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The Contribution of Commons to the Viability of Mountain Grazing: An Updated Perspective under the Common Agricultural Policy

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1. Introduction

Common pasture land along the coast of the Bay of Biscay was a fundamental resource in the pre-industrial economic system, despite its lack of agricultural suitability. The houses, villages and towns located in the valleys often had high wooded upland and pastureland "for the common use of the residents", which were part of the set of natural resources on which the family economies were based. From time immemorial, the residents used that land to obtain food by hunting, wood to be used for heating and building, ferns for the beds of the livestock and fodder, and shelter for the livestock during the summer months (Iriarte, 2002; Alberdi, 2003; Urzainqui, 2007).

Different governance institutions established a series of rules and regulations for that common pastureland which limited the use of the resources to the local residents. They also managed the available resources by means of common rules where collective interests prevailed, by defining the users with rights, the permitted grazing times, timber extraction rules, type and amount of livestock allowed per family, etc. Down through the centuries, upkeep of the high wooded upland and pastureland as a common self-managed by the communities along the Bay of Biscay coastline de facto allowed greater effectiveness than other types of exploitation, both as regards the economic structuring and the social reproduction of the rural economies (Beltrán, 1996; Iriarte, 1997).

The industrialisation along the coastline of the Bay of Biscay from the end of 19th century onwards led to the loss of the productive value of the upland pasture. The affect is even felt by today's rural economies, where livestock is increasingly more residual and intensification and globalisation prevail on agricultural markets. In recent decades, other interests have appeared involving stakeholders who are not the ones who have traditionally managed the resource. Those interests are related to the growing recognition of the environmental, cultural and social functions of the rural areas, a recognition that is gradually permeating rural development and agricultural policies.

Effectively, the continuity of communal governance has often ensured the sustainability of the natural resources of the alpine ecosystems, to the point that much of that upland pasture now forms part of the best preserved European humanised habitats (Short, 2008; Couto & Gutierrez, 2012). Those habitats likewise generate important environmental services for society (García-Ruiz *et al*., 1996; Sutchiffe *et al*., 2013; Bernués *et al*., 2014; Odriozola *et al*., 2014; Batalla, 2015): carbon sequestration to mitigate the greenhouse effect, providing water

resources, maintaining the traditional landscape, fire prevention, conservation of native breeds, etc.

Thus, the common pastureland must now be considered as complex socio-ecological systems where institutional analysis is essential to explain their evolution and to design policies to support their maintenance (Ostrom, 2009). Despite the multiple pressures endured, many of these forms of communal governance have survived by adapting to a rural society under continuous transformation (Lana, 2008; Serrano, 2014; Beltrán, 2015; Lana & Iriarte, 2015). Society also requires spaces for leisure and recreation, wishes to protect the cultural legacy and the roots of traditional grazing, advocates maintaining native forestry resources, values artisan food and fosters the declaration of protected areas to conserve alpine habitats. Those interests are embodied in interest groups and institutions at different levels that manage in different ways these areas (rural and agricultural policy, forestry management, environmental protection, etc.).

The challenge of multiple-use communal pastureland in this context is twofold. On the one hand, it is necessary to maintain the livestock activities that have modelled the current landscape and habitat in Europe over the centuries and that, however, are at the threshold of their economic viability with the ensuing risk of abandonment (Rodríguez, 2010; Lopez i Gelats *et al.*, 2011). In this regard, it is therefore imperative to critically analyse the impact that the Common Agricultural Policy (CAP) of the European Union (EU) has, in particular, on mountain grazing, given that it has been the main instrument of public support for the sector in recent decades.

On the other hand, in parallel with what has been discussed so far, the multiple functions performed by the common pastureland in current society need to be married, thus reducing the tensions generated by the conflicts of interest that may emerge (Edwards & Steins, 1998; Short, 2008). The entry of new stakeholders, that in many cases are today more structured and organised than the traditional ones, should be compatible with the survival of the age-old practice of mountain grazing. This new agent setup will predictably require a transformation and adaptation of the age-old management institutions in order to respond to the new users and interests generated.

2. Objective, materials and method

This paper seeks to address the aforementioned twofold challenge that common pastureland has to face based on a case study: the Enirio-Aralar Association of Municipalities (Gipuzkoa, the Basque Country). The district is a common pastureland area with a tradition of sheep grazing and where there are different interests, due to its multiple uses, that have led to conflict. Different regulations currently overlap on the land of the Association of Municipalities, as it is currently catalogued as Public Utility Woodland, has been part of the Aralar Natural Park since 1994 and has recently been declared as a Special Area of Conservation (SAC) in Natura 2000, the European network of protected areas.

Thus, its functionality and its governance is first studied from a historical perspective, noting the multiple interests and institutions that are appearing in this area and that are redefining the uses and exacerbating the conflicts. Technical reports and specialised bibliography on rural commons of different scientific fields (history, law, economics, etc.) have been consulted for this analysis.

Second, the current situation of sheep grazing in Enirio-Aralar is analysed, a sector that is currently the primary one responsible for maintaining the landscape and the habitat of this area. Specifically, the focus is on the fundamental contribution that the common resources currently mean for the survival of the traditional sheep sector, along with the influence that the CAP has on the uses of the territory. In fact, both in its more specifically agricultural aspect and as regards rural development, this policy is seeking to support the maintenance of livestock activities in the disadvantaged mountain areas given its environmental and social benefits.

Two different sources were used to analyse the characteristics of the current sheep sector in Enirio-Aralar. On the one hand, the available operating data, provided by a management centre (Lurgintza) and from the accounts of seven typical holdings (n=7), were used. On the other hand, the available public data on the CAP funding awarded to each holding were analysed. This information provided a broader sample, given that the available public information has been compiled on 35 shepherds (n=35), a number that coincides with the total consolidated grazing areas in the benchmark year (2014). This information has likewise been completed by six interviews with the people in charge of managing the pastureland, agricultural policy and rural development, and with representatives of the Enirio-Aralar Association of Municipalities itself.

3. Case study: Enirio-Aralar Association of Municipalities

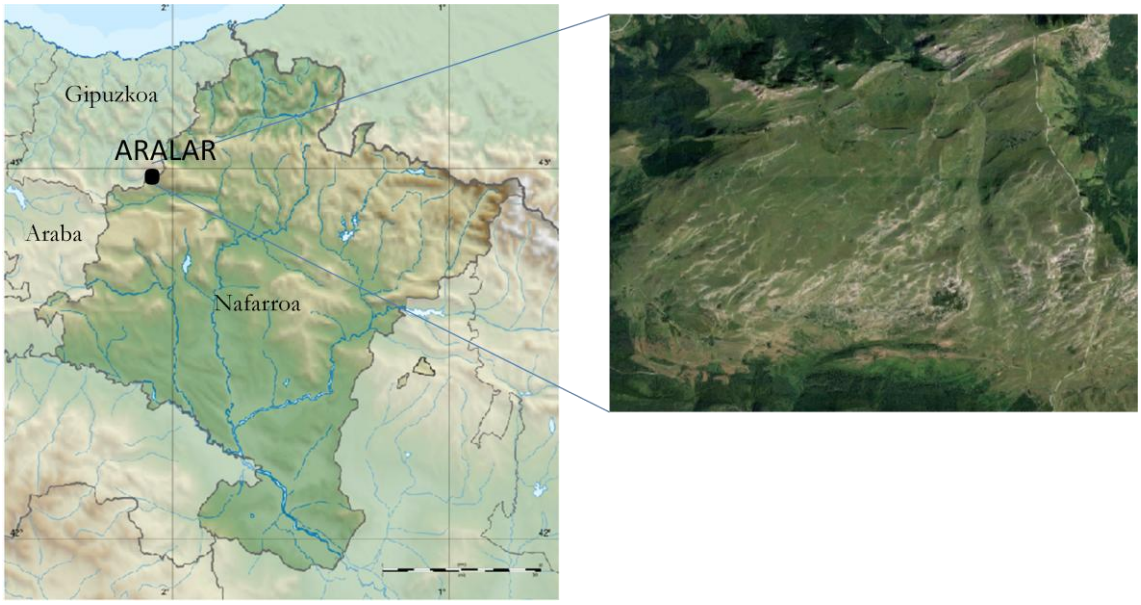
3.1. Description: demarcation and brief historical overview

The Enirio-Aralar Association of Municipalities is located in the northern part of the central massif of the Sierra de Aralar mountain range (Gipuzkoa, the Basque Country). Bordering on the Mediterranean-Cantabrian watershed, this mountain range has a mild climate and high rainfall in winter. It is one of the most important mountain areas of the Basque Country, with extensive beech forests, mountain meadows, alpine grasslands, ravines and streams. The part coming under the Association of Municipalities basically comprises mountain pastures located at a height of over 1000 metres, which make up an extensive plateau at the foot of the limestone slopes and which is currently the most important grazing area of Gipuzkoa. The total surface area of the land belonging to the Association of Municipalities is 3,387 hectares (Ha.), 2,087 (61%) of which is pastureland. Even though beech trees are the potential vegetation of Aralar, the landscape is completely intervened by human activity, as it has been used by the local communities down through the centuries. Located just a short way from densely populated urban centres, it is also a well-known mountain area with a long tradition for the inhabitants of the Basque Country and Navarra.

Right from Neolithic times, grazing has transformed forests into mountain meadows and timber extraction was also very important in the last two centuries. The Aralar pastureland has been common land from earliest times based on age-old uses and customs, which led to the formal setting up of the Enirio-Aralar Association of Municipalities (Table 1) in the 15th century. Fifteen municipalities of Gipuzkoa are currently part of this community of land, and they are the common owners and are entitled to the joint enjoyment of this mountain[1].

[1] The fifteen municipalities are Altzaga, Arama, Ataun, Beasain, Gaintza, Itsasondo, Lazkao, Ordizia, Zaldibia, Abaltzisketa, Amezketa, Baliarrain, Ikaztegieta, Legorreta & Orendain.

Image 1. Location of Enirio-Aralar Association of Municipalities and prevalence of pastureland



Source: own preparation

The establishment of the Enirio-Aralar Association of Municipalities reflected the oral tradition that existed regarding the age-old right of the residents of the valleys to use the pastureland. It was officially established as a "community of grazing and folds". Therefore, the uses defined as communal have been exclusively "grass, water and grazing" right from the start, resources that until the 17th century were specifically used for cattle and pork livestock, more adapted to the forest cover that then predominated on the massif (Aragón, 2002) and more valuable than another types of livestock for farming-based family economies. The local residents were also allowed to collect fern and leaf litter (for livestock bedding and subsequently as fertilizers for the crops) and timber for household uses.

The Enirio-Aralar Association of Municipalities was governed by a Board with representatives of the fifteen settlements of the district and it adopted a series of different wooded upland and pastureland regulations and byelaws down through the centuries (Table 1). Its history is noted for the successive and drawn-out pressures between different uses and users, and by the disaggregating trends between villages, to the point that life of the Association of Municipalities could be defined as "a nearly permanent conflict" (Moraza, 2010). These conflicts of interest were similar to what occurred in nearby common mountain land (Iriarte, 1997; Urzainqui, 2007). One of the major tensions occurred in the 18th century, when forests began to be an important economic resource, sought after by railways and by the shipping industry at a time when the needs of the villages, indebted by constant warfare, was obvious (Aragón, 2001).

Table 1. Milestones in the function and governance of the Enirio-Aralar common land

Date	Resource units Common	Community Users with rights *Commoner*	Governance Institutions Commoning	Interests and tensions
From Neolithic times to 15th century	Pastureland, water, wood for household use	Local residents (with open house). Farmers (cattle and pork) Free use at no charge	Oral/customs	Forestry use & livestock use without conflicts, use integration
From 1409 to 1821	Pastureland, water, wood for household use	Local residents: shepherds (sheep) and farmers (cattle & pork). Free use at no charge Outside shepherds, exceptionally, from 18th century.	Board where the 15 towns are represented (mayors or representatives) Provincial authority arbitration	-Growing tension about wooded areas (needs of the municipality) -Conflicts between livestock farmers (cattle/sheep, local/outsider, between towns,...) -Start of deforestation -Conflicts between towns
	Timber, coal	Exploitation as own assets of the municipalities on a joint basis		
From 1821 to 1886	Pastureland, water, stripping of woodland	Free use by local residents at no charge	Decline of the Board as regulating body, lack of supervision and byelaws. Forestry authority arbitration	-Notable deforestation -Disaggregation of the forest cover among the 15 municipalities
	Timber, charcoal	Exploitation as "own" asset independently for each municipality		
From 1886 to present	Pastureland and water	Local residents Livestock use subordinate to forestry repopulation	Livestock and forestry uses supervised by the forestry authority when given public utility status Investments by forestry authority Board has a very small role, only regarding livestock issues and always subordinate to provincial provisions	Intense reforestation process Poor livestock use management
	Woodland	-Society beneficiary of woodland (environment, recreation) -Municipalities as beneficiaries of the commercial exploitation of the wooded upland, always subordinate to green criteria for forestry management		

Source: own preparation.

One of the consequences of the progressive deforestation by the municipal harnessing of the woodland was that it encouraged the entry of sheep to replace the cattle and pigs, a process that had started in the 16th century and which meant that that the former, whose value had been progressively increasing, became the main livestock in the mountain range. The

amendments to the regulations regarding livestock uses (types of priority livestock, access to pastureland, whether or not royalties had to be paid, etc.) were always preceded by tensions and conflicts that, despite everything, the Association of Municipalities was managing to overcome to an acceptable extent thanks to the arbitration of the provincial and regional authorities. One of the most controversial decisions was, for example, when sheep from outside Aralar were allowed be grazed upon payment of a fee.

However, the tensions between the different uses became unsustainable when their traditional integration ended. Extensive livestock farming began to be cornered into a farming system that was increasingly more intensified and less self-sufficient. At the same time, pressure from industrialisation ended up with the woodland being reappraised for the production of coal. Thus, the capacity of the Association of Municipalities to address those challenges was called into question at the start of the 19th century (Moraza, 2010). The conflicts between the villages of the Association of Municipalities that owned the wooded upland increased as the woodland grew in importance as an economic resource and the debts of the local treasuries increased, to the point that the fifteen municipalities decided in 1821 to divide the forest stands between them after heated discussions. From then onwards, each municipality would have its own trees, which inevitably led to a speeding up of the deforestation. It can be argued that the supramunicipal system of appropriating the resource slowed down excessive forestry use to a certain degree, by containing the specific needs that affected each local treasury, so it was the municipal appropriation of the common which led to its overexploitation.

The liberal policy that characterised Europe from the mid-18th century and throughout the 19th century led to a general stripping of common lands, which affected many of those located in the Basque Country because of the disentailment laws (Urzainqui, 2007; Lana, 2008; De Moor, 2011; Serrano, 2014). This privatisation process of common and public assets did not affect Aralar, as the wooded upland was declared a "public utility" in 1886, alleging the existence of beech groves that still stood there. Therefore, its environmental values (forest) and not its common use (grazing) were those that, as they were considered in terms of society overall, that allowed this wooded upland to remain outside the disentailment legislation that sought to sell it off. However, cataloguing Aralar as a Public Utility Woodedland enshrined the municipal equity appropriation of the common assets, as it was required to be registered as the property of the city councils, which meant the definitive loss of the property for the "common of the local residents" (Urzainqui, 2007). That social function was carried out and is still performed by means of supervision, both of livestock and forestry uses, by the forestry authority, specifically by Gipuzkoa Provincial Council (DFG).

At the start of the 20th century, Aralar was certainly in a unfavourable situation. Its forests had significantly shrunk due to forest and pastoral over-exploitation and anarchy reigned in the governing institution, the Board, to such an extent that the documents of the time described the wooded upland as being in a "pitiful state of abandonment" (Ayerbe, 2005). The DFG sought to prioritise conserving and promoting the beech tree, by means of nurseries, enclosures and plantations, and allowing grazing only when it did not interfere with the repopulation of the forest. Forestry engineers began to be actively involved in managing the previously common resources, by promoting management plans and imposing technical criteria to conserve the woodland and grazing, an intervention that still continues today.

The intense industrialisation that characterised Gipuzkoa in the 20th century reduced the pressure of economic uses on the land of the Association of Municipalities, while the mountains were reappraised as a place for the leisure and recreation of an increasingly more urban society. During that century, Aralar recovered part of its forest cover thanks to the protective policy of the DFG and it likewise remained as the most important grazing land in the whole province. The Board continued to operate, even though it declined in importance in municipalities that were not outside the general industrialisation process.

3.2. Current uses and source of conflicts

During the last decades of the 20th century, the persistence of horse, cattle and sheep livestock on the upland was really more due to the deep-rootedness of the rural and pastoral way of life of the local residents than to their being a real source of economic profitability. And along with that, the environmental functions of the Aralar mountains have more recently been reappraised, while the contribution of grazing to preserving the mountain habitats and landscapes is assumed with increasingly greater intensity.

In this line, global awareness of the recreational and environmental services that the uplands and natural spaces provide to the rest of society has spread. This has necessarily highlighted the need for their preservation and the number of protected areas have multiplied around the world. In this regard, the Aralar mountains were declared a Natural Park in 1994, which went hand in hand with a Natural Resources Management Plan and, subsequently, a Management and Use Master Plan. However, no major changes occurred in reality, given that the management of the Aralar uplands was de facto already in the hands of the DFG due to their public utility status. The Association of Municipalities Board continues to have certain specific powers in the management of the pastureland subordinate to the management by the forestry authority, while the rest of the uses are directly regulated by the DFG.

The recent declaration of Aralar as a SAC of the Natura 2000 network in 2016 can be expected to have a greater impact. That status implies a series of environmental obligations with the European institutions, preservation targets that are prioritised over social, cultural or economic considerations (Basque Government, 2015a). However, Decree 84/2016 declaring Aralar as a SAC envisages that "the directives and management measures for the SAC will be incorporated in the Management and Use Master Plan for the Aralar Natural Park (Article 3.1),[2], therefore those measures must be integrated in a perspective that also considers farming activities to be appropriate because their close relationship with the environment. Furthermore, as envisaged in the First Final Provision of the aforementioned Decree, the Management Plan of the Natural Resources must also have the status of a sole document that regulates both protection figures, both the Natural Park and the SAC[3].

The situation of the different habitats of Aralar can now be considered as satisfactory in general, even though sufficient data are not available to assess the state of conservation of the mountain meadows (BG, 2015a). Note that at the start of the 1980s, the pastureland was overexploited and degraded due to the lack of control of the horse and cattle livestock, a situation that can be put down to the DFG and to the Association of Municipalities itself. Even though the byelaws theoretically prioritised sheep farming, the working conditions as a

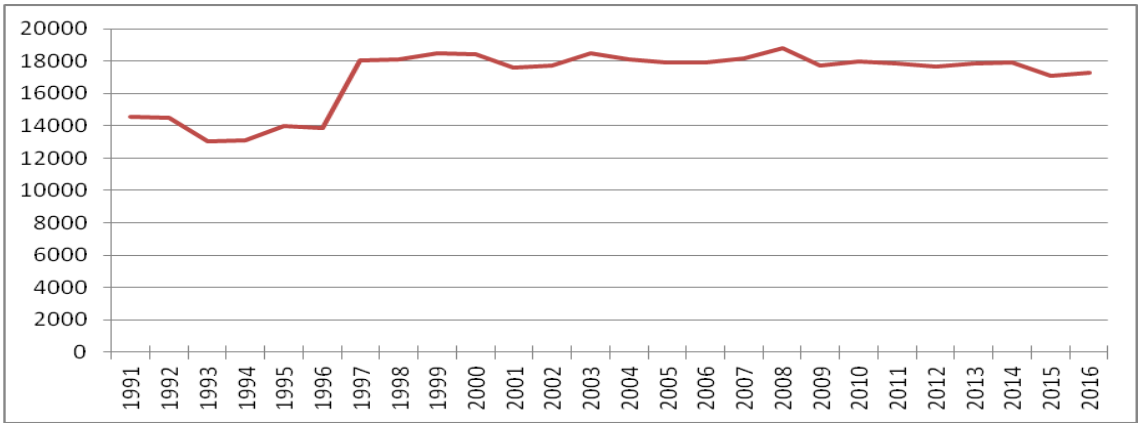
[2] DECREE 84/2016, 31 MAY, designating Aralar (ES2120011) a Special Area of Conservation. BOPV No. 174, published on 13 September 2016.
[3] *Ibid*.

shepherd were then very precarious, that hindered the generational handover and, therefore, the survival of this traditional grazing system (Aranzadi, 1982).

This situation has changed in recent decades for several reasons. On the one hand, the DFG has invested significantly in livestock infrastructures and increased the control of the animals, so that the living conditions of the shepherds and the state of the livestock population has notably improved, particularly in health terms. On the other hand, an important boost has been given to artisan cheese production, particular with the creation of the Idiazabal Denomination of Origin, which increased the profitability of sheep holdings. And, finally, Spain's joining the EU opened up the way to a system of subsidies for livestock and farming activities which has had a great impact on land uses, and to which Aralar has not been immune.

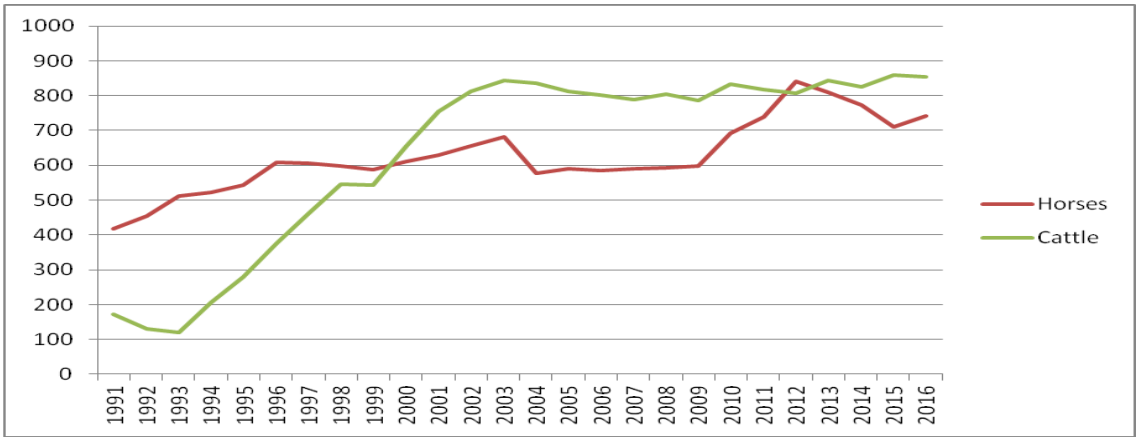
If we look at the evolution of the livestock population in Aralar (Graphs 1 and 2), we can see, effectively, how the sheep population (Graph 1) has managed to stabilise during recent decades. As regards cattle and horses, the majority of the owners envisage this activity as additional income to their main employment in the service or industrial sectors. They use their local resident grazing rights to keep a few animals, that provides significant economic benefits, mainly thanks to the CAP subsidies. There has been a quadruple increase in the number of cattle in the mountain range in just one decade (Graph 2).

Graph 1. Evolution in the number of heads of sheep in Aralar, 1991-2016.



Source: own preparation using data provided by the Enirio-Aralar Association of Municipalities.
N.B.: the increase in sheep in 1997 was due to a change in the system to count the number of heads, not to a real increase in the livestock population.

Graph 2. Evolution of the number of horses and cattle in Aralar, 1991-2016.



Source: own preparation using data provided by the Enirio-Aralar Association of Municipalities.

The uses and the interests in the Aralar pastureland have, therefore, undergone rapid transformations, to a great extent caused by rural development, agricultural policy and environmental directives established by European authorities, far removed from the traditional governance entities. Assuming that the survival of the common depends to a great extent on their adaptation to the different socio-ecological contexts (Lana, 2008), it should be noted that the Association of Municipalities Board does not react expeditiously, or even has the capacity to do so, to adapt to the new challenges generated.

The Enirio-Aralar Association of Municipalities can today be considered as a weak institution, with few powers, and where it is very difficult to reach shared agreements, as its decisions are affected by the vagaries of the political parties at the head of the local councils. For example, the latest renewal of the byelaws has involved several years of tough negotiations as sufficient consensus does not exist to amend them. Neither were the annual grazing management plans required by the byelaws prepared and therefore the DFG provincial forestry regulations are the ones that have been regulating the uses in practice during that time.

It is true that even though the Association of Municipalities byelaws give priority to sheep, by limiting the cattle and horses to the number needed to complement the sheep, and always depending on the capacity of the upland, it is not proving to be simple to put that limitation into practice on common upland where the local residents have traditionally had practically free grazing rights at no charge. In fact, it is complicated to avoid subterfuge with regard to limiting the maximum number of heads of cattle and horses allowed for each user - which vary according to their professional or non-professional status - or the entry of livestock from holdings located outside the district.

On the one hand, there is a competition for grazing among the sheep farmers (professionals) and the cattle and horse owners (mainly non-professionals) in an environment noted for the trend to overexploiting the pastureland, particularly in the most fragile areas, such as beech groves being regenerated and around troughs (Sierra, 2004; DFG, 2005). Even though the average livestock density on the pastureland is less than two livestock units (LU) per hectare, the density of up to 4.5 LU per Ha has been detected at some points. In those areas, there are ewes (which are estimated to account for 48% of the livestock density), mares (34%) and cows (18%) together (Odriozola, 2014).

The state of conservation of the Aralar protected pastureland therefore depends on appropriate management and handling of the livestock density. The Aralar regulatory legislative as a SAC (BG, 2015a) specifies, in fact, that both an excessively low and an excessively high livestock density are detrimental to keeping the pastureland in a favourable state of conservation. Furthermore, it advocates more active management, something fundamental in the case of non-professional cattle and horse owners, which are the majority.

Another conflict that has been particularly in the spotlight in recent years is reconciling the construction of livestock tracks and protecting Aralar habitats. Environmental groups from local rural communities, on the basis that the common pastureland belongs to the Natura 2000 network, are categorically against the opening up of new livestock tracks given their impact on the environment. However, shepherds and livestock farmers consider that access fundamental to ensure the survival of their activity. Opinions on the Association of Municipalities Board are divided regarding this conflict of interest, where the productive use of the pastureland clashes directly with protection the ecological functions of this space.

Effectively, the current conflicts of interest in the space are many and are mainly related to the new functions that the local industrialised and urban society gives to the rural world (Lana & Iriarte, 2015). What is obvious is that the multifunctionality of the rural world and of mountain grazing, so heavily defended by European rural policies (OECD, 2000; Reig, 2002), is not exempt from difficulties when seeking to reconcile the diversity of interests that compete in a common socio-ecological system.

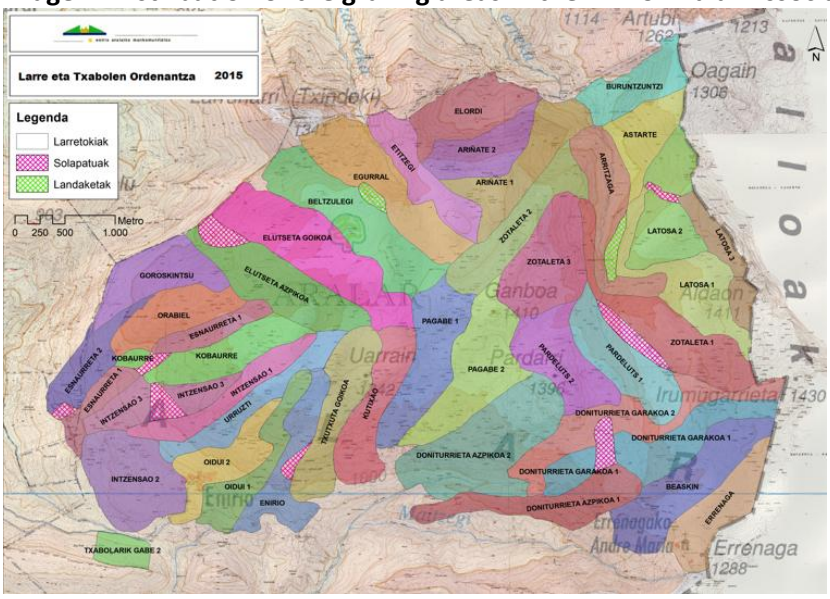
Increasing the endeavours to develop mechanisms that allow the local systems of governance to adapt to those new requirements in a system of multiple uses such as the one in question is, therefore, necessary (Short, 2008; Sutcliffe *et al*., 2013). As has been the case down through the centuries, only the adaptation of the Enirio-Aralar Association of Municipalities to the new interests of society and to the growing interventionism of the regional and European institutions in the management of the rural territory will be able to continue to guarantee its survival as a common in the future.

4. The main productive use of the common land: sheep grazing

Sheep grazing is the economic activity that can best combine all the functions that society currently requires from the Aralar common land and, therefore, it is considered as essential for appropriate conservation of the wooded upland. The active management of the sheep on the pastureland allows a set of environmental services to be provided and the landscape to be preserved, along with the production of traditional food items.

The traditional and typical way of managing Aralar is transhumance: the shepherds have stables and some land (own or rented) at the bottom of the valley, but their territorial basis is very small. Therefore, they take the livestock up to Aralar in the spring and summer to use the upland common grazing, when they live during part of that period in the high pastures, looking after their flocks. Over 50 farmers currently are authorised to take their flocks of sheep up to the Aralar pastureland. However, the number of professional shepherds, considered to be those that at least keep a flock of 100 sheep fell to 37 in 2015. This figure remained practically unchanged in the last decade and is directly related to the provision of shacks and their relevant grazing areas on the common lands of the Association of Municipalities.

Image 2. Distribution of the grazing areas in the Enirio-Aralar Association of Municipalities



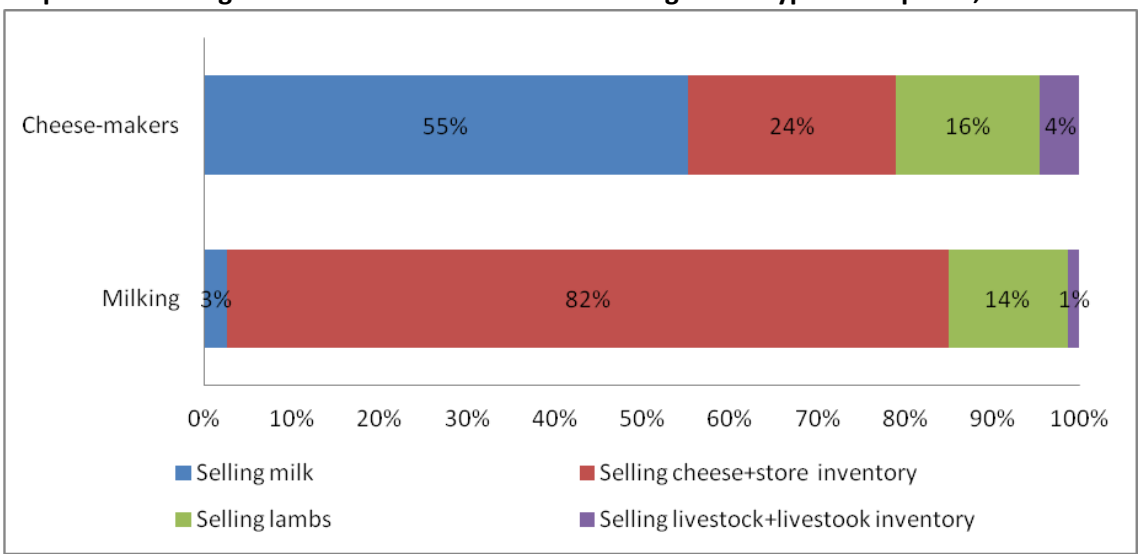
Source: Basque Government, 2011

The *latxa* ewe is the only one allowed on the land of the Enirio-Aralar Association of Municipalities. It is a medium-sized protected native breed, which is agile and perfectly adapted to the relief and climate of this zone. In recent years, this breed has become more highly valued as its raw milk is used to produce Idiazabal cheese, a quality product that has had a denomination of origin since 1987 and that is highly sought after locally. Proof of that is that its production has increased 50% in the last two decades (Basque Government, 2015b).

The holdings are family run, the flock rarely has more than 500 heads and there are very few shepherds that contract salaried workers. The professional shepherds are often quite young, proud of and committed to their activity and who have placed great emphasis on quality, updating facilities, technical innovation and food safety (Basque Government, 2015b). The uplands are part of their life experience and they feel deeply-rooted in the shepherd culture (Urzainqui, 2007).

Following the classification that other authors have used regarding the structure of the sheep sector in Aralar, a distinction should be made between two types of shepherds (Karrera *et al.*, 1998; Mauleón, 2014; Basque Government, 2015b): on the one hand, those who prepare cheese on their holding, who we will call the cheese-maker shepherds and who account for two-thirds of the total; and, on the other hand, those who fundamentally sell milk to companies or to small cooperatives to be transformed, who are the milking shepherds. As can be seen in Graph 3, the former obtain most of their income from selling cheese, while the latter do so from selling milk; both types of shepherds however obtain similar earnings from selling lambs.

Graph 3. Percentage of the income from sales according to the type of shepherd, 2015

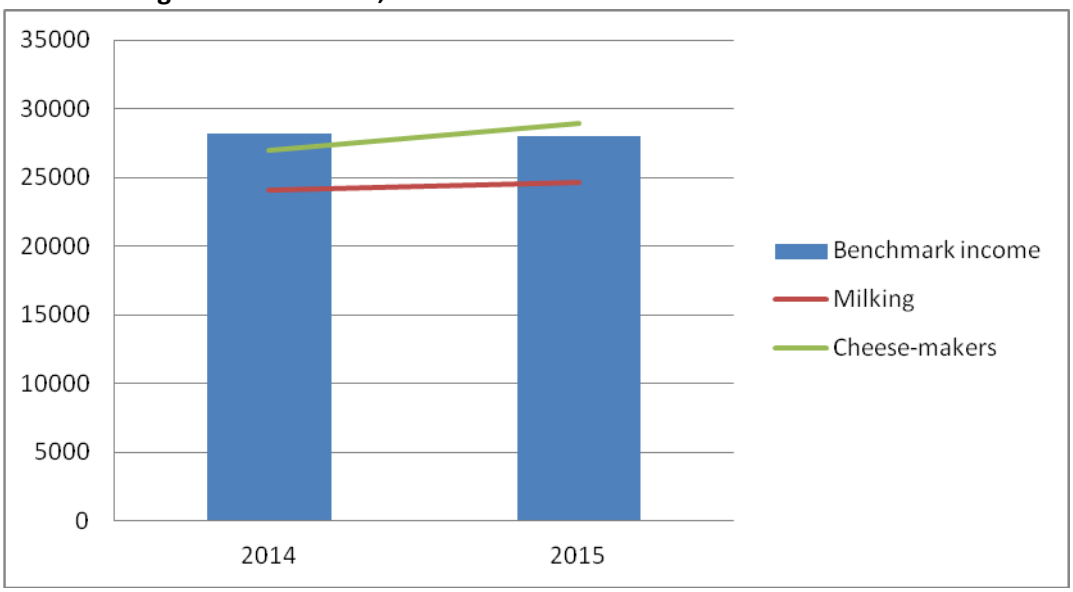


Source: Own preparation using data provided by Lurgintza.

The milking shepherds, who usually have rather larger flocks, have seen their margins greatly hit in the last decade, due to the drop in the price of milk and the tougher collection conditions imposed by industry. According to the Regulatory Board of the Idiazabal Designation of Origin, this transformation led to a considerable reduction: only 214 remained in 2013 of the 434 holdings in the Basque Country and Navarra that sold milk to cheese dairies in 2010 (Basque Government, 2015b). Many of those shepherds therefore began to produce cheese to increase the value added of their product as the only way to ensure continuity of their activity, while others have entered into cooperative process to achieve milk collection for fairer prices, for example through the "Latxa esnea" association.

Cheese-maker shepherds are economically more efficient, as they enjoy better net margins on average than the milking shepherds (Graph 4). However, given the low productivity of the *latxa* breed, with moderate milk production, and the extensive way of managing the flocks, the economic margins per family Annual Working Units (AWU)[4] are not very high if we compare them to the agricultural income that the Ministry of Agriculture establishes annually and which stands at just over EUR 28,000 a year (Graph 4).

Graph 4. Net margin in euros per family AWU of the sheep holdings, in relation to the benchmark agricultural income, 2014-2015



Source: Own preparation using data provided by Lurgintza.

The majority of the cheese-maker shepherds have sanitary permits to sell their cheese legally, but some produce "unlabelled" cheese, which they easily sell directly locally. Many of them are members of "Artzai Gazta", an association that has been up and running for three decades, which only accepts shepherds that make cheese from *latxa* or *karranzana* ewes from their own flock. This association now produces nearly half of the cheese certified by the Idiazabal Designation of Origin in the Basque Country and Navarra (Artzai Gazta, 2016).

The cheese is produced during the first part of the year at the holdings in the valley. In summer, when the livestock is grazing on the high upland, approximately half of the shepherds carry on milking and produce cheese until the end of June, making it in the shacks where they live over those weeks. Their immediate family usually goes with them and actively helps with the livestock tasks. The institutions have recently begun to support the regularization of those mountain-produced cheeses, by investing infrastructures that ensure compliance of the sanitary conditions and its subsequent marketing using its own seal ("Mendiko Gazta"), which will thus enhance the value of the cheese that is traditionally made in the high pasturelands.

In any event, the possibility of using the upland grazing for their flocks is a condition for the cheese-maker and milking shepherds alike without which their holdings would cease to be profitable. Given their small economic margins, it seems clear that their viability is greatly conditioned by the dependency on feed and fodder external to the holding. It should be noted that just 9% of the land declared to be linked to the holding is owned, with 64% of the land belonging to the Association of Municipalities and the remaining 28% is other rented or ceded

[4] In other words, the net salary obtained by each of the family members working on the holding.

land[5]. The cost of renting that land is, in fact, seven times higher than the cost of using the common land, where only a small rent is required to use the pastureland. More specifically, land rent accounted on average in 2015 for 8% of the total costs of the sheep holdings[6], which is a not insubstantial amount.

On the other hand, the cost of feed purchased accounts for more than a third of the costs of the sheep holdings. According to Basque Government estimates (Basque Government, 2011), each sheep in Aralar needs to graze the equivalent of 1.22 kilos of dry forage every day. Given that the ewes remain on the common pastureland for approximately 5 months and that the average flock of the professional shepherds is estimated to be 357 ewes, that land use can be calculated to be worth around EUR 6,533 per shepherd[7]. This amount represents around 13.5% of the net margin that each shepherd obtains for their work in 2015 and is absolutely relevant for their economic viability, as that saving helps to offset the cost of feeding the livestock in winter.

Therefore, the conservation of the common pastureland is not only an environmental necessity, as has been previously stated, but also an economic imperative to ensure that the shepherding remains in Aralar.

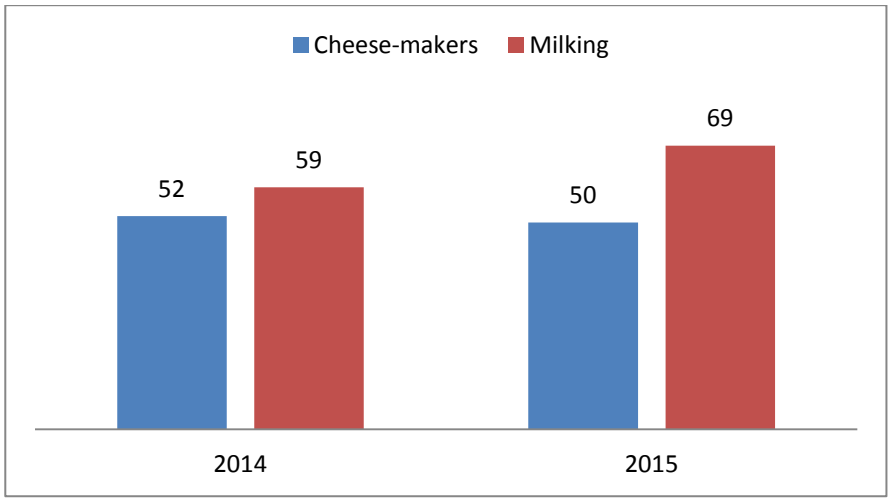
5. The impact of the CAP for shepherding to be maintained in Enirio-Aralar

Previous sections have shown that the governance of the Aralar common land is increasingly more influenced by the European context, both by the influence of the agricultural policy and by the regulations relating to the Natura 2000 network which directly affect that pastureland. Specifically, the CAP has progressively shifted over recent decades towards a policy whose main purpose is not so much to support production and the income of the farmers, but rather to maintain the many functions of livestock and farming activities. The landscape and environmental benefits of keeping a rural world alive are especially prized. In other words, the existence is assumed of a series of positive externalities provided by the agricultural and livestock activities, that benefit society overall despite not being recognised by the markets. This recognition of the multifunctionality of the rural world has transformed the fundamental European subsidies for maintaining farming in general and for supporting the livestock activities in the common pastureland in particular.

In the case of the Aralar sheep holdings, the CAP subsidies are essential to maintain their activity. The analysis performed shows that funding accounts for over half the net margin obtained at each professional sheep holding (Graph 5), with dependency on subsidies being greater in those holdings that produce milk than in those specialising in producing cheese.

[5] Source: Lurgintza. Data taken from the 2015 land declaration for CAP funding of the seven benchmark holdings.
[6] Source: Economic margins calculated using the data provided by *Lurgintza.*
[7] A price of 10 €ct/Kg. of dry fodder has been estimated.

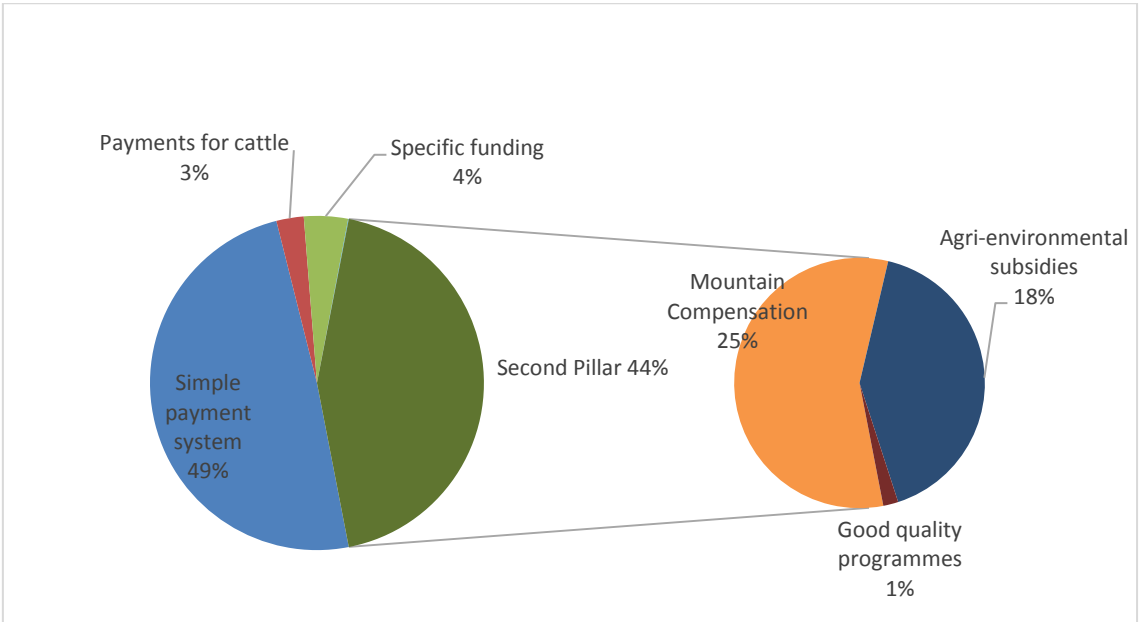
Graph 5. Percentage of the net operating margin represented by CAP operating subsidies (%), 2014-2015



Source: Own preparation using data provided by Lurgintza (n=7).

CAP funding for holdings in the sheep sector is currently divided into two pillars with different objectives. The first pillar includes the traditional subsidies for the farming sector. For decades, that aid has been linked to the number of heads of livestock with entitlements, even though it has been progressively "decoupled" since 2006, meaning that payment entitlements per sheep have not been awarded in Spain since 2010. This first pillar of funding includes the single payment scheme - currently known as the basic payment scheme-, the beef and veal payments - still couple to the number of suckler cows that some livestock farmers still keep as a supplement-, and the specific funding for quality and networking (Graph 6). The shepherds obtain over half of the amount of the European funding from these three lines of the first pillar. Furthermore, its importance is not expected to change greatly at least during the 2014-2020 programming period.

Graph 6. CAP subsidies for sheep holdings in Aralar, 2014.



Source: own preparation using data extracted from the Spanish Agricultural Guarantee Fund (n=35), 2014. https://www.fega.es/.

The aforementioned decoupling has meant that in the case of extensive sheep farming in Spain, the traditional importance of the number of heads has stopped being the sole criteria to receive funding from the first pillar in the last decade. The hectares used, an implicit recognition to support appropriate land management, has begun to be taken into account. The viability of the current professional sheep holding is, therefore, based on the capacity to maintain the hectares of common pastureland that each livestock farmer can declare according to their rights of use, a variable that is fundamental to receive first pillar funding[8]. Extensive sheep farming on alpine pastureland, in fact, is considered to be an environmentally friendly practice per se, given the role that it plays in the maintenance of the permanent pastureland. Therefore, those holdings that use the Aralar common land directly meet the environmental conditions required to receive that first pillar funding, including the so-called "green payments".

The rest of the European subsidies that support the shepherding activity in Aralar come under the second pillar of the CAP. This pillar, which dates back to 1992, seeks to foster rural development and sustainable environmental practices, recognising the landscape, social and environmental services generated by agricultural for society overall. Even though the development of the second pillar in Spain has been slower than expected and the importance given to it is still far behind that of other European Countries (Asociación de Pastores Monte Mediterráneo, 2013), its importance is expected to be increasingly greater.

Specifically, and as set out in Graph 8, the Aralar shepherds receive two main lines of funding in this second pillar: those earmarked to compensate farmers for natural difficulties in mountain areas and agri-environmental subsidies. The first, which is only awarded to main-occupation farmers, supports livestock and farming on land with steep slopes and at great heights, as the belief is that despite the natural limitations and constrains, their maintenance is positive for the environment and rural development. The funding is based on a payment per hectare (which depends on the physical characteristic of the land used and the livestock density), with maximums established per holding.

On the other hand, the agri-environmental measures are set up as subsidies that seek to offset the higher costs and loss of earnings resulting from adopting farming production practices and methods that are highly environmentally friendly and conserving natural resources. In the case of the Enirio- Aralar Association of Municipalities, a livestock farmer (whether or not a professional) just has to use common pastureland to be able to receive this funding, as it is considered that the farmer is helping to conserve the permanent grassland. The subsidy consists of a premium per hectare of declared pastureland, which can be increased for keeping native breeds, such as *terreña* cattle or the *latxa* ewe.

In short, the use of the Aralar common pastureland is essential to receive European subsidies from the first and second pillar of the CAP. Based on the calculations in Table 2, we can estimate that the right to take livestock up to Aralar results in direct benefits of EUR 16,812 a year in subsidies for each shepherd. This value represents, with respect to all the income from selling milk, cheese, lambs and livestock, a significant amount without which the sheep holdings on this common land would no longer be viable.

[8] Specifically, it is essential that, up to 2020, shepherds can continue to declare the use of at least the same of common Ha as in the 2013 or 2015 benchmark, as applicable, to continue receiving the same amount of the first CAP pillar as they received in the previous programming period.

Table 2. Economic benefit for shepherds from the use of common land

	Criteria	Total amount of the subsidies to the shepherds overall	Benefit linked to the common pastureland
CAP first pillar	64% of the land declaration are common. We therefore assume that the first pillar funding is linked to the common land in that percentage	EUR 413,132	EUR 264,405
CAP second pillar	100% of the funding is related to the use of common land	EUR 324,023	EUR 324,023
TOTAL economic contribution of the common land to the viability of the holdings			EUR 588,428
Average benefit per holding (n=35)			EUR 16,812

Source: own preparation using data extracted from the Spanish Agricultural Guarantee Fund (n=35), 2014. https://www.fega.es/.

It should be noted that the philosophy used to design the agri-environmental aids does not seem to be in line with the way in which this funding is granted in the Association of Municipalities or in the rest of the nearby common upland. The agri-environmental measures, in the case of common pastureland managed jointly, should aim to strengthen the collective action, perhaps by granting them to the management entity of the pastureland as a collective that brings together and manages the common interests of the livestock farmers and shepherds. As there is broad number of beneficiaries that jointly uses a territory, the collective action in the design and implementation of agri-environmental measures could generate a greater level of commitment and effectiveness than the individual beneficiaries of the funding (Dominguez, 2013).

However, the Aralar shepherds and owners of cattle and horses have option of receiving the agri-environmental subsidies individually, with the sole requirement that they are entitled to and use the common land. This design means that the opportunity is being lost to seek better governance of the commons, as the individual economic interests of the livestock farmers and shepherds are prioritised exclusively to the detriment of strengthening the institution, cooperation and the joint implementation of an endorsed grazing management plan for the mountains, which includes the broad set of functions and interest of this space.

It is also important to point out that the common hectares that each shepherd may declare for the CAP are not exactly the ones that they are effectively using, but rather, as different types of livestock and farmers overlap on the same common land, the total of land for grazing (eligible) in the Community (2,087 Ha) has to be divided between the total number of heads of livestock authorised to use the pastureland. Appropriate regulation is therefore fundamental as regards the maximum livestock allowed per person and the type of prioritised livestock in the byelaws of the common. This is even more so as the first product of the use of the common land for many livestock farmers (particularly cattle, with high coupled premiums) is the money they receive from the CAP from being entitled to use eligible land. However, the 2006 byelaws in force during the last 10 years were approved at a time when the first pillar

funding was still not so closely linked to the declared hectares and therefore there was less competition between the uses. The lack of adaptation and flexibility of the governance of the common to adapt to the European funding context may in fact be one of the reasons why the conflict between the type of livestock farmers and the infringements and strategies to take livestock up to Aralar have been quite frequent during recent years (application from both spouses in the case of a married couple to exceed the maximum heads allowed, request for permission but without using the pastureland, etc.).

In conclusion, in the same way as in other areas (Sutchiffe *et al*., 2013), the CAP regulations in the last decade have reappraised the financial value of the pastureland for the livestock farmers and shepherds, which can put pressure on the overexploitation of the common pastureland and endanger their sustainability.

6. Conclusions

The Enirio-Aralar Association of Municipalities was set up and has survived for centuries by means of a governance system that guaranteed economic benefits for its users: common pastureland for the family livestock and income for the municipalities. However, society places much greater value on the environmental rather than the economic aspects in the use and enjoyment of common resources. While the recognition of the protective value of the forest for society was progressively assumed from the 18th century onwards, it would not be until recent decades that awareness would spread of the importance of continuity of livestock management to conserve the habitats and the associated environmental services.

The management and use of the space of the common land are increasingly more determined by regulations external to the traditional ones. In the case of Aralar, the DFG has been supervising the forestry and livestock uses for a century given its status as public woodland, a supervisory role that has been reinforced by the zone being recently declared a protected area.

The main contribution of grazing to the local livestock farmers is related not only to the availability of pastureland, but also, and above all, to the significant CAP funding. However, the design of that funding may paradoxically lead to a certain risk of over-exploiting the pastureland, as it does not adequately distinguish between the more environmental and social sustainable use - sheep grazing - from other non-professional livestock farming (horses and part of cattle), which have widely benefitted from them.

The interest in keeping sheep grazing on the common land does not so much pursue economic as environmental and social goals, and is therefore only defendable if the protected habitats on the common land are conserved. That maintenance can only occur if it is an activity that apart from being managed using environmental criteria, is profitable and generates jobs and economic benefits.

However, it is noted that the professional sheep holdings are at the limit of their economic profitability. As the cheese producers are more profitable and less dependent, it seems necessary to foster the making of cheese by the shepherd or in cooperatives, at the same time that greatest margins must be achieve for shepherds who sell the milk.

To address the new social, environmental and economic challenges that the Association of Municipalities is facing, its governance needs to be improved, more so when taking into account the progressive assuming of powers by external institutions whose decisions are

conditioning the uses of the common land. The existence of pressures and conflicts of interests in a space with increasingly greater uses - some common and others directly assume as public goods- requires the Association of Municipalities to be adapted as a local institution of governance.

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