière Pastorale / Pastoral Land Association
PDO = Protected Denomination of Origin
GP = Groupement Pastoral / Pastoral Association
DATAR = Délégation à l'Aménagement du Territoire et à l'Action Régionale / Delegation for Territorial Planning and Regional Action
DFCI = Défense des forêts contre les incendies / Defense of forests against wildfires
DIACT = Délégation interministérielle à l'aménagement et à la compétitivité des territoires / Agency for Town and Country Planning and Regional Development
HNVF = High Natural Value Farmland/ Terrain à Haute Valeur Naturelle
IACS = Integrated Administration and Control System/ Système d'Administration et de Contrôle Intégré
ICHN = Indemnité Compensatoire de Handicap Naturel (Compensation for Less Favoured Area)
MAE = Mesure agro-environnementale / Agri-environmental measures
CMO = Common Market Organisation
NGO = Non-Governmental Organisation
CAP = Common Agricultural Policy
PCO = Ovine Premium
PDRH = Plan de Développement Rural Hexagonal / Hexagonal Rural Development Plan
PHAE = Prime Herbagère Agro-Environnementale / Agri-Environmental Fodder Premium
PLU = Plan d'Occupation du Sol / Land Use Plan
PMBE = Plan de Modernisation des Bâtiments d'Élevage / Modernisation plan for Livestock Quarters
SAFER = Sociétés d'Aménagement Foncier et d'Établissement Rural / Societies for Land Development and Rural Enterprise
SCOT = Schéma de Cohérente Territoriale / Territorial Consolidation Plan
GIS = Geographical Information System
SUAIA = Service d'Utilité Agricole Interchambre d'Agriculture Pyrénées / Service for Inter-departmental Agricultural Benefit of Pyrenees Agriculture
SUAMME = Service for Agricultural Benefit of Mediterranean Mountain Livestock
UP = Unité pastorale / Pastoral Unit

Summary

This document concerning the challenges of pastoralism in Europe was carried out by Euromontana (European Association for the Development and Cooperation of the Mountain Regions) in 2007 within the framework of a tender notice of the French Government's Agriculture and Fishing Department.

Pastoralism is a traditional activity of extensive animal breeding, practiced in particular in the mountain regions. This form of breeding allows the development of territories with low agronomic value (difficult to access or not mechanisable), and thus to maintain an economic activity in these zones. Pastoralism also has the advantage of maintaining open landscapes, thus playing a role in the development of tourism and biodiversity, as well as the prevention of natural disasters. However, the continuation of pastoral activity is threatened by various difficulties: difficulties related to the economic context, difficulties in finding sufficient land to maintain the herds, difficulties in effectively and consistently organising the pastureland of the herds in the context of the seasonal use of the land with strong environmental issues and the pressure exerted by other users of the pastureland.

The aim of this document is to show some examples and propose some solutions already used in several European countries concerning three topics related to pastoral activities: namely, the land pressure in the valleys, the management of mountain pastures and the support extended by public authorities. Far from having drawn up an exhaustive list, what is presented is really a selection of case studies on the three subjects.

After having presented the definitions and legislative framework of pastoralism in the first part, the document treats each of the three topics while attempting to describe the issues, the current situation and the solutions under consideration in several European countries and at several levels. One can note that land pressure and management of the pasturelands are not problems whose regulation is provided for on a European level. On the contrary, it is rather the principle of subsidiarity which applies. It is therefore up to the States or Regions to develop and especially to implement the necessary tools. The management of pasturelands is often dealt with locally and usually obeys rules developed over centuries, which could then be written into national legislation. The support for pastoralism by the public authorities is, on the other hand, much more dependant on European legislation, since the measures available to the Member States enter into the framework of the Common Agricultural Policy. However, it should be noted that the Member States have manoeuvring space and a variety of ways in which they can use this support. As for the States which are not members of the European Union, they are free to choose the support implemented.

The last part of the report brings together ten examples found in Europe and related to the three topics presented. Thus, the case of the Spanish Land Bank of the Province of Asturias, the town-planning of the province of Trento in Italy and the Management plan of the Rural Areas by the Luchon Valley canton in France provide some answers to the problem of land pressure in the valleys. The following examples present different systems of pastureland organisation: management of the communal land according to users' rights (*Usi Civici*) in the Province of Trento in Italy, the method of organisation for the use of the common pastures in Romania and the operation of the Scottish system of *crofting*. The economic analysis of the management of mountain farms in Austria has been added to supplement the list of the case studies on this topic while showing under which conditions the use of mountain pasturelands has an economic component. Finally, the last case studies present the economic supports to pastoralism in Switzerland, and in particular in the Canton of Valais and in Norway, in the County of Oppland, as well as the analysis of the impact of tourism in the Austrian mountain pasturelands. The ten experiments presented were developed in a local context and are thus not reproducible "as they are" elsewhere. The hope is that these examples come as a support and source of inspiration for the people working on one of the three topics studied in this document. For more information, the addresses and contact numbers of people or organisations are given for each example.

Introduction

The main objective of this document, realised within the framework of a French Ministry of Agriculture and Fisheries tender notice, is to share experiences of innovative aspects of organisation, legislation or technology. In this spirit, this document does not want to propose an exhaustive inventory, but to collect some points from actual Community legislation and some innovative ideas encountered in other regions of Europe. This collection will then be able to constitute one of the tools to support the reflections carried out at the national or local level for the maintenance and development of pastoral activities in European mountain regions.

Some difficulties which came up during the study are to be mentioned, due to the poor availability of literature on the subjects in which we were interested. Indeed, most of the players working in the field of pastoralism are practical people who often do not have the time necessary to make full use of their experiment. Therefore, these people's sources of information have few written documents available concerning their work and the distinctive pastoral innovations which they encounter.

All the same, there exist a certain number of studies on pastoralism. However, many of them are centred on the link between pastoralism and bio-diversity. One can also find a certain number of references describing pastoral practices or transhumance, like the impact of pastoralism as a factor allowing for the reduction of natural hazards. On the other hand (except in the legislation), some problems (and in particular problems of land access), are rarely tackled. It is thus necessary to document these subjects in order to approach the authorities concerned and to study the legislative documents referring to them. Legislation being generally available only in the national language, the possibility of analysis is stymied by the obstacle of language.

In addition to the difficulties of obtaining documentation on the subjects which we wanted to cover in this study, it seems important for us to underline another point. All the players whom we questioned for the production of this study insist on the importance of pastoral activity and its positive impact on the region. But the majority also agrees on the threats which weigh on and put in jeopardy the longevity of pastoral practices. In particular, the recent changes of the CAP are feared because it seems to the people involved in the management of pastoralism that pastoral distinctions are not taken into account, and that the support which could profit stockbreeders is slowly being reduced, both because the amount of the support available decreases and because less support is intended for extensive production activities in general or pastoralism in particular.

Whereas ecology and environmental questions take more and more space in politics and the media, agricultural activities having a positive or neutral impact on the environment receive support only at the price of additional efforts. On the other hand, sizeable budgets are devoted to help the most polluting farmers reduce the impact of their activities. The observation of these facts then raises the question of representation of the stockbreeding pastoralists: if the means employed to support pastoral activities are considered to be insufficient, an explanation could be that the stockbreeders, by the nature of their activity or their traditions of organisation, are not well represented in comparison to other agricultural branches and, consequently, their needs are not sufficiently taken into account. This assumption could be confirmed only by a complete study of the question.

Part 1: Context, topic and aims of the study

Pastoralism in various forms is found on every continent. This form of extensive breeding has particularly been developed in regions of low productivity. In Europe, forms of pastoral activity are thus present in most mountain ranges and the various issues related to them were described on several occasions and in many countries (see the map of the European mountain ranges in appendix 1 and a map of the places of large transhumance in appendix 2). Pastoral practices are thus largely recognised for their various roles and the benefits which they bring.

Pastoralism is an activity with multiple issues¹ for the mountains and the mountain dwellers. The economic issue is certainly important, not only because this form of extensive breeding is the stockbreeders' livelihood, but also many promotion and economic development activities of quality, agro-alimentary products stem from pastoral practices. Therefore, a well-managed, pastoral activity, with an adequate availability of pastureland, generates benefits which exceed the solely economic sector: considering the influences of pastoralism, the issues of this activity are also environmental (many studies have shown the positive role played by extensive breeding for the maintenance of bio-diversity in our mountains), landscaping (the grazing of the animals allows open areas to be maintained and thus to have an alternation of meadows and forests, very appreciated by tourists), and also relates to natural hazards (well maintained pastures play an important role in the prevention of wildfires, avalanches, landslides and floods).

However, in spite of these advantages, pastoralism today has to face many difficulties which threaten its long-term survival. These difficulties vary in nature: in this study we will elaborate on three of them and offer examples of solutions found. For each one of these three problems, we will present in detail examples of solutions or plans which were developed in various European countries. These three types of difficulties, chosen in agreement with the French Ministry of Agriculture, are as follows:

- the areas threatened by urbanisation in mid-altitude areas and valleys;
- the systems of management of pastoral areas in mountain regions;
- economic issues and support from public authorities.

We will thus begin the report of this study by presenting what is pastoralism in Europe. We will identify in particular the various types of practices before briefly presenting the origin and current reality of European pastoralism. In the second part, we will examine in detail the three problems stated previously, with the issues, the current situation, and the existing solutions for each of them. Lastly, the third part of this study will be made up of case studies collected in Europe: each one of these cases will offer some basic elements of reflection on the solutions developed by various European countries in answer to the three topics.

¹ Inter-departmental Commission on Pastoralism - Report to the Minister, 2002

Part 2: Pastoralism and its management framework at the European level

1/ Definitions

1.1/ Practices

Pastoralism is a form of comprehensive stockbreeding practiced all over the world. The practices vary widely, and different terms are therefore used which we will clarify in this section. However, since our study relates only to European mountains, the definitions which we present here concern European practices. We will not take into account the forms of pastoralism found on other continents.

a/ Pastoralism

On the international level, pastoralism is defined in the framework of the WISP Programme (*World Initiative for Sustainable Pastoralism*) as "an extensive breeding of ruminants, characterised by a certain form of mobility. Pastoralism very often refers to the extensive breeding of herds of various species (cattle, sheep, goats, camels, horses) requiring periodic migration to reach the pastures".

In the French context, it is interesting to note that the French Association of Pastoralism proposes a very open definition of pastoralism. It describes it as being "a very original production activity which exists only by a close and respectful relationship between men, the land and the herds. Pastoralism is moreover closely dependent on climatic variations. It represents a unique form of development and management of natural areas using little fossil fuel"¹. This very broad definition insists on the importance of the relation between man, the animals and the land used. In the law of development of rural territories (article L113-2 of the rural code supplemented by the LDTR of February 23, 2005²), the mode of land use is specified: "Pastoral area consists of pastures of extensive and seasonal use".

In the European context, one finds this concept of extensive use of pastures or rangeland in several definitions (BLENCH R.³, European pastoral projects⁴ and Pastomed⁵). One thus retains from these various definitions that pastoralism is a stockbreeding activity in which **natural spaces** are used in an **extensive way with a more or less substantial mobility of the herds**.

The term 'pastoralism' includes a very large variety of practices; various categories are then identified. Although one can establish classifications according to the species of animals raised, land used or other criteria, it is generally according to the movements of the herds that the distinctions are established. We will thus clarify in the following paragraphs what one understands by nomadism and transhumance. We will also clarify what is agro-pastoralism and sylvopastoralism.

b/ Nomadism

Nomadism defines a breeding method in which herds and families move according to the fodder possibilities of the areas. Since they do not have a permanent place to live, the families take their belongings with them. Nomadism is not practiced very much in Europe, although one can still meet certain families of practitioners, in particular among the Sámi in northern Scandinavia⁶ (reindeer breeders). In Greece, the Sarakatsani practiced nomadism, breeding goats and sheep until the 1970s; they gradually became sedentary, currently practicing

¹ L'Association Foncière du Pastoralisme website: www.pastoralisme.org

² Law no. 2005-157 of February 2005 regarding the development of rural areas (French law)

³ Pastoralism is defined as the use of extensive rangeland for livestock production.

⁴ The pastoral systems concerned with the project are generally characterised by the grazing of domestic animals with low density in vast "open" zones mainly dominated by semi-natural vegetation. This semi-natural vegetation provides most of the fodder necessary for the animals throughout the year.

⁵ "Pastoralism is a traditional activity of stockbreeding which is based on the use of pasture in a variety of natural spaces".

⁶ <http://www.regjeringen.no/>, <http://virtual.finland.fi/netcomm/news/showarticle.asp?intNWSAID=26473>

only transhumance [ISPIKLOUDIS I., SIOLIOU M.K., PAPANASTASIS V.P. 2004]. We will therefore not dwell on the problems related to this form of pastoralism in this study.

c/Transhumance

BLENCH R. describes transhumance as being "the regular movement of herds between fixed points to exploit the seasonal availability of pasturelands." The herds will be taken for a given period at such a distance so that returning daily is impossible. The stockbreeders will then live for this period with their herd in a hut or a secondary farm, or regularly travel between their distant farm and these pasturelands to watch over their animals. The main difference between transhumance and nomadism lies in the fact that, contrary to the second form of pastoralism, the stockbreeders practicing transhumance have a permanent dwelling.

According to the method and the season, various types of transhumance are identified:

- **The large transhumance (summer):** long distance, summer migration (sometimes several hundred km). Coming from low altitude areas, the animals are led to mountainous regions where they will stay for part of the spring, the summer and the beginning of autumn. Transport can be by foot, by truck or by train. The large transhumance is practiced primarily for sheep in the Mediterranean region (see map in appendix 1).
- **The small transhumance or local transhumance:** summer migration of the animals for short distances: going up to mountain pastures, "pendulation" in Romania ("Pendulare" or "Mica transhumanta" for small migration in Romania), "trastermitancia" in Spain. Migration is often a vertical migration, from the valley where the farm is located and where the animals winter, to the higher, but closer, zones. The distance is shorter than for the large transhumance: not more than 20 km. The period spent at a higher altitude is called the period of mountain summering, and the animals concerned (although generally cattle, sheep or goats), can also be from other species.
- **Winter transhumance:** migration of the herds (especially sheep) towards regions of low altitude, in particular towards the coastal regions, where they will spend the winter. One finds livestock practicing winter transhumance in the Mediterranean regions, as well as in Romania.

The distinction between nomadism and transhumance being made, it is good to clarify that many stockbreeders practice what one could describe as **sedentary pastoralism**. The animals are then high up on widespread grassland or rangeland, all areas used being integrated into the farm and not requiring seasonal migration.

Diagrams presented in appendix 3 illustrate some of the practices of transhumance adopted by the stockbreeders.

Pastoral activity can be associated with agricultural activities or forestry. The following paragraphs clarify the framework of agro-pastoralism and sylvopastoralism.

d/ Agro-pastoralism

Agro-pastoralism refers to all pastoral and agricultural practices. One can speak about agro-pastoralism to describe the agricultural activities of an area if pastoral and agricultural activities are found there at the same time. In the context of a farm, agro-pastoralism¹ characterises the fact that farmers, in addition to their activities of pastoral stockbreeding, tend agricultural land.

e/ Sylvopastoralism

In the introduction to their brochure, GUERIN and MACRON² define sylvopastoralism, as "the combination of forestry and pastoral activities in the same space." Sylvopastoralism is thus a form of economic development of the land and forests (rangeland and natural forest) by pastoralism. In France, it is practiced mainly in the Deep South.

¹ BLENCH R.: "Agro-pastoralists can be described as sedentary pastoralists who cultivate enough land to nourish their families thanks to their harvests. The agro-pastoralists thus hold rights related to land, work themselves or hire workers to cultivate their land and grow food. Although cattle remain an invaluable asset, the herds are on average smaller than in other pastoral systems, perhaps because the agro-pastoralists do not rely solely on their cattle and depend on limited pasture space around the villages, which can be reached in one day. "

² Stockbreeding Institute, 2005, Sylvopastoralism: keys of success, Stockbreeding Institute, Paris, 78p.

The advantages related to this practice can be:

- the search for a techno-economic balance at the level of livestock farms or forest management. It is actually an interesting solution since the pasture of a forestry plot, once it is thinned, makes it possible to keep it clean and thus support the growth of trees. At the same time, access to these places where the trees provide shade can be an additional interesting fodder resource for the stockbreeders, in particular in Mediterranean regions where the summer scorches the pastures. [DOREE A., 2000].
- the products (wood energy and timber);
- the impact on the scale of the region (maintenance of the land, fight against wildfires). Within the framework of the Defence of the Forest against Wildfires (DFCI) in particular, contracts can be signed between public authorities and stockbreeders to maintain the cleared firebreak zones or to limit the undergrowth, a factor in the spread of wildfires (an example of the "fuel cut-off" network in the Mediterranean area)¹.

Briefly...Definitions used in this study:

Pastoralism is a stockbreeding activity in which natural spaces are used in an extensive and seasonal way.

According to the migration of the herds, one distinguishes:

Nomadism: pastoralism with migration of herds and families not attached to a particular dwelling place

Transhumance: pastoralism with seasonal herd migration. According to the case, one speaks of *small* or *local transhumance*, *large transhumance* or *winter transhumance*.

Sedentary pastoralism: pastoralism without significant migration of the herds.

If activities other than stockbreeding are associated with pastoralism, then one speaks about:

Agro-pastoralism: association of pastoral and agricultural activities

Sylvopastoralism: association of pastoral and forestry activities in the same location.

¹ See the SIME site: http://simelr.free.fr/ACTUS/article.php3?id_article=23

1.2/ Areas of pastoralism

The locations used by the stockbreeders are defined according to altitude, the type of vegetation (fodder resource) and availability of land. The diagrams presented in appendix 3 illustrate the diversity of locations used.

These locations can be held indifferently as private assets (belonging or not to the stockbreeder), municipal or sectional (land belonging to a section of a municipality: village or hamlet), or public.

a/ High altitude and medium altitude grazing land

It is in particular land used in summer by the stockbreeders practicing large and small transhumance. One speaks about **pastures of medium altitude** for those located between 600 and 1,000m (the Vosges, the Jura and the Massif Central in particular), and of **high altitude** for those beyond approximately 1,000 m. Several terms are used according to the region: in France we would speak about *alpage*, *estive*, *haute-chaume*, *montagne* depending on the region.

After a certain altitude, the ruggedness of the climatic conditions prevents the growth of trees. Beyond this limit, the land remains naturally covered with herbaceous vegetation, even in the absence of pastureland for the animals. On the basis of this criterion, one can therefore differentiate between:

- the **mountain meadow** [MASSON N, FLEURY P., 2000]: "a meadow is land covered with grass producing fodder for domestic animals. In mountainous areas, the meadows are generally permanent, i.e., they are never ploughed. The regular practice of cutting and/or grazing prevents the growth of shrubs and the return of the forest. The meadows seldom exceed the lower level of the sub alpine stage, i.e. approximately 1,800 m."
- the **high altitude prairie** [MASSON N, FLEURY P., 2000]: "a prairie is ground covered with grass shorter and denser than a meadow. In high altitudes, because of grazing by the animals (but also because of the tougher climatic conditions), the meadow is gradually replaced by the prairie. Up to 2,000 m, the presence of a prairie requires pasture to prevent the establishment of ligneous plants. At the alpine level, above 2,200 m, where trees do not grow (even in the absence of human and animal intervention), the vegetation remains on the level of a prairie. "

Altitudes given here are valid for the alpine range. According to the various mountain ranges, the boundary between the meadow and prairie is drawn at different altitude.

These spaces are not used solely by seasonal migration stockbreeders; sedentary farms can also be located in these areas.

Categorisation of the pastures according to their physical characteristics

In Spain, in the Asturias, the stockbreeders define various types of pastoral areas according to the quality of the land: thus, they distinguish the *xerros* which are "zones where grazing land of excellent quality are intermingled with rocks" on the one hand, and on the other hand the *vegas*, which are "naturally very fertile land" and form "vast zones of pastures with a more pleasant landscape than the *xerros*"¹.

¹ The conservation of the Picos de Europa following the return of traditional pastoralism, J. IZQUIERDO VALLINA. Introduction and translation: B. Besche-Commence, 14 p.

b/ Intermediate zones or inter-seasonal units

The mid-altitude areas are located at altitudes lower than those of the high altitude pastures (In the case of the (AC) Pyrenean Barèges-Gavarnie¹, the altitude of the intermediate area is described as between 1,000 - 1,500 m). In the case of migration stockbreeding, the intermediate zones, so called zones of "open barns" in the Pyrenees, can be used in spring or autumn. A stockbreeder whose farm is located at a low altitude and who practices transhumance will thus be able to leave in spring to use an intermediate area before joining the high altitude pastures for the summer, and then descend again in autumn by making a stop in the intermediate area.

This academic case is, however, only one of many possible cases: some migration stockbreeders do not use an intermediate area, others remain the whole year in the intermediate area and use different sites at these altitudes (meadows, undergrowth, rangeland). All types of situations are possible.

Places of transhumance.

In France, one calls a **pastoral unit**² (UP) a prairie consisting of a geographical unit of at least 10 ha at a stretch. The UP is generally located above the permanent habitat and agricultural zone. It is grazed without the daily return to the farm (more than half an hour's walk), only part of the year (for reasons of altitude or climate), by the same herd or the same group of herds, whatever the nature of the landowners.

c/ Valleys and zones of low altitude

Just as in the case of high altitude and intermediate zones, breeding farms can be established and make use of the different types of terrain and vegetation found there.

In the case of small and large migrations, it is in these valleys and areas of low altitude that the farms are established. It is also in low altitude areas that the herds will be taken for the winter migration.

Pastures close to the villages or distant pastures

Some systems of pastoralism define differences in pasture management according to the distance of the grazing land from the village. Thus, in Romania, one calls the pastures near the village "*izlaz*"; these are communal, but are used individually. On the contrary, the "*pasuri*" are the higher, more distant pastures; the village animals gathered in a common herd will be brought there. In Scotland, one also finds a difference in management there between the distant, common pastures where the sheep feed in freedom, and the land near the village which is allotted to the stockbreeders individually.

d/ Rangeland

Rangeland is characterised by the vegetation that one finds there. The definition included in the prefectural decree n° 2005-143-18³ of Ardeche stipulates that "it is a surface which can seldom be mechanised, wooded or not (at least 33% percent grass), which can have several layers of vegetation (grass, undergrowth, trees). It is primarily used for grazing, but with low productivity, offering varied food resources, and can occasionally be worked on in addition to grazing (clearing of the undergrowth). "

¹ Decree of September 15, 2003 concerning (AC) "Barèges-Gavarnie" published in the J.O. 218 of September 20, 2003

² SCEES Definition (Service Central des Enquêtes et Études statistiques / Surveys and Statistics Service)

³ Available on http://www.ambroisie.info/docs/Arrete_Ardeche_DDAF.pdf

Various types of rangeland can then be distinguished according to the ratio of the various types of vegetation present. This concept is specified in the DOCUP Midi-Pyrenees 2000-2006 {DOCUP Objective 2 Midi-Pyrénées 2001-2006}: thus one speaks about "prairie" if the herbaceous layer is predominant, of "moor" when the land is relatively overgrown, and of "wood" starting from a covering of more than 25% of the ground by trees.

Rangeland is used a lot in the Mediterranean area, in particular for sheep breeding.

2/ Brief presentation of the history of pastoralism and current practices: the issues

2.1/ Occurrence and evolution of pastoral practices

Pastoralism in Europe has a tradition which in certain regions goes back 10,000 years. Thus, in Scandinavia, studies have shown the occurrence of pastoral practices from the Viking period [REINTON L., 1969]. In Spain, archaeologists found traces of the exchange of cattle between Iberian tribes. The first rules related to the migration of cattle come from the time of the Visigoths (5th century) [GARCIA MARTIN P.,]. The PASTORAL project¹ points out that in Crau (Southern France), one observes sheds for sheep dating from the Roman time. In Romania, the high pasturelands have been used by domesticated herds for more than 800 years.

Authors [DIGARD J.-P., JUSSIAU R., MONTMEAS L., et al., 2001] indicate that in the Middle Ages, in France, there was a strong increase in breeding activity, which was accompanied by significant deforestation. The practices of common grazing land, i.e. the right to graze one's animals on the slopes, in the wastelands or woods then developed, thus making it possible to utilise available grazing resources in the best possible way. The crises at the end of the Middle Ages (wars and epidemics) put this increase in breeding temporarily on hold, resuming again at the end of the XVth century.

With the development of stockbreeding, rules of use were thus established, gradually and locally, in all the pastoral areas.

In one of its working papers going back to 1998², the DG Agriculture of the European Commission acknowledges that the agricultural and European rural landscapes were very often shaped by pastoralism: 'the marshes, mountain pastures, steppes and virgin lands which remain in Europe take their character from extensive pastoralism.'

According to the European study 'The Nature of Agriculture' carried out in 1995 [BEAUFOY G, BALDOCK D., CLARK J, 1995] the area grazed in Europe could exceed 30 million hectares. The Iberian Peninsula alone represents 3 million hectares. In Central and Eastern Europe almost a third of the Carpathian Mountains are covered by semi-natural meadows where traditional pastoral systems persist.

2.2/ Multi-functionality of pastoralism and difficulties encountered

Thus, these very ancient pastoral practices have a paramount role to play in stockbreeding and the territorial development of these agricultural regions which the mountains are a part of, and which are subject to strong natural constraints (slopes, altitude, climate). **These systems of production respond to the principles of multi-functionality of the 21st century** European model of agriculture, with pastoralism having the following functions³:

- **Economic:** pastoralism is primarily a production activity: the main products are beef and veal, sheep meat and milk production. Many stockbreeders have also tried to gain recognition for local products by developing official labels of quality (PGI, PDO, denomination "mountain").
- **Environmental:** preservation of the bio-diversity of fauna and flora. By maintaining open spaces alternating with more wooded areas, pastoralism encourages a diverse environment. This diversity of habitat is favourable to the development of many species.
- **Landscaping, Cultural and Touristic:** pastoralism shaped the landscapes in the areas which it uses and gave birth to the development of a specific culture, with an architecture, an inheritance of traditions, etc., of its

¹ PASTORAL project, Information note1

² VI/7655/98 Working Document of the DG VI Commission - State of the Regulation Implementation (CCE) NO. 2078/92 Evaluation of Agri-Environmental Programmes

³ See appendix 1

own. This heritage profits the promoters of tourism who can propose activities revolving around the landscape (excursions, nature camps, etc.) and the pastoral culture (festivals of transhumance, theme tours, etc).

- Prevention of natural risks: The preventive role of pastoralism in natural risk management (fire, avalanche, landslide, erosion) is also beneficial to society.

Pastoralism and bio-diversity

The European Research Project: Transhumount (5th PCRD)

In Europe a considerable amount of work on pastoralism and its multi-purpose role exists, but we will not devote ourselves to this topic in this document. We can, nevertheless, mention the Transhumount Research Project (5th Master programme of research and development of the European Commission).

This one and a half year programme, (which ended in June 2004), had as an objective to learn more about the link between transhumance and management of Priority Habitats (habitats in danger of disappearing in Europe, in particular those protected within the framework of the Natura 2000 directives), and to present recommendations for a closer consideration of these links in political decision-making.

The results of the Transhumount Project are presented in the book "Seasonal Migration and Bio-diversity in European Mountains" [Bunce, R.G.H et al. Eds., 2004].

The recommendations put forward relate to four levels:

- to improve the recognition of public services provided by the transhumant systems
- to improve interactions between rural communities and herdsmen
- to encourage the marketing of products from the transhumant systems
- to provide indications for the design of public financing projects in support of these activities.

More generally, the importance of agriculture and sylviculture in mountain regions is recognised by the members of the Alpine Convention who established¹ priorities to support the use of mountain spaces, the protection of natural resources and water management in the multi-annual work programme of the 2005-2006 Alpine Convention.

In spite of these advantages, **pastoral activities face difficulties of all kinds**:

- Economic: the income resulting from the sale of products like wool and meat is decreasing (in particular for sheep). Subsidies are necessary for many stockbreeders, who watch closely the evolution of the CAP. Economic difficulties are all the greater as the stockbreeders must face specific costs related to pastoral activities.
- Linked to transhumance: transhumance by foot encounters obstacles, in particular in Romania, where the passage of the animals is scarcely tolerated by the inhabitants of the villages crossed because of the damage caused and the administrative difficulties. The solution of transhumance carried out by train or truck has a cost which the stockbreeders cannot always afford. In Spain, it is also the disappearance of the traditional routes of transhumance which worries the stockbreeders.
- Linked to the working conditions: pastoralism suffers from a problem of disaffection related to the folkloric perception which surrounds it. The herdsmen are thus seen as solitary, poor people, working a lot (without holidays, not even weekends during the summer) under uncomfortable conditions. Potential herdsmen are

¹ Available on: http://www.alpconv.org/NR/rdonlyres/2CDD627E-83D0-423A-BAC4-CD44FC2C5616/0/MAP_F_GESAMT.pdf

thus constrained because they wish to combine their trade with a minimum of comfort (holidays, water and electricity in mountain huts ...).

- Of labour: for some stockbreeders who were raised on their parent's farms, the retirement of the latter brings about a heavier workload which falls on the ones taking over. Even if they can occasionally profit from the assistance of their family, they are finally obliged (in order to keep the farm from shrinking), to hire a work force and thus to pass from free to paid help. This labour problem is even more noticeable in the case of farms taken over outside the family circle.
- Training for the herdsmen (Italy, Spain). The trade of herdsman is learned as much by experience as by theory and the training is not always adapted to the needs of the trade. In Italy, it is very difficult to find herdsmen. Adding to that the problems of employment costs and the adaptation to modern life of the huts and mountain cottages, the stockbreeders are finally often obliged to turn to foreign labour (in particular, from Romania or the Balkan countries).
- Expansion of the territories of large predatory animals: following their legal protection¹ and with the decline of pastoralism in certain areas, one witnesses the return of large, predatory animals. The traditional solutions of management (such as the use of watchdogs or the bedding down of the animals at night) had been abandoned during the period these species were absent; this return is consequently not accepted very well by the stockbreeders, who feel the presence of predatory animals is a danger to their trade not recognised as it should be by the rest of society. The financial compensations offered in case of attack by predatory animals are not considered to be sufficient by some stockbreeders, and this especially because being a victim of an attack creates stress not only for the herd, but also for the shepherd. The question of predation is all the more thorny as the images of the bear and the wolf, symbols of nature in a wild state, just like the traditional image of pastoralism, are used for tourist promotion: thus TOLLEY C. [2002] mentions the case of the department of Bouches-du-Rhône which at the same time promoted the great migration and the return of the wolf in its magazine.
- Conflicts related to multi-activity in mountainous areas. Ignorance by the other users of the mountain of the work performed by the stockbreeders leads to incomprehension and tension. The problems arising from parks not properly closed, accidents between animals and walkers lead increasingly to demands for more stringent safety regulation for agricultural activities. On the other hand, these regulations and the standards of comfort are not always adapted to the mountain areas.

A public awareness campaign: "a mountain, that's all" - natural, regional reserve of the Volcanoes of Auvergne

To prevent usage conflicts between tourists, inhabitants and people working in mountain regions, information and communication campaigns are set up by the national or regional parks or by local authorities.

The natural, regional reserve of the Volcanoes of Auvergne has produced a series of 7 postcards meant for visitors, to inform them of good practices for respecting the mountain and all its users. One of the topics relates to the attitude to be adopted by tourists when they pass by a herd: not to approach the herd, to keep your dog next to you, to close the barriers after passing through.

An Internet site is dedicated to this information campaign:

<http://www.chainedespuys.com/>

- Related to the land. The problem of land and urban pressure is a general problem in agriculture. Thus, the farmers see themselves confronted with steep land price increases, in particular in valleys and in the mid-altitude areas, which they can hardly cope with. The land used before as meadows or pastures are thus eroded.

¹ Berne Convention of September 19, 1979, relative to the preservation of wildlife and natural habitat of Europe

- Cost of the practice. Pastoral practices involve a certain number of surcharges compared to more traditional and intensive forms of breeding, among which are investment costs (related to comfort in the huts or alpine cottages for the installation of electricity and access to water, the transformation and standardising of altitude workshops, the management of wildlife), the costs of labour (for the herding in particular), of transport if the stockbreeders practice transhumance, the acquisition of specific equipment, taking into account the particularly difficult climatic and topographic conditions...

As mentioned in the introduction, within the framework of this study we will treat more specifically the problems related to land (part 3/1) the management of the mountain pastures (part 3/2) and the existing economic support (part 3/3).

3/ Legislative framework of European pastoralism (European Union)

3.1/ At the community level: mountain farming and pastoralism

The European Union acknowledges that agriculture plays a central part in mountain areas and the European Commission¹ indicates that while 17 % of the SAU² of the Union is located in mountain zones, 25% of the cattle, 29% of the milk cows, 32% of the sheep and up to 67% of the goats are bred in these areas. It also stresses the fact that agriculture and sylviculture have been traditional in these areas for centuries and that they shaped the landscape.

The pasture represents an important type of land use because it is a vital element of many mountain cultures, and it often constitutes the link between the mountain areas where the animals feed in summer and the plains where they spend the winter. According to the statistics of the Commission, the largest grazing areas (the proportion ranges from 61 - 80% of the SAU), are the mountains of Scotland, of Northern Ireland and the Morvan in France. They are also numerous in Greece, in the Apennines in Italy, in the Spanish Pyrenees, the Pre-Alps in France and in Sardinia.

At the economic level, the same report of the Commission indicates that agricultural income in the underprivileged mountain areas is 45% lower than the Community average, underlining, however, that this figure hides significant variations from one area to another.

Thus, while the multiple roles of mountain farming and its rurality seem to be recognised and announced as a priority in the support measures for this agriculture which one finds in the first and second CAP initiatives, it seems that neither the concept of pastoralism nor that of transhumance has been defined by the European Commission. The main measure, aimed very specifically at mountain farming, remains the system of compensatory allowance for natural handicaps granted in the concerned areas according to the regulation of underprivileged areas (paragraphs 36 and 05 of the preamble Regulation (EC) n° 1698/2005 of the September 20, 2005 meeting).

As the Interreg PASTOMED project³ which studies pastoral practices in several Mediterranean areas observed, certain areas instituted long-range, major policies of compensation for natural handicaps and this by bringing the amount of the allowances up to the ceiling proposed by the CAP, and by instituting precise zoning limits: high altitude, mountain, piedmont. The Pastomed team regrets, however, that some States remained on much more restrictive provisions in terms of geography and finances.

The informative document of the European Commission (2005)⁴ mentions relevant measures for mountain areas which were adopted by many Member States in the former programme, such as support for the maintenance of pastures, specific dairy quotas for mountain areas, mountain labels for quality products. These measures are subject to the subsidiarity of the Member States.

¹ Regulation CE N° 1698/2005 of the September 20, 2005 meeting concerning the support to rural development by the European Agricultural Fund / Fonds européen agricole pour le développement rural (Feader) Paragraph 33

² SAU: Surface Agricole Utile / Useful Agricultural Area

³ Mediterranean Pastoralism

⁴ European Commission (2005): The mountain areas of the European Union

3.2/ French legislative framework

The French Rural Code gives the definition of pastoral space (article L113-2 completed by the LDTR of February 2005):

“ Pastoral space consists of pastures used in an extensive and seasonal way. In the regions where the creation or maintenance of agricultural activities with pastoral prevalence is (because of the general vocation of the territory), likely to contribute to the protection of the natural environment, the land and the landscape as well as to safeguard social life, provisions adapted to the particular conditions of these regions are taken to ensure this maintenance.

These provisions include measures figuring in articles L. 113-3, L. 113-4, L. 135-1 to L. 135-11 and L. 481-1 and L. 481-2, which are effective:

- 1- In the villages listed in mountain areas;
- 2- In the villages included in the areas delimited by the administrative authority after consultation with the Agriculture Council.”

Pastoralism is subject to an adapted legislative framework since the **1972 pastoral law**¹. This law introduced adaptations specific to pastoralism in the Pastoral Land Associations (AFP) and Pastoral Associations (see part 3/1 and 3/2). The **1985 Mountain law**² has provided a third legal tool with the creation of pastoral conventions running for several years. More recently, the **2005 law relative to the development of rural territories**³ widens the concept of pastoral spaces and makes new modifications to the tools previously created.

The legislation concerning these legal points is gathered in the rural code:

- Pastoral Land Association (AFP): articles L135-1 to L135-12 of the rural code; Agricultural Land Associations: articles L136-1 to L 136-13 of the rural code. The AFPs are associations of pastoral land owners. *They bring together owners of land meant for agricultural or pastoral usage as well as owners of wooded or soon to be reforested land contributing to the agricultural, pastoral and forest economy in their area.* The AFP then rents the land to a stockbreeder or a pastoral association. When a member of the AFP sells the land which he owns, the purchaser automatically becomes a member of the AFP in his turn and can leave it only after authorisation. The AFPs can be created either by a decision of all the owners, or by a prefectural decision if at least half of the owners of at least half of the concerned land agree. New texts (guidelines of July 1st,2004 and its enforcement decree of May 2006) have just begun to govern the functioning of the AFPs, which are obliged to put their statutes in conformity before May 2008.
- Pastoral Associations (GP): articles L113-2 to L113-5 of the rural code. The GP is a collective structure which gathers stockbreeders for the common management of their herds (see the Echoalp document⁴): the herding, the use of the territory will thus be shared. The GP allows for better distribution of the costs among stockbreeders.
- Multi-Annual Pasture Conventions. Contracts of land use with pastoral vocation: L481-1 to L481-4 of the rural code. Multi-annual pasture conventions make it possible for the owner to use his land for non-agricultural purposes during a part of the year (for example, skiing, hunting, production of timber...). The owners can be grouped in AFP and the tenants in GP. Conventions are signed for a period of 5 years minimum. The tenant can thus engage in agri-environmental contracts (which generally last 5 years). Conventions can also be signed for undergrowth pastures.

¹ Law 1972-12 of January 3,1972 concerning pastoral development in mountain economy regions, rescinded since and codified in the rural code.

² Law 1985-30 of January 9,1985 relative to the development and protection of the mountains, modified and partially rescinded since and codified in several codes..

³ Law no. 2005-157 of February 2005 regarding the development of rural territories.

⁴ Echoalp is the site of the Société d'Economie Alpestres of Savoie and Haute-Savoie. The document on the GP is available on http://www.echoalp.com/alpes/download/Fiche_GP.pdf

3.3/ Example of the Swiss legislative framework

(The exact definitions given by the Swiss legislation are presented in appendix 5.)

By the Guidelines on the land register of the agricultural production and the delimitation of areas (Guidelines on agricultural areas) of December 7, 1998, the agricultural territory of Switzerland is divided between **summer mountaining areas** and useful agricultural areas (article 1). The area for summer mountaining is thus made up of areas including pastures used during the summer mountaining period for the grazing of animals, and the meadows meant for harvesting used to create reserves for the winter. The limits of the region are fixed at the federal level, in consultation with the Cantons involved.

Switzerland defined various areas for pastures and different standards of usage in the Guidelines on agricultural terminology and the recognition of the forms of usage¹. Thus it distinguishes:

- Summer pastures, are used for the grazing of animals in summer;
- The community pastures belonging to a community and which are traditionally used jointly;
- The areas of summer pasturing, made up of summer pastures, the Community pastures and meadows for winter foddering, as well as agricultural areas located in summer pasturing regions (whatever their usage).

From the definitions of pasture areas, a usage classification is established:

- The utilisation of pasture includes the land that it uses from the summer pasture areas, used by the shepherd who lives on the land for the period of summer pasturing to watch over his animals and those of other stockbreeders for boarding;
- The utilisation of collective pastures is arranged by a community and uses collective pastures for the grazing of animals in common;
- The summer pastures are used for the summer grazing of animals taken for boarding.

One will note that Switzerland is also divided between the **mountain area**, itself subdivided into four areas according to the difficulty of the conditions (from IV for the most difficult to I), and the **plains area**, also subdivided into hill areas, mid-altitude, extended mid-altitude, and field crops (article 2 of the guidelines on agricultural areas). The criteria used to establish these divisions depend on the climatic conditions, the accessibility and the topography of the land.

By defining classifications by the type of farm and pastures, as well as a zoning of the arable land, Switzerland has a framework which allows it to allot support specifically to pastoralism (see case study in part IV).

¹ Guidelines on agricultural terminology and the recognition of different types of operations (Guidelines for Agricultural Terminology, OTerm) of December 7, 1998. (Switzerland)

Part 3: The three topics studied

1/ The land pressure in the mid-altitude areas and the valley

1.1/ The issue: maintain sufficient spaces accessible to the stockbreeders in low altitude areas

Land is a limited resource which must be shared among its users. Whereas fewer and fewer people turn to agricultural activity, paradoxically it becomes increasingly problematic for the farmers to obtain land because of competition for the use of the land by other users. Although high altitude areas are hardly touched by this land pressure, pastoral activities also suffer from this competition.

Indeed, the spaces used in valley and mid-altitude areas are especially threatened by urbanisation and the growth of the transport network. However, these areas are used by the stockbreeders as meadows to be harvested for winter fodder. If these **areas are eroded by urbanisation**, the stockbreeders cannot create sufficient reserves to maintain sizeable herds in winter. The number of animals is thereby reduced, with the consequence of an insufficient number of animals to maintain, in summer, enough pastures necessary for the maintenance of all the summer pasturing. Thus, in the central Pyrenees, it is estimated that the disappearance of 1 ha in the valley brings to a stop the land management or the usage of 2 ha in the mid-altitude area (meadows for harvesting and communal off-season) and 10 ha of summer pasture [D. BUFFIERE, written contribution 2007].

Furthermore, competition for the land leads to a **serious rise in the price of land**. The land is very difficult to access for young people wishing to settle down (problem encountered, amongst others, in the French Pyrenees). Buildings likely to have an agricultural usage are also repurchased to make main or secondary homes, to the detriment of the farmers needing new buildings (Norway, Scotland, France...).

Thus, the issues are not only the continuation of the activity by the current stockbreeders, but also the establishment of new stockbreeders.

1.2 / The current state of affairs

The problem of competition between agricultural use and other land usage arises first of all near the cities. Thus, in its study on land changes in the Northern part of the Swiss Alps, SCHNEEBERGER N. [2005] observes that peri-urban areas develop at a dramatic rate, even if their growth experienced a deceleration since the 1970s. The development of the road system goes together with the development of urban areas. However, this study shows that in the areas studied, rural and tourist municipalities are also affected by land usage changes, in particular because of the development of roads.

This can be illustrated by figures concerning the Spanish Basque Country: in this autonomous community, the percentage of land developed went from 5.2 % of the territory to 6.5 % between 1994 and 2005, which corresponds to 9,440 ha of land developed in 11 years.¹ The data show that the land is used for three kinds of purposes: residential construction (4,854 ha), industrial or commercial activity (2,908 ha) and finally, infrastructure and transport (671 ha).

FERNANDEZ GARCIA A. [2006] explains the phenomenon of urban sprawl in the Asturias countryside by the development of the tertiary sector, made possible by the improvement of means of communication, virtual (telephone, Internet) as well as roads. He also deplores the absence of strategies of territorial planning in some areas, including in Nature Reserves where recreation objectives sometimes supersede traditional activities such as breeding, to the detriment of the initial objectives of conservation of the environment and the landscape.

¹ Programa Marco Ambiental 2007-2010 available on:
http://www.ingurumena.ejgv.euskadi.net/r49-5832/es/contenidos/plan_programa_proyecto/eavds_pma/es_9688/pma_2007_2010.html

In the tourist areas, the construction of secondary homes is problematic. In the Pyrenees, the DATAR (replaced by the DIACT since 2006) gives the following figures: between 1990 and 1993, approximately 31,000 additional residences were built, among which 18,000 are secondary homes, that is to say 58% of the residences built within this period¹. Whereas in metropolitan France, 10% of the residences are secondary homes, this proportion reaches a third of the dwellings in the Pyrenees, with a smaller proportion in the Piedmont region and increasingly more as one goes up in altitude.

Moreover, in the mid-altitude areas of the Pyrenees, barns are purchased to be transformed into second homes. The demand is very strong for this type of building, interesting from the architectural point of view and from its location since they are located outside the villages, in areas with a flatter relief than the surrounding land. Moreover, these barns are also often accompanied by a piece of land which the stockbreeders of the region will not have access to any more. The strong demand for housing in general and for this type of building in particular brings about speculation to the detriment of the farmers: it becomes difficult for them to acquire existing buildings because of the high prices, and the land left available is not to be build on or only allows construction too small to be used within the framework of a modern development.

The problem of acquisition of old farms or altitude farms and the construction of a second home is also mentioned in Norway² or in Scotland where the *crofts* are acquired as second homes, to the detriment of the potential accommodation of farmers (JONES G, 2007, written contribution).

The higher bid for land prices takes place in a similar manner in the frontier areas of countries with a higher standard of living. Thus the price of land reaches extremes in Haute-Savoie because of its proximity with Switzerland, the land demand for tourism and the urban demand in general. Whereas the average price of natural meadows was 3,180 €/ha in France in 2006, the land reached 6,510€/ha on average in the department. The price reaches 10,000 €/ha in the area of Annecy, and near Switzerland, in the area of Annemasse and Bas Chablais, it is 9,400€/ha and 9,000€/ha respectively (source: Agreste).

This rapid overview highlights two facts: first of all, the problem of land pressure is not specifically French, since it was mentioned in the majority of the countries that we studied. Then, land development is not only related to the extension of population centres, but also to the development of economic zones and transport infrastructure. The solutions suggested to limit land urbanisation will therefore have to take into account not only agricultural needs, but also the needs of other activities.

1.3/ Tools making it possible to fight against land pressure

a/ At the community level

There are no **tools developed at the community level** to tackle the problem of land pressure in agricultural areas. The solutions are therefore considered nationally, or on a regional level.

Although it does not directly imply constraining measures regarding the fight against land pressure, we can nevertheless mention the obligation of the Member States to identify Natura 2000 areas. These areas are special areas of conservation and each Member State must ensure the maintenance or the re-establishment, in a favourable state of conservation, of some type of natural habitat and species. Natura 2000 did not directly impose a solution, it is up to the Member States to develop the tools necessary for site maintenance. Thus regulation varies according to the States, and management can be centralised or decentralised.

b/ The solutions found in France

French law has in its rural and town planning code a certain number of tools which can be used by local or regional authorities to protect agricultural land. To better sensitise the partners involved in agriculture and

¹ Schéma interrégional d'aménagement et de développement des Pyrénées, 2006, Comité de massif des Pyrénées, 52 p. Available on http://www.datar-pyrenees.gouv.fr/fr/pratique/librairie/form_telecharger/?id=256

² The defense and management of fragile rural spaces, landscapes and natural resources in mountain areas. Case study in Sogn og Fjordane: pastoral project for domestic animals in protected zones, project Interreg III C Euromountains.net, 22 p. Available on: http://www.euromountains.net/documents/theme3_DOCresults/Sogn-Rep-them3_FR.pdf

regional planning to the problems relating to land usage, in 2005 the Department of Isere developed an agricultural land guide in which it proposes, in particular, recommendations for the elaboration of town planning documents or concerning the use of land tools¹. Without examining them all in depth, we present some of them as follows:

- The law of 09/01/1985 relating to the development and protection of the mountains (amended by the Town Planning and Habitat Law of 02/07/2003): in mountain areas, article L 145-3 of the Town Planning Code, protects agricultural land and activities and imposes urbanisation follow-up (except in extraordinary cases). This obligation aims to avoid "urban sprawl" into agricultural land.
- Town planning documents:
 - Local Town Planning Plan² - PLU** which replaces the Land Use Plan (articles L123-1 to L123-20 and following the Town Planning Code), or **communal map** (articles L124-1 to L124-4): developed at the communal or inter-communal level, PLU allows for the protection of agricultural and natural land, but the pastures do not necessarily have priority (compared to the land with a higher agronomic value, for example). The land in areas A (agricultural) or N (natural) can in any case pass to U (urbanised) if a project of general interest is involved; for example, in the case of road construction (article L123-14). PLU is composed of four parts (introductory report, project of sustainable development, regulation and appendixes), of which two (projects of sustainable development and regulation) are opposable. For the small communes not developed on either PLU or communal maps (see map in appendix 6), the National Code of Town Planning applies.

Territorial Coherence Plan³ - SCOT, which replaces the Master Plan (L122-1 article and following of the Town Planning Code): SCOT can be set up by several communes or communities of communes which want it, and is opposable to PLU and communal maps.

The SCOT and PLU can integrate specific requirements concerning arable lands and natural spaces:

Protected Agricultural Areas / Zones Agricoles Protégées⁴ - ZAP: the objective of these tools for land control is to establish the "agricultural vocation" of the territory considered in "service to the public interest", for the conservation of farm holdings. The agricultural areas which are of general interest (quality of the land or geographical situation) can be delimited by prefectural decree, in addition to the PLU or by a group of communes within the framework of a POS. The change of assignment of these areas will then require the opinion of the Agriculture Council and the Departmental Commission of Agricultural Orientation, or the authorisation of the Prefect.

Protection perimeter of natural and agricultural spaces⁵ - PAEN: they are set up by the Department, in agreement with SCOT and possibly with the charters of the natural, regional parks. The Departments or SAFER can then acquire the land included in this perimeter (according to the case, in a friendly manner, by pre-emption or expropriation). This land cannot then be integrated into an urban area or be urbanised by PLU, or in a building sector of the communal map unless by decree.

According to their classification in the documents of town planning, it is possible to ensure the relative protection of agricultural land. It is, however, necessary to have as a base the will at the time of the creation of the document of town planning. The partners involved in the preparation of these documents or their revision must thus know the agricultural and environmental problems and those related to the protection of the landscape sufficiently, so that the decisions taken are favourable to agriculture in general and to pastoral activities in particular.

In addition to the laws governing urbanisation, the part played by the **Societies for Land Development and Rural Establishment - SAFER** (L141.1 article to L143.15 of the rural code) must be mentioned here: they have in particular the role of the transfer of the farms and accommodation of new

¹ Agricultural land guide signed on June 20, 2005, available on:

http://ddaf38.maapar1.agriculture.gouv.fr/article.php3?id_article=172

² Introduced by the 2000/1208 law of December 13, 2000 relative to the Solidarity and Urban Renewal Act (SRU)

³ Introduced by the 2000/1208 law of December 13, 2000 relative to the Solidarity and Urban Renewal Act (SRU)

⁴ Introduced by the 1999-574 agricultural orientation law of July 9, 1999, codified in the rural code (article L112-2)

⁵ Introduced by Law n° 2005-157 of February 23, 2005 relative to the development of rural territories, codified in the rural code (articles L143-1 to L143-6)

farmers, as well as plot development. To this end they have the right of pre-emption of the land classified as agricultural or natural areas in the PLU which must be motivated by one of the following reasons:

- 1- The settlement, the resettlement or the maintenance of farmers;
- 2- the enlarging and improvement of the plot distribution of the existing farms;
- 3- the maintenance of the balance of the farms when they are compromised by the influence of public interest work;
- 4- the safeguard of the farm's family character
- 5- the fight against land speculation;
- 6- The conservation of existing viable farms when they are compromised by the separate transfer of the land or farm buildings;
- 7- the development and protection of the forest as well as the improvement of forestry structures within the framework of the guidelines passed with the State;
- 8- the realisation of projects of landscape development and environmental protection approved by the State or local communities and their publicly owned establishments.

Under the conditions envisaged by Chapter III of Title IV of the first book of the Town Planning Code, the protection and development of agricultural and natural spaces around urban areas, the right of pre-emption cannot be used if these motivations do not apply, or to the detriment of a member of the owner's family, of an expropriated farmer or a tenant working the land for at least 3 years. The land acquired by SAFER must then be reassigned in the next 5 years after purchase from a farmer according to a procedure of public tender. In the meantime, the land can be rented out.

The SAFERs are, however, subjected to budgetary constraints and must thus make choices when they wish to apply their pre-emption right.

In addition to the already existing tools, France committed itself at the time of the recent organisation of the Environment Grenelle to introduce new measures concerning regional planning. The objective of the Grenelle was to create a starting point for the mobilisation of French society in favour of the environment. The outcome at the end of October was an action plan with the perspective of sustainable development.

One of the objectives of the action plan is the safeguarding of natural areas, in order to stop the loss of bio-diversity by 2010. This implies the reconsideration of French urbanisation policy in order to preserve agricultural land and bio-diversity. The Grenelle proposes to create a Green Screen corresponding to a network of natural areas based on collective management. A set of specifications will be locally prepared, to allow a majority of qualified players to adopt rules of environmental protection on a territory to restore the bio-diversity and the agricultural landscape.

Some measures proposed are the identification of a national green screen, protected in the PLU and SCOT, and the establishment, by 2009, of a management plan of ordinary bio-diversity in each farm, with reinforced requirements in certain areas (PNR, etc), the setting up of protected agricultural areas, as well as measures of land management. Immediate measures must be taken, like assigning PLU quantitative protection objectives against the regression of agricultural areas by limiting urban sprawl or by densifying the built-up areas.

Similar solutions to those currently existing to protect the French littorals could also be considered. Thus, the institute for conservation of Littoral Space and Lake Shore (more commonly called the **Institute for the conservation of the Littoral**) is a French publicly-owned institution created in 1975¹. Its objective is the preservation of fragile and natural spaces of the littoral, estuaries, delta and the shores of large lakes (more than 1,000 ha). With this intention, the Institute **acquires fragile or threatened land** by amicable agreement, by pre-emption, or exceptionally by expropriation. Property can also be donated or bequeathed. With an annual budget of 35 million euros (where 30 million is devoted to land acquisition), each year the Institute buys between 2,000 and 3,000 ha of land. By January 1st, 2006, it thus ensured the protection of 100,000 ha out of 880 km of maritime littoral. The management of the acquired property is then entrusted to the local communities or associations.

¹ Loi 75-602 du 10 juillet 1975 relative au conservatoire de l'espace littoral et des rivages lacustres

c/ Solutions encountered in other European countries

In all the countries which we studied (Norway, Scotland, Romania, Switzerland, Italy) **regional planning is based on the creation of plans, with delimitations of various areas.** These plans can be elaborated at the municipal (example of Norway) or regional level (example of the province of Trento in Italy). To protect agricultural land, the following conditions will therefore have to be met:

1- a **display of will power from the people and institutions which take part in developing the zoning of town and regional planning** strong enough to classify the maximum amount of land possible in the agricultural areas, **and clear criteria** to establish a classification of the territories.

Thus in Switzerland, the land is classified as "to build", "agricultural" and "to protect" areas (Regional Planning Law¹). For land to be integrated into the "to build" area, it must fulfil the following three criteria: to be suitable for construction, to be integrated as much as possible into construction areas (to support the regrouping of the buildings), and to be regarded as necessary for the construction requirements of the next 15 years.

The importance of the involvement of the local authorities in the establishment of zoning is not to be neglected, since it is noted that existing tools are not always used: in Scotland, the land locally important for the viability of the system of *crofting* can be identified for better protection. However, this work has not been undertaken [G. JONES, written contribution 2007].

2- a **definition of the "agricultural area" or non-urbanised areas used by farmers which allows them to effectively limit or prohibit the extension of land development.**

In Norway, the regions where summer farms are located are often included in nature conservation areas (generally in "sectors protected for their landscape"), which implies a relatively soft form of protection. Traditional agricultural usage is allowed, but must not lead to large scale landscape changes [K. DAUGSTADT, written contribution 2007]. In Switzerland, the Regional Planning Law mentions what can be built only in agricultural areas: "constructions and installations which are necessary to the farm or to producing horticulture" (LAT article 16a).

In addition to the establishment of town planning plans, we present some examples here of ways to limit or reduce the impact of the pressure from land urbanisation which one finds in other European countries.

- Protection of the roads, rest areas, folding enclosures and watering holes used for transhumance (Spain). The Law 3/1995 of March 23rd on transhumance roads establishes the legal status of transhumance routes and allows for their protection. Once delimited by the Autonomous Communities, the routes and places necessary for transhumance, which are the public property of the Autonomous Communities, are classified. If work must be carried out on these classified roads and places, the community which undertakes the work will have to ensure an alternative route so that transhumance can be carried out without difficulty.
- To evaluate better the impact of urbanisation on agriculture by using adapted indicators (Spain, Basque Country). The law on the environmental protection of the Basque Country² defines which evaluations of environmental impacts must be carried out within the framework of the establishment of urbanisation plans. Recommendations were made within the framework of the Sectoral Agroforestral Territorial Plan³ for taking into account more precisely the impact of urban modifications on agriculture. Thus the Plan presents a list of indicators to be used when impact studies on the environment are made: areas of each category of affected land (arable land, meadows and pastures, forest...), how many farms are affected and techno-economic orientations of the farms, consequences of territorial changes on the farm (fragmentation of parcels, size, shape, accessibility, agronomic value of the land..), general consequences of the changes for the area concerned (on country lanes, agrarian infrastructures...), areas likely to be affected by the emission of pollutants.
- Management of an Agricultural Fund and facilitation of the transfer of the farms (Spain, Autonomous Community of Asturias). The "Land Bank" of Asturias manages an agricultural fund made up of the land belonging to the Principality and the communes. It can also rent or repurchase the arable lands of former owners for sub-leasing or resale to other owners. The Land Bank thus has the role of mediator to facilitate the transfer of the land and to prevent it from being abandoned. This system functions relatively well and

¹ Swiss Regional Planning Law

² Ley 3/98 de Protección del Medio Ambiente de País Vasco

³ Gobierno Vasco. Territorial Sectoral Agroforestral Plan, pp. 77-78.

will be established in a similar way in the Basque Country, by the Lurranek Institution. (see case study presented in part IV

- To facilitate the re-use of the already urbanised areas and the recovery of the developed land (Spain, Basque Country). The objective of a balanced use of the territory is registered in the 2007-2010 Basque Country Framework for the Environment Programme [Gobierno Vasco]. To fulfill it, eight lines of action are proposed, two of which concern agriculture and land use. Thus, the line of action in Town Planning includes a criterion of priority of use of already urbanised areas, before considering the requalification of unurbanised land, and this, in particular, in order to preserve the agricultural and natural areas. Line of action no. 8 suggests the development of rehabilitation and recovery programmes for the unutilised, developed land (for example, neglected roads, oversized residential areas, etc).
- To compensate for the loss of agricultural land by the reclamation of other unused land (Italy, Province of Trento). The planning programme developed in 2007 by the Province of Trento provides that if land classified as "agricultural zone of value" is used for ends other than agricultural, then areas must be found and assigned for agricultural use in compensation. Pastures and meadows of more than 20 ha are regarded as valuable agricultural land. (see case study presented in part IV

2/ The Management Systems of Pastoral Spaces

2.1/ The issue: to succeed in sustainable space management

A **sustainable management of pastoral space** implies taking into account several sustainability factors: the first is the need for having **economic sustainability**. A pastoral unit which does not allow the people who use it to cover their expenses will undoubtedly be abandoned. Several reasons can lead to this outcome. The units which are the most parcelled out, steep and difficult to access will be abandoned first because the operational cost is too high. The pastures included in the territory of large predatory animals can also be neglected if other pastures, more secure, are available in nearby. Thus in France, this cause of abandonment will be more often quoted in the Pyrenees where there are fewer requests for mountain pasture than in the Southern Alps¹ where there is a strong demand from the stockbreeders to obtain an area of summer pasture so that even the "wolf" areas are not abandoned.

A final factor which can lead to the abandonment of pastoral areas is when the shepherd's huts are not up to standard, or difficult to reach. The high cost of the work (particularly for establishing standards for cheese-making) can explain the cessation of the use of summer pastures. It should be noted that if a type of production stops, others can sometimes take over. Thus, in the predatory areas, some pastures abandoned by sheep herders can be used by cattlemen (if the slopes are not too steep and the land not too parcelled out). In the same way, a hut which is not used any more by a cheese producer could be used again to lodge a shepherd or a cattle herder.

The second criterion of good management is that of **environmental sustainability**. It is, indeed, a question of successfully maintaining one's herd in this space for the maximum benefit of the animals while respecting the pastures used. It will thus be necessary to avoid overgrazing of the best areas and not to neglect the areas² less nutritional or more difficult to access. It is thus necessary to reconcile the objective of productivity for the herd with that of the sustainability of the grazed space. The problems of agricultural abandonment risk leading to the abandonment of large areas.

The question of climatic changes is likely to influence the way in which the pastures are managed in the next few years. Indeed, following the results of the Inter-Governmental Conference on Climatic Changes³, the European Commission published a chart showing the increases in temperatures predicted by 2080 in Europe. The mountains will be very affected by the increase in temperature, and one should expect an upward displacement of the vegetation areas. Areas which are currently beyond the tree line could be gradually colonised by woody perennials. Their maintenance will thus imply a heavier follow-up (mechanical mowing, for example). Also, a temperature increase implies a snow melt and a resumption of vegetation earlier in the season, and thus the use of high altitude pastures earlier in the spring. A dry period can also occur during the summer. This implies that the herdsman will have to adapt their use of the pastures to these new constraints, and one can thus expect changes in the management of the pastures.

To the preceding criteria are added that of **land sustainability**. It is indeed necessary for the stockbreeders to be able to rely on a sufficiently large area, and this year after year. Access to the land is complicated by the conditions to be met so that the stockbreeders can benefit from CAP subsidies. G. JONES (written contribution, 2007) quotes, as an example, the problem of the correct identification of pastoral territories. Thus, in Slovakia, the NGO Daphne compared the land identified in natural or semi-natural meadows and likely to be used by stockbreeders with the land included in the Integrated Administration and Control System - IACS). To benefit from agricultural subsidies, the land which they use must be identified in the IACS system. However, the results were that a lot of land is not identified by the IACS, which means that currently, many parcels are not eligible for CAP payments and therefore, the stockbreeders who use them cannot receive support.

A second example quoted by G. JONES relates to the problem of the pastoral use of the undergrowth: indeed, in spite of easing CAP rules, the parcels with more than 50 stalks/ha are not eligible for CAP payments (before, unless the Member States did not take specific measures, the case of the parcels with trees was not considered). In certain countries (Mediterranean countries in particular), the undergrowth is, however,

¹ According to our discussions with the technical representatives of the local pastoral services.

² A quarter is a subdivision of a pastoral unit.

³ <http://www.ipcc.ch/>

traditional pasture area, which can potentially pose problems for the use of forest /scrub land if the Member States, not aware of this problem, do not intervene.

To finish, **social sustainability** should not be forgotten. Indeed, pastoral activity engages various types of players (owners, stockbreeders, summer pasture managers), whose agreement is critical, in particular for the common pastures. The economic problems, in particular the question of who is responsible for maintenance, must be anticipated so that conflicts do not threaten the continuation of the activity.

In addition, more and more conflicts are mentioned by the professionals of pastoralism, relating to the use of the pastoral territories. Thus, misunderstandings between stockbreeders and tourists are frequent.

2.2 / The Current State of Affairs

Whereas one speaks more or less passionately about modernity and the future of pastoralism in Europe, these changes cannot be considered without the States or infra-official structures playing a prominent role to frame and further pastoral land rights. Given the complexity of national and local regulations, the European Union is not presently involved in this field.

As the PASTOMED project underlines, the question of pasture management affects private and public property. For this reason, it is particularly sensitive and meets a lot of resistance. However, far from being opposed to the rights of private property, the task is to provide a stable and protected professional framework to support the involvement and investment of the farmer over several years.

This stability allows them to carry out and defend an installation project, to invest in infrastructure and equipment, to make areas eligible for CAP schemes and to establish contracts of agri-environmental measures (PASTOMED). According to G. Jones, (2007, written contribution), at the Community level, it is supposed that the stockbreeders and pasture users control the land for more than 5 years since the subsidies are spread out at least over this period of time.

As for the national levels, according to the PASTOMED project (Mediterranean countries), it seems that few sought to revise pastoral land rights, but when it is the case, the measures taken over the years largely showed their relevance and effectiveness.

It should also be underlined that the modernisation of pastoral land rights must be coherent with very similar regulations (those of natural, forest spaces) to be completely relevant and useful. To take up such a task reflects a clear political will to invest in the future of pastoral activity, even if the first results of this approach are delayed (PASTOMED).

Transhumance is more particularly affected by the problems of land ownership because, amongst other things, it requires legal forms of collective organisation for the stockbreeders. At the Mediterranean level, the relationship between pastoral activities and forest or natural spaces was very often antagonistic (PASTOMED). Currently, it seems that the European Union is mobilised in the search for complementarity of these activities (support for the first installation of agro-forest systems on arable lands - Art. 44).

2.3/ The Solutions Considered

It has been noted that usage practices and statutes of pastoral land rights are very different among countries and regions and stem from customary rights inherited over several decades. When these management systems do not change, they become precarious, anachronistic and constitute an obstacle to pastoral development. Strongly marked by local and traditional culture, these modes of organisation must adapt by taking into account the expectations of the various stakeholders and local cultures. Thus, a relevant and successful measure within a certain framework cannot inevitably be transferred to another framework and another culture without more or less major adaptations.

In addition to the management systems, legislative measures have been introduced to take into account the characteristics related to the use of spaces within the framework of pastoral activities.

Thus, the PASTOMED project cites two relevant adaptations for the restoration of pastoral land rights:

- the first is to define and promote methods of access by renting to pastoral units;
- the second is to consider legal formulas for the association of the numerous and dispersed owners.

The following paragraphs thus present some existing town planning initiatives.

a/ At the Community Level

The European Union did not envisage legislating or providing legislative frameworks on pastoral land rights. On the other hand, as underlined by G. Jones, (2007, written contribution), measures of financing the CAP suppose a control and vision for the future of arable lands over at least 5 years.

b/The Management Systems of Pastoral Spaces

There are **big variations in the management systems of pastoral spaces**, not only from one country to another, but also from one mountain range or from one valley to another. Indeed, these systems of management were developed over the centuries according to **local customs**. One can point out, for example, that pastoralism is organised in a more individual way if the property is individually owned (example of the Cantal in France, or the *seters* in Norway) whereas in the zones where the pastures are collective, the solutions implemented to manage them are rather collective also (example of the associations of communes in the Pyrenean valleys in France, of *crofting* in Scotland).

We tried to synthesize the various possible cases in the following table, where we introduce the various people involved in pasture management and infrastructure maintenance. We illustrated this table with some examples presenting types of organisation which are mainly encountered in certain regions, in France or Europe. These examples are not exclusive and other systems of organisation can be encountered in the regions cited.

	INDIVIDUALLY OWNED LAND	LAND IN COLLECTIVE OWNERSHIP
STOCKBREEDERS OR ASSOCIATIONS OF STOCKBREEDERS	<ul style="list-style-type: none"> • Pastures belonging to the stockbreeder (ex: Cantal in France) <u>Expenses and management of the pasture in the care of the stockbreeder.</u> Problems of financing large, potential investments • Pastures rented by the stockbreeder (ex: Savoy in France, Switzerland, the Jura) <u>Agreement</u> between the stockbreeders and the owners <u>for the sharing of maintenance costs</u>; possibility for the owners to impose <u>conditions for the management of the pastures</u> (established to protect certain areas, for example). Problems of financing large, potential investments • Pastures rented by an association of stockbreeders (ex: Southern Alps of France) <u>Agreement</u> between the stockbreeders and the owners <u>for the sharing of the maintenance costs</u>; possibility for the owners to impose <u>conditions for the</u> 	<ul style="list-style-type: none"> • Pasture management assumed by the stockbreeders, with the possibility of the communes imposing conditions. (ex: common land used by the <i>crofters</i> in Scotland; land which can be used for grazing animals by usage right in Norway; stockbreeder associations renting the land from sections of communes, particularly in the Massif Central, from communes, or in the French Pyrenees from commune syndicates) <p>Stockbreeders contribute more or less to the <u>financing of infrastructure</u></p> <ul style="list-style-type: none"> - in Norway, most of the investments, such as the buildings, belong to the stockbreeders, the common pastures need only a little work. - In France, the stockbreeder associations must sometimes assume by themselves the maintenance of pastoral facilities (huts, water source...) following the disinvolvement of some communes.

	<p><u>management of the pastures.</u> The expenses that stockbreeder associations can bear are higher than those that individual stockbreeders can be responsible for on their own.</p>	
STOCKBREEDERS BOARDING THE ANIMALS OF OTHER STOCKBREEDERS	<ul style="list-style-type: none"> Boarding animals with the stockbreeder 	<p>(ex: usage regulation in Italy¹, using the common pastures in Romania²) The stockbreeder who boards the animals of other stockbreeders can be chosen by the stockbreeders or by the commune (case in Romania). He will then <u>be responsible for the management of the pastures and, at least, for the basic maintenance of the summer pasture infrastructure.</u></p>
INDEPENDENT MANAGER	<ul style="list-style-type: none"> Pastures rented by an independent entrepreneur (ex: Pastures rented by <i>lessees</i> in the Jura). The pastures are rented by an independent entrepreneur who boards the animals. These <u>entrepreneurs take care of the management of the pastures and the basic maintenance.</u> 	<ul style="list-style-type: none"> Intervention of a local Maintenance Authority (ex: <i>Crofters commission</i> in Scotland³, <i>Mountain Board</i> in Norway) These authorities <u>participate in the formulation of management rules</u> for common pastures (size of the parcels, grazing dates, environmental and architectural constraints...), but do not take part directly. They are also not financiers.
LAND OWNER	<ul style="list-style-type: none"> They are generally <u>less involved in the maintenance of the infrastructure</u> than in the case of collective property, considering the heavy investments to be realised. They can impose conditions on those who use their pastures 	<p>(ex: the communes or syndicates of communes in the French Basques Country, communes and villages in Romania, communes and villages in Italy)</p> <p><u>The involvement of the communes in the maintenance and renovation of pastoral facilities is very variable.</u> In the French Basque Country, some commune syndicates thus take care of a large portion of the expenses necessary for the maintenance of pastoral activity. Other communes establish other budget priorities and disengage themselves totally.</p>

Far from being complete, this table shows that the management systems vary a lot and are very local. Some examples given here are presented as case studies in part 4: they are the usage regulations of the Trento Province in Italy, the case of the common pasture management in Romania and the *Scottish* crofting system.

¹ See case study in part 4

² See case study in part 4

³ See case study in part 4

Two examples of common pasture management

(Source: Agricultural Council, February 2005)

✓ Allmende: management of cattle in the pre-Alps and Bavarian Alps

The collective entity is an inheritance of past centuries and is called *Allmende*. This entity brings together 2 - 200 stockbreeders in a given territory (30 - 6,000 ha). The *Allmende* land can be the property of different types of people (individuals or organisations: the Commune, the Region, the Regional Forest Office, etc.). Among the activities managed by the *Allmende* one frequently finds: the period of grazing or the migration to higher land; the total number and the type of animals that each stockbreeder of the *Allmende* can put to pasture. The *Allmende* is organised around an administrative bureau elected by the stockbreeders. The stockbreeders manage the pasture of their animals collectively.

✓ Poligono: sheep in the region of Castille-La Mancha

In the XXth Century, in order to rekindle pastoralism, the Spanish government imposed a usage rights transfer system. Thus, the collective entity called *Poligono* is made up of a group of neighbouring parcels belonging to different owners and made available only to one stockbreeder (because the average acreage of the farms - 40 ha - does not allow one to feed all the herds - 2 - 300 head). The stockbreeder pays a very modest fee to the owners. The organisation of the system and the transfer of user rights are managed administratively by a local pasture committee. The *Poligono* are allocated to the stockbreeders and the owners are, in principle, required to leave their land after the harvest. 50% of the land and 86% of the sheep herds of the region profit from this system.

It seems important for us to highlight some critical points here which will have to be taken into account by the people involved in the management of herds and mountain pastures.

- Maintenance and improvement of infrastructure: the expenses are very heavy for an individual enterprise and even for the small communes. If it is not a priority for the owners, the charge is borne by the stockbreeders who are not necessarily in a position to meet these expenses.
- Access to the pasture: when it is not automatic thanks to a usage right (generally acquired because the stockbreeder lives in the vicinity), many transactions are made "by word of mouth" in an informal way. This implies a working knowledge of the network and good relations between the players, so much more as the rules are not always formalised in writing. Pastoral services can sometimes assume the role of intermediaries.
- The problem of adjustment to the availability of pasture according to the sustainability of pasture access: the managers of summer pastures not being assured of having access to the pastures from one year to the next are tempted to make the land profitable to the maximum by boarding a very large number of animals, thus leading to overgrazing. On the other hand, people assured of their right to pasture access tend to underuse the parcels, because the rights of beneficiaries are less and less numerous, because of the general decrease in the number of farmers, and/or because they do not want their usage rights to be available for the benefit of other stockbreeders (D. BUFFIERE, 2007, written contribution).

To help them analyze better and make appropriate decisions, the players involved in pastoralism have tools at various levels: these tools range from data acquisition for a better understanding of the state of pastoral activities at the local, regional or national level, to legislative adjustments. In addition, they are assisted by pastoral services. A certain number of the tools and means available in France are presented in Appendix 6.

3 / Economic Issues and Support from Public Authorities

3.1/ The issue: to support an activity where all the benefits are not paid out

Pastoral activity being foremost an economic activity, its continuation can only happen when it is generally profitable; that is, if the stockbreeder's income is higher than his expenses. Among the expenses which the stockbreeders have to meet, some are very specific to pastoral activities:

- expenses related to transport in case of transhumance;
- employment of the herdsman;
- investment and maintenance in the summer shelter (especially in cases of standardisation for cheese production or where investments for the comfort of the herdsman have to be made);
- investment in the pastures (fences, water outlets, access road);
- additional costs in areas where predators are present (fences, dogs, employment of additional, assistant shepherds);
- expenses related to renting the fields;
- boarding expenses if the stockbreeder doesn't herd the animals himself;
- specific purchases of material adapted to the climatic and topographic conditions of the mountain areas.

The stockbreeders' income consists of the following three components (DIMANCHE M., 2006):

- The products, resulting from the sale of the farm's livestock products, and which could possibly be supplemented by an income resulting from a diversified activity (tourism at the farm, for example);
- Premia, made up of the subsidies from the first CAP initiative;
- Allowances consisting of all the contractualised support from the 2nd CAP initiative and intended to remunerate the benefits of pastoral breeding for the environment (agri-environmental measures, PHAE).

The continuation of pastoral activities will thus be put into question if the expenses increase, or if the income of the stockbreeders decreases. We will not pursue here a study of the expenses, but will go into more detail regarding the "allowance" component of the income.

3.2 / The Current State of Affairs

Within the European Union, the decisions concerning the premia and allowances are contractualised between the EU and the Member States which contribute a national compensation. The decisions concerning which measures will be used and their amounts will depend on the choices of each Member State. According to the importance attached to the impact of pastoral activities on the environment, the landscape and cultural values, and according to their agricultural development priorities, the choices for CAP implementation will be different from one country to another. The stockbreeders will therefore not receive the same support from one country to another.

Following the reform of the CAP and with the decoupling of the aid in relation to earnings, one is afraid that the number of animals will decrease in the least favoured regions. The first results available from Scotland, where the decoupling of support began from 2005 with the choice of a decoupling at 100% for animal premia, indeed point in this direction: a study carried out by YUILL B. and COOK P. (2007) mention an important drop in cattle herds (approximately - 6% between 2001 - 2006) and especially for sheep (- 18% between 2001 - 2006).

The dismantling of the dairy quota system, planned for 2013, may also lead to a drop in the number of cattle herds in the mountain areas, putting into question the future management of the grasslands and the future of the landscape. Indeed, the disappearance of the quotas will certainly lead to a reorganisation of the areas of dairy production. According to the facility of production, levels of consumption and choices of the dairy industry, one is afraid of a drop in dairy breeding in the mountain areas to the benefit of more favourable areas [CHATELLIER V., PFLIMLIN A., 2006]. In the event of suppression of the quotas, Michel Barnier, French Minister for Agriculture and Fisheries, announced at the ANEM Congress of October 26, 2007, that his objective

will be to avoid the destructuring of the network and the delocalisation of the production¹. The means which could be implemented are not yet known.

The future of CAP support for rural development is also a source of concern for the pastoralist stockbreeders, in particular for the French. Indeed, the Pastomed project studied the components of the income of pastoralist stockbreeders in the Mediterranean EU countries. It was shown that the share of income brought by the contractualisation of agri-environmental measures (MAE) reached approximately 35 and 40% in the areas of Provence-Alps-Cote d'Azur and Languedoc-Roussillon respectively, whereas it is lower than 20% in Epire (Greece), the Abruzzi and Sardinia (Italy), approximately 5% in Andalusia (Spain) and is even nil in the Portuguese regions studied. Of the five countries studied, it is therefore France which uses the possibilities of support for pastoralism by agri-environmental measures to a greater extent, and these figures explain why the decrease of the budget of the second CAP initiative is so worrying to the French stockbreeders, who are depending more on the second CAP initiative than their European counterparts. These data, however have to change with the implementation of new regulations for rural development and the 2007- 2013 national strategic plans in which the new MAEs for the next few years are established.

3.3/ Support for Pastoralism through Agricultural Policies

In the European Union, all the financial support for agricultural activities are administered through the Common Agricultural Policy. Although the framework is common to all the Member States, variations in the application of the first initiative as well as the second are possible.

a/ European Union and Europe

- Subsidies within the Framework of the Direct Support for Agriculture

In the framework of the first CAP initiative², sheep and goat transhumance benefit from a special measure: in addition to these allowances, an **additional premium** of 7 € per animal is thus granted "to any farmer practising transhumance" (article 114, paragraph 2), on the condition that at least 90% of the herd grazes during a minimum period of 90 days in an area defined by the Member States as a traditional breeding area, and that the operation centres are located in areas also defined by the Member States.

Therefore, the stockbreeders who practice transhumance, but whose base of operations is not located in the defined area cannot receive this additional premium.

There is also **payment for extensification** which can supplement the suckler cow premium or the special premium (allotted to the stockbreeders of male cattle). This payment of 100 € is granted when the density of animals on the breeding farm is lower than 1.4 UGB/ha. Since this premium is granted only for suckler farms, the dairy pastoralists cannot profit from it.

The implementation of these two measures (additional sheep/goat premium and extensification payment) depend, however, on the choice of the Member States, which may or may not implement them.

- Subsidy within the Framework of Rural Development

In the Regulations for Rural Development³ which provide the implementation framework for rural development support measures (the second CAP initiative), the terms "pastoralism" or "extensive breeding" are not mentioned. However, a certain number of measures taken are likely to be applied to pastoral farms. They are, in particular, measures centred on the sustainable use of arable land (article 36/a): **less favoured area payment, Natura 2000 agri-environmental measures (MAE)**. These MAE and Natura 2000 type measures, valid for 5 years, therefore suppose that the stockbreeders can use the parcels for which these commitments are made during this minimum time period.

¹ Speech of Michel Barnier, Minister of Agriculture and Fisheries at the 23th Congress of the National Association of Elected Representatives of the Mountains (Association Nationale des Elus de la Montagne), on October 26, 2007 in la Plaine

² Rule CE N° 1782/2003 of September 29, 2003.

³ Regulations CE N° 1698/2005 of the 20 September 2005, n° 1974/2006 of the 15 December 2006, n° 1975/2006 of the 7 December 2006.

The rule of subsidiarity which is applied **depends on each Member State** to establish measures adapted to pastoralism within this framework.

Alpinet Gheep Project, Interreg IIIB project (from 2005 to 2008)
(See: <http://www.alpinetgheep.net/progetto.aspx?L=ENG>)

Alpinet Gheep is a trans-national project whose objective is to encourage and promote the sheep and goats sector in the alpine region in order to preserve its role in the sustainable development of mountain communes. The project seeks to identify strategies and good practices to mitigate the difficulties of the sector, to promote positive interaction with tourism, the local arts and crafts and regional policies, and finally to create a Trans-national Federation of Sheep and Goat Breeders of the Alpine Region.

b/ CAP support in Favour of Pastoralism in France

Many professionals of the pastoral sector have reported a very marked deterioration of the conditions necessary for implementation of agri-environmental measures (which have been in place in France for several years), and this in particular since the end of local agri-environmental operations (OLAE, regulation 2078-92). According to these people, the complexity of the administrative framework has increased or is inappropriate, and the budgets currently available have decreased compared to the possibilities which existed before. They also deplore the restrictive access conditions imposed on the schemes.

In the following paragraphs, we briefly present the choices made by France for the implementation of the first CAP initiative, following the reform of 2003, and for the implementation of the second initiative through the 2007-2013 measures for rural development.

- First initiative: in addition to the uncoupled payments, France chose to maintain a certain number of coupled subsidies:

Sheep: sheep premium with the possibility of obtaining an supplementary sheep premium

Cattle: premium for slaughter, premium for extensification, premium for suckler cows

It should be noted that Mr. Barnier announced at the time of the CAP medical check-up which will take place in 2008, that France will be opposed to a further decoupling of animal permia than that currently in place, in order to maintain the sheep and cattle industry in the mountain regions [speech of BARNIER M., 2007].

- Second initiative: over the period 2007-2013, 6.4 billion euros is granted to France for the application of rural development projects. In this budget, 5.7 billion euros is intended for metropolitan France within the framework of the hexagonal rural development plan. This amount is supplemented by the national grant (6.3 billion euros) and the grants to local communities (1.6 billion euros), to reach a total of 13.6 billion euros [speech of BARNIER M., 2007].

The various rural development plan measures which can benefit French mountain pastoralist stockbreeders are as follows:

Modernisation Plan for livestock buildings¹ (PMBE): this measure is intended to help farmers modernise their farm while renovating or constructing new livestock buildings which would improve the conditions for production and employment, animal well-being, and respect for environmental standards. Over

¹ *Source*: "the modernisation plan for stockbreeding quarters", document from the Ministry of Agriculture and Fisheries. Available on: http://agriculture.gouv.fr/sections/thematiques/europe-international/la-programmation-de-developpement-rural-2007-2013/europe-s-engage-en/downloadFile/FichierAttache_6_f0/pmbe.pdf?nocache=1188398507.92

the period 2007-2013, the plan will receive 800 million euros, for a total value of 20% of the labour cost, financed by the State. The ceiling of 90,000 € per farm is raised to 100,000 € for farms in mountain areas.

Support to mechanise the mountain area: intended to facilitate the acquisition of farm equipment, to compensate for the overcosts related to the use of farm equipment in mountain areas. The rate of financing is 20% in mountain areas and 30% in high mountain areas (with an increase of 10% for young farmers), for a maximum of 16,000 €.

Less favoured areas scheme: Specific to the areas with natural handicaps (mountain areas, areas with specific handicaps, areas with other handicaps). The farms have access to it under certain conditions; the main farm building must be in the natural handicap area as well as a part of the grazed land. Approximately 60 % of the recipients are in mountain areas, for a total of 56 % of the subsidised areas and approximately 80 % of the total amount distributed [speech of BARNIER M., 2007].

PHAE (agro-environmental premium for grassland): PHAE 1 comes to a close this year. The measure will be renewed from 2008 in the form of PHAE 2, a national measure project (the PHAE 1 was regionalised), and with the same budget as PHAE 1 [speech of BARNIER M., 2007]. The amount of the premium is according to the compensation for the loss of earnings and the potential savings realised by the farmer. The maximum amount of the premium is 76 €/ha/year.

MAE: each region chose a series of agri-environmental measures which will be applied to its territory. Thus, a measure applied in one region cannot be applied in the neighbouring region. A part of the budget is contracted in the State Regional Plan Contract. We cite two measures here which have a particular interest for pastoralism:

The Natura 2000 programme is open to farmers located in areas defined according to the fauna and flora present. The MAE are thus tools available to the farmers as an incentive for better management of these spaces

The territorialized measure OUVERT03 (implemented in defined areas):

Burning or directed burn-beating deserves to be described at greater length: the purpose of it is to encourage new stockbreeders to practice burn-beating or controlled burning to fight against overgrowth in the non-mechanisable areas and thus avoid the development of "unused" land within moors, summer pastures or rangeland. Indeed, this traditional practice in mountain areas allows one to maintain open spaces and fodder by regular burning (frequency from 3 - 10 years in general). The amount of government support is calculated on the basis of the time necessary for controlled burning to fight against overgrowth. For each territory, the list of approved structures for achieving parcel diagnostics and burning programmes are created. A programme created for each parcel by an approved structure, contains the frequency of minimal and maximum intervention (1 time in 5 years at least), the period of intervention, and the methods of intervention. The participation of the farmer or land manager is specified locally at fire planning meetings. Apart from the years when a burning must be carried out, the maintenance of the parcels must be carried out by mechanical maintenance or grazing.

Other territorialized measures that we will not detail here can also profit from pastoral players, including OUVERT01 measures (opening a neglected environment) and OUVERT02 (maintenance of the opening by mechanical or manual elimination of the discarded branches and other undesirable vegetation), and measures HERBES01 - 10 (with measure HERBE09 in particular: pastoral management and HERBE10: management of grasslands and moors covered by undergrowth).

Measure 323 C: integrated plan in favour of pastoralism. This measure favours the multi-purpose character of pastoral management while guaranteeing the maintenance of natural spaces and the development of fragile areas. Suitable actions relate to two fields:

1/ investments linked to maintenance, restoration and development of the landscape and natural heritage as well as the development of areas of high natural value (investments in material to make up for the difficulties related to the quality of life not only of the stockbreeders and the shepherds but also of the hikers), or investment for pastoral infrastructure: collective investments such as pastoral huts for the shepherd and the equipment, repair of roads suitable for motor vehicle access to the huts, pens for the selection of the animals near the hut, permanent fences, water systems, multi-use equipment, clearing of undergrowth...

The actions necessary for the control and protection of the herds are also eligible: implementation of protection methods, safety devices and installation of mobile fences, acquisition and maintenance of

watchdogs, implementation of a reinforced watch, analyses of the vulnerability of the mountain pastures...

2/ environmental awareness campaigns, communication about the pastoral sector, publicity and surveys in favour of the rural players allowing for better description and management of these territories. In this regard: the pastoral diagnostic, the land diagnostic, analyses of vulnerability, professional information to the general public are eligible...

The recipients are the pastoral land associations, the pastoral associations, mountain pasture associations and federations, communities and their associations, trade unions, employers' trade unions, the departmental, regional and inter-regional structures of pastoral facilitation and public institutions.

It is the regions which target the recipients and the actions supported. The percentage of government aid can vary from 40 - 100%.

c / Measures of Rural Development in the other EU Member States

As it was explained in part 1/2.2, pastoralism provides benefits not only for the farmers, but also for the rest of society. The measures established within the framework of the second CAP initiative are a means of remunerating these benefits.

The following table presents the list of measures supporting pastoral activities established by the Member States of the European Union within the framework of rural development. We present measures for the countries whose rural development plans were approved on November 16, 2007. These measures are more extensively detailed in appendix 8.

Country	Measure implemented (MAE = mesure agro-environnementale) Agri-environmental measure
Germany- Bavaria	MAE Bavarian landscape, measure 4 related to the specific forms of production to maintain the cultural identity of the landscape: 4:1- leading animals to alpine pastures and meadows MAE Bavarian programme of nature conservation contract, measure 3 habitat "pastures": 3.1- extensive use of parcels with a high natural value
Austria	MAE 16: The use of alpine meadows MAE 17: breeding and alpine farms
Slovenia	MAE II/1 mountain pastures MAE III/1 driving animals in areas visited by large carnivores
Italy	-Veneto Region MAE 16: sub-measure e) management of meadows/pastures Action 3: Maintenance of mountain pastures leading to better management - Friuli Venezia Giulia Region MAE: Action 4: Pasture Maintenance - Val d'Aoste Region MAE environmental management of fodder lands MAE renovation and management of the "rus" necessary to preserve the hydro-geologic balance of mountain pastures
Bulgaria	Support measure for traditional breeding systems (mountain pastoralism)
Slovakia	MAE: support for environmental protection in natural or semi-natural permanent meadows – alpine meadows measure
Greece	MAE 216: action 1.2 – purchase and maintenance of Greek sheep dogs
United Kingdom Scotland	MAE management of fauna and flora in the highlands and peat bogs MAE management of grazing land on sites Measure relating to non-productive investments: management of pasture habitats

Studying the measures created in support of pastoralism allows us to observe huge differences between the Member States. These differences reflect the importance the State grants to pastoral activities, but also the capacity of the people of the pastoral world to organise, draw attention to and defend their interests.

d. Support measures for pastoralism in Switzerland and Norway

Switzerland and Norway chose to establish measures in support of pastoralism. We examine them in the case studies (see part 4).

Pastoral project for domestic animals in protected areas – Norway-Sogn County og Fjordane – Projet Euromountains.net

(See: http://www.euromountains.net/documents/theme3_DOCresults/Sogn-Rep-them3_FR.pdf)

This type of project, developed in 2005, is the first in Norway. The objective is to encourage pastoralism in the protected landscape area of Nærøy fjord in order to preserve its farming landscape, knowing that traditional subsistence farming is threatened in the area, leading to a marginalisation of the land. In 2005, approximately 4,350 head (sheep and goats) were put in open grazing land in the protected area, with additional financing of 7-8 € (50NOK) in addition to the 15 - 16 € (104 NOK) already granted to support pastoral activity (see table below). For the financing of this measure, there were tensions between the Ministries for Agriculture and the Environment, the first estimating that these expenses corresponded to management costs for the area, justifying a full or partial financing of the measure. Finally, the Department of the Environment refused to release any amount for this purpose.

The table below presents the calculation of all the support to pastoralism, paid to the farmers in the protected landscape area of Nærøyfjorden.

Type of support	Animal species	Number of animals	Rate (NOK)	Total amount of support per species (NOK)
General aid	Sheep	3,205	84	269,220
	Goats	1,046	84	87,864
	Cows/horses	83	250	20,750
Total amount of national support				377,834
PER (county):				
General support (adult cattle only)	Sheep	1,233	20	24,660
	Goats	523	20	10,460
	Cows/horses	83	45	3,735
Additional support in protected areas	Sheep	3,205	50	160,250
	Goats	1,046	50	52,300
	Cows/horses	83	100	8,300
Total amount of PER support:				259,705
Total (State + county)				637,539

e/ Private initiatives

Although we chose to concentrate on public support for pastoralism in this study, it seemed interesting to present some private initiatives.

There are numerous initiatives, individual or collective, of diversification or economic development through the processing of livestock products or by obtaining quality control labels. Tourist activities are another way to generate additional income. Thus, in Austria, there are numerous cases of tourist activities on mountain farms. We present in case study 10 the results of an evaluation on the repercussions of tourism for the stockbreeders.

**Project Giralpeggi, project Interreg IIIA, Italy/Switzerland –
A project of mountain pasture tourism**

(more information: <http://www.giralpeggi.it/>)

The Interreg IIIA Giralpeggi project, in which Italy and Switzerland participate, supports the tourist development of the mountain pasture economy. This must be realised by various initiatives for the inhabitants of the Alps as well as for the tourists (vocational training in cultural aspects, marketing, welcoming of the customer, gastronomy, maintenance of the animals and for the customers, guided tours, festivals, activities for the children) in order to strengthen tourist attractiveness.

We will mention two more original initiatives in this paragraph:

- The "Adopt a sheep" project¹ ("the Door to the Parks" Farm, Abruzzi, Italy): the objective of the project is to collect subscriptions from people wishing to support agricultural activity and in particular sheep breeding in the Abruzzi region. The participants in the operation pay an annual subscription of a variable amount according to the country of origin and the formula chosen. In exchange, they receive a certificate of adoption and an identity card bearing the photograph of the adopted sheep, cheese (pecorino, ricotta), lamb sausage, wool socks and olive oil (manufactured by a producer associated with the operation). The farm is also an agri-touristic guest house and the people adopting a sheep can thus go to the site to visit the region.

This type of initiative (we found other examples in other countries)², shows the possibilities offered by the association of tourism and pastoral activities.

- The Association of Swiss Assistance to Mountain People³: this Association finances projects for the development of the Swiss mountains, to improve the quality of life in the mountains and to maintain activities in these areas. It supports projects in various fields: trade, agriculture, energy, tourism... This non-profit association functions without subsidies, by donations and legacies from private individuals. For example, the Association financed the establishment of standards for cheese-making workshops, the installation of a pastoral hut transported by helicopter, the renovation of a mountain pasture hut, "nature and mountain" training courses for youth ...

By its existence, this association gives proof of the interest which the public has for the maintenance of activities in mountain areas and particularly for the traditional features of the landscape and mountain culture, as well as the attachment to pastoral activities.

¹ <http://www.laportadeiparchi.it/>

² For example: the "adopt a sheep" project in Ireland: <http://www.adopt-a-sheep.ie/>

³ <http://www.berghilfe.ch/fr/portrait/>

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Part 4: Experiences Presented

The choice of experiences has been guided by the feedback of the Euromontana members in the given time frame, through their diversity, their heterogeneity, their complementarity, and is not an exhaustive list of the most relevant experiences. These experiences have their own characteristics and can hardly be duplicated as they are. They can, however, highlight a new aspect to be used for the purposes of local debate. These texts describe the main aspects of each experience; for that we have chosen to use the format proposed by the DIACT in France, adapting it according to our needs. For each experience, the addresses of the responsible person/organisation are provided so that you can study more in depth the point which interests you. As you will notice, some experiences are very local, others are of national scope. One or another can introduce new and beneficial approaches.

The cases presented here are repeated below:

Topic 1: The Land Pressure in the Mid-Altitude Areas and the Valleys			
Asturias, Spain	The Land Bank (<i>Banco de tierras</i>)	The Land Bank manages agricultural land belonging to the Province of Asturias. The Regional Commission of the Land Bank facilitates the transfer of the farm by playing the part of intermediary between the owner going into early retirement and the ones who are newly installed. Furthermore, it deals with the transfer of rights (dairy quotas, sheep and goat premia...).	
Trento, Italy	Town Planning of the Province of Trento (Piano Urbanistico provinciale)	The Province of Trento implemented innovative means of land protection in its 2007 town plan. Thus, some land areas are classified as "valuable agricultural areas" and are regarded as invariant. Their urbanisation is thus made more difficult. The conditions for the construction of second homes were also made more difficult.	
Luchon, France	The Rural Spaces Management Plan of the Luchon Valley canton	The space management plans by the valley have been designed to tackle the problem of unbalanced development that the canton of Luchon has to face. Established in consultation with local partners, they are supplied with a landscape charter.	
Topic 2: The Management Systems of Pastoral Spaces			
Trento, Italy	Municipal land and usage rights: <i>Usi Civici</i> in the Province of Trento, Italy	<u>The pastures:</u> Above 1,600 m, the pastures are held in common and are governed by user rights: the <i>usi civici</i> .	<u>Management of the pastures:</u> A pasture management committee by village (ASUC) defines the usage rules of the mountain pastures. The herds are kept in common.
Romania	Use of the common pastures in Romania:	<u>The pastures:</u> Most of the pastures belong to the commune or the village, and are farmed in common.	<u>Management of the pastures :</u> The commune defines a grazing plan. A system of bidding defines who will be in charge of the management of the pastures (according to the pasture plan) and the maintenance of the village herds.
Scotland	Crofting in Scotland	<u>The pastures:</u> The pastures belong to a landowner (often private), but are generally operated jointly by the <i>crofters</i>	<u>Management of the pastures :</u> A local pasture committee defines the rules of grazing land usage. The general rules of <i>crofting</i> are laid down by a regional commission.

Austria	Economic Analysis of Mountain Pasture Management in Austria	This case study compares the profitability of the operations of mountain pastures (practising small transhumance) with that of the plains. Under certain conditions (accessibility, minimal size of the farm), it is more profitable for the owner to use mountain pastures than to keep his herd on the plain all year round.
Topic 3: Economic Issues and Support from Public Authorities		
Switzerland	Swiss agricultural policy and support for pastoralism	Presentation of the national measures (general direct payments, ecological, ethological and summer grazing contributions) of the Valais canton.
Norway	Norwegian subsidies to encourage the practice of cattle transhumance - case of Oppland County	Presentation of national support and the support provided by the County of Oppland (important area of small cattle transhumance), such as the subsidy for summer farms, the support for the use of the commons, and support for the fodder harvest.
Austria	The Impact of tourism in the Austrian Alps - the ALP Austria project	Tourism is an important additional source of income for many Austrian alpine farms. The ALP Austria project has studied this phenomena. The principal results concerning the activities introduced, the advantages and disadvantages of tourism in the Alps, future prospects, are presented here.

Topic 1: The Land Pressure in the Mid-Altitude Areas and the Valleys

1/ The Land Bank (*Banco de tierras*) of the Asturias, Spain

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1.1/ Presentation of the Project

The "Land Bank" of Asturias constitutes the farm holdings of the Autonomous Community of Asturias. It is managed by the "Regional Commission of the Land Bank" (*Comisión Regional del Banco of Tierras*), which manages and administers the claims and defence of Land Bank assets and rights. The objectives of the Bank are to organize modernisation, agricultural and social development, as well as the direct and personal, rational cultivation of the land. Its principal activity is the organisation of the anticipated transfer of farms. By intervening at this level, the Land Bank can locate and sign contracts with the owners of the land, and then lease them to people wishing to settle or expand. This system prevents the land being used for urbanisation because of a lack of transferee.

1.2/ Context

a/ Pastoralism in the Asturias

(Source: Estudio de viabilidad para la creación de una escuela de pastores en Picos de Europa)

The Asturias are located on the Northern coast of Spain, and are delimited in the South by the Cantabrian Mountains. The practice of transhumance is traditional here: after a winter spent in the valley, the herds go up first to the mid-altitude spring pastures (between 900 and 1,600 m), then, at the next stage, to the level of the mountain passes. The herds are mostly constituted of sheep and goats because they are more hardy and resistant than the cattle and better adapted to the breeding conditions of the Asturias mountains (dryness, narrow trails, rock areas); the herds of cattle consist of animals of robust breeds such as the *casina*, a small cow able to cope with conditions where food is limited.

Previously, several stockbreeders had their huts in the same spring pasture area and the units formed a small village, most of whose buildings are abandoned today. One of the reasons for this disaffection is the isolation and loneliness experienced in these places. Previously, in the Picos de Europa mountains, the population present during the summer amounted to a thousand people; by 2006 there were only 11 people listed living in summer pastures.

The production of milk by sheep and goat herds is seasonal and corresponds to the period of summer grazing. The milk, which can be mixed with a small proportion of cow milk, is partly used to nourish the kids, lambs and calves, the remainder being transformed into cheese according to traditional methods, with equipment often made of wood.

Currently, pastoral activities and transhumance have regressed to the point where they are just anecdotal. The stockbreeders turn more and more to the breeding of animals for their meat, in particular beef and veal to the detriment of sheep-goat breeding. Spaces which can be occupied only by sheep and goats are consequently abandoned.

b/ The Need to Organise the Transfer of Farms

The fall in the number of transhumant stockbreeders can be connected to the general decline of agriculture and of rural Asturian areas which has taken place since the middle of the XXth century. To this can be added the problem of urbanisation [Fernández García A. 2006], which extends to the best farm land while disturbing the existing agro-pastoral balance. On the other hand, a certain amount of land is under-used because the owners are not identified. One way to encourage the renewal of agricultural activity is to facilitate the resumption of farming by people wishing to become farmers and the use of land which, until now, has been unused.

In Spain, measures concerning the agricultural sector were transferred to the autonomous communities. Support measures for the anticipated suspension of agricultural activities (financed partly by FEOGA) are included within the framework of the June 7, 2005 Asturias Ministry for Rural Environment and Fisheries resolution to contribute to financing support for the discontinuance of activity. The role of the Regional Commission of the Land Bank in the early retirement of farmers has developed in two ways: one as a department for support management, overseeing aspects relating to administrative procedures and the payment of the support; the other as a transfer system if the recipients of the anticipated assistance do not have a transferee for their farm, thus operating the transfer in favour of the Land Bank as recipient of the farmland and its rights of production (dairy quotas and premium rights for nursing cows and goats).

c/ Emergence of a Solution

The Land Bank manages the land belonging to the Principality of Asturias, and is managed by the Regional Commission of the Land Bank. The Commission was created on July 21, 1989 by Agricultural Ordinance and Rural Development Law 4/1989¹. It has an autonomous status of an organisation attached to the Ministry for Rural Environment and Fisheries of the Autonomous Community of Asturias government. According to this law, its functions are:

- To ensure the administration of the Land Bank by exercising all competences necessary and in particular those of conservation, protection of integrity, inspection, direction and control of the assigned assets.
- To endeavour to increase and consolidate the Land Bank, by acquiring new land and intervening in procedures for enlarging or excluding the assigned assets
- To take care of the conservation of the ecological environment of the Land Bank, in particular by requiring a sensible development of natural resources.

d/ The legislation

The legislation of the Land Bank operation is governed by the following texts:

- The July 21st Law 4/1989 of Agricultural Ordinance and Rural Development of the Principality of Asturias² defines the composition and operation of the Regional Commission of the Land Bank Council
- The December 27th Decree 116/1989 sets the standards which control the procedure for the nomination and dismissal of members representing Agricultural Associations and Syndicates who become part of the Land Bank Regional Council
- The Internal Regulation of the Council of the Land Bank Regional Commission, adopted by the Council on June 9, 1998.

¹ Law 4/1989 of 21 July (Ley 4/1989, de 21 de julio, de ordenación agraria y desarrollo rural) published in BOPA n°. 193 du 21 août 1989; corrigée dans les BOPA n°. 228 et 242 des 30 septembre et 18 octobre respectivement.

² Second section of chapter V (articles 58 to 65)

1.3/ The operational mode of the Land Bank

a/ The Regional Commission

The Regional Commission includes a Manager (nominated and dismissed by the Ministry of the Community, after compulsory preliminary notice to the Council of the Regional Commission), a Secretary (nominated by the Minister for Agriculture and Fisheries, following a selection process from amongst the public employees of the Asturias Principality) and a Council.

The Council itself is made up:

- of a President (the Minister for Agriculture and Fisheries of the Community),
- of a Vice President (the Manager of the Regional Commission)
- of six members. Four of the members are nominated on the recommendation of the Ministry for Agriculture and Fisheries, the two others on the recommendation of most of the representative agricultural trade unions in the Autonomous Community, according to the criteria of the current legislation. The Council members can be dismissed by the Government Council on the request of the organisations which proposed their candidacy.

The functions of the Council of the Regional Commission relate, in particular, to the following tasks:

- Determining the usage of Land Bank assets
- Proposal for a direct adjudication, establishment of the set of specifications for public tender notices and the administrative conditions of concession for the adjudication of Land Bank assets
- Acquisition of new assets, determination of their usage and characteristics of their operation.
- Adjudication, decision-making and declaration of expiry of the administrative concessions, judicial action and appearance in the event of litigation

The Council has, in addition, an advisory role for the problems relating or concerning Land Bank management.

Since 19911, the Regional Commission of the Land Bank is also in charge of the management of the register of rural leases (Registro Especial de Arrendamientos Rústicos).

b/ The Land Managed by the Land Bank

The Land Bank consists of land whose owners could not be identified during land consolidation, or bought or acquired following an expropriation, in particular in the cause of public interest. To achieve its mission the Regional Commission has at its disposal the right of pre-emption, except if the transferee of the farm is a family member of the former owner (direct descendant, brother or sister or ascendant), having in addition the ability to be a farmer.

The Regional Commission can also insure mediation within the framework of land consolidation. It will then be able to recover the land for the Land Bank from owners who are unknown. Indeed, the land changes which took place in the XVIIIth and XIXth centuries, with the passage from a mini-fundist mode of property ownership to a way of farming with larger land holdings, left a certain amount of land without owners. In particular, the land which was used jointly was not systematically registered as belonging to the communes in the land registers. By researching the property registers, the municipal inventories and the land registers, the land whose owners were unknown were identified and could be added to the Land Bank. The Bank could then make proposals for their new land use.

The properties acquired by the Land Bank are intended for the following uses:

- Extension of existing farms
- Creation of co-operatives or other farm associations
- The installation of young farmers, in particular as private individuals within cooperatives or other legal associations, or the installation of emigrants resettling in the Community of Asturias
- Installation of new farms, in particular in the areas affected by an ageing population or rural migration.
- Establishment of fields of research and experimentation directly managed by the Community of Asturias or for non-profit, research organisations.

The adjudications can be made in property or in administrative concessions, to people having the status of farmer and **the land must preserve its agricultural usage.**

¹ Decree 13/93 of February 25th.

c/ The Role of the Land Bank in the Anticipated Transfer and Leasing of Land

The primary mission of the Land Bank is to repurchase or lease the farms from people who stop their activity without having a transferee. Owners wishing to stop their activity can thus contact the Regional Commission. Similarly, people wishing to extend their farm or establish themselves in agriculture can look for land via the Land Bank.

It is the Regional Commission which gives its final agreement on the adjudications. The adjudications are made by auction sale unless the commission gives its agreement for a direct adjudication.

The candidates wishing to profit from a direct adjudication must provide a case file in which they justify the low value of the property that they wish to acquire, describing the neighbouring land in relation to the land already in their possession, as well as the homogeneity of the fields in this area.

The concessions have a maximum duration of 30 years. Requirements concerning the type of fields or the improvements to be made on the land can be recorded in the contract. The amount of the lease is given according to the average price in the area where the land is located. The concessions cannot be divided, transferred or seized, but in the event of the death of the holder, they can be assumed by the spouse, the descendant of the holder, or partners of the holder. If the holder does not respect the terms of the contract, the Regional Commission can make the decision to break the contract and evacuate the concession.

d/ Other Actions Undertaken by the Land Bank

The actions carried out by the Regional Commission of the Land Bank relate primarily to the management of agricultural land. The Bank also takes part in the management of certain programmes, such as the "contracts of sustainable management of suckler cows", or "the programme to increase the production of goat milk".

Rehabilitation and development projects are also coordinated on the land managed by the Commission. Among the various achievements of 2006, one can cite the following projects:

- improvement in water collection in an area potentially threatened by drought thanks to a pump operated by solar panels
- Carrying out visits to 26 pastoral concessions (that is, 258 ha in total) to check the conditions concerning access, enclosures, amendments, farmwork, general state of the concession...
- rehabilitation of a farm house intended for rural tourism

1.4/ Resources of the Land Bank

Sources of income for the Land Bank Regional Commission are:

- Transfers earmarked in the General Budget of the Principality of Asturias
- Patrimonial yield
- Subsidies and voluntary contributions from public or private entities

1.5/ The Results Obtained

The total area of the Asturias is 1,060,000 ha, of which 350,000 ha are municipal property and managed by the Land Bank.

In 2006, among 196 anticipated cessations of agricultural activity, 193 went through the Land Bank. Among 196 farms, the total area is thus 3,469 ha (including 3,414 ha of grassland and pastures), at a cost of 29 million euros.

One can explain this success by the interest the farmers have in using the mediation services of the Land Bank and in the help it provides for administrative procedures. The Land Bank also allows one to overcome some of the problems which come up following an inheritance and the division of property among heirs, since by leasing the property to the Land Bank (which takes care of releasing it to a farmer), the property can stay undivided.

1.6/ Future Prospects

The Land Bank management system is, however, not sufficient to compensate for the problem of urban pressure on the land because the means available to the Land Bank are limited. In spite of this, the system is nevertheless useful since the Autonomous Community of the Basques Country has established an institution (Lurranek) according to the same model to manage the land it owns.

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Town Planning of the Province of Trento (Piano Urbanistico provinciale)

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2.1/ Presentation of the Project

In the province of Trento land use is defined by a town plan which defines what use will be made of the land. Two principal categories are thus established in the agricultural sector: valuable, arable lands on which no construction can be made, and other arable lands. This plan is redefined regularly to adapt to the changes which have occurred. In the province of Trento, a small percentage of land is used for agriculture; one of the objectives of the plan is therefore to maintain as constant the agricultural hectareage.

2.2/ Context

a/ Pastoralism in the Province of Trento

One traditionally finds dairy farming in the province of Trento (in particular, the *Bruna Italiana* breed, which is hardy and adapted to the economic development of the mountain pastures), as well as breeding sheep and goats. The stockbreeders practice small transhumance: the animals are taken to the mountains in the summer. Animals from several farms are herded and kept together on the mountain for approximately three months, from June 15 - September 15. In addition to optimising the use of the mountain pasture fodder, the practice of the small transhumance releases the stockbreeders from the constraint of guarding the animals and allows them to devote themselves to collecting hay and other tasks on their farms. The milk from the animals, collected in the mountains, is used for making cheese.

b/ The Difficulty of Maintaining Agricultural Land in the Province

The province of Trento is a very mountainous province. The cities and the transport system are concentrated primarily in the valleys. However, the land located in these areas has the highest agronomic value. Therefore, between 1982 - 2000, active agricultural area decreased by 1.5% (1,706 ha) and forest area increased by 24,000 ha. However, the most profitable agricultural areas (orchards, horticulture, grains, vines and meadows) represent only 50,000 ha (less than 10% of the total land area of the Province). The real loss of land is thus equivalent to 3% of the most profitable agricultural land area.

In addition, the plots used for construction are acquired at prices considerably higher than those for agricultural land. To prevent urban development from leading to too much encroachment of the arable land to the detriment of agriculture, the provinces established "town planning" (PUP) which sets up land use regulations for the province. These regulations are set according to provincial development objectives. They are then the object of a town planning law (*legge urbanistica*).

c/ The Development of Provincial Town Planning

The plan prepared in 2007 will be the third Provincial town plan.

The first plan, established in 1967, aimed at provincial socio-economic development and the rebalancing of the city-countryside differences. In particular, it has allowed the establishment of two nature reserves.

In 1987, the second town plan was prepared, following the creation of the first provincial development plan. The protection of agriculture was then one of the objectives of the development plan and town planning.

The planning of a new PUP has been adopted by the Provincial Council on November 17, 2006, in the framework of the XIII legislature. Today, this new plan has to tackle the questions of economic, socio-cultural and environmental changes which occur in Trento province. Among the problems identified, presented in the preliminary document at the revision of the PUP (see bibliography), are the crisis of agriculture and its causes related to the very high cost of land, the abandonment of the sylvopastoral space, which lead to a reduction of bio-diversity and landscape variety; it is these that worry the provincial government.

2.3/ The establishment of the current Provincial Town Plan

The provincial town plan contains directives about construction on the land and maps of the province with the zoning of the territories into several categories. The land devoted to agriculture can thus be classified into three categories: agricultural land, valuable agricultural land and pastoral land.

Before the preparation of a new PUP requested by the provincial government, an assessment of the 1987 PUP was made and what stands out, at the agricultural level, is an acceleration of the increasing scarcity of well integrated landscapes at the bottom of the valley and a decline in the territorial role of agriculture, of alpine animal husbandry and sylvan culture.

This assessment being established, a strategy for the new PUP is implemented. From there, the new PUP development and realisation process begins according to the following three phases:

- 1 - Acquisition of knowledge
 - Recognition of the specific character of the territory and of landscape values: development of a landscape map in order to identify the characteristics and dynamics of the changes. It must take into account various landscape characteristics (environmental, historical and cultural, economic, of production, of perception and aesthetics).
 - Update and integration of the data within an environmental and territorial information system (SIAT). At the same time, it is necessary to take into account not only factors such as networks, services, mobility and tourism, but also the subdivisions and the specific qualities of the landscape, socio-economic data and any possible feedback following the establishment of the information system.
- 2- Project content development
 - Content relating to the regulation. The PUP is composed of maps and related regulations: the maps and the regulation networks (environmental, historic and cultural, economic, infrastructural and functional), maps, site and landscape regulations (which distinguishes the historical settings, urbanised zones, industrial parks, mines, agricultural, pastoral, and forested zones, rocky areas, brooks/waterfalls/lakes, glacier).
 - Strategic content. It represents the most important innovation established for this PUP revision. It presents the orientation options for the development of the province according to themes, lines of action and ideas-projects.
- 3- Checking and control by a strategic evaluation of the plan
 - Definition of a framework of criteria and indicators for the evaluation of environmental, landscape and territorial conditions
 - Evaluation of the PUP strategy
 - Evaluation of the plans and local projects

The principles for establishing the PUP are durability (environmental, socio-cultural and economic-productive), and responsible subsidiarity. Under this term, it is understood that the local communities will play a role in the establishment of the PUP, by preparing plans on two other levels: Territorial Plans of the Communities and Communal Regulating Plans. The third principle which governs the drafting of the new PUP is the principle of competitiveness, whose objective is to support the rooting of pilot economic activities which display a balanced growth and provide employment in the province. Finally, the integration of development constitutes the fourth principle.

The maps and regulations established in phase two are derived from the old plan and based on discussions at the municipal level. Each municipality receives maps with a new zoning proposal, and with new land apportionment. These documents are published and everyone can react and make known his position regarding future land use. The development process for new zoning is therefore lengthy since it implies negotiations between all the concerned partners.

2.4/ Taking into account agriculture in the PUP

a/ Valuable agricultural zones

Agricultural areas are classified into three types of agricultural zones:

- Valuable agricultural zones: this category includes permanent crops of recognised quality, in particular by an official label; they are notably vineyards, orchards, olive groves, arable land, or permanent meadows and pastures of more than 20ha;
- simple agricultural zones: annual crops and uncultivated lands and wastelands;
- grazing areas.

Land is classified according to its current usage.

Classification into valuable agricultural zones has been introduced in the new plan. This measure allows one to recognise the uniqueness of certain zones where local food specialties are produced and thus to protect the natural heritage of the province. It is also a means of supporting the economy of quality products.

Valuable agricultural zones are classified as "invariants" in the PUP. They are thus regarded as being a permanent feature of the territory: being a part of the local identity, they are not replaceable. For this reason, their destination cannot normally be changed: there should be no building construction and the surface area of the zones should not be reduced. Any change concerning these zones will initiate a special procedure: a special commission evaluates the proposal for new buildings and construction for agricultural or agro-tourism purposes and the final decision will lay with the Provincial government.

b/ The Compensation System

If necessary, there could be a reduction of the valuable agricultural zone. In this case, however, it is envisaged in the regulation (paragraph 5 of article 38) that the reduction of the zone will have to be compensated for by categorising other non-agricultural land as land for agricultural purposes. Compensation must equal at least 80% of the valuable agricultural zone area which was used. The principle is to try to preserve an equal area of agricultural land: if 5 ha must be used for urbanisation, one will then try to find 5 ha to replace them.

The land which will pass into agricultural use can be waste lands intended for industrial use but having never been used for construction, or forest zones which will then be cleared. Negotiations between the various local actors will be necessary for each one of these reassignments.

2.4/ Future prospects

The disappearance of agricultural land will be compensated for when valuable agricultural land is involved. In the case of pastoral land, nothing is envisaged. However, pastoral land parcels are less threatened by urbanisation (less interesting situation because higher in altitude, or more relief features).

The plans are made on the basis of negotiations among the local actors. Therefore, it is necessary that the farmers make their voices heard to keep land in the agricultural classification. Anyway, agriculture as a whole is protected by the principle of compensation for land parcels. The risk is that, gradually, agriculture is pushed out of the good land and relegated to land of low agronomic value. In addition, for a farmer whose land parcel passes from agricultural land classification to another use, even if this land is compensated for, it will not necessarily be usable if it is far away from the rest of the farm holdings.

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3/ Management Plan by Valley of the Rural Areas of the Canton of Luchon, France

3.1/ Presentation of the management plan

The territory of the Luchon canton is located in the middle of the Pyrenees Centrales, at the Southern end of the Haute-Garonne department; it is organised around 2 principal valleys (the Pique and the Larboust). The 31 communes share a particularly limited territory (30,000 ha), whose altitude varies from 600 - 3,222 m.

The Luchon canton was concerned about its future; it wished to work with an integrated development of the territory to take into account not only the space requirements for agricultural activities, but also for the development of economic activities. To this end, in 2001 the Luchon canton developed a **Space Management Plan by valley** supplied with a landscape development plan.

3.2/ Context

a/ Territorial assets: agriculture, forest and tourism

The Luchonnais occupies a strategic location in the middle of the Pyrenees Centrales. Situated away from the principal hubs of communication, it is a frontier territory preserved from steady commercial traffic. It is also an attractive territory which displays a remarkable natural environment and landscapes of great beauty. In this canton, traditional mountain activities based on stockbreeding, pastoralism and the exploitation of forest resources benefited as far back as the last century from the development of tourism, thanks to hydrotherapy.

Based from the beginning on the principle of economic self-sufficiency, the pastoral system implied a diversity of land use types: food crops and fodder, meadows and pasturage. The environment was thus put to the maximum use. The crops were concentrated on the adret of the valley bottoms protected from floods and glacial terraces, the meadows occupied the moist valley bottom, the remainder of the slopes were devoted to harvesting and to mid-season grazing, the higher, less fertile, more irregular slopes were used collectively in summer.

Starting from the period between the two wars, the agro-sylvopastoral economy and its traditional operating systems experienced a slow regression. Agriculture developed, but in an intensive way wherever mechanisation was possible. For the last few years, the phenomenon of disengagement has accelerated and resulted in the collapse of the traditional agro-pastoral system. The farms which were maintained have expanded by taking over the most "practicable" freed land and abandoning the ones most difficult to access.

b/ The need for a harmonious development between tourist and agricultural activities

The questions about the future of the canton of Luchon are related as much to landscape quality (closing of the landscapes) and to tourist attractiveness as to the protection of the land (erosion, fires). In-depth analysis of the territory has enabled researchers to point out a series of dysfunctions:

Agro-pastoralism suffers from land speculation in the bottom of the valley: the maintenance of arable land becomes increasingly difficult and the difficulties for the farmers to delocalise their production constitutes a real obstacle to the pastoral economy. The field realities involve significant, additional costs for the construction of new agricultural buildings. The transformation of open barns into second homes can involve an undesirable change of aspect, and often causes the loss of a pasture for the stockbreeder as well as usage conflicts. On certain mountain pastures, under-grazing and the absence of regular burning lead to overgrowth of the parcels. Substantial quantities of fuel make the control of fires more difficult. Modification of the use of burn-beating towards the valley bottoms increases the fire hazards.

From an economic point of view, little agricultural activity oriented towards services or products directly marketable to tourists, yet locally significant, exists. In the same way, on the level of forest resources, lack of strategy and mobilisation of the forest communes makes exploitation and marketing difficult.

River cleaning projects are often badly adapted to the geographical and financial realities of the communes. This absence of maintenance, the presence of log jams, of floating debris, constitute a real source of aggravation of flood risks and does not allow an upgrading of the tourist potential.

From a tourist point of view, the percentage of visited sites is unbalanced: certain spaces are excessively visited, which can generate the phenomena of trampling of the vegetation, shying away of the wild animal populations and water pollution. Other factors appear to damage the natural integrity of the sites: an increase in big game (stags, wild boars) poses problems for the regeneration of the forests and leads to the disappearance of small game.

c/ a tool for a harmonious development of the Canton

Finally, it appears that the development of the Canton is not done in a harmonious way because there is a lack of valorisation, of networking the various sites, products and tourist services. Also, it appears useful to aim towards a clarification of the various uses of the land and space, to be able to control urbanisation and arrive at efficient space management. Tourism, agriculture, and sylviculture must be maintained and developed in a harmonious balance with respect for the environment and the landscapes, be they urban or natural.

On the initiative of the Luchon canton SIVOM and in partnership with the General Council of Haute-Garonne, the District Council of the Midi-Pyrenees and the State, **the Space Management Plan by Valley** together with a landscape development plan was established. This relevant tool seems **to provide for different uses and space practices**.

3.3/ The development of the management plan

a/ Stages of the realisation of the plan

The development of the management plan is based on an analysis of the activities structuring the territory, on a close analysis of the territory as well as on well planned coordination, mobilising many people in an effort to carry out a united action. Following the diagnosis of territory established and in consultation with all the communes, a list of issues (defined purpose being of particular importance) has been established, creating the basis of a think tank for putting forward action plans. Each issue is supplied with a series of actions to be implemented by the space management plan. Certain actions (local initiative, European procedure) are currently under study or being realised in the Canton.

We have listed below the issues and actions which seemed to us most relevant to the subject under discussion.

b/ Measures:

- For the landscape and environment
 - a. Maintenance of an open and accessible landscape
 - **Providing the canton with the equipment for clearing undergrowth**
 - **Developing the practice of alternating grazing land** to improve the quality of fodder in the meadows, to preserve the zone against wild fires and to improve landscape aesthetics (green pasture which doesn't turn yellow in August). This practice applies to land located in the vicinity of the villages and which is difficult to reach with heavy machinery.
 - **Continuation of the maintenance and reorganisation operation of the woodland hedges:** this measure allows for restructuring of all the canton's woodland hedges by eliminating or replanting trees.
 - b. To promote local architecture
 - **Establishment of a think tank on construction:** in partnership with habitat professionals (craftsmen, technicians, salesmen), it is a question of proposing a reference guide which can perpetuate the identifiable characteristics of the architecture as well as the traditional methods. In this regard not only are restoration programmes involved, but also new building projects more adapted to the needs of our society.
 - **Proposal for a Reference Plan by valley and finalising the architectural and landscape map:** in order to move towards a clarification of the various uses of the land and space, it is proposed to set up, jointly with all the communes of the same valley, an urbanisation plan by valley. This plan is scrutinised by a

"watchdog" committee which provides assistance for new building permits and requests for restoration of traditional constructions. The goal consists of beginning the coherent development of the urban, suburban and rural territories, to develop villages in harmony with the territories which surround them, to concretise the architectural and landscape development plan.

- In favour of pastoralism and burn-beating

c. To maintain and consolidate the owners on the level of their means of production

Sensitising the communes and private owners to the installation of management tools (AFP): The Pastoral Land Association would allow large pastures to form by grouping together the land (private and/or communal), vast rangeland adapted to extensive use in order to limit the expansion of waste land. The constitution of a collective land reserve on the one hand, the sensitising and engagement of the owners to come together (AFP) on the other hand would make it possible to act on the land.

d. To reinforce the territorial dynamics with the implementation of collective CTEs

Coordination of agricultural dynamics in favour of collective action by the stockbreeders. Territorial Contracts of Exploitation (CTE) were thus proposed to organise and manage the territory for the safeguarding of agro-pastoral, forest and tourist resources in order to preserve the landscape. This project makes it possible to develop specific actions such as the maintenance of space (pruning, burn-beating), the promotion of quality products, studying the problems of agricultural buildings, and the management of the mountain pastures for the pastoral associations.

e. To facilitate and organise the practice of burn-beating

Organising the practice of burn-beating in the canton by proposing a cartographic and written document suitable for understanding which zones are to be maintained by fire (by including rotations to be carried out periodically) each year, and secondly, by setting up a commission bringing together all the stakeholders concerned in order to facilitate working relationships at the time of burn-beating operations and to define practices.

f. To promote, develop and market quality products

Quality procedure with the IGP Pyrenees cattle/small lambs//lambs to certify the quality of the animals bred and "prepared" in the mountains.

- Concerning the buildings and open barns

g. To preserve and perpetuate the character of heritage buildings

Subsidies of the General Council for the restoration of the open barns meant for agriculture allows one to equip and modernise this work tool and preserve this fragile architectural heritage.

h. To redefine a purpose for open barns

Setting up of a work group on the future of the barns with the goal to reflect jointly on the future of open barns in order to maintain and/or to redefine their purpose (functions envisaged, requirements). The study must be carried out on all the zones with open barns and must take into account the territory of the barns which represent reserve fodder for the stockbreeders.

i. To maintain the maximum number of buildings housing a small staff in the villages

j. To facilitate the delocalisation of the bigger buildings outside the villages

k. To think of a methodology of approach facilitating all new installation projects

- In favour of tourism

l. To develop the great sites of the canton and its landscape potential

Saint Bertrand de Comminges/Roda de Isabeña Transborder Road Project: built around the upgrading of the roads which historically have connected le Haut Comminges and the valley of Bénasque and the transborder ports, the project aims to rehabilitate the roads and the shelters, with the joint promotion of the heritage and history of the relations and exchanges between the two valleys, with the reinforcement of the bonds and exchanges between the local population and the project holders.

"Pyrenean village" Project: the objective is the creation of a Pyrenean village in the region of Luchon and, more particularly, in the commune of Garin. In a coherent unit composed of farms and construction representative of the principal Pyrenean areas, the village will propose the conservation of a heritage of rural

architecture and, more generally, of an ethnological heritage. Beyond a mere window into the past, the project wants to be a place of reflection and proposals on the cultural and economic evolution of the Pyrenees.

- In favour of sylvan culture

m. To carry out a joint action on the management of the deer population

Forest development diagram (the Pique and d'Oueil valleys): this diagram of forest development examines, among a range of forestry development techniques, those which are best adapted to the objectives of a parcel among a whole mountain range

n. To improve the conditions of forest exploitation and to better promote forest resources

-Sensitising the communes to control exploitation of common resources

Inter-cantonal "Parc à grumes" Project

Other measures were also set up concerning natural hazards, water resources, fishing, hunting, natural environments or biodiversity

The Management Plan thus supports the progressive implementation of natural hazards prevention plans (PRR) in the communes, a micro- purification plant in the commune of Cirés, deer hunting plans, setting up of adequate forestry measures by the ONF in harmony with the environment, upgrading of the site and the Jouéou arboretum within the framework of the Luchon high valleys ecotourism development project.

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Theme 2: Pastoral land management systems

1 / Municipal land and land use rights: *Usi Civici* in the Province of Trento, Italy

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1.1/ Project presentation

Usi civici are the rights to use communal mountain pastures. These provisions exist throughout Italy. Here, we will examine the situation in the province of Trento. They are controlled by separate Civic Use Administrations¹ (ASUC).

1.2/ Context

a/ A brief presentation of pastoralism in the region

Dairy cattle breeding (including the *Bruna Italiana*, a hardy breed that has adapted well to mountain pastures), as well as sheep and goat farming, is common in the province of Trento. Breeders practice small transhumance: the animals herded in the mountains during the summer. The animals from several farms are gathered in a herd and kept together on the mountain for about three months, from June 15 to September 15. In addition to optimizing the use of fodder resources on the mountain pastures, practising small transhumance frees the breeders from the constraints of having to guard the animals and allows them instead to focus on hay gathering and other tasks on their farms.

The milk from the animals, milked at high altitude, is used to produce cheese.

b/ The need to harmonize the use of high altitude pastures

The *usi civici* system developed in response to a need that breeders have experienced since the Middle Ages, that of promoting pastures in collective ownership. In the province of Trento, all pastures situated above 1600 m belong to the villages², or to municipalities³; a municipality can be made up of several villages (in the south of Italy, pastures situated above 1200 m are shared). An agreement between the different users is therefore necessary to avoid conflict and to make optimal use of the common pastures.

The *usi civici* system which has been developed also enables breeders to be relieved of duties related to animal care. By herding the animals on these pastures during the summer and entrusting their care to a herdsman, farmers can remain on their farms and deal with all the other activities that need to be seen to in the summer, including haymaking (a very important task considering that the animals are kept in the barns during winter and fed fodder that is collected during the summer months) as well as farm maintenance and the harvest. For all these tasks to be completed, the farmers need to be relieved of the burden of animal care, milking and cheese production.

1 ASUC: Amministrazione Separata dei beni frazionali di Uso Civico

2 So these mountain pastures were equivalent to the French sectionnaux.

3 Equivalent to municipal.

c/ Land use rights: *usi civici*

The *usi civici* of common pastures have existed since the Middle Ages. This system fulfils both the need to coordinate communal grazing management and the need to watch over the cattle herd while relieving its owners during the summer. The *usi civici* exist in the Trento province and other neighbouring provinces (with local variations).

Even though the *usi civici* were originally unwritten rights, a number of laws were introduced during the course of the 20th century to regulate the framework of *usi civici*. Their function is therefore now acknowledged and adapted into law. Since the introduction of the constitutional act no.5 on February 26th 1948, the Trentin-Haut-Adige region has the power to legislate with regard to *usi civici*. Subsequently, the implementation of the regulations of Special Statute no.1064 for Trentin-Haut-Adige from July 17th 1952 clarified and helped to enforce this constitutional act.

The functioning of the *usi civici* was later clarified in several provincial acts¹.

1.3/ Pasture organisation on lands governed by the *usi civici*

a/ The ASUC: administrative associations of the *usi civici*

According to article 42 of the regional decree no. 332 from 26th February 1928 (*regio decreto n. 332 del 1928*), common pastures must be managed according to the rules of *usi civici*.

The administration of *usi civici* by the ASUC (entity for management of pastures under *usi civici*, see next paragraph) resembles the management of an association. Depending on the size of the villages, there will be one ASUC per village; on the other hand, if the villages are small, then an ASUC will administer the lands of the entire municipality or group of villages through *usi civici*. Beneficiary members of the *uso civico* are the heads of households in the village or a group of villages or their representatives. The municipality is not involved in the management of the ASUC, which is an independent entity.

A number of amenities are available on the common pastures (huts, wells, roads...) and can be used by beneficiaries of the *usi civici* rights.

b/ The functioning of the ASUC

The law specifies how the community property should be administered: a committee comprising three to seven members is elected for five years and makes decisions regarding the operation of the ASUC. A president is elected within the committee and is the legal representative of the ASUC. The committee members cannot simultaneously be the mayor or municipal councillor of the commune. This committee makes decisions about how much needs to be invested in the maintenance and improvement of the mountain pastures.

The members of the ASUC are heads of families (or their representatives) living within the limits of the commune or village that owns the common mountain pastures (a minimum period of residence in the region is required).

If a village or region has only a few breeders, breeders from more remote locations can entrust the care of their animals on common pastures to an ASUC. This case is not common, however.

Pasture management essentially involves determining how much load the mountain pasture can support (number of animals per hectare): each grazing unit is assigned an index based on the maximum density of animals that can be introduced on it. Other parameters are used to define the rules of mountain pasture management (with different coefficients depending on the animal species: cattle, sheep, goats):

- Vegetation structure: dense pasture, sparse pasture, large herbs, small shrubs, leafy bushes, resinous bushes, green alder (*alnus veridis*), forest, non-pasture area
- Access to water, which is measured by the distance in km to a water supply point (0.5-1; 1-1.5;> 1.5km)

¹ The Provincial Act No.16 of June 12th 1980, Provincial Act No. 5 of March 13th 2002, Provincial Act No. 6 of June 14th 2005

- Slope: inclination between 0 and 20 degrees, between 20 and 45 degrees, more than 45 degrees. Goat farming has further classifications
- Access to mountain pasture: tarred roads, trails, lack of roads
- etc.
-

The animals are boarded with the ASUC which looks after them during the summer. The milking is done by a shepherd, who also makes the cheese.

Generally, the income from the sale of the milk and cheese is enough to cover almost the whole cost of boarding the animals. The owners of the animals usually pay a modest fee (for example in Abruzzo: 5 € per sheep). However, the breeders can also receive subsidies.

1.4/ Financial resources

In principle, common land usage is free. However, when the yield from the use of the common property is not enough to cover the administration and maintenance of the mountain pasture (especially if the pasture is small and the ASUC has only a few members), a contribution might be required from the heads of households (eg 1 € per sheep and 5 € per cow).

On the other hand, the redistribution of money for the benefit of family members is completely prohibited. The ASUC uses a proper accounting system. The ASUC's operating budget comes mainly from the fees paid by the breeders. The municipality may also allocate a budget to subsidize the ASUC and to maintain the pastoral facilities (maintenance of the cabins and water supply points, access roads...). Most of the municipalities in the Trente mountains have forests and hence, a large part of their revenue is derived from the sale of trees.

1.5/ Future prospects

The *usi civici* system has already lasted several centuries and has thus far been effective. As the price of boarding the animals is almost completely covered by the income from the sale of milk and cheese produced in summer, the cattle breeders find the system cost-effective. However, the latest tendency towards intensification and enhancement of the scale of operations has led some breeders to abandon the traditional *Bruna Italiana* breed in favour of the more productive Holstein (*Frisona*). As a consequence of making this choice, however, the farms cannot continue to practice transhumance, as it is difficult for the Holstein cows to perform well when herded on the mountain pastures. In addition, the declining number of farmers as well as fewer and fewer herds grazing on the mountain pastures has led to some pastures being abandoned. Lands that are the most difficult to access and of lower quality are usually among the first to be abandoned. However, in recent years, there has been a gradual increase in the number of sheep grazing on the common mountain pastures.

Farmers from other villages who do not normally have access rights to the communal pastures can make an application to benefit from the *usi civici*. However, these cases are still very uncommon and are sometimes the cause of conflicts since the customs and practices of the local farmers can differ from that of the newcomers.

Solving the issue of mountain pasture management is important for the continuation of the activity, especially in the south of Italy. In fact, some of the cabins on the mountain pastures are very rudimentary (without water, electricity or sanitation) and access is difficult, which isolates the herdsman. Potential candidates for the caretaker job among the Italian youth are not interested in working under such conditions. In order to get the job done, breeders are increasingly resorting to hiring foreigners. This raises the question of sustainability of the system.

1.6/ Bibliography

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2/ Use of common pastures in Romania

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2.1/ Presentation of the common pastures management system

In Romania, communes (which can involve several villages) have public pasture lands for the villagers' herds. These lands are located either in the immediate proximity of the villages or farther at high altitude; these lands are managed in different ways: some are used for grazing the animals during the day and returning them to the farm at night and others are used for small transhumance.

This long-standing system has developed its own rules to ensure good pasture management. This case study outlines the conditions and agreements that were implemented for individuals to graze their animals.

2.2/ Context

a/ Pastoralism in the Romanian Carpathians

In Romania, one encounters various pastoral practices that can be differentiated, mainly, according to the type of transhumance carried out:

- Pastoralism with winter transhumance, which is actually declining, is practiced only by sheep breeders. The herd, between 500 and 2000 heads or thereabouts, can travel several hundred kilometres. The case study is not interested in this type of transhumance.
- Pastoralism, sedentary or with small transhumance is practiced by small scale farmers doing subsistence breeding (small herds of about fifteen animals: sheep, goats and cattle, horses) as well as breeders (larger herds, including sheep breeders who do not practice winter transhumance more often because it is too expensive).

In this second case, breeders and animal owners are able to use communal pastures to feed their animals during the summer and prepare fodder reserves for the winter.

b/ The problems encountered : How to manage communal pastures

The communes and villages have various communal pastures located in close proximity to the villages (izlaz, pl. = izlazuri in Romanian) or at a higher altitude (PĂȘUNE, pl.= PĂȘUNI in Romanian, equivalent to mountain pastures). Access to these pastures is vital for animal owners in the villages for the food they provide in the summer as well as for the fodder provisions that can be prepared for the winter, thanks to hay harvesting in the spring (most of the hay is collected from the prairies - FÎNEȚE in Romanian). The communes and villages must therefore reach an agreement with the breeders wishing to graze their animals on these lands to ensure that the communal lands are maintained correctly and to minimize conflicts between the users.

c/ Pasture management by auction

The use of communal pastures goes back several centuries. Irrespective of the political regime or the historical period, villagers have always been able to benefit from the availability of land resources to procure fodder in the summer, even though the system of usage has changed according to the times¹.

¹ History of Romanian pasture management
1890: Communal grazing

Even in those days, the whole village shared the pastures. They were used especially for breeding herds of horses. The horses were left running free and captured when needed. Although difficult to tame, these robust horses were greatly appreciated; even the neighbouring states used Romanian horses as remount horses for the army.

Besides the herds of horses, pastures near the villages were used for cattle in the summer. To reduce the risk of predation, the cows were kept under supervision and circular fenced parks were constructed to guard them during the night and during milking. In these parks, called "prisons", the excrement of the animals piled up and got trampled on by the animals. Consequently, the parks needed to be moved regularly to another section of the pasture and were therefore called "relocations". In the pastures near the village, the best grasslands were reserved for harvesting and were fenced off to prevent the animals from accessing them. As a result, the landscape in that era was a picture of

The communes and villages belonging to the commune would have their grazing lands, more or less, close to the village: either very near the villages (*izlaz*) or at a higher altitude (*pasun*). The pastures were therefore located in the valley or in sub-mountain or mountain areas.

Some village or commune members owned land on which their animals could graze in the summer. Other members with no land to graze their animals opt to either use the pasture located near the village (if the village has its own grazing land) or send the animals up to the mountain pastures during the summer.

Every year, in the spring (march-april), a grazing plan for use of the communal pastures that takes into account all the animals present in each village of the commune is drawn up by the commune. The plan calculates the grazing period, the number of animals and the species that can graze... Representatives from each village of the commune participate in drawing up the plan: in each village belonging to the commune, a number of local councillors are elected to the municipal council, and these representatives then protect the interests of their village within the commune.

Once the grazing plan is drawn up, a licitation (auction by invitation to tender) is held to determine who will have the right to manage the pastures of the villages or communes. The licitation is usually for the high altitude pastures, but may also include pastures near the village. Theoretically, one does not need to be a farmer to be able to participate in the licitation. However, every commune can, if it wishes to, ask for proof (diploma or certificate) that the candidates participating in the licitation have experience in cattle breeding. The person who wins the licitation then gathers together the animals (cattle and sheep) of the villagers who so desire and is responsible for organising their grazing during the summer, according to the rules that were established in the grazing plan by the commune. This person is responsible for hiring a herdsman for the animals. Various deals will be struck between the village animal owners and the person with the winning bid to decide the fee payable for the duration of the summer and how much produce will go to the owner for each animal that is put in care.

Sheep, heifers and bulls are generally sent out to the high altitude pastures, along with one or two cows for milk for the shepherds' personal consumption. The ewe are milked at high altitude and the milk is transformed by the person who won the licitation. He will keep the revenue from the sale of milk and cheese after setting aside four to five kilos of cheese per ewe, during the three to four months of the summer season, for the owner of the animals.

The cows are kept on pastures near the village (*izlazuri comunale*): they are gathered together in a herd and guarded by a shepherd who gets paid by the villagers. The animals are then returned to their owner for the night, where the milking will be done.

When the sheep are herded and use the pastures near the villages (*izlazuri*) prior to their migration to the mountain pastures (*pasuni*), it can cause conflicts with the owners of other animals that will use these pastures next. Actually, they complain that the sheep have fed on the grass and dirtied it with their faecal matter.

villages and meadows dotted with "relocations". In any case, these fences, moved as needed, did not imply a property right but were only tools for the management of animals.

Animals, like sheep, that could not be left to run free (especially because of predator problems) were gathered in a large flock by the village. Sometimes, early in the season, they grazed in the meadows near the villages (*izlazuri*) before being handed over to shepherds to be led up to the high-altitude pastures beyond the treeline (practice of small transhumance). The herd remained on the mountain from spring to autumn. In winter, the sheep were either held in village pastures or were moved by winter transhumance along the "sheep route" to the Danube ponds where the animals grazed on the fields after the crops were harvested.

1948-1989: continuation of the practice of transhumance under the communist regime

In the lowlands and in some hill regions, the nationalized land was managed at the village or commune level by the Agricultural Production Cooperatives (CAP) or State Agricultural Enterprises (IAS). The villagers could own animals and use a portion of the land to graze their animals during the summer as well as to produce fodder that was needed to maintain their animals during the winter.

In the mountainous regions, there were few Agricultural Production Cooperatives: the cooperatives could be established only if there were more than 30 ha of arable land for crop culture, which was seldom the case in mountain regions. Inhabitants of villages and municipalities were allowed to use pastures after paying a fee, whose amount was established by the municipality administration. The pastures were common property but were managed by IIEP (Intreprinderea pentru Intretinerea si Exploatarea Pajistilor = enterprises for management and use of pastures). The IIEP were received funds for investments (conveyance of water, access roads, fertilization, etc.) and for managing the pastures (weeding, removal of stones and waste, etc.). The work done by IIEP was decided in agreement with the municipalities. That manging system has been stopped after the 1989 revolution.

Sheep breeders in mountains used to sign contracts with municipalities to get a right to use the pastures in summer. During fall, sheep breeders used to bring their stock to lower altitude areas, where they had agreements with the CAP and the IAS in order to be allowed to have their animals grazing their. Short transhumance and winter transhumance was therefore still done during communism.

If the communal pastures are not used by the local community, the commune can grant it to another community or individual for a year, against a rent negotiated between the commune and the buyer.

d/ The legislation

Two major acts regulating pastoralism :

- Land Fund Act no. 18/1991, article 44 regarding the management of *izlaz*.
- Joint Ordinance of the Minister of Agriculture and the Minister of Administration and Internal Affairs no. 226/235/2003 regarding pastoralism and transhumance.

2.3/ Pasture management

The management of communal pastures is done locally. There is no interference from the regional or national government. It involves several players:

- The commune or the village, which owns the land, determines the annual grazing plan and the pasture maintenance plan through its representative in the municipal council. The maintenance includes cleaning the grassland, ensuring access to water, organic fertilizing, reseeding the meadows, maintaining the access roads, etc., as well as upkeep of the facilities available. However, the cabins and water troughs present on the mountain pastures are rudimentary: shelter for the herdsman is often just a simple wooden hut.
- The person winning the licitation will be responsible for the proper utilization of the pastures during the summer and for the animals entrusted to him. This person will also be responsible for maintaining the high altitude pastures (repair of water troughs, fences, buildings...).
- All the village breeders can use the pastures near the village and also participate in cleaning the meadows (including clearing work).

2.4/ Budget and resources

a/ The source of funding

Different programmes (Banque Mondiale, Phare, Sapard, European Structural Funds Romanian government funds) allow municipalities to access funds for improving the infrastructure of the pastures, access paths, water supply points, reseeding, for the acquisition of choice bulls, etc.

These programs enable timely intervention, but they are probably not utilized as often as they could be because of the communes' lack of knowledge in this regard. Even so, several communes have benefited from the existing funds.

b/ Operating revenue

For routine maintenance, funding comes from the commune. The revenue used for pasture management comes:

- from the annual auctioning of pasture management
- from the fees paid by the villagers using the pastures: when the animals graze on meadows near the villages, the municipality charges the villagers a fee per animal. The amount is determined by the local council of the commune and depends on the animal species and the quality of the pasture (for eg. cattle is about 20 € / head for the season).

The municipal council does all it can to maintain these grasslands in optimal conditions to ensure that the animals are provided with good grazing conditions during the summer.

2.5/ Future prospects

There are many conflicts with regard to using the pastures. However, agriculture in Romania is still important and the villagers have no other option for grazing their animals during the summer. The system of auctioning makes it possible for mountain pasture management to be assigned to a different person each year; it is therefore in the interest of the person in charge of managing the pastures to ensure correct maintenance of the pastures and deal with animal care in the best possible manner so as not to be excluded from the system the following year. The system therefore continues to survive.

Nevertheless, its survival in Romania is threatened because of the significant decline in the number of breeders. In fact, the decreasing involvement of the villagers in agricultural issues could cause the communes to allocate less funds for the upkeep of the pastures. They would need, in that case, to find other funding sources.

Likewise, it is possible that Romania will ultimately face the same problems as those prevalent in western European countries: unless the working conditions of the shepherds and the facilities offered are improved, the cabins are made more comfortable and brought up to standard, it might be difficult to find people to employ as herdsmen in the summer.

3/ Crofting in Scotland

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3.1/ Presentation of the project

The system of *crofting* can be found on the islands and mountains of the North West Highlands of Scotland. Thus, one encounters *crofting* in the seven former counties. (Former counties of Argyll, Inverness, Ross and Cromarty, Sutherland, Caithness, Orkney, Shetland).

This system is characterized by the fact that farmers (*crofters*) manage the land but do not own it. They, however, own the buildings and the rent they pay entitles them to all the rights relating to the land occupied, including the right to lease the land to others. The farm *crofts* generally have a small area of arable land (*in-bye land*) as well as the right to use the common pastures (*common*). These pastures are managed jointly by the *crofters* and the total number of animals is controlled to avoid the load of excessive grazing which compromises the system's sustainability.

3.2/ Context

a/ Pastoralism in the crofting regions

Sheep farming for meat as well as suckler cow breeding are most common. The breeds are the local, hardy variety and productivity is quite low. The pastures are seldom lush enough to allow finishing the animals and so, the lambs and calves are sold to finishers. Sheep are left to run free in the hills surrounding the villages and are flocked from time to time on private plots or in enclosures for mating, lambing and shearing.

Cattle breeding is less common than sheep farming, perhaps because cattle require more care, especially feeding during the winter. Thus, cattle breeding is associated with fodder cultivation on private plots. Since the 19th century, grain cultivation (wheat, oats, barley, rye) has declined in favour of hay and, especially now, grass silage production. Silage production is generally contracted out to companies that have the equipment needed to complete the work in one or two days.

The season for common grazing on the hills stretches from approximately May to November, for cattle. In winter, the cattle need to be fed twice a day. So the breeder has three options : sell all the animals before winter, use a barn on his private plot (which requires the purchase of straw for the litter), or leave the animals outdoors all year round and feed them using outdoor troughs.

b/ The need to ensure the farmers' rights to enable them to implement a sustainable system of breeding.

In the 18th century, Scottish farmers were neither owners of the land they used, nor of the buildings they occupied. As a result, they had no guarantees regarding the continuity of farming operations and therefore, did not feel inclined to invest in the land or in housing. Between the 17th and 19th century in Britain, a general movement to improve agriculture took place with the introduction of new cultivation techniques as well as modern forms of ownership. The "enclosure" movement spread and allowed owners or tenant farmers to control the plots they used, at the expense of the small scale farmers who had prior access to the place to graze their animals.

So the system of *crofting* developed in the north and west of Scotland. It gave small scale farmers sufficient rights which allowed them to continue working, despite not being the owners of the land they used.

c/ The characteristics of the crofting system

The system of *crofting* was developed in the 1890s. The tenant farmer, known as a *crofter* rents a *croft* consisting of outbuildings and adjoining grounds meant for cultivation. These plots (*in-bye land*) can range in size from less than 1/2 a hectare to more than 50 hectares, but are generally about 5 hectares. If improvements are made on the plots (setting up the drainage, fencing...), compensation will be granted for these investments when the lease ends.

What's more, the *crofters* have the right to use the common lands which are usually located beyond the cultivated areas of the villages on the surrounding hills. These common lands are often of substandard agronomic value. These common grazings can reach 100 hectares and are shared by all the *crofters*. Proper livestock management is necessary to prevent overgrazing. Pasture sharing becomes part of a tradition of working together, like the rounding up of the sheep grazing on the hills for shearing. Given that the area allocated to each *croft* is small, the *crofters* seldom make a living solely from agriculture. Thus, in addition to agriculture, they usually have a second job.

Until 1976, all *crofters* were tenants. The owners are varied across the country, but are never the municipalities: no municipality is the owner of land in Scotland. On the Island of Skye, the biggest landlords are the state. The other large landowners are MacLeod, Noble, the Sheikh of Abu Dhabi, trusts and NGOs (Cland Donald Trust, National Trust of Scotland...). Since 1976, it has become possible for *crofters* to buy their *crofts* and become *crofter*-proprietors (*landlord of a croft*). In most cases, they also remain nominal tenants of the common grazings. With the exception of areas such as Waternish on the Island of Skye where to be a *crofter*-proprietor is the rule, such a status is, nevertheless, unusual.

This system has proven to be stable and has helped sustain the population in remote regions and conserve the agricultural activity in those areas. In many cases, this system is committed to preserving the specificities of the region as well as protecting the landscape.

d/ The current regulation

The Crofters Commission (*crofters' commission*) was established in 1955, and the Crofters' Act (crofters Act) was introduced in 1993 and revised in 2007 (Crofting Reform etc Act 2007). The Commission has a representative role and advises the government on issues related to *crofting*. In addition, the Commission initiates activities favouring *croft* development and explores alternative uses of the lands that are under *crofting*. Finally, the Commission has a regulatory role: it advises on the registration of new *crofting land*, land distribution...

As for the Crofters' Act, it defines the rules that are linked to this particular system: definition of *crofting* and the community of *crofters*, rules to create or rent *crofts*, to register new lands as common grazings, etc.

3.3/ The operation of the project

a/ Management at the local level by a grazings committee

Every community of *crofters* is organized according to local rules. A grazings committee is elected by the members of the community and headed by a grazings clerk or a grazings constable. The committee's role is to regulate grazing according to the rules of the community: it decides how many and what species of animals each *crofter* can put on the common grazings. It can also make decisions pertaining to the involvement of the community (such as commitment decisions with regards to a agri-environmental measure or to reforestation, involvement in diversification, grant application,...). The clerk or the constable will then be a signatory of the contract binding the community. He/she will also act as an intermediary between community members for any modifications to common lands (distribution, *decrofting*, sublease...).

b/ The use of common grazings

The use of common grazings varies between communities. Some communities do not have common grazings; however, these cases are exceptions. The common grazings are located around the *crofts*. The limitations of the land also reflect how the territory is used by its inhabitants. It may happen that, in areas where the soil is

very poor and the *crofts* really spread out, the farther lands will be regarded as common grazings, not assigned to any community or village, but usable by all the *crofters*. These lands are often used for sheep grazing. On the other hand, the communities use the nearest lands at their own discretion.

A characteristic feature of the Sleat communities on the Isle of Skye: the different communities close to the sea are arranged, more or less, in a circle around a central common ground that is used by all the *crofters*. In addition, each community has its own common grazings.

The common grazings (be they grazings near the communities or more remote) can be "apportioned" to the *crofters*. *Crofters* wishing to be part of this apportionment make an application to the *Crofters' Commission*, an organization for the management of farm *crofts*, which in turn consults the department for a local opinion. The community clerk as well as all the inhabitants of the township will be informed through notices placed in the newspapers and stores. The parts to be apportioned are predetermined in the rules (and are the basis for the IACS fodder calculation¹ for example). So a *crofter* can request that he/she be "apportioned" a grazing area which stretches all the way to his/her land.

In practice, the department can claim that some grounds are "non-apportionable", and so the plots actually apportioned will be less than what the *crofter* can theoretically claim. The usual practice is then to either authorize an apportionment that is far less than what is theoretically possible or to authorize the "apportionment" only if the *crofter* is willing to take over the whole allotment that he is entitled to (this is to prevent these people from continuing to use the common grazings on the pretext that they still have the right to a small portion of it as the "apportionment" was incomplete).

The "apportionment" authorization is valid for two years, during which time the *crofter* should arrange to have his plots fenced. Investment aid to finance the fencing is available. The grazings committee can also ask for other specific work to be carried out (drainage, soil improvement...).

Having their own allotments gives the *crofters* more independence with respect to the management of their herds. They can therefore adopt different methods (choose different rams, improve performance), increase productivity (because common grazing implies adapting the herds in accordance with the lowest common denominator), reduce workload. Working independently also allows one to reduce health risks and join various programmes (agri-environment, forestry...).

On the other hand, the disadvantages are that the *crofters* making such a choice must face additional costs (particularly to fence their grounds). At the grazings committee level, the loss of a member leads to a decline in the group dynamics, especially if the *crofter* who requested the "apportionment" was a resourceful member. The loss of members can eventually lead to problems stemming from the weakening of the structure, the potential loss of opportunities and problems with the future management of the organization. The other members are also affected by the request for apportionment because then there are fewer of them left to carry out the sheep roundup. On the whole, there are also negative consequences for the landscape as the obligation to enclose the plots means the landscape is more obstructed (especially if the plots are small). Finally, the intensification that follows the requests for "apportionment" is also negative for the environment.

c/ The players involved in the crofting system

The *crofting* system involves players at different levels:

- At the local level, *crofters* working to perform certain tasks related to joint sheep herd management.
- The grazings committee, made up of member *crofters*, manages the community pastures.
- The *Crofters Commission* (crofting's commission), founded in 1955, aims to regulate the activity of *crofting* in Scotland. It maintains a register of *crofters* and approves the assigning of *crofts* to people who wish to take over a *croft* but are not members of the *crofters'* family that has the *croft*. Its approval is also required for "apportionment" of *crofts*, for *decrofting* plots (ie. a request by the owner that the land no longer be subject to the rules of *crofting*), etc. The *Crofters Commission* also manages the various systems of grants available to *crofters*.

¹ IACS = Integrated Administration and Control System. In France, one talks about the CAP Graph, ie. the Geographical Information System which has listings of agricultural plots likely to receive agricultural subsidies.

3.4/ Funding

a/ Funding at the local level

The grazing committees are funded by the *crofters*, who make a contribution that is used to pay for the clerk and the maintenance costs of the grazings. Or else, the *crofters* do the general work themselves.

b/ Aid Available

A number of grants are available to maintain the activity of *crofting*:

- *Croft House Grant Scheme*: intended for maintaining traditional constructions;
- *Crofting Counties Agricultural Grant Scheme*: provides funding for infrastructure improvements;
- *Cattle Improvement Scheme*: a scheme to improve livestock;
- *Highlands and Islands Croft Entrant Scheme*: a scheme to aid new *crofters* in the Highlands and the Scottish Isles with a view to boosting the activity of *crofting*, including helping new people to take over unused *crofts*;
- *Crofting Community Development Scheme*: development plan for the *crofting* community.

These grants are financed by public funds or by private partners. Thus, for example, the *Highlands and Islands Croft Entrant Scheme* is funded by the company "Highlands and Islands Enterprise".

3.5/ Future prospects

In 2006, the Crofters Commission identified 17,725 *crofts*, for an estimated 11,500 *crofters*. It should be noted that some *crofters* occupy more than one *croft*. So that would be more than 33,000 people living on *crofts*.

The main threat to the system stems from the fact that the revenue from agriculture is insignificant. In fact, the *crofters* cannot maintain their profitability without agricultural subsidies; however, the commitment of the Scots to this kind of activity and the cultural benefits it produces partially explains why this system lives on despite its low profitability. A shortage of farmers who are active and involved in the collective work can also be observed.

Nevertheless, the concerns are real, especially since the introduction of decoupling of subsidies available under the first pillar of the CAP (total decoupling in Scotland).

On the other hand, the pressure of demands to convert these farm holdings into second or retirement homes leads to an increase in the price of farm *crofts* and discourages prospective facilities. Thus, it appears that, protecting the common grazing areas is perversely detrimental in that most of the new constructions are on private plots since these are the ones that *crofters* can dispose of without the permission of the entire community, and also because the profit from the sale of these lands for the constructions goes directly to the *crofters*. In the final analysis, the best lands are used for construction, while the poorest lands, which are used for common grazings, are protected by virtue of their status.

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4/ Economic analysis of mountain pastures management in Austria

This summary is based on the report "Betriebswirtschaftliche Analyse von Almbetrieben" written by Martin Oberhammer (Institut für Agrar- und Forstökonomie, Department für Wirtschafts- und Sozialwissenschaften, Universität für Bodenkultur Wien) within the framework of the ALP Austria project, http://www.almwirtschaft.com/index.php?option=com_content&task=view&id=88&Itemid=144

4.1/ Presentation of the project

Hardly any statistics showing the profitability of mountain pastures in Austria exist. One part of the ALP Austria study aims to remedy these deficiencies. Participants of the project have, from the economic analyses, proceeded to assess the profitability of some farms whose operation is based on the use of mountain pastures. Four mountain pasture holdings were studied. These holdings vary according to the type of production as well as the ease of access, electrical equipment and the condition of the buildings.

4.2/ Context

a/ Brief presentation of alpine farming in Austria

In Austria, most breeders operate small scale alpine farms. On 36% of the alpine pastures, the breeders have herds of under 10 LU¹, on 29% of alpine pastures there are between 10 and 25 LUs and only 25% of alpine pastures have more than 25 LUs. People working on the alpine farms are three quarters of the time from the same family (breeders and family members). Only ¼ the workers do not belong to the family: in fact, because of harsh working conditions, low pay and the seasonal nature of the work, breeders find it difficult to employ outsiders.

Alpine pastures fulfil several functions for the farm:

- Animal husbandry and high quality food production
- Positive impact on the health of the animals (eg fertility)
- Expansion of fodder resources through using the alpine pasture surfaces

In addition to those cited above, the consequences are also

- Conservation of the cultural landscape as a basis for tourism
- Positive impact on the environment
- No pasture abandonment and securing animal diversity

b/ The decrease in the use of alpine pastures

Since the first investigation at the federal level in 1952, the surface of alpine pastures used in Austria has declined by 100000 hectares. Through natural reforestation and afforestation activity, abandoned areas become woodlands. Especially between 1952 and 1974, many high altitude pastures were abandoned due to the rationalization of agriculture and mechanization. As a result of these findings, incentives for the use of alpine pastures were introduced and resulted in an increase in the pasture surfaces used until 1986. The surface of alpine pastures then decreased again.

Today, there are half as many dairy cows on the alpine pastures as in 1952. As for other cattle, their number is, in contrast, relatively constant. Moreover, the number of alpine pasture cheese dairies is also down: instead of producing cheese on the premises, many alpine dairy farms are transporting the milk down to the valleys. The reasons cited most often to explain pasture abandonment are lack of profitability, insufficient disenclavement and lack of personnel. Very small alpine pastures, long distances from the alpine farm to home or steep surfaces are other factors cited. High personnel costs, very low selling price of the products and the need to invest to bring the facilities up to standard after the introduction of the Decree on milk hygiene in 1998 are also important economic factors.

¹ In Austria, a LU (UGB) or Livestock Unit (Unité Gros Bétail) (*Großvieheinheiten* or GVE) corresponds to 500kg body weight.

4.3/ A study to calculate the profitability of alpine farms

Before the development of this project, only a few studies on the profitability of alpine farming existed. The aim of the project is to develop a suitable calculation model and the implementation of case studies.

The alpine pastures operation and valley operation together constitute an economic unit. Where beef production is concerned, a farm in the valley has the option to choose whether to use a high altitude pasture or not. In order to evaluate the cost-effectiveness of using alpine pastures, the cost and profitability of using mountain pastures will be compared with those of an operation that does not use high altitude pastures and its animals are kept on the farm in the valley throughout the year and additional low altitude areas are rented for the production of additional food. The difference in the amount of time spent on the job when family is in charge of the operation will not be factored into the assessment. However, the difference in terms of workload will be provided as a rough guide.

a/ Analysis of the profitability of a dairy farm

Two dairy cattle farms using large areas of alpine pastures were studied. The result shows that using high altitude areas is definitely cheaper than herding the cows on the farm in the valley throughout the year.

Working hours are reduced, especially when common alpine pastures are used, because hiring personnel to work on the mountain pastures relieves the breeder. Thus the operation of an alpine cheese dairy farm is profitable. Likewise, for smaller scale alpine farms, using high altitude areas is cheaper than maintaining the animals mainly on the farm in the valley, with the proviso that this conclusion is valid only so long as no investment is needed.

b/ Influence of different factors on the profitability of alpine farming

Location and disenclavement are factors that have a significant impact on profitability. In Austria, more than 86% of mountain pastures are accessible by truck. 8% of mountain pastures are still only accessible on foot. A hardship allowance offered by the state as compensation for the latter is not enough to cover the higher cost of transporting equipment to the site.

As far as the **cost of investment in the buildings is concerned**, the largest holdings have an economic advantage thanks to the economies of scale. The marginal costs of the buildings fall for each additional LU.

The **cost of employing** workers from outside the family for each alpine pasture: the costs vary depending on whether the farm has suckler cows or is a dairy farm.

As for **the legal proviso**, milk quota regulations play an important part. Indeed, since milk quotas linked to mountain pastures cannot be transferred to lands located in the valleys, the possibility of obtaining additional quotas makes using mountain pastures suddenly an interesting proposition for the farmers.

c/ An example

The object of this study is the alpine pasture in Vorarlberg. This pasture is used jointly by seven members and comprises bi-level farming, the first of which is located between 1380 and 1580 meters above sea level and the second between 1680 and 2020 meters above sea level. High altitude pastures are used for a period of approximately 80 days. Each level of the alpine pasture has a building. The alpine pasture cheese dairy comprises a copper pot with a wood heating stove, for a capacity of 850 litres. The pasture is used for breeding 45 dairy cows. All the milk is processed into butter and cheese. The waste from the treated milk is used for breeding twenty pigs, which are taken to the mountain pastures in the summer. Four people work on the alpine pastures: a cowboy, a cook and two young shepherds.

Under present conditions, using alpine pastures is profitable. Herding the animals in the valley throughout the year would result in an additional cost of € 15,500.

4.4/ The budget and resources

Financial aid received by the alpine farms.

Alpine farms depend heavily on the state for financial support. Austria offers alpine farms the following financial support programs :

In 2002, 112 million euros had been paid out throughout Austria as financial support for alpine pasture farming. These incentives were distributed to 30,400 holdings that used mountain pastures for 273,400 LU during the summer. 51% of them were paid additional compensation for alpine pasture food surfaces.

Extensification subsidies account for 28% of all incentives and almost a quarter has been given to ÖPUL programs¹ for "the use of alpine pasture surfaces and shepherd services". Only 2.6% has been allocated to support investment and 0.5% for actions involved in securing mountain pastures. The state also offers alpine pasture farms other forms of support. The Vorarlberg region pays 50% of the social security contribution of personnel employed by alpine pastures.

Calculations have shown that for fair-sized alpine farms, financial support pays the additional costs incurred from using alpine pastures as opposed to maintaining the animals all year round on the farm at home. The financial support is not enough to balance the additional costs incurred when the alpine farms are smaller. The economic disadvantage resulting from the size of small alpine farms is not reflected in the financial aid.

Investment costs support is the premise for maintaining a profitable alpine cheese dairy farm. Direct marketing, top quality cheese and the declining price of milk from dairies in the valley have a positive impact on the profitability of alpine cheese dairy farms.

4.5/ The results and the investigation (income for the alpine farmers, the durability)

The results of calculations show that profitable alpine farming is possible on the two large farms alpine farms. The farmers' workload does not increase even if workers from outside the family can not be employed (small pastures). Building costs per LU are proportionately less on large alpine farms in comparison to small alpine farms and employing workers from outside the family as well as more rational work methods improve the profitability as compared to smaller pastures.

The main factors influencing profitability of an alpine farm are location, disenclavement, infrastructure of the buildings, employee situation and overall conditions (the milk hygiene decree). From what has been analyzed, smaller farms and less disenclavement are recognized as economic disadvantages under the present conditions. Under the same conditions today, raising young animals is more profitable than the maintenance of dairy cattle. The sustenance of dairy cattle on alpine farms is only profitable on the large farms studied.

4.6/ Future prospects

As long as no investment is necessary, the benefits of using the surplus alpine pasture surfaces outweigh the cost of running all four alpine farms. With regard to the two large alpine farms, it makes sense in the long term to use the alpine pasture surfaces for cattle. This means that future investments are profitable and employing foreign workers decreases the burden on farmers during the summer. On the smaller farms that were analyzed, use of alpine pasture surfaces by the animals causes an increase in working hours for farmers.

Milking carried out in an alpine cheese dairy farm is only profitable on the two large alpine farms. With regard to raising young animals, calculations done on the two alpine farms show that, under current conditions, an alpine farm with young animals being raised on the same premises - without assessing the family working hours - is more profitable. The decree about guaranteed milk quantities is an important incentive to produce milk on alpine pastures - this would be eliminated in a free market in milk.

¹ Österreichisches Programm für eine umweltgerechte und den natürlichen Lebensraum schützende Landwirtschaft: Austrian Program for ecological agriculture and protecting the living space

Theme 3: Economic challenges and support by the public authorities

1/ Swiss agricultural policy and support for pastoralism

1.1/ Overview

Switzerland is a federal state comprising 26 cantons. The agricultural policy is federal as well as cantonal. Even though direct aid is federal, the cantons still have the freedom to implement additional measures, especially in the field of rural development. Here we describe the federal measures and an example of measures implemented in the Valais canton to boost pasturing activities.

1.2/ Context

a/ A presentation on pastoralism in Switzerland and the Valais canton ¹

High altitude pastures account for nearly a quarter of the Swiss territory. In the Valais canton, around 15% of the area, covering approximately 550 alpine pastures, is used for pastoralism. Most of the users are cattle breeders and a fifth of the alpine pastures is used for sheep, goat or horse breeding.

b/ Evolution of the Swiss agricultural policy

Until 1993, Switzerland guaranteed the price and sale of products in order to support domestic agriculture. Since then, Switzerland has been committed to decoupling aid. The first phase took place between 1993 and 1998 and involved the introduction of direct payments not linked to production, a decline in price support by the State, compensation for meeting specific ecological standards and changes to border protection. The second phase between 1999 and 2003 involved the abolition of price and sales guarantees, the dissolution of Butyra (Swiss Central Office for butter supplies) and the Swiss Cheese Union, and linking direct payments to meeting mandatory environmental standards. The third phase (2004-2007) saw the abolition of milk quotas, the auctioning of tariff quotas for beef and establishment of social support measures.

c / Establishment of Agricultural Policy PA2011

Currently, the next phase of the agricultural policy is being negotiated. The 2011 Agricultural Policy program (PA2011) will be implemented for the years 2008 to 2011.

The idea to establish PA2011 was formulated in December 2004 with the publication of the Charter of the rural economy of Switzerland². The key stages that followed in 2005 were the presentation by the Swiss Association for the Development of Agriculture (AGRIDEA) containing ideas on PA2011³, the presentation of the FOAG's⁴ (Federal Office of Agriculture) outlook for PA2011, followed by a document presenting the main guidelines for the policy⁵. On December 12 2005, AGRIDEA issued a collective statement about PA2011. Subsequently, on September 14 2005, an official enquiry was launched, the results of which were published in March 2006⁶.

On May 17 2006, the Federal Council submitted its views about the future development of the agricultural policy (CAP 2011) to the federal parliament⁷. Finally, a document concerning the initial hearing on the first set of ordinances was made public on June 29 2007⁸. The first set of ordinances, which should come into force from January 1 2008, will bring, among other things, changes to direct payments and zoning (with the introduction of an entry criterion for defining the summering regions). It should be followed by a second set of

¹ Alain Alter, The future of the alpine economy

² The Charter of the Swiss rural economy is available at <http://www.srva.ch/files/charte.pdf>

³ Swiss Association for the Development of Agriculture, 2005. Reflections of SRVA on PA 2011, SRVA, Lausanne, pg 11. Available at <http://www.srva.ch/files/reflexions.pdf>

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⁶ Federal Department of Economic Affairs, 2006. Report on the results of the enquiry relating to the future development of the agricultural policy (CAP 2011), pg. 38

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⁸ Document available at <http://www.blw.admin.ch/themen/00005/00044/index.html?lang=fr>

ordinances, which is scheduled to come into force in 2009 and will introduce changes to the rate of contributions based on the area and the animal.

1.3/ Federal subsidies (on the basis of aid granted in 2007)

a/ General direct payments and ecological contributions

Legal basis

Federal Law on Agriculture from April 29 1998;

Ordinance on direct payments in agriculture (OPD) from December 7 1998;

Ordinance of December 7 1998 issued by the DEA about regularly keeping livestock outdoors;

Ordinance of December 7 1998 on agricultural terminology and recognition of types of farming.

To be eligible for these subsidies, the farm must be at least one hectare or with one LU¹ and need a minimum workforce of 0.25 Standard Labor Units (UMOS). The farmers must meet the Environmental Farm Management Practice Requirements (PER) pertaining especially to animal welfare, the balanced use of fertilizers and the environment.

The subsidies are staggered: payment will be 100% for up to 30 ha and 45 LU, 75% for 30 to 45 ha with 45 to 90 LU, 50% for 60 to 90 ha with 90 to 135 LU and beyond that, there will be no payment. The amounts distributed are limited to CHF 65,000 per UMOS, and may be capped depending on the income and wealth of the person concerned.

General direct payments

They are paid to farmers, private or in a cooperative, under 65 years.

Payments for roughage-consuming animals (Article 28 to 32 OPD) amount to CHF 900 / LU² or 400 CHF / LU / year for non-dairy sheep and goats, deer, llamas and alpacas. A loading limit, ranging from 0.8 roughage-consuming LU / ha in Class IV mountain areas to 2 LU / ha in large scale farming and intermediate zones, has been set up³ (from 2008, the intermediate zones will be declassified). A supplement is available for summering the animals, the peak load is increased by a summering supplement. This supplement, expressed as a percentage of LU summered, is as follows: 25% supplement for a minimum period of 60 days up to 35% for a period exceeding 120 days.

Likewise, there is a subsidy for animal care under difficult conditions (Articles 33 and 34 OPD). The amount varies from CHF 260 in hilly areas to CHF 1190 in mountain zone IV and is paid for a maximum of 20 roughage-consuming LU per farm holding.

Ecological payments

Unlike general direct payments, ecological payments may also be paid to legal entities and to collectives. Income limits do not apply.

The ecological compensation for extensive grasslands, litter areas, hedges, copses and wooded river banks (Articles 44, 45, 47 to 49 OPD) depends on the area where the lands are located, and ranges from 1500 CHF / ha / year in areas of large-scale farming and intermediate zones to 450 CHF / ha / year in mountain zones III and IV.

The compensation for less intensive grasslands (Articles 44, 46 and 49 OPD) is intended for untreated meadows with limited nitrogen supplies. The amounts range from 300 CHF per hectare per year for mountain zones III and IV to 650 CHF per hectare per year for large-scale farming, intermediate and hill zones.

Ethological payments

Payments for regularly keeping animals outdoors (SPRA) (Articles 59, 61 et 62 OPD) are granted when animals consuming roughage are outdoors at least 26 times a month during the growing season and at least 13 times a month for the rest of the year. In PA2011, this payment will have a rangeland variant and a rangeland/pasture variant. The amount of the payment is 180 CHF / roughage-consuming LU / year for 2007.

¹ LU = Livestock Unit

² RCLU = roughage-consuming Livestock Unit

³ The Swiss territory is divided into large-scale farming zones, expanded intermediate zones, intermediate zones, hill zones and mountain zones I, II, III and IV.

b / Summering contributions in agriculture

Legal basis

Federal Law on Agriculture from April 29 1998;

Ordinance on summering contributions from March 29 2000;

Ordinance of the FOAG from March 29 2000 on the management of summering farms.

Those eligible for contributions are farmers of summering farms, pastures and community pastures whose corporate headquarters are in Switzerland, and raise sheep, cattle, goats, horses, deer or llamas and alpacas.

The contribution depends on the animal species, duration of summering and type of supervision. For animals summered 56 to 100 days per year, it is 300 CHF/roughage-consuming LU/year for dairy cows, dairy ewes and goats, 300 CHF / pâquier normal/year¹ for sheep with permanent shepherding, for other animals consuming roughage and for dairy cows, dairy goats and sheep summered for less than 56 days or more than 100 days per year. For sheep (except dairy ewes) in rotational grazing, the contribution is 220 CHF/pâquier normal/year. Finally, the contribution is 120 CHF/pâquier normal/year for sheep (except dairy ewes) on a different pasture.

1.4/ Valais canton subsidies

The cantonal agricultural policy is implemented through the Agriculture and Rural Development Law (Law on Agriculture; LcADR) of February 8 2007, enforced since July 1 2007², and the Ordinance on Agriculture and Rural Development (OcADR) of June 20 2007³.

The cantonal law is intended to implement and complement the federal legislation. Its objectives are to improve agriculture in economic, territorial, organizational, environmental and socio-cultural terms. For this reason, the Alpine economy is specifically mentioned in the more stimulated sectors.

a / Subsidies for structural improvements (Part 6 of the Act, articles 51 to 59)

Structural improvements with regard to pasturing activities can be land improvements, alpine improvements, alpine infrastructure improvements and renovations, regional development projects and promotion of local products, maintenance and improvement of traditional structures (dry stone walls, alpine buildings). For this reason, the subsidies granted are differentiated by whether the investments involved are for an individual or a collective.

Operations can be carried out by private individuals, communities or land improvement unions and the important phases of the work will be subject to public scrutiny (except in cases of natural disaster or accident). The Canton can provide financial aid for the structural improvement work. The municipality has to contribute towards the financing of a project supported by the canton and its contribution will be 25% of the cantonal aid. The owners provide the necessary additional finance.

Once improvements are completed, the works and installations that have been the object of improvement must be used for agricultural purposes for 20 years.

The government of the canton, through the department of economy and territory, can define the rural development plans or alpine pasture farming plans. These will be developed especially if they are necessary for the proper management of alpine pastures, for environmental (particularly to preserve the quality of groundwater) or landscape interests and can lead to granting of aid to the individuals that are under the plan.

b/ Other aid (Title 8 of the law, Article 99-2)

Moreover, the Valais canton grants aid "to agricultural landscape assets, such as irrigation canals, dry stone walls and alpine buildings"

¹ A pâquier normal equals one roughage-consuming LU grazing a summer pasture for 100 days.

² Available at <http://www.vs.ch/navig/navig.asp?MenuID=461>

³ Available at http://www.vs.ch/public/public_lois/fr/LoisHtml/frame.asp?link=910.100.htm

c/ Distribution of federal summering contributions

The summering contributions are federal subsidies. The canton however has a say in how this aid is distributed. Thus, the Ordinance on Agriculture and Rural Development from June 20 2007 allows a portion of the summering contributions to be returned to the owners of the summering farms that are rented out to farmers. This share may go up to 25% of the contribution, provided the owners themselves carry out the maintenance and improvement of the alpine pastures.

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2 / Norwegian subsidies to encourage the practice of cattle transhumance - County of Oppland example

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2.1/ Overview

Norway has a long tradition of transhumance dating back several centuries. In the summer, farmers located at low altitude ascend with their dairy cattle herds to higher altitude areas and spend the season in summer farms. However, this practice, known as *seterbruk*, is in decline and farmers are using summer farms less and less. Therefore, Norway has set up aid to be used by county authorities to try and halt the decline in transhumance.

2.2/ Context

a/ Pastoralism in Norway

Transhumance in Norway evolved so that high altitude pastures available in the summer could be used for both, milk production as well as building fodder reserves for the winter. There is documentary evidence of these practices since the time of the Vikings; in the 19th century, transhumance was practised by up to 100,000 farmers before it began to decline.

Summer farms or *seter*, are usually located a few kilometres from the main farm at a higher altitude. It is often located just above the tree line; for farms located inland, it is approximately 800-900 metres above sea level while the main farm is about 400-500 metres above sea level (the main and summer farms are at a lower altitude if they are situated closer to the coast). In spring, the pastures above the farm are used and the animals graze freely. Transhumance is sometimes done in two movements involving a progressive ascent to higher altitudes and a longer distance from the main farm. Thus, a first trip to a spring farm (*vårseter*) at medium altitude can take place in early June. The move to the summer farm, which is the main summering spot, takes place later at the end of June or the beginning of July. The breeder and his family remain on the summer farm for around two months before climbing back down to the main farm.

The summer farm, though smaller than the main farm, is nonetheless well-equipped; the breeder can live there with his family, work, do the milking and transform the milk, if needed, into butter and cheese. The animals can graze on common pastures belonging to the State or parishes. The management of the commons is governed by Acts (Parish Commons Act of June 19 1992, Act on uses other than forestry and the Management of State Commons Act of June 6 1975). They are managed locally by the "Commons Board" (*allmenningsstyret*) for parish commons or the "Mountain Board" (*fjellstyre*) for pastures of the State Commons. The breeders have representatives in the "Mountain board".

Currently, approximately 1200 farms in Norway are used for milk production, with about 480 in the County of Oppland.

b/ Decline in the number of breeders using the summer farms

Like in other European countries, agriculture in Norway has also undergone significant restructuring. The number of farmers has decreased considerably and continues to decrease. The decrease in the number of farmers is automatically followed by a decrease in the number of transhumant breeders, which is itself compounded by the abandonment of transhumant practices by some breeders.

In Oppland County, where a significant number of summer farms are located, a fall in transhumant activities has repercussions not only on farming activity but also on the traditional landscape, sold nowadays by tourism

professionals to city dwellers seeking the calm of rural areas. There is a sizeable risk that the territory will lose the attraction it holds for tourists because of the changes in agricultural practice.

c/ Implementation of aid for transhumant activities

The abandonment of traditional transhumant practices has led to Norway deciding to support these activities by establishing subsidies for transhumant breeders. The national program to support farmers using summer farms was set up in 1994. These subsidies in support of summer farms are the result of negotiations between the State and agricultural unions, and are renegotiated each year. Until 2005, the subsidy available to breeders using summer farms and producing milk was €1500. From 2005, the decision about how much aid is available has been handed down from national level to the Counties, and the Counties are now paying the aid.

2.3/ Subsidies introduced by the Oppland County and related directly to pasturing activities

The figures mentioned and types of aid presented are valid for the Oppland County. Other Counties may have different support programs.

a/ Subsidy for using summer farms

As mentioned above, since 2005, the decision about the amount of aid has been decentralized and the counties can, depending on their priorities, decide on the sum allocated for this aid. Some counties, where transhumant activities are infrequent, have decided to allocate only a minimal amount for this aid. Others, like Oppland County, where the use of summer farms is still significant, have placed emphasis on this measure.

Like the national aid before 2005, the decision about the amount of aid at the county level is the result of negotiations between the Governor of the county and the agricultural unions in the county. The aid is then registered in the Regional Program for Environment and Agriculture which each County must prepare.

In the Oppland County, €3200 is allocated as aid to farmers using summer farms. The proviso for aid is that farmers must spend a minimum of four weeks running the summer farm. Additional aid may be granted under the following conditions:

- If animals graze on uncultivated areas throughout the period spent on the summer farm, the supplement is €400 .
- If the time spent on the summer farm exceeds eight weeks, the additional aid is €500
- If the summer farm is a farm commons, i.e. managed by more than one farmer, the additional aid is €500.

b/ Other subsidies available in the County of Oppland

Other aid is available to pastoral breeders, especially aid to maintain the cultural landscapes that are so valuable for biodiversity (the amount depends on the number of animals, the system of organization for grazing the animals, cultivated areas around the summer farms...).

Help for organizing pastoralism: organizations using common property may receive a subsidy for herd supervision. The subsidy amount varies according to the animal species: it will be €1 per animal for sheep and goats, €2 per animal for cattle and horses. The total subsidy for shepherding should not exceed 60% of the shepherd's salary or €5000.

Harvesting fodder (grass or hay) on lands linked to the summer farms and intended for transport to the main farm as fodder for the winter: subsidy can be to the tune of €1 per hectare for the first 4 hectares, beyond that €0.5 per hectare.

Aid for grazing in cultivated areas on the summer farm: breeders can receive aid amounting to €0.5 per hectare

2.4/ National aid

In addition to aid for practising transhumance, **investment aid** also exists and the proviso for it is governed by national rules. Norwegian farmers can receive 25% of the amount invested in the construction of a new barn or the construction of a cheese making factory on the summer farm.

Farmers deciding to invest in **diversification** (usually in tourist activities) can also be subsidized for up to 50% of the costs.

Aid **for diversification**, amounting to €50,000 maximum, is also available to farmers wishing to start a non-agricultural activity on the main farm or the summer farm. For example, an owner wishing to start farm tourism on the summer farm will be able to receive this aid.

2.5/ Bibliography

- Daugstad K., 2005. The location pattern of summer farms (seters) in Norway: Determinants, changes and contemporary management challenges, ESF EARTH Programme Team 3 meeting, Menorca, 27-31 October 2005 P-07/05
- GUNDERSEN F., 2000. Between tradition and modernity. Local institutions and the management of common property in mountain regions in Southern Norway in the 1990's. 8th Biennial Conference of the International Association for the Study of Common Property (IASP), Bloomington, Indiana, 31 May – 4 June 2000.

3/ Analysis of the impact of tourism in the Austrian alpine pastures - ALP Austria project

This summary is based on the report "Auswirkungen des Tourismus" by Arne Arnberger, Andreas Muhar, Petra Sterl (Institut für Landschaftsentwicklung, Erholungs- und Naturschutzplanung, Universität für Bodenkultur, Wien) within the framework of the ALP Austria project, http://www.almwirtschaft.com/index.php?option=com_content&task=view&id=88&Itemid=144

3.1/ Presentation of the project

More than half the alpine pastures in Austria also have tourism services, such as supply companies, cable cars, ski runs, marked hiking trails, etc. Farms with tourist offers are found mainly in Western Austria. Nevertheless, tourism has a significant impact on alpine pasture management as it involves a coherent sharing of space for optimal use by all. The tourism component of the ALP Austria project analyzes the positive and negative consequences of tourism on alpine pasture management.

3.2/ Context

a/ Short presentation on alpine pasture management

More than 9000 alpine pastures are used in Austria, most of which are situated in Tyrol, Carinthia and Styria. Alpine pastures account for about 12% of the total territory of Austria. Most alpine pastures are between 3 and 50 hectares. Approximately 73% of them, including most of the ones in Carinthia and Styria, are private property. Ownership and joint holdings exist mainly in the federated states of the west (44% of Vorarlberg Alps and 36% of the Tyrolean Alps). 58% of all alpine pastures with usage rights (Servitutsalmen) are found in Styria.

Alpine pastures are used most frequently for cattle breeding (Galtalms). Mixed pastures represent 26% of all pastures, followed by pastures for dairy cows (6%), pastures for sheep and goats (2%) and pastures for horses (1%). More than 400 000 cattle, sheep, goats and horses summer every year on the alpine pastures.

The farms are relatively small: on 36% of the alpine farms, less than 10 Livestock Units¹ (GVE) are summered; 29% of farms have between 10 and 25 GVE, 17% of the alpine pastures in Austria receive between 25 to 50 GVE. Only 6% of alpine pastures are managed with more than 100 GVE.

The summering period in 1986 lasted between 77 and 163 days. Depending on the region and altitude, animals begin their ascent to the mountain pastures between May and June and then come back down between mid-August and the end of September (Parizek, 2006).

Economic problems in the livestock and dairy sector

Agriculture in the mountain regions of Austria faces major economic problems. Income from alpine farming is very low at the moment and additional sources of income as well as support from the public sector are needed to ensure the preservation of alpine farming.

b/ Tourism as a source of income

In some regions in Austria, tourism can be a source of additional income for the owners or managers of alpine pastures. For example, direct marketing of products, sale of beverages, lodging. Tourism in general also benefits; the alpine pastures are well-managed since the peasants of the alpine pastures and mountains help in maintaining the attractiveness of the cultural landscape of the Alps and the road infrastructure. Alpine pastures and grazings are an essential part of a tranquil landscape. This applies to both summer tourism (trekking, mountain biking, etc.) as well as winter tourism (downhill skiing, cross-country skiing, etc.).

¹ In Austria, the Livestock Unit *Großvieheinheiten* (GVE) equals 500kg body weight.

3.3/ Tourism development

a/ Example of activities implemented

Many opportunities and attractive offers are available to combine alpine pasture management with tourism. The options range from very simple to professional hotels. Employment in the tourism industry can also be a source of additional income for the owners.

Below are some examples of what is done in Austria:

- Alpine pasture festivities with traditional drinks and meals
- Inns, hotels, private rooms for rent, alpine shelters
- Direct sales
- Sale of beverages on the alpine pastures by the owners or shepherds
- Secondary income from tourism services, cable car operations
- Services in the field of recreation, culture and education (alpine flower paths, games on the alpine pastures, school visits)
- Cultural and traditional ceremonies
- Sporting opportunities : Nordic walking, mountain biking, paragliding, horse riding)
- Mountain rescue service
- Alpine and nature guide, hikes, excursions
- Seminars for managers
- Pasture rental for ski runs

b/ The players involved

An alpine farm's ability to provide tourist services depends mainly on the terms and conditions. For example, in order to offer accommodation on the farm, it needs to have the necessary buildings and services as well as comply with legal obligations such as standards of hygiene, permission from the management of the hotel and lodging industry.

Furthermore, accessibility of the alpine pastures is also important for tourism. Income from tourism will not be significant in areas that are not easily accessible. On the other hand, very intensive and non-integrated disenclavement leads to undesirable changes in the landscape as well as fragmentation of wildlife habitats and increased noise resulting in a loss of the territory's attractiveness and finally, overcrowding and conflicts among visitors. Vehicular traffic (motocross, quad, 4x4 vehicles) in particular can pose a problem.

3.4/ The ALP Austria project

a/ Context of the project

The ALP AUSTRIA project has been sponsored by the Ministry of Life and the seven federal states (Carinthia, Lower Austria, Upper Austria, Salzburg, Styria, Tyrol, Vorarlberg); pasture inspectors and representatives of the pastures have been involved in its realization. The project coordinator is the Environment office Klagenfurt in collaboration with an interdisciplinary group involving scientists, research agencies, government institutions, academic institutions, and the Austrian task force for alpine pastures and grazing.

The project has been developed because of concerns over the future use of the Austrian mountain pastures. The overall objective of the project has been to contribute towards securing and developing the cultural landscapes of the Alps; tourism has been one of the aspects studied.

b/ Methodology of the project

The project is essentially based on the evaluation of existing studies, specific cases and literature as well as interviews with those involved in the alpine pasture management and tourism sectors. The information was supplemented with interviews of people operating pastures where tourist activities are also evolving, of inspectors and representatives of pastures as well as of tourism associations.

3.5/ The results and the investigation

a/ Benefits of tourism

The benefits of tourism are mainly in the economic sphere: besides strengthening the regional economy, the additional income and the possibility of combining incomes are important to farmers: for them, often, economic survival is only possible thanks to the agriculture - tourism combination.

Alpine pasture users can also passively earn an income from tourism in the region; for example, by renting out pastures for ski runs or for cable car tracks. Farmers can also supplement their income by making their own contribution, for example by direct marketing of their products or by creating accommodation opportunities.

Tourism creates job opportunities and helps fight against depopulation. The pleasure derived from alternating between activities and contact with guests is also very important to the farmers who engage in tourism in summer.

b/ Disadvantages of tourism

The double work for farmers engaging in tourism leads to longer working hours. Devoting too much time to tourist opportunities can result in the management and care of the pastures and animals suffering.

Tourists often do not realize that their bad behaviour can lead to environmental damage, can disturb the cattle in the pastures or provoke conflicts among the managers (ruined tracks, littering, problem with people regarding the pastures as a zoo where children can pet the animals, not shutting the gates after passing through them, etc.). Accidents can also occur when an animal becomes aggressive; for example, when a cow is defending her calf against the tourists.

Finally, tourism can have negative long-term consequences on the landscape when the area is used for the construction of buildings and tourist services.

3.6/ Future prospects

The main reasons that prompt Austrian tourists to holiday in the mountains are landscape and nature, walking and hiking opportunities that allow one "to be outside and in nature" at the same time. The clientele and social trends are gradually changing; although this entails an adjustment of the tourist supply and demand, it also offers a glimpse into the possibilities of new markets.

The current trend of paying more attention to one's health has resulted in a sharp increase in activities such as Nordic walking. Skiing, mountain biking, parasailing and horseback riding are all sporting activities that continue to be appreciated. One is also witness to new technological developments which are the basis for setting up of new types of sport or new forms of recreation.

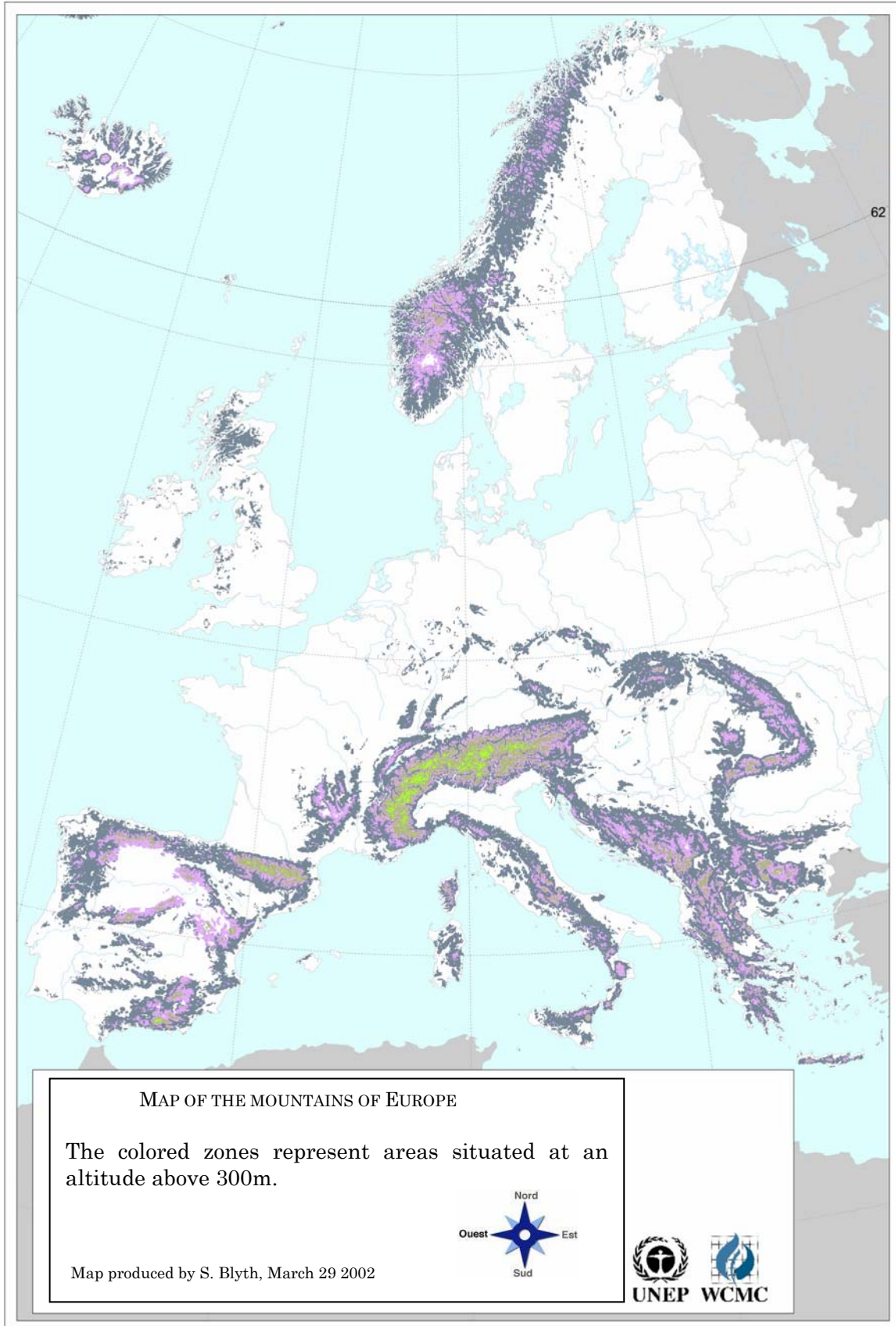
City dwellers are increasingly turning to nature to compensate for the everyday frenzy of their urban lifestyle. Mountain pastures have, with the development of internet access and power supply, also become an attractive proposition for managers and scientists.

As the population ages, developing offers that are suited to the older generation becomes necessary (trails for shorter walks, adapted accommodation).

Farmers who, while promoting touristic opportunities, place emphasis on mountain pastures become economically dependent on tourism, its seasonal fluctuations and social trends. A balance between agriculture and tourism is preferable for better durability. In the future, this objective should be taken into account when promoting tourism on the mountain pastures.

APPENDICES

Appendix 1: map of the mountains of Europe



Appendix 2: Places of great transhumance



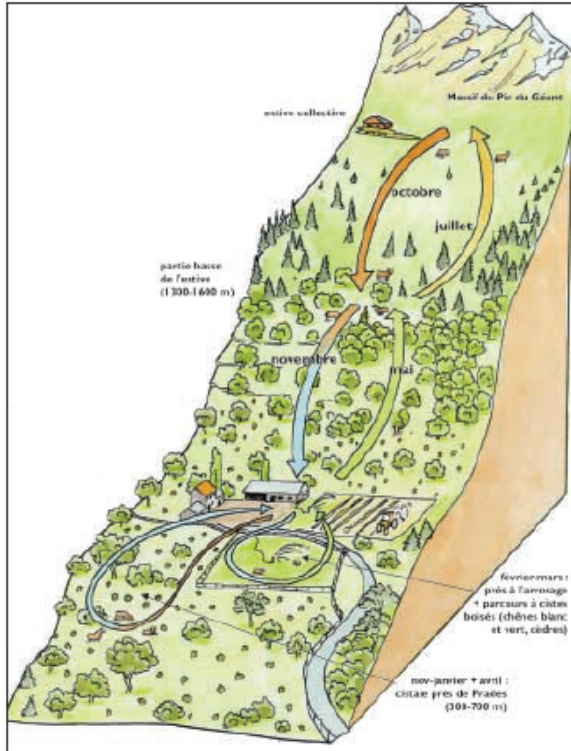
Figure 1: places of great transhumance in Mediterranean Western Europe
 (Source: P. Fabre et J.C. Duclos; mapping: N. Esperquin; Dauphinois Museum/ General Council of Isere)



Figure 2: great transhumant sheep route in Romania

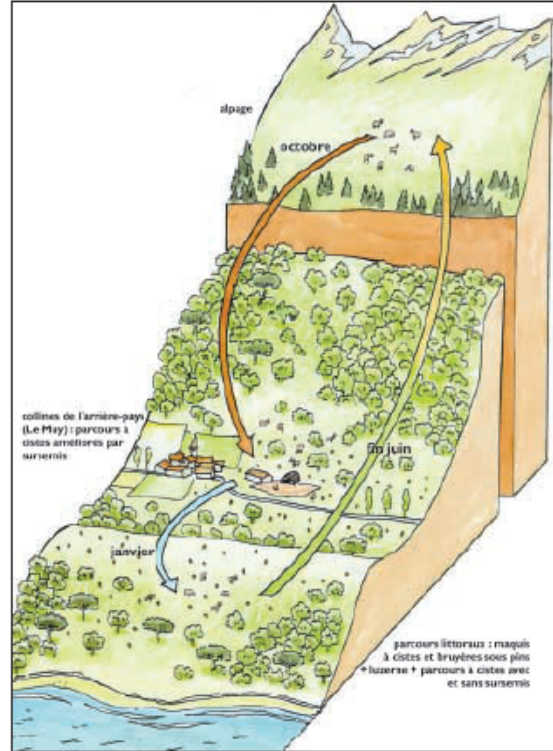
Appendix 3: pasturing systems and space utilization. Some examples

Source: BROSSE-GENEVET E., 2003. Wildland fire prevention management, Fire Prevention Network, 7th Ed. Cardère, pg.85



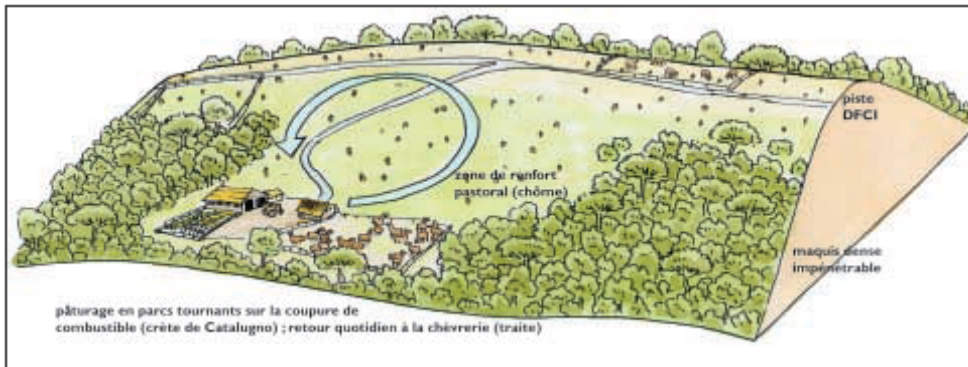
Dairy cattle summer transhumant system : use of the intermediate zone in spring and autumn and use of high altitude pastures in summer; grazing on rangelands and the undergrowth (sylvopastoralism) in winter.

Prades, Eastern Pyrenees (France)



Landless meat sheep transhumant system : great transhumance to high altitude pastures and winter transhumance on the rangeland.

Palayson, Var (France)



Dairy goat farming : sylvopastoral system involving daily return to the farm (sedentary pastoralism : no transhumance). Catalugno, Var (France)

Appendix 4: Benefits of pastoralism

a/ Economy

Mr. Dantin, in his report published in 2005, examined the importance of pastoralism in terms of territory covered and agricultural activity. Pasturing land, as defined by the LDTR (see paragraph 1 / definitions), is spread over more than 1.4 million hectares in France (Total UAA of France: about 25 million hectares, source : Agreste 2005¹) and in 1983 included 8941 pasturing units. In 12 departments, pasturing areas account for more than 50,000 ha. 60,000 farms on this territory practice some form of transhumance. There are therefore even more pasturing farms because sedentary pasturing farms also need to be included.

With regard to animals, the report specifies that "almost 2.5 million cattle, 4 million sheep, over 220,000 goats and 76,000 horses" are bred on these territories. For comparison, according to Agreste 2005 statistics, France has 18.3 million cattle, 8 million sheep, 1.2 million goats and about 204,000 horses. Thus, **approximately 13.7% head of cattle, 50% head of sheep, 18% head of goats and 37% head of horses are produced on pastures in mountain areas.**

The main products of pasturing farms are as follows:

- Beef production. An important outlet for beef cattle breeding is the sale of calves, especially to Italy where the animals are fattened.
- Sheep meat production. A particular example is that of the lambs of the PDO "Barèges-Gavarnie", whose specifications require that they originate from flock that are summered on mountain pastures at least two months a year².
- Milk production. The milk is either picked up or else transformed on the premises. Many famous cheeses (including the PDOs) also originate in the mountain regions with pasturing practices. A particular example is the PDO Beaufort "chalet d'alpage": the appellation is given to a type of Beaufort cheese that is produced in the summer in an alpine pasture chalet above 1500m altitude.

Similarly, many PDOs have instructions concerning the mode of feeding the animals as part of their specifications. Thus, in the case of Chevrotin produced in the Alps, the decree for PDO recognition specifies that the goats must spend at least 5 months on the pastures. Fourme d'Ambert is manufactured from the milk of cows for whom, "when grass becomes available and weather conditions permit, grazing on the mountain pasture is obligatory"³.

These examples of quality production illustrate **the importance of pastoralism not only for the economy, but also in terms of the cultural and gastronomic heritage.**

b/ Biodiversity

The European Environment Agency has defined the concept of high nature value agricultural zones (HNVF: High Value Nature Farmland) as comprising "hot spots" of biodiversity in rural areas and as being generally characterized by extensive farming practices⁴(translated from English). In their report published in 2004⁵, the Agency specified that agricultural lands with the greatest biodiversity are areas where there is little agricultural input and most of the high nature value agricultural zones are semi-natural grasslands, used mainly for pasturing activities.

Numerous studies have also been conducted in different countries to examine the link between pastoralism and biodiversity. The positive influence of extensive breeding in the mountains is recognized everywhere. In fact, grazing by animals helps prevent the gradual overgrowth of high altitude grasslands and thereby maintains open spaces. This alternation of forest zones with unforested zones is conducive to the

¹ All the agreste data given are for 2005. Source: www.agreste.agriculture.gouv.fr

² Decree of September 15 2003 - Decree concerning the appellation d'origine contrôlée "Barèges-Gavarnie", published in the French Official Gazette JORF of September 20 2003

³ Decree of February 22 2002 - Decree concerning the appellation d'origine contrôlée Fourme d'Ambert, published in the JORF of February 24 2002

⁴ Check out the website of the European Environment Agency: <http://www.eea.europa.eu/>.

⁵ European Environment Agency, High nature value farmland: characteristics, trends and policy challenges, eds. Copenhagen, EEA, 2005, 26 p.

development of varied fauna and flora. The ecosystem's fragility is emphasized in the report on the prairies of Slovakia [ŠEFFER J., LASÁK R., D. GALVÁNEK, STANOVÁ V, 2002] : 77% of the endemic plants (including endangered plants) that are found in the grasslands cover only 17% of the territory in this country. Unfortunately this rich flora is threatened by both, the abandonment of lands that then turn fallow and is detrimental to species of open environments, as well as the intensive use of grasslands. Fertilization and overgrazing lead to the selection of more productive species and consequently to the loss of more fragile species . This study shows the importance of **maintaining extensively managed spaces in order to protect the biodiversity**. The same risks pertaining to the closure of spaces and forest progress are described by BOREC and NEVE in Slovenia ¹, by GUNH E. et al. in Norway [GUNILLA E., OLSSON A., HANSSON S., RØNNINGEN K., 2004], etc.

Sylvo-pastoral **practices have** also been studied and **have demonstrated a positive effect on biodiversity** [KINGS-DIAZ M., MOSQUERA-LOSADA R., RIGUEIRO-RODRIGUEZ A., 2006] : grazing on the undergrowth promotes development of a diverse environment as well as habitat connectivity and wildlife mobility, thereby reducing problems of habitat fragmentation.

The importance of grazing to maintain open landscapes becomes apparent especially when pasturing practices are abandoned. In a study conducted by the austrian researchers TASSER and TAPPEINER [2002] on the impact of land use on vegetation, the following conclusions were reached : land use in the mountain region depends primarily on its vehicular accessibility. The more accessible a region, the greater the probability that it will be used . Land use then determines the type of vegetation present. The vegetation changes whenever land use changes; however the rate of evolution varies according to the altitude. The researchers reached the conclusion that land use is the leading factor influencing vegetation; intensification or, on the other hand, land abandonment leads to a reduction in the number of plant species present.

Numerous similar studies could be cited here. We shall just end this discussion by presenting the DOCOBs (DOCuments of Objectives). These documents describe the objectives and recommendations of the Natura 2000 program. In many regions, extensive grazing is considered to be crucial for preservation of certain habitats² and maintaining the pastoral landscape is necessary for the survival of some species.

c/ Landscape

Pastoralism influences the landscape initially through its impact on the vegetation type : grazing helps to limit overgrowth and thus maintains an open landscape. When pasturing practices are abandoned, the deserted lands lie fallow. Although this change in vegetation is not always considered unfavourable³ as bush can stimulate the sheep's appetite, excessive closure of landscapes should nevertheless be limited, as it is not very appreciated by tourists who prefer places with an unobstructed view.

In Spain, *cañadas* (transhumant routes), are paths that emphasize the landscape and break the monotony of high mountain plateaus with their distinct color [SAL A. GOMEZ, LORENTE I., 2004].

Pastoralism also impacts on the landscape through the presence of animals and signs of human activity: a shepherd and his dogs, cabins or mountain pasture chalets, trails in the mountains... These characteristics are all components of a landscape sought by both tourists as well as residents.

d/ Other economic activities

Pastoralism has repercussions on other economic activities even if they are not directly connected by obvious economic ties. Tourism in particular is growing in pasturing zones. Therefore, the traditional landscape sought by mountain enthusiasts and comprising animals, their herds and the presence of pasturing activities is highly appreciated by city dwellers who come to the countryside to recharge their batteries. They also appreciate the opportunity to enjoy locally manufactured quality regional products; likewise the farmers also make a living as restaurateurs and hoteliers in the mountains. The local crafts, including wooden objects, traditionally produced in these regions are bought as souvenirs. The Tatra region in Poland, where pastoralism and sheep farming can be found in all the tourist centres, can also be cited as an example : sale of the traditional cheese oscypek, sale of pullovers and sheep wool products made in the region, traditional music played by musicians in folk costume in restaurants...

Cultural activities related to pastoralism are booming : farm visits, walks in mountain pastures, development of pastoral buildings, transhumance festivals... Numerous events revolving around pastoral traditions also provide a significant economic contribution to the pasturing regions .

¹, Natural characteristics of parcels facing land abandonment and forest expansion on Pohorje Mountain (Slovenia), University of Maribor - ISARA

² Check out, for example, the massif de Madres-Coronat DOCOB or the Causse de Campestre-et- Luc DOCOB available at <http://www.languedoc-roussillon.ecologie.gouv.fr/loadPge.php?file=docob/docob.file>

³ *Fallow and brush : they can contribute to the environmental and pastoral quality of rural areas*, In: Territoires, acteurs et agricultures en Rhône-Alpes – Programme de recherches pour et sur le développement régional, n° 3, Janvier 2004.

e/ Natural hazards

Well managed herds can be valuable allies in preventing several types of natural hazards:

- Fires (Source: Fire Prevention Network, 2006)¹. In Europe, every year large summer fires ravage hundreds of hectares in the Mediterranean region. Since the past twenty years, farmers are involved in the management of danger zones under the auspices of the Defence Against Forest Fires (DFCI). The programs that are set up also involve grazing in the "cut-off zones" which will limit the spread of fire. Contracts between farmers and foresters allow the former to supplement their income and the latter to limit risks at a lower cost than by mechanical clearing. In southern France in 2000, more than 330 municipalities had a fire prevention plan that incorporated maintenance through pastoralism. It involved an area of 37,000 ha, of which approximately 16,000 ha were placed under an agri-environmental contract (Regulation CE 2078-92 of the MAE regulation).
- Erosion of the superficial layers of the soil. A study conducted by researchers from Austria [TASSER E., MADER M., TAPPEINER U., 2003] has also shown that maintained grasslands and pastures are less erodible than abandoned grasslands. This is explained by the fauna composition and vegetation structure that will differ depending on how the grass is used. Harvesting and grazing promote grass roots and change the composition of the soil so that it becomes less prone to superficial displacement. Moreover, the movement of animals on sloping ground creates paths that split the incline and slow or stop erosion and small avalanches.
- Avalanches. The influence of trails created by moving animals as a primary obstacle to avalanches was mentioned in the preceding paragraph. In addition to this factor, it has been shown [NEWESELY C., E. TASSER, SPADINGER P., CERNUSCA A, 2000] that maintained grasslands can reduce the risk of avalanches on account of the state of the vegetation. In fact, some plant species like *Calluna vulgaris* and *Arctostaphylos uva-ursi*, which develop when the pastures are neglected and grasslands not harvested, get compressed easily under the weight of the snow layer and do not form an anchoring point for the snow. Avalanches are therefore more prevalent on abandoned terrain, especially as terrain with steep slopes is the first to be abandoned. It should however be noted that ligneous brush growth can be an impediment to snowslides.

¹ Fire Prevention Network, 2006: *Agri-environmental measure applied to the prevention of forest fires in the Mediterranean region - Results of 20 years of achievements and proposals for the future*, RCC no.11, pg.43

Appendix 5: Definitions used in the Swiss legislation

Extracted from the Ordinance on Agricultural Terms and Recognition of Types of Farming (Ordinance on Agricultural Terminology, OTerm).

- Grazing farm (article 7)

"A grazing farm according to article 6 is a farm that:

- a. includes a utilized agricultural area (art. 14) and a summering area (art. 24);
- b. in which the shepherd:
 1. lives all year round;
 2. shepherds his own animals during the year, and
 3. watches over mostly third party animals during the summer for a fee. "

- Community grazing farm (Article 8)

"A community grazing farm is an agricultural enterprise that:

- a. is used for communal grazing of animals;
- b. includes community pastures (art. 25);
- c. includes buildings or facilities suitable for grazing, and
- d. is managed either by local authorities or by a cooperative owning the pastures of the commune. "

- Summering pasture farm (article 9)

"1. A summering pasture farm is an agricultural enterprise that:

- a. is used for summering animals;
- b. is not connected to the farms owning the summered livestock
- c. includes summering pastures (art. 26);
- d. contains buildings or facilities required for summering;
- e. is operated during summering, and
- f. is not dependent on other summering pasture farms.

2. A summering pasture farm that is made up of several levels of operation is considered to be a single unit. "

- Summering areas (article 24)

"1. Summering areas are:

- a. communal pastures;
- b. summering pastures;
- c. hay meadows whose harvested grass is used as fodder during the summering.

2. Likewise, the areas located in the summering region defined in art. 1, al. 2, of the Ordinance of December 7 1998 on agricultural areas are also regarded as summering areas even if they are used for other purposes. "

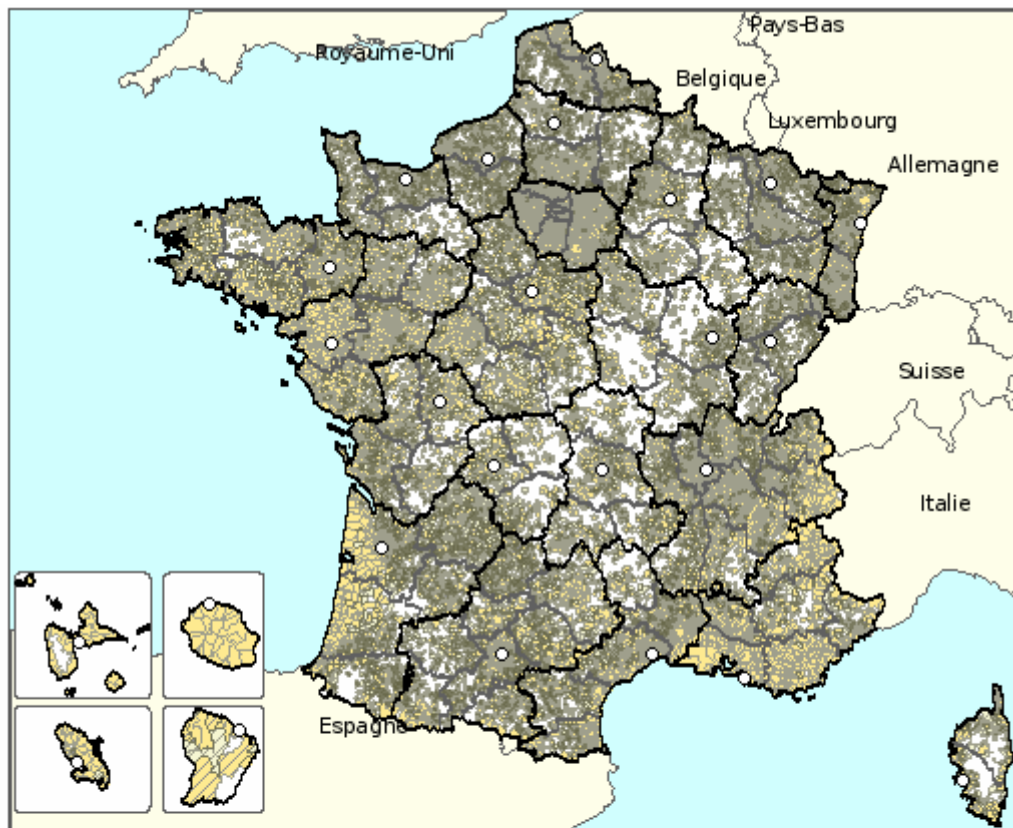
- Communal pastures (article 25)

"A communal pasture means that the area belonging to the local authority or a cooperative is traditionally used as a common pasture by livestock holders, who are part of a community pasture farm (art. 8). "

- Summering pastures; (article 26)

"Summering pastures are areas used exclusively as a pasture for summering the animals that are part of a grazing farm (art. 7) or a summering pasture farm (art. 9). "

Appendix 6: Communes with a PLU or a commune map



0 180 360 540 km

Sources : DIACT, DGUHC, DGMT, DIV, DGCL, ETD
Intégration : CETE de Lyon
Découpage administratif : GéoFLA® - ©IGN - PARIS 2005
© Camptocamp SAS

The colored areas represent communes that have a Plan of Local Urbanism or a commune map, or for which these are being prepared.

Appendix 7: Some tools and resources to assist in the management of pasturelands in France

- Acquisition of statistical data: (France) **pastoral investigations** are conducted by the department to acquire statistical data on pastoralism (number of pastoral cabins used, animals and farmers concerned...). According to the departments, the last one goes back to 1996 or 1999. Data was also obtained regularly thanks to **aid management**: application forms for aid that the farmers must fill out are good sources of information (number and species of animals, land use, areas developed, information on the owner..).

Use of geomatics in pastoralism

✓ Reindeer and sheep herd management via satellite - Norway¹

In 2005, Norway, a member of ESA (European Space Association), launched a satellite whose tasks have been outlined by the Agricultural University of Norway. Some are closely linked to pasturing activity, namely :

- Measurement of the snowmelt in areas grazed by reindeer;;
- Monitoring reindeer movement in certain mountain areas of the country;
- Monitoring sheep movement along the Norwegian coast.

✓ Utilization of Geographic Information Services - France

In France, geomatics is increasingly used as a tool to support and analyze pasturing activities. CEMAGREF de Grenoble, for example, has worked on the characterization of grazing pastures using high-resolution remote sensing [Bernard-Brunet J., 2000]. Moreover, pastoral services have been equipped with Geographic Information Systems (GIS) to improve and facilitate tracking of pasturing activities. GIS Pyrénées², managed by the Observatoire des Pyrenees, also has a pasturing section which collects grazing data on the 6 Pyrenees departments.

- Pastoral Services : these services are a source of **advice for technical and administrative issues**. In France, pastoral services exist in departments where pasturing activities are important (for example the Alpine Economy Societies (SEA) in the Alps, SUAIA Pyrénées, the SUAMME). Like all management systems, the diversity of the services reflects the history and manner in which they are developed (for example, pastoral service within the Departmental Direction of Agriculture and Fisheries, as a service of the Chamber of Agriculture or as an independent association).

Other advisory bodies are also present in other European countries. Thus, in Scotland, the *Crofting Foundation* (<http://www.croftingfoundation.co.uk/>) is a non-governmental organization whose goal is to represent and promote *crofting* (system of using common lands for breeding found in the Highlands and the Scottish Isles). The *Crofters Commission* ([http://www.crofterscommission.org.uk /_](http://www.crofterscommission.org.uk/)), in addition to having an advisory role, is also the organ of registration and management of farmers that have *crofter* status.

- Legislative tools: several legislative plans offer a framework adapted for pastoralism. Thus, the introduction of **Pastoral Land Associations** and **Pastoral Groupings** (see Part 1/3.2) has enabled breeders and owners to maintain organization modes adapted to their practices.

Moreover, landlords who do not wish to subject their lands to tenancies can negotiate more flexible contracts with the breeders in the form of either perennial **pasture agreements** (see Part 1/3.2) or a **commodatum** (Articles 1875 to 1891 of the Civil Code).

¹ For more information: <http://www.norway.org/restech/researchnews/satellite.htm>; <http://www.ntnu.no/gemini/2002-06e/10-11.htm>

² Check out the GIS Pyrénées website : <http://www.sig-pyrenees.net/index.php>

The Rural Code provides other tools to restrain the landlord or manager: **land that is uncultivated and clearly under-utilized** for at least three years, after being checked by the competent authorities and formal notice being served to the farmer or landlord, must either be **rehabilitated, or leased to another farmer** (article L 128-4 of the rural code). Moreover, herd movement can be facilitated **from abandoned agricultural funds** that may be granted to the pastoral land associations through a **right to passage** authorized by the prefect for one year (Article L135-6 of the Rural Code).

- Constitution of a viable farming centre: in the Hautes-Pyrénées, a novel experiment in land use management is being conducted by the community of the Véziaux d'Aure commune. It is based on the observation that the land structure (size of plots, isolation, dispersion) no longer correlates with the evolution of herd size and livestock systems and as a result, many plots are underused or abandoned. The aim is to establish viable farming centres with an amiable exchange of land use. The community has developed a system of **tripartite agreement between the community, farmer and landlord**. The community undertakes to rehabilitate the plot by clearing the undergrowth; the landlord agrees to change the farmer; the farmer agrees to keep the plot for grazing and if necessary, to additional clearing of the brush. d. BUFFIERE, 2007, written contribution)
- Grazing diagnostics: the method was developed by CEMAGREF de Grenoble in the late 70's and was subsequently revived and simplified according to requirements to adapt to local contexts. The diagnostics are implemented to engage in joint pasture management with the farmers and communes, most often at the request of Parks (National or regional) or organizations of pastoral activity. The Ecrins and Pyrénées Parks have also used grazing diagnostics on almost all their grazing sections. Grazing diagnosis helps **improve pasture management** (protection of some areas, increased pressure on others...) and **deliberate over the investments to be made and techniques of herd management**. The diagnoses are quite sensitive analyses, which require several days to be carried out. They are usually financed by the Parks, communes and, where appropriate, departments and/or regions. They are updated through followup methods.

In Spain and Italy, local diagnostic methods are also used.

Appendix 8: Measures for promoting pastoralism in rural development plans (approved on 27 February 2008)

AE = Agri-Environmental

	Name of the measure	Primary Objectives	Requirements	Aid intensity
GERMANY - BAVARIA	<p>Axis 2 - Measure 1: Bavarian Landscape AE payment</p> <p>Sub-measure 4 relates to specific forms of production to maintain the cultural identity and view of the landscapes</p> <p>Mesure 4.1: Herds of animals identified in alpine pastures and meadows measures A41 – A44</p>	<ul style="list-style-type: none"> - To support environmentally friendly agricultural practices that are positive for the natural resources and biodiversity - Support farmers to practise extensive agriculture with a view to generating positive externalities and a landscape of high cultural value 	<ul style="list-style-type: none"> Farmers having at least 3ha - 5 year contract - Use of production factors mandated by the candidates (Buildings, land, livestock...) - Ban on spreading organic waste, water treatment sludge and sewage on land receiving an agri-environmental subsidy. - In addition, up-to-date eco-compliance/standard along with basic requirements for pesticide and fertilizer usage - No grant support for fallow land on which production is discontinued 	<p>Payments for measure 4: Min = €250 / farm Max = €35000 / farm</p> <p>Allowance for measure 4.1: -Work done by regular staff: €80/ha (min = €600/pasture, max = €2500/shepherd) -Work done by non-regular staff : €40/ha</p>
	<p>Axis 2 – Measure 2: contract for Bavarian nature protection program</p> <p>Sub-measure 3: "grazing" habitat</p> <p>Measure 3.1: Extensive use of grazing on high nature value farmlands</p> <ul style="list-style-type: none"> - Sheep, goat, cattle and horse grazing - Cattle grazing in the Alpine regions 	<ul style="list-style-type: none"> - Support of biodiversity, specific habitats and supporting the construction of networks on nature sites. - Support for prescribed environmental objectives – Support for agriculture on small plots having natural historic value to prevent them from turning fallow 	<ul style="list-style-type: none"> Farmers and agricultural associations, associations for nature and landscape protection; other land users (eg. Municipalities) - Plots less than 0.1 ha - Terms based on the decision of the local administration responsible for protecting nature. 	<p>Sheep, goat, cattle and horse grazing : €270/ha Cattle grazing in the alpine regions : €120/ha</p> <p>Additional responsibility: increasing work efforts and machine use. (Not compatible with subsidies for mountain pastures)</p> <ul style="list-style-type: none"> - more for goat grazing: €50/ha - second pasture: €125/ha - Specific challenges for grazing conditions: €65/ha

AUSTRIA	<p>Axis 2 – AE measures</p> <p>Conservation of cultural landscape and nature.</p> <p>Measure 16: Culture of the alpine meadow</p>	<p>- Cultural landscape and alpine meadow protection and preventing the growth of bushes and trees</p> <p>- Preserving the mountain meadow culture in the long term.</p> <p>- Ensuring the biodiversity of mountain meadows.</p>	<p>Farmers, legal entities and associations guiding farm owners under their own name and account</p> <p>-5-7 year contract ending in 2013</p> <p>-Minimum 3ha of alpine pasture fodder with a cattle density of 3 LU</p> <p>-region located above the residential boundary</p> <p>-Max 1 harvest/year, at least every 2 years, collection of the harvested products</p> <p>-no grazing (except after 15/8), no use of fertilizers (except solid manure), no herbicides, no sewage sludge or compost made from sewage sludge.</p> <p>- maintenance and culture of the landscape component</p>	<p>Aid dependent on the incline/ accessibility of the slopes</p> <p>- harvest with tractor: €350/ha</p> <p>- harvest with other mechanical means: €430/ha</p> <p>- harvest using a scythe: €700/ha</p>
	<p>Axis 2 – AE measures</p> <p>Protection of cultural landscape and nature</p> <p>Measure 17: Alpine farm and herd</p>	<p>- Cultural landscape and alpine meadow protection and preventing the growth of bushes and trees</p> <p>-Maintaining alpine pastures for the good of cultural landscapes and tourism</p> <p>- Ensuring biodiversity on mountain pastures</p>	<p>Farmers, legal entities and associations guiding farm owners under their own name and account</p> <p>-5-7 year contract ending in 2013</p> <p>-Minimum 3ha of alpine pasture fodder with a cattle density of 3 LU</p> <p>-Livestock movement to mountain meadows for at least 60 consecutive days</p> <p>- Min of 3 LU moved in the first year of commitment</p> <p>- livestock density: max 0.67 LU/ha; additional hay diet is acceptable</p> <p>- Refrain from spreading liquid manure produced outside the property</p> <p>- additional option of herd supervision : cows (except suckler cows), horses, sheep and goats.</p> <p>- Appropriate lodging for the herdsman, max 70 LU per herdsman.</p>	<p>1- Pastures accessible via a tractor path: Suckler cows : €150/ha Other cows, sheep, goats: €50/ha Horses: €70/ha</p> <p>2- Pastures accessible only by cable car in good working condition or by special vehicle: Suckler cows: €180/ha Other cows, sheep, goats: €60/ha Horses: €80/ha</p> <p>3- Pastures accessible only on foot: Suckler cows : €195/ha Other cows, sheep, goats: €65/ha Horses: €90/ha</p> <p>2- additional caretaker option +€25/LU 3- +€30/LU 4- +€35/LU</p>

SLOVENIA	Axis 2 – AE measures Group II: Protection of natural conditions, biodiversity, soil fertility and traditional and cultural landscape II/1 Mountain pastures	- Preserving traditional farming methods in mountain zones - Preserving the environment, diversity and cultural landscapes of mountains	- Pastures in the mountains, use of grassland in the traditional manner with animals grazing - Refrain from spreading wastewater sludge, silt, fish farming waste. Only compost produced by organic farming and fertilizers and herbicides allowed in organic farming can be used - Storage density between 0.5-1.9 LU/ha, no livestock manure surplus - Obligation to manually remove bushes and weeds after the grazing season	Without shepherding: €61/ha With shepherding: €73/ha
	Axis 3 – AE measures Group III: Maintenance of protected zones III/1 Breeding in the main large carnivore occurrence zones	- Ensuring coexistence with large carnivores and preserving a favourable status or protecting the population of large carnivores (brown bear) - Grassland protection and conservation and prevention of overgrowth	- official registration of farming property or private farmland property located in the main large carnivore occurrence zones. - Refrain from spreading wastewater sludge, silt, fish farming waste. Only compost produced organically can be used. - grassland zones should be grazed - Storage density between 0.5-1.9 LU/ha, no livestock manure surplus -On the pastures, sheep and goats need to be watched over constantly; whenever possible, mobile barriers and safety nets should be used.	Payment: €29/ha The maximum amount that can be obtained by combining the different AE measures : €450/ha If the total UAA of the farm property involved in AE measures exceeds 100 ha, the amount paid decreases by 50% for the area beyond 100 ha.
Greece	AE Measure 216 Action 1.2: purchase and maintenance of greek shepherd dogs	-protecting the herds from bears and maintaining the ursine population	- Beneficiaries: sheep, goat and cattle breeding under the extensive system	Support for up to 80% of eligible costs, and up to €400
Italy - Veneto	Veneto Region Programme Axis 2 - AE measures Sub-measure e / grass and pasture management	- Preserving, maintaining and improving grazing areas, meadows and pastures in view of the production, ecological and environmental benefits. .	Action 3 relates to the maintenance of pastures located in the mountains in order to improve management: - Ensuring adequate cattle grazing in order to maintain good green manure coverage of the fields and thus avoiding manure accumulation in some zones; prohibiting the use of chemicals (fertilizers, pesticides); eradicating invasive vegetation in the meadows.	Payment: €85/ha The green regions of the mountain zones eligible for compensation are the targeted regions. 83,900 ha are involved Aid for similar interventions that are provided for in the Natura 2000 program are not complementary

Italy- Friuli Venezia Giulia	Friuli Venezia Giulia Region Program - Axis 2 AE Measure : Action 4 - Pasture maintenance	- The action is aimed at protecting the rural landscape by preventing abandonment, water runoff recovery, limiting forest overgrowth by ensuring alternation of the alpine landscape features; maintaining animal and plant biodiversity	- "Pasture maintenance": Livestock load between 0.4 and 1.4 LU/ha; ensuring a grazing period of at least 75 days a year; performing manual cleaning and maintaining accessibility and water source; no use of fertilizers, pesticides...; ensuring that at least 70% of the animal food is from grazing - Commitment to manual and/or mechanical (not chemical) clean-up of plants infesting the pastures.	Payment: - €140/ha/year for dairy production - €100 for meat-oriented production + Additional aid : €35 for beneficiaries who are committed to rotational grazing of pasture areas. Deprived zones as well as certain preferential areas are the targeted regions. 240 enterprises are beneficiaries, 8900ha are involved
Italy – Val d'Aoste	Val d'Aosta Region Program Axis 2 - AE measures : Alpiculture Environmental management of fodder areas measure		- Prohibition of mineral fertilization in alpine pastures and cattle load reduction to reach a quantity of assimilable nitrogen of not more than 28 units/ha - rational pasture management so the entire area is declared utilized	Payment: - €75/ha, maximum 160 ha
	Val d'Aosta Region Program Axis 2 - AE measures : Alpiculture Restoration measure and management of streams required	- preserving the hydrogeological balance of alpine pastures	requirements relating to the existing fauna	Payment: - €80/ha for manual activities to be carried out
Bulgaria	Traditional breeding systems measure (Mountain Pastoralism)	- supporting traditional seasonal grazing systems in high nature value pastures with domestic breeds - preserve/maintain habitats and species in high-mountain zones - promote the use of Karakachan dogs as a nature-friendly means of protection against large predators	- two pilot projects have been set up in Pirin and the national parks in the centre of the Balkans, in specific areas conducive to pastoralism. Additional proviso for agreements between landowners and breeders/herders - minimum herds of 50 sheep / 10 cattle / 10 horses, for a grazing period of at least 3 months per year (with exceptions) in the area - no littering the pastures at the end of the grazing period - grazing surface in proportion to the load, according to the management plan of the national park (1 LU/ha) - if Karakachan dogs are used : ownership of at least 2 purebred Karakachan dogs for herd protection, the number of dogs must be proportional to the size of the herd. Dogs must have a pedigree recognized by the associations.	Payment: - €100/ha - €110/ha if dogs are used Maximum amounts specified in Regulation 1698/2005.

Slovakia	<p>AE measure - support for environmental protection of permanent natural and semi-natural grasslands</p> <p>Alpine pastures and meadows</p>		<ul style="list-style-type: none"> - Fertilization : no mineral fertilizer or liquid manure - pesticides: avoid the application of pesticides in the area, except locally for invasive plants (health authorities certificate required), except for breeders in organic farming - hay : the first harvest no later than July 15; harvesting from the center outwards. The alpine meadows are harvested once a year - grazing conditions : follow the rules of discretion when using enclosures (minimum area of 1 LU/10 m², regular shifting of enclosures). A fixed night enclosure can be used for young cattle with the agreement of professional bodies. If an enclosure is not used, grazing should be supervised by a herdsman, with a load of 0.3 to 1 LU/ha - no additional sowing in fauna and flora habitation zones -- No drainage in habitation zones - pastures should not be mulched 	<p>Payment: SKK 5342/ ha (€150.70/ha)</p>
United Kingdom - Scotland	<p>AE Measure for Support of the moors</p> <p>- assessing the management of fauna and flora in the highlands and swamps</p>	<ul style="list-style-type: none"> -improving conditions in the highlands and swamps by good soil management - protecting and improving wildlife and biodiversity - protecting and managing the fragile soil of the highlands and reducing gas emissions from carbonized vegetation pits and from swamps 	<ul style="list-style-type: none"> -measures applicable in the swamps or sites with fine soil susceptible to highland erosion - measures to manage wildlife of the highlands and swamps will be supported by a moors management plan (with instructions on the scheme of appropriate grazing and the required work) - the pasture lands must be included in the terms recommended for moors management. - trampling on the lands must be avoided; vehicles must be adapted and not leave tracks 	<p>Payment: €1.02/ha</p>
	<p>AE Measure for Support of the moors</p> <p>-Assessing moor grazing management in the designated highlands and swamps</p>	<ul style="list-style-type: none"> - maintenance and promotion of habitats of the highlands and swamps through good soil management 	<ul style="list-style-type: none"> - use of only vehicles adapted for the soil - compliance with the code of burning of moors (Muirburn code). Burning in strips maximum 20m wide, no burning after April 15 - Peat can be harvested by hand 	<p>Payment: €2.92/ha</p>
	<p>Support measure for non-productive investments.</p> <p>Managing grazing habitats</p>	<ul style="list-style-type: none"> - encouraging the development of caretaking and better division of grazing to improve the highlands and moors 	<ul style="list-style-type: none"> - action applicable for areas where a moor management plan has been established - a pasture management registry should be kept 	<p>Payment: €11.42/hour</p>