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## **More sheep, more space...but not any tractor ! Is farm enlargement (always) damageable regarding sustainability in French Mediterranean mountains ?**

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This paper deals with the analysis of changes in sheep farming activities in the Southern Alps, located in the Mediterranean region of France. We particularly focus on the analysis of different types of sheep farming at the scale of a small region, their diversity and recent changes in them. On the one hand, we address these changes in terms of the challenges and expectations facing sheep farming activities in these Mediterranean mountain regions and, on the other, we discuss the means for characterizing the diversity of these systems, their dynamics and interactions, in order to better understand rural development trends. More specifically, we characterize a particular type of farming whose increase in recent years is a dominant feature of the changes in these activities - that of farmers with big flocks who practice double transhumance, or double migration. We describe the specificities of this type of farming and analyze its contribution to the development trajectory of the local agriculture, as well as the specificities of the "double migration" farmer (DMF) in comparison to another more traditional type of farmer in the region, the "small mountain farmer" (SMF), as one of them qualifies himself, who appears, at first glance, to be at the opposite end of the pole of the criteria that we have chosen in terms of the different ways in which the two work.

From a historic point of view, sheep farming in France is linked to grain farming, often highly present in mixed crop-livestock farming systems as a complementary activity. This activity has sharply decreased, as can be seen by changes in the national herd, whereas France is the second ranking consumer of sheep meat in the European Union (France Agrimer 2010). Nevertheless, it is better represented in disadvantaged areas where it benefits from special support within the context of the Common Agricultural Policy. This is particularly true for the Provence-Alpes-Côte d'Azur (PACA) region, which, after having been in third place, has now become the 2<sup>nd</sup> ranking sheep production region in France today (AGRESTE, 2012), with the second largest slaughterhouse in Europe located in the French Alpes de Haute Provence department in Sisteron. The relative stability of the number of sheep in this region over the last three decades is due to a specialization within farms that has considerably increased over time (the average herd size today is 390 sheep, corresponding to 11.5% of French sheep farmers) (France Agrimer 2010). This specialization has also taken place at the scale of huge swaths of land in the countryside where the majority of farms have become specialized in sheep breeding.

The A3V area (*Pays A3V*) in the south of the Alpes de Haute Provence department (Figure 1), is emblematic of these changes in sheep farming and the issues that the development model that encompasses these changes raises for the local society. Two main aspects are expressed at the local level in terms of "expectations" in relation to livestock farming: first, its contribution to maintaining landscapes shaped by centuries of pastoral activity and, second, its contribution to local development in terms of territorial dynamism.

## 1. Sheep farming and landscape maintenance

Sheep farming, with its historically strong pastoral component, has structured Mediterranean landscapes. Since the 1980s, following a crisis linked to the steep drop in sheep meat prices, policy statements, development initiatives and public support for this activity have all highlighted this issue of "land maintenance" and the ability of sheep farming to address these needs (Lasseur, 2006). Sheep farming in our study area, which includes a portion of both a regional and a national park, is particularly concerned by this aspect of the activity. The study area covers 1650 km<sup>2</sup>, or 25% of the Alpes de Haute Provence department. It is centered on the upper Verdon Valley, between 800 and 3000 m in altitude. Forty percent of the area is covered by forests, and the same percentage is taken up by alpine meadows. Farmland (excluding mountain pastures) represents 15% of the territory, 90% of which is still covered by grassy areas. As observed by R. Dumont in 1954, we are "in the real world of sheep" here. Sheep farming, which is primarily oriented towards sheep meat production, is the main agricultural activity of the area. The herd present on farms located within this area counts 35,000 ewes. Among this number, some 8,000 sheep leave the area to spend the winter in Basse Provence. During the summer, 35,000 other sheep from the rest of the region graze in the alpine meadows. As illustrated by these figures, mobility is an essential characteristic of this type of farming. If we take a look at it in other regions of the world (Faye 2008), we see that mobility has many typically Mediterranean traits. This type of farming is based on the very strong demand on natural resources by which "man and beast follow grass growth" (Vercherand 1987). In our study area, little interest was shown for cultivated interstitial spaces and small pastoral units, poorly adapted to the grazing management of large groups of animals, leading to the encroachment of woodland on the landscape and overgrowth. However, the opposite took place outside of the study area with a revived interest in pastoral activities, encouraged by considerable opportunities, for agri-environmental purposes, to graze herds in the forests of the coastal plain, as well as strong environmental incentives for summer transhumance. These forms of sheep farming that appeared to be in regression are now undergoing a reversal. In reality, relocating livestock in winter (that normally remain in the mountains with some in the sheep pen) recalls to mind practices that can be intermittently observed throughout the history of this type of farming and that are linked as much to the fluctuation in land stock as to social forms of agricultural production. Today, their ability to fulfill expectations in terms of controlling plant dynamics over the local area is a subject of debate.

2. **Sheep farming and local development** : Maintaining assets, contributing to the local dynamics (affirmation of a cultural identity, contribution to the dynamism of social networks, participation in the local food network).

The reaffirmation in the 1980s by public policies of a sheep farming activity strongly based on the appropriation of grazing land contributed to the cultural identity of the territory, which became a "Pays" in 1999, specifically, the "Pays A3V" (signifying Asses-Verdon-Vaïre-Var), strengthening the idea of territorial cohesion even more. A "Pays" (in this context, the French term *pays* is not used in the modern sense of "country" but preserves the original meaning of the Latin word from which it was derived, *pagus*), is an area whose inhabitants share common geographical, economic, cultural, or social interests, and who have the right to enter into communal planning contracts (Wikipedia). This "pays A3V" confirms the recognition of an undisputed legitimacy in terms of livestock farming activities. However, the consequence of the increase in herd size without an intensification in fodder production or the purchase of huge quantities of animal feed is the increase in the size of

holdings, in favor of abandonment of farming activities. As a result of specializations at the micro-regional level, this trend also has an effect on local development and the contribution of agricultural activities to maintaining employment. Agriculture only accounts for 8% of local jobs but is the last economic activity present in many of the communities in the area. Farm succession is a critical issue – 57% of farmers are over 50 years old – but the current prevailing model that is based on the dismantling of small farms deemed "unviable" to allow the others to expand is questioned by local actors. Finally, the economy of this area, like the majority of the countryside in the PACA region, has been strongly boosted by residential tourism (Datar, 2011). With 65% of the area's housing corresponding to second homes, local politicians are not just concerned with farming interests alone, and part of the land slips out of the control of farm families. However, this trend also represents a potentially large opportunity in terms of the market, particularly that of the coastal plains that are highly urbanized and close to the breeding area, in terms of local products that contribute to strengthening the tourist attraction of locally-grown products and to justifying incentives to diversify agricultural activities (e.g., the cultivation of fruit, aromatic plants and vegetables) linked to direct sales or agri-tourism. Nonetheless, with the exception of the sales of live lambs, particularly to North African Muslim communities along the coast for the celebration of Eid al-Adha, which has recently fallen at the end of the summer and represents a considerable market, specialized livestock farms such as they have evolved over these last decades have remained on the fringe of this trend, developing, as we will see, an extremely critical point of view. We suspect that the result of this is a distinction between two relatively distinct ways to approach the territories and their markets and to find one's niche. These two approaches correspond to two ways of exercising the profession of sheep farmer at the core of the development model discussed today in farming and in the territories (Figure 2). These two contrasting figures consist of the "small mountain farmer" (SMF), defined as a sheep farmer with an average-size flock (less than 500 animals), who grazes his sheep in the mountains only in the summer. He grows the forage necessary to feed his flock in the winter. He may be diversified and can produce under a quality label. The second is the "double migration" sheep farmer (DMF) who has a big flock consisting of 1000 to 2000 animals (1.6% of French sheep farmers have a flock with more than 750 animals) (France Agrimer 2010). He moves between the mountains and the plains where he grazes his flock on land with a permissive use status, generally works in a couple and employs between one to three permanent shepherds (Figure 3).

### **3. Analytical framework**

Analyzing the contribution of these two forms of agriculture to the future of rural areas could lead to clear-cut conclusions that would be tantamount to favoring one form of agriculture, either to the benefit of the economic efficiency linked to scale economies, or in the name of the defense of small farmers and the maintenance of threatened "traditional" know-how. To describe the diversity and the dynamics of systems in terms of sustainable development, it appears to us that proposals to analyze the resilience of socio-ecological systems renew the perspectives, both in terms of the assessment and its object.

The characterization of the diversity of agricultural systems is generally based on the distinction between three types of agriculture: small-scale ("peasant"), entrepreneurial and industrial (Ploeg 2009), each mobilizing production factors in a different way, particularly capital and labor. Small-scale farming, often in reference to tradition, is considered the repository of specific know-how, making it possible to organize agricultural activities at the lowest possible cost and to avoid risks.

Entrepreneurial agriculture is characterized by its integration into the market, the implementation of its activities on large farms, and its strong reactivity to exterior incentives, particularly those of the Common Agricultural Policy. It is also characterized by the use of a salaried workforce from outside of the family unit. Finally, industrial agriculture is characterized by a large financialization and total integration into the business world. This last category is largely absent in relation to grazing livestock in France (particularly in the case of sheep farming). In order to refine the segmentation of categories of farmers when integrating new concerns addressed at this sector, Niska et al. (2012) emphasize the emergence of sub-categories that are more closely linked to sustainable development issues: (1) a "new peasantry" that Ploeg (2009) links to "traditional peasantry", but considers to be more responsive to involving itself in the multifunctionality of agriculture (Ploeg 2009); and (2) "ecological entrepreneurs" (Marsden et al. 2005), that lead to an ecologically-friendly agriculture and that are involved in short supply channels and agrotourism. Such proposals make it possible to qualify the stigmatizing implementation of common typologies but seriously limit the possibilities for describing changes that affect the forms and frameworks of practices involved in the activity and their ability to adapt and contribute to local development.

Beyond the selection of the form of agriculture adapted to variations in the sustainable development issue "of the moment", it appears to us that an analysis perspective in terms of the sustainability of agricultural activities particularly targets the question of maintaining the adaptation capabilities of activity systems on the medium-term in an uncertain environment (Hubert et al. 2002). Maintaining these capacities rather than reaching specific objectives in view of maintaining stable balances constitutes the true perspective of research priorities to be developed. Our work on the characterization of activity forms and their dynamics therefore aims at strengthening our understanding of the adaptation mechanisms and identifying their principles. Research carried out in the field of the analysis of the resilience of socio-ecological systems (Walker et al. 2004) offers several proposals in this respect. Our attention was particularly drawn to the proposal put forth by Cummings (2011) to consider several spacial analysis level. We would have to consider the production systems in their local context as well as at a broader scale that, moreover, corresponds to the mobility properties particularly expressed for "big mobile flocks". Strengthening the adaptability and the transformability of socio-ecological systems relies in large part on the social component of these systems. For Berkes (2007), this is particularly based on (i) the capacity to learn to "live with" change and uncertainty; (2) maintaining diversity within the system in all its forms; (iii) the combination of different forms of know-how within the learning process; and (iv) preserving self-organization capacities and multi-scale links. Maintaining diversity and favoring self-learning at the local scale appears to be linked to the analysis of interactions between the different types of breeding identified, concerning discussions in local professional collectives (Darré 1999) about adapted breeding standards and practices, on the one hand, and places for social exchanges, on the other.

Our study aimed at increasing awareness of the way in which breeding activities are transformed in terms of the double migration farmer, compared to the SMF, another form of sheep farming that is very indicative of the current local development in the region. To do this, we carried out semi-directive interviews with some 30 sheep farmers with farms in the A3V area. The sampling included farmers who differ with regard to their personal histories, the location and size of their farms, and the technical systems that they implement (Sicard 2012). We therefore more specifically characterize double migration farmers from the point of view of how they perceive their profession, their

practices and their role in society. We first describe the dynamics of these farmers, their socio-economic characteristics and the way they involve themselves in their profession. We then present the issues sparked by this dynamic in relation to its contribution to the development of local agriculture. We conclude, not by considering the tensions and criticisms between these two major forms of sheep breeding that appear to us to be the most significant in terms of current dynamics but, instead, their possible complementarities and their interest in view of an adaptation on the medium-term. To do this, we apply a double change of scale. The first consists of submitting breeding practices to an interrogation that targets the profession and its transformation. The second goes beyond the breeding area in question and takes account of all of the areas mobilized by these two forms of sheep farming. In other words, we leave the alpine scale to extend the analysis to different areas of the Provence-Alpes-Côte d'Azur region.

#### **4. - Double migration farmers: socio-economic dynamics and sheep farming practices**

In our study region, farming families from this alpine highland have practiced winter migration towards the plains of Basse-Provence for many centuries. As local contexts change (both in the mountains and the plains), the frequency with which this practice is adopted by sheep farmers varies. For example, in 1954, R. Dumont qualified the choice of two farmers from a community in the region to considerably increase the size of their flocks and to spend winter in Basse Provence as an innovative practice. We can therefore distinguish farm families that have maintained their farms in alpine valleys but that have continued to move their flocks to the plains in winter. They often have a stable land base and family ties that have developed over the years. These people therefore describe their activity on a dual basis that is no longer questioned and that leads them to favor grazing over crop cultivation. This practice has been on the rise for the past 20 years. Sheep farmers who recently adopted it were previously on evolutionary trajectories similar to those of "small mountain farmers". They defend the choice of double migration by the possibility of increasing the size of their flock, which would lead to greater flexibility in terms of production system management as soon as the big herd is mobile. By freeing themselves from the limits created by (i) the need for fodder to get through the winter, and (ii) the capacity of buildings to shelter the animals, these farmers could easily double the number of sheep (or even more). They can use the sheep pen of the parents as an infirmary and have the possibility of using greenhouse tunnel-type mobile shelters to house their sheep in the plains, if the need may be. Moreover, they consider themselves to be very free in terms of the market, emphasizing the fact that they are not "bound" by any contract or specific sales date. They benefit from a large, well-maintained social network that allows them to find pastures every year, sometimes at a high cost, they say, but specify that the size of their flock allows them to easily borrow money since their bankers are among their privileged partners. These big sheep farmers have therefore disassociated changes in the production system from the original farm structure that they may have inherited. They were able to fully respond to the demands of the agricultural policy implemented since the end of the 1980s, which first provided incentives for the increase in herd size linked to support measures for the first pillar in the 1990s (sheep premium paid per head, followed by the ewe premium of 21 euros today), as well as grazing in areas that opened the way to agro-environmental support within the framework of the second pillar since the 1992 reform. The increase in the size of farms has often led to the installation of the farmer's spouse or children by creating a new collective-type farming entity (GAEC, EARL). As a result, these sheep

farmers work on a family basis, often as a couple. The mobility of the flock is therefore also that of the family, including the children who go to school in the mountains or the valley, depending on the period of the year. Their capacity to satisfy the measures initiated within the Common Agricultural Policy could therefore place them in the category of "entrepreneurial farmers", according to the definition of Ploeg (2000, op. cit.) who considers the reactivity to these demands to be a major characteristic of this type of farming.

## **5. – Issues arising from this dynamic**

The analysis of arguments put forth by sheep farmers during our interviews to justify the choice of double migration or to express reservations about this practice are related to the way that they perceive their profession. Two aspects are particularly highlighted: their enthusiasm for sheep breeding and the question of maintaining and developing farm resources.

The passion for sheep farming is expressed and becomes apparent to the other farmers mainly through the presence of the flock and by taking them to pasture – the love of grassland and the love of the big flock are linked in this case. This passion – that can be targeted at genetics in other types of animal breeding – is itself the expression of a form of excellence recognized by the profession. It consists of favoring an activity that provides the flock with a pasture diet, or accompanying it in this respect through herding practices. This pastoral aspect is dominant in this case and takes place at the expense of the purely agricultural activity that consists either of maintaining fodder crops and accumulating stocks, or concentrating on cash crops. This passion can be very precisely broken down in the case of the management of big herds: the number of animals that justifies being able to devote all one's time to the activity and that produces a sufficient income to avoid any complementary activity. Technical excellence is then expressed more as the capacity to maximize the grazing aspect in terms of feed than that of lamb production whose quality should be recognized by all of the upstream operators in the sector (quality label, for example). This does not prevent these sheep farmers from laying claim to the quality of their lambs by explicitly linking this quality to an entirely grass-based diet and a more healthy way of life. The fact that the animals are inevitably immobilized in winter by the other farmers is explicitly criticized in this case. Batching is a fundamental practice in this type of sheep farming. It consists of dividing the herd into different batches and assigning them, depending on their physiological stage and, as a result, their dietary needs, to different grazing areas. This is indicative of a unique form of management excellence and recognized by the others, which is assessed on the basis of fodder grazed as opposed to fodder distributed.

In contrast, for some sheep farmers who do not practice double migration, reorganizations linked to the large increase in the size of the flock and its relocation for four to five months of the year make it necessary to reconsider means for developing the resources of the farm and its territory. These large herds are criticized on one particular point: their contribution to the maintenance of local space. These sheep farmers do not work with finesse, do not clean up after themselves and, on the contrary, "sweep up everything in their path", threatening the grassland resource as a result of their "expansionism". As a result, less intensive fodder cultivation to build up winter stocks and the absence of the flock between seasons that decreases grazing pressure on rangeland do not ensure

the maintenance of the land on the farm. The same is true of the under-occupancy of sheep pens and storage buildings that are only used as infirmaries, and even at that, only for several months of the year. Therefore, that which is at issue is the capacity to ensure the inter-generational continuity of the valorization and maintenance of the inherited patrimony in the majority of the cases. It should nevertheless be emphasized that from the point of view of regional institutions, the judgment concerning the capacity of these farmers to maintain the land in question is of a totally different nature since they are the first to be concerned by the solicitation of contracts to enable their flocks to graze in areas of environmental interest in the coastal plains.

This type of big-herd farming is often compared to the mythical figure of the shepherd, which we will come back to later. It is clearly differentiated from the small mountain farmer, with his mixed farming system, who was considered to exemplify the modern farmer during the period of agricultural modernization and fodder crop intensification that was promoted after WWII. In 1954, the standard prescribed by one of the fathers of French agricultural modernization was clearly expressed for production systems in this region: one tractor pulling a plough, and 250 sheep (Dumont 1954: 429). Has the debate about which practices represent modernity or tradition therefore been reversed over the course of the past 40 years? In our situation, references to tradition are substantially bolstered by a type of sheep farming that is also the one that shows the most reactivity to the CAP and its financial incentives. However, we must ask if these two approaches to sheep farming should necessarily be considered within a framework of radical oppositions as soon as the issue of territorial development is raised. This is the subject of our last section.

## **6. Local development, complementarity and change of scale**

We showed that several forms of sheep farming co-exist on this alpine territory where breeding is the dominant activity. These forms result from a constant adaptation of local breeding practices, especially to public policies and to the CAP, in particular, that can be seen today by the diversification of the ways in which sheep farming is carried out within the A3V area. Like in many mountainous areas, the sustainable agriculture charter of the area puts the accent on forms of agriculture capable of occupying and maintaining the territory, and emphasizes their capacity to become an integral part of the local socio-economic fabric with an underlying dynamism to which agricultural activities contribute. The diversification of activities— whether they be agricultural, para-agricultural, in which case they are often linked to tourism, or targeted at transformation and direct sales – are the preferred means of agricultural and territorial development supported by the A3V area. This is a relatively classic territorial agricultural development pattern. However, as we have already mentioned, this first scenario seems weak in terms of the reality. Production under a label of quality remains highly marginal in our little study area, whereas there is little consensus, if any, in terms of the diversification of either agricultural or para-agricultural activities within local professional spheres, giving way to highly polarized positions. Two visions of sheep breeding exist, supported by collectives with different types of legitimacies: one is the result of territorial management at the scale of a "Pays", and the other is based on the local professional culture that is discussed and reactualized within singular institutions and pastoral groups. Whereas "small is beautiful" appears to be a local development pillar elsewhere this approach to sheep farming is not the only answer in our

territory, even if it is highly encouraged and recognized as a specificity of agriculture (AGRESTE 2003). We are therefore encouraged to go beyond these dualities and to examine how these worlds complement each other, on the one hand, in terms of maintaining the territory or, rather, the territories concerned by sheep farming, and on the other, in terms of the reshaping of the profession: what therefore do small mountain farmers have in common with sheep farmers who engage in double migration?

We will first examine the question of the point of view of the territory. In France, 84% of sheep farming takes place in disadvantaged areas where it is an alternative to desertification, while significantly contributing to the maintenance of the territory, which tends to decrease. This land squeeze motivates in part the double mobilization of big sheep farmers who lack space in the alpine territory. They move between the plains and the mountains and take advantage of the complementarity of their respective resources. In the plains, their integration into the territory sometimes depends on the reactivation of the complementarity between agricultural activities according to an old principle of reciprocity, "grazing in exchange for manure and maintenance" of future or current crops. This is the case for flocks that graze during the off-season in vineyards, on post-crop fallow land or forested areas along the coast. They benefit from a certain legitimacy and visibility by contributing to the maintenance of large territories associated with risks that they help protect against (fires, for example). At the regional scale, 76,000 hectares are maintained by sheep for the purpose of fighting fires. Double migration farmers thus find a legitimization for their activity, all the more important because it benefits not only the major economic actors in the region (winegrowers in the Var department, the French National Forests Office), but residents as well. This social and territorial integration is even more interesting since the competition for grass is generally high in the mountains. On the other hand, in the mountains, social integration and territorial legitimacy are linked to relationships established with tourists in summer and the careful preservation of resources and family patrimony. We will now take a look at the situation at the level of the sheep farming profession.

The question of renewing the profession is an important issue since the number of farms is also on the decrease, abandoned within the framework of a family transmission. A unique agricultural asset plays an important role in the dynamics of renewal and is at the crossroads of these two types of sheep farming. This is the idealized image of the shepherd that we see on posters and that is part of the collective imagination. The shepherd can be the farmer himself, as we have seen in some cases, or a farm worker responsible for guarding the flock, particularly in the summer. Emblematic and central, the figure of the shepherd is a key element of local sheep farming, of which he is the symbol and a sort of showcase: he cares for the flock and for the mountain. He embodies complex ecological knowledge about plants and animals but has not always been recognized and valorized. It has only been over the past 15 years that the shepherd has increasingly tended to be a farm worker, benefitting from a social and professional rehabilitation. It is no longer the youngest child in the family who is given this task, little appreciated in the past, the one that left for the plains in winter because he was dispossessed of the land and only inherited the sheep and not the land necessary to feed them. Today, one chooses to become a shepherd and is trained for the job, particularly in the case of a summer shepherd, a true professional specialization. We can hypothesize that the local sheep farmer (the one we referred to as the small mountain farmer) tends to hide behind the strong figure of the shepherd, which is not always the case since he must farm his land in the summer in order to harvest fodder for the winter. However, the shepherd is not only a virtuous and emblematic

figure of alpine farming. The debate must also be situated in terms of employment and the profession. In some way, the shepherd also embodies – even if it is difficult to assess – the contribution of pastoralism to the development of agricultural employment in these rural territories, even at the seasonal scale, since double migration farming systematically requires the addition of one to three employees per year. This use of non-family labor (which would easily put these farmers in the entrepreneur category) contributes, as we will see, to strengthening social and professional integration. In fact, the shepherd can even personify the continuity of a professional group. The status of the shepherd is often an intermediary status, often like a farm worker, a first step on the way to becoming a sheep farmer. In May, when the shepherds have completed their studies – there is a training center for shepherds in the PACA region – aspiring shepherds begin their career by working as summer shepherds for a pastoral group, a legal entity that includes several farmer/owners within the same summer pastures and that employs one shepherd to care for their flocks. In the winter, these shepherds then work for a sheep farmer during the lambing season, watching over the flock in the plains. They are thus introduced to the world of sheep farming and to its territories, its places for social exchanges, its networks, etc. They meet other shepherds and sheep farmers in the mountain region, and acquire experience. If they wish to do so, they can also progressively constitute a flock of sheep of their own. Some of them establish their own business, for example, taking over the holding of a small mountain farmer that they met via these inter-relational networks that we have just described. The shepherd, if he wants to settle down, will be made quickly aware of opportunities to do so, just as his value will rapidly become known among his peers. The confrontation between offer and demand generally takes place in the summer. As a result, the profession of sheep farmer, very often characterized by its strong resistance to administrative measures and interference, in this region at least, is reshaped by the support of the pastoral group that encompasses the different types of sheep farming and that mutualizes the shepherd.

It is on this point that it is necessary to insist on a very important socio-economic institution that is both a place for social exchange and for professional debates: the pastoral group. A pastoral group is a group of sheep farmers that practice transhumance and that is generally founded on the principles of a not-for-profit organization. This structure organizes all aspects of summer grazing management. It deals with the various administrations. Its role is of utmost importance. The pastoral group acts as an institution that regulates the work market and access to the grazing resource, both of which are closely linked. It is a strategic and irreplaceable place for social exchanges, discussions and learning, within a context where technical support is rare. The pastoral group is a true passport to the profession, controlled by the profession, taking the place of or substituting itself for the mechanisms that govern classical family transmission. It even allows access to the profession of sheep farmer, its capital (i.e., its herd), and to its networks, outside of all agricultural affiliations and inheritance issues. It is even more interesting because it allows people who are not from the world of agriculture – which is often the case with shepherds who follow a specialized vocational training in the region's training center – to adopt the profession, regardless of the form under which activities are carried out. As an example, the professional career of one of the farmers we interviewed with a big herd began with the status of shepherd, caring for the animals of others. Little by little, he started to constitute his own herd/capital, finally establishing himself as a sheep farmer thanks to an opportunity that presented itself, and continuing to expand his role both in the territory and in the profession. He, in turn, hired a shepherd to guard his animals, and then several shepherds from

different pastoral groups between which he could divide up his big herd. This example shows the extent to which the profession and the territory are interconnected. Even though criticism is sometimes fierce, as we have seen, we can make a complementary interpretation of these two forms of sheep farming in terms of a broader territorial scale and an extended socio-professional scale. The challenge depends on sustaining a certain balance between the diversity of approaches to sheep farming that coexist within the mountain territory and, consequently, ensure its maintenance: the farmers with big herds that cover large territories that they more or less grossly exploit, and the others (the small mountain farmers) who work at a smaller but more refined scale, and who are more favorable to the "care" aspect of their profession.

Describing agricultural systems in terms of their diversity and dynamics in order to analyze their contributions to the sustainability of the resilience of development trends at the micro-regional level led us to distinguish types of systems that are differentiated as to their specific dynamics and their means of mobilizing the resources available to them. It seems that modernity can "change sides" in a time lapse of just several decades. Practices that embody a tradition can therefore appear to be very modern or exactly the opposite at a given moment, leading to the difficulty of adopting this aspect as the key to discriminating between systems. Finally, to strengthen the adaptability of the system to a supra-farm scale, it seems to be more productive to focus on the complementarity between these systems rather than what opposes them to each other. However, these properties of complementarity are fully expressed if the collective bodies, in our case, pastoral groups, constitute cross-linked places of learning and multi-scale connections that contribute to renewing system diversity. Lastly, the mobility of people and animals, sometimes seen as a thing of the past, appears to be a guarantee of adaptation, capable of strengthening the fluidity of production systems with regard to the expectations aimed at sheep farming in the Mediterranean mountain region.

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## **Bibliographie**

**Agreste, 2013.** Hors-série Massif alpin, novembre, 4p.

**Agreste Paca, 2012.** Etude n°272, mai, 4 p.

**Berkes F.** 2007 understanding uncertainty and reducing vulnerability: lessons from resilience thinking, *Nat Hazards*, 41. 283-295

**Cumming, G.S.** (2011). *Spatial Resilience in Social-Ecological Systems*. Springer, 254pp. ISBN: 978-94-007-0306-3 [URL: <http://www.springer.com/life+sciences/ecology/book/978-94-007-0306-3>].

**Darré J.P., 1999.** *La production de connaissances pour l'action. Arguments contre le racisme de l'intelligence*, Editions de la Maison des sciences de l'homme, Paris, I.N.R.A., 242p.

**Datar 2011.** Typologie générale des campagnes françaises des espaces ruraux, <http://www.observatoire-des-territoires.gouv.fr/observatoire-des-territoires/fr/typologie-generale-des-campagnes-francaises>. Consulté le 20/01/2014

**Dumont R. , 1954.** Esquisse de certaines possibilités agricoles de la moitié Sud des Basses-Alpes

In: Revue de géographie alpine. 1954, Tome 42 N°3. pp. 423-455.  
[http://www.persee.fr/web/revues/home/prescript/article/rga\\_0035-1121\\_1954\\_num\\_42\\_3\\_1140](http://www.persee.fr/web/revues/home/prescript/article/rga_0035-1121_1954_num_42_3_1140).

**Faye B, 2008.** bergers du monde, Paris, Quae.

**FranceAgriMer, 2010,** Filière ovine, septembre, 12 p.

**Hubert, B., 2002.** Sustainable development ; think forward and act now. Agricultures and sustainable development; the stakes of knowledge and research attitudes. INRA faced with Sustainable Development: Landmarks for the Johannesburg Conference, les dossiers de l'environnement de l'INRA, vol. 22. INRA-Editions, Paris .

**Lasseur J. 2005.** *Sheep farming systems and nature management of rangeland in French Mediterranean mountain areas.* Livestock Production Science 96 87–95

**Marsden, T. and E. Smith, 2005.** *Ecological entrepreneurship: sustainable development in local communities through quality food production and local branding.* *Geoforum* 36 pp. 440–451

**Niska, M., Vesala, H. T. and Vesala, K. M. (2012).** Peasantry and Entrepreneurship As Frames for Farming: Reflections on Farmers' Values and Agricultural Policy Discourses. *Sociologia Ruralis*, 52: 453–469. doi: 10.1111/j.1467-9523.2012.00572.x

**Pays A3V, 2010.** Diagnostic de territoire du pays Asses-Verdon-Vaire-Var. <http://www.pays-a3v.net/paysa3v/index.php/telechargements/finish/16-conseil-de-developpement/17-diagnostic-actualise-paysa3v-2010>. Consulté le 20/01/2014

**Rieutord L., 1995.** *L'élevage ovin en France. Espaces fragiles et dynamique des systèmes agricoles,* Editions CERAMAC - Université Blaise Pascal Clermont-Ferrand, 510 p.

**Sicard Julia, 2012.** *Entre mobilité et sédentarité des éleveurs ovins. Pratiques pastorales et liens des activités d'élevage au(x) territoire(s) en Haute-Provence* », 69 p. annexes, mémoire d'ingénieur agronome, ESA, Angers.

**van der Ploeg, J.D. (2009)** *The new peasantries. Struggles for autonomy and sustainability in an era of empire and globalization* (London: Earthscan)

**Vercherand J. 1987,** La question du développement de l'élevage en Corse. Inra.

**Walker B, Holling CS, Carpenter SR, Kinzig A. 2004.** *Resilience, adaptability and transformability in social-ecological systems.* *Ecology and society* 9(2):5. [online] URL: <http://www.ecologyandsociety.org/vol9/iss2/art5/>

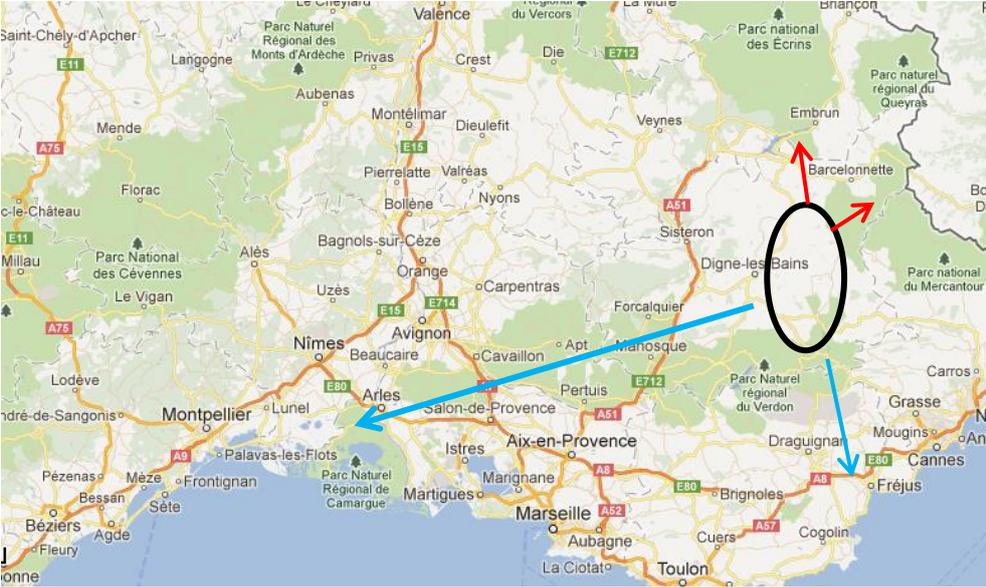
Figure 1 : « A3V Pays » located in the French Southern Alps.



Tableau 1 : Socio economical elements characterizing “Double migration farmers” and “small mountain farmer”

|   | Double migration farmers                       | small mountain farmer        |
|---|--|------------------------------|
| Flock size  | 1000 to 2000 ewes                              | Less than 500 ewes           |
| Participating in pastoral group                             | All of them                                    | All of them                  |
| Originated from a farming family and/ or inherited his farm | 2/5  | 8/13                         |
| Family status   | 4/5 living in couple                           | 7/13 unmarried               |
| Both members of couple working on farm                      | 4/5  | 4/13                         |
| Use of hired labor  | 1 à 3 shepherds , one, at least, all year long | 1 summer shepherd (120 days) |

Figure 2 : Mobility of double migration farmers .



blue arrows represent winter moving toward lowland grazing ( generally operated by trucks) concerning the double migration farmers flocks . Red arrows indicate moving toward summer pasture concerning the double migration farmers flocks and the small mountain farmers flocks.