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SUMMARY – This work focuses on aspects of diversity in the Pogoni area of Epirus, Greece and more specifically on its sheep farm system. Diversity is initially examined at the area level and then successively considered at the household and sheep farm levels. Two methods are basically employed: (i) secondary data analysis; and (ii) the case study results of three selected communities in the Pogoni area, where an ethnographic type of approach was primarily used. Area level diversity has been mainly predicated on biophysical, socio-economic and demographic factors which have been culminated in shaping two zones in the area, where a number of household structures around the nuclear and extended types are identified. Diversity among the sheep farms observed within the frame of ethnographic approach seems to be higher in the plain community of Doliana but generally can be subsumed under two main versions of sheep farming in the area along the continuum of intensification-extensification. Important for the area's long term vitality is the apparent need for a broader developmental perspective as well as the simultaneous integration and upgrading of technical and socioeconomic parameters in its sheep farm system.

Key words: Sheep farm types, diversity, less-favoured areas, farming systems.

RESUME *– "Aspects de la diversité des ménages et des exploitations ovines dans la région de Pogoni". Cette recherche est consacrée à l'approche de la diversité dans la région de Pogoni (Epire, Grèce) et plus particulièrement à celle des systèmes d'élevage ovin, analysée d'abord au niveau global puis à ceux de la famille et de l'exploitation ovine. Deux méthodes de base sont utilisées : (i) l'analyse des données récoltées ; et (ii) une étude de cas de trois communautés sélectionnées dans la région de Pogoni par une approche de type ethnologique. Au niveau de la zone, la diversité est surtout liée aux facteurs bio-géographiques, socio-économiques et démographiques qui se conjuguent pour discriminer deux zones, selon l'importance des conditions défavorables, mais les deux sont caractérisées par la faiblesse des possibilités de travail non agricole. La diversité entre les exploitations ovines, étudiée par l'approche ethnographique, apparaît plus forte dans la commune de la plaine de Doliana. Les communautés étudiées peuvent être représentées par deux modèles principaux aux pôles d'un continuum intensif-extensif. L'élevage ovin de forme professionnelle, intensifié et bien intégré à l'exploitation est représentatif de la zone de plaine. A l'opposé, les formes extensives sont, indifféremment de la taille du troupeau, le mode dominant des zones défavorisées. Pour les exploitations d'élevage ovin, une meilleure intégration avec les éléments de leur environnement et l'amélioration, tant des paramètres techniques que socio-économiques, ressortent comme des domaines d'action pour des travaux ultérieurs. Tout aussi important pour la viabilité à long terme de la région apparaît le besoin de perspectives de développement élargi mettant l'accent sur l'ouverture et le renforcement du marché du travail non agricole, aujourd'hui très anémié.*

Mots-clés : *Types d'exploitations ovins, diversité, régions défavorables, systèmes de production agricoles.*

Introduction

This paper focuses on aspects of diversity in the Pogoni area of Epirus and more specifically on its sheep production system. Various factors enter in the decision-making process of farm households and determine the choice of a particular type of farming. A basic determining factor among them is the biophysical environment surrounding the farm. Equally important is also the socioeconomic environment of the rural household, that is the opportunities offered for off-farm employment and the level of available social services and amenities that can meet the needs and interests of rural people (males, females, youth, aged people, etc.). A number of responses may be given from rural households regarding the above conditions as the decisions made within rural families get more and more individuated (Barthez, 1988 in CEC, 1993). In fact, the responses of farm households to their environmental resources and contingencies are further predicated and on the family resources available, the specific stage of the family cycle the rural household is and the concomitant family

objectives and desires along with the priorities that are put on them. Changes in family size and composition, mainly family cycle, may affect family objectives, production plans and management over the years, thus having implications on the main strategic choices made by the farmers due to an interplay of internal or external influences impinging on them (Capillon, 1986). Furthermore, differences between households in the size of their livestock holdings can cause differences in producer behaviour and production strategies (Bekure and Grandin, 1991).

The major objective of this work is to approach the notion of diversity in the study area at different levels, leading from the more general forms of diversity observed at the area level to the more specific ones at the sheep farm level. In particular, the aspect of diversity is examined initially at the Pogoni area level and its village communities. Then, the issue of diversity is considered at the farm household level and finally at the sheep farm level.

For this purpose, the work first demarcates the area briefly and then describes the social-spatial organization of the village communities in it and the prevailing land use patterns, its major demographic trends in the past and the resultant changes in its socio-economic structure and physiognomy. Then, the focus shifts to the ensuing implications of these changes on the shaping of major household types in the area and furthermore on the functioning sheep farm types that have evolved as a result of the different adjustment strategies the sheep farmers and their households have followed over time.

Methodology

Two methods are mainly employed in this work in order that the sources and basic aspects of the nature of diversity in the area should be easier understood: (i) a descriptive character analysis of available census data for the area over a period of time; and (ii) the case studies results of three selected communities in the Pogoni area, where ethnographic type of interviews were used. In a limited sense, the above available ethnographic type of data will be eclectically supplemented with some survey data available concerning the characteristics of the sheep farmers' households in the area. The latter data were collected in 1992 from a random sample of 100 sheep farmers that had more than 50 productive animals in their flock. For a more detailed discussion on the methodology followed see Kazakopoulos (1996). More specifically, with the help of census approach the basic aspects of socio-economic structure and diversity are examined at the Pogoni area level and its major zones that can be delineated. On the other hand, the ethnographic approach focuses on the more detailed study of three communities in the area, which in terms of their locational characteristics and demographic profile could be placed on a continuum of marginality representing the major community types existing in the area. At the one end of the continuum we have, relatively speaking, the less marginal and larger size plain community of Doliana, followed at about the middle of the continuum by the marginal, medium sized, semi-mountainous community of Vissani, and then at the other end of the continuum the very small-sized, mountainous and extremely marginal type of community of Dolos. The third community is an extreme case of marginal community with only ten households of elderly people mostly at retirement stage. For this reason, no specific interviews were conducted. However, the total number of farm-heads with and without livestock production was contacted in each of the first two village communities, where 16 structured and ethnographic types of interviews were completed in Doliana and 25 respectively in the community of Vissani.

The Pogoni area and its land use pattern

Two basic units determine the socio-spatial integration and diversity of the Pogoni area: (i) the village community *per se* and its location; and (ii) the rural household.

The village community and the broader area it fits in provide the basic socio-economic and natural environment within which the farm households operate as the primary units of production.

The area under study is situated close to the frontier of Greece with Albania approximately at the heart of the mountain range of Pindos covering around 39000 ha. Within the area there are 28 communities that are administered by the prefecture of Ioannina, which further belongs to the geographic region of Epirus. The area is divided into two zones on the basis of the prevailing natural

conditions and a number of socio-economic factors generally mentioned by Alexandridis *et al.* (1996): (i) the plain zone (zone A), which includes four communities; and (ii) the less favourable zone (zone B, upland area), which includes twenty four mountainous and semi-mountainous communities of small generally size and with a greater dispersion in the area.

Each village community has a unified administrative and political structure and to its jurisdiction belongs a fixed in size land area devoted to various land use patterns (farm land, forest land, pasture land, settlement land, etc.).

A noticeable characteristic of the Pogoni district land use pattern is the availability of extensive pasture lands, especially in zone B, which are covering 69.3% of this zone area in comparison with 39.8% for the respective figures at the national scale. More than half of the pasture land area is characterized as communal, and has been seriously degraded because of intensive grazing and lack of proper management. The village communities in the area control to an important degree such local resources for sheep farming as are the grazing and watering facilities in their communal pasture land areas, the management and leasing arrangements of which are within their responsibility.

The farm land area occupies a rather tiny portion (6.4%) of the total area and it has more or less followed the declining trends in the population of communities, while the rest of it is mostly covered by forests. More specifically, the farm land area of the plain zone and more or less the number of farms within it have remained about the same over the last three decades. However, the number of farms in the less favourable zone has declined almost more than five times between the 1961 and 1991 censuses and by about three times its available arable land area. The arable land area of the latter zone has been taken out of the production (vineyards, cereals) and rendered to other uses such as pasture land or degraded pasture land due to bush encroachments that limit sheep carrying capacity. It may also turn to forest land, depending on the maintenance concern of its owners (local or absentee) and the relevant claims made by the Forestry Department. For instance, in the communities of Doliana and Vissani where the ethnographic approach was carried out, the vine-yard fields that have been abandoned by their absentee owners are now officially defined by the Government (Forest Service) as forest land and their use is no longer permitted for farming purposes. Hence, the currently available farm land in the more mountainous community of Vissani is cultivated on the basis of conditions of arid agriculture (arid alfalfa) not so much for productive purposes as for just keeping on the right of exploiting farm and not forest land. The forest status of land is quite restrictive for issuing building permits and it thus constitutes a prohibitive factor for changing the use status of land on the basis of land speculation or other needs of local or absentee owners of the land.

As a result, the land use pattern prevailing in the area follows about its land use potential. Agriculture and mainly livestock activities at various levels of complementarity are the major income and employment opportunities in the communities of the area.

Demographic trends in the area and characteristics of its village communities

The population of the village communities in the area has declined considerably (around 17%) during 1961-1991, especially in zone B. This decline was more serious in the 1940's after the civil war in Greece, and later in the 1960's and early 1970's due to a strong emigration stream that was felt out all over the areas of the country. During the 1980's a slight population gain is noted in the area (around 1.5%), at least for a few of its communities. More likely, this increase is supported by returning retirees of local origin, who upon their retirement prefer to come back to their home community and live there the rest of their life. At least, this point was validated during the case study of the plain community of Doliana.

According to the 1991 population census data there were recorded 7311 inhabitants in the area but only a total number of 587 farm households[1], a figure that was less than one third of farms operating in 1961 (around 2000 farms). A little less than one third of them (30.8%) were recorded in zone A and the rest in zone B (Table 1), with about only 1034 farm heads and household members employed in the area. The latter figure of farming population approaches the real population figures of

[1] Census Statistics in Greece have generally overestimated rural population figures in the past due to the tendency of Greeks to return home for the census registration.

the area, if in addition some further considerations are made for the dependent population groups (youth, aged).

Table 1. Distribution of farms and employment on and off the farm, of farm heads and household members of the Pogoni area, according to its main zones A and B during the 1991 census (National Statistical Service of Greece, unpublished data of the 1991 census especially processed)

	Unit	Number
Total number of farms in the Pogoni area of which:	No.	587
Plain zone	%	30.8
Mountainous and semi-mountainous zone	%	69.2
Farm heads and household members employed in the Pogoni area of which:	No.	1034
Plain zone	%	34.6
Mountainous and semi-mountainous zone	%	65.4
Farm heads and household members employed in the plain zone of Pogoni area of which:	No.	358
Completely on the farm	%	93.0
Mainly off the farm	%	1.7
Secondarily off the farm	%	5.3
Farm heads and household members employed in the mountainous and semi-mountainous zone of Pogoni area of which:	No.	676
Completely on the farm	%	88.4
Mainly off the farm	%	1.8
Secondarily off the farm	%	9.8

In conclusion, it can be argued that the whole of Pogoni area and especially its less favourable zone have already felt the implications of population decline and the ensuing marginalization due to the growing ageing process of population, the shrinking of the younger population groups and the concomitant weakening of the socio-economic fabric and cohesion of the area. In fact, the actual number of farm households for most of the communities of zone B (14) is ranging no more from one to nine, according to the latest census data (1991), with only three of the communities having more than 40 farm households. Most of these households belong to ageing or aged couples of farmers whose exit from farming without replacement is accelerating, as at least the case study of the plain community of Doliana suggests. Out of the 40 farm holdings recorded during the 1991 census in this community, only 16 holdings engaged in farming and/or livestock production were possible to locate during the early summer of 1995.

The socio-economic base of village communities in the area

The employment situation

Broadly speaking, employment in the farm regions of the prefecture of Ioannina is primarily limited to the primary sector with a particular emphasis on agriculture and livestock production. Also, the overwhelming majority of farms in the Pogoni area has livestock production along with farming as its exclusive form of employment. The mixed type of farms in the area are mainly sheep farms. Around 61.5% of them are of small size with fewer than 50 animals.

It is worthwhile to note that an inconsequential percentage of the farming population in both zones A and B, ranging from 1.7% to 1.8% respectively was employed mainly off the farm, mostly as public

sector employees in 1991 (Table 1). Compared with the average national figures of the farm heads and household members employed outside of agriculture (around 24% of farm heads and at least 18% of household members nationally), the Pogoni area figures appear to be among the poorest in the country. It seems that the capacity of the area for absorbing labour force to sectors of economic activity other than agriculture or livestock production has been almost stagnant, close to the zero point, and not at all developed over the years.

Hired labour force needs

Among the sheep farm holdings of the Pogoni area the need for hiring available labour force, either seasonally or on a permanent basis, appears to be stronger among the farms of the plain zone according to the 1991 census data (Table 2). However, the ratio of farms with permanent labour force needs is about the same in both zones of the area, but the need is somewhat higher among the plain farms that are employing more than half (54.5%) of the permanent registered labour force all over the Pogoni area.

Table 2. Dependence on seasonal and permanent labour force needs of farms in zones A and B of Pogoni area in 1991 (National Statistical Service of Greece, unpublished data of the 1991 census especially processed)

Seasonal labour force needs of the Pogoni Area	124 man units
-Farms of zone A having seasonal labour force needs	9.4 %
Seasonal labour force employed by farms of zone A out of the totally employed in the Pogoni area	62.1 %
-Farms of zone B having seasonal labour force needs	4.4 %
Seasonal labour force employed by farms of zone B out of the totally employed in the Pogoni area	37.9 %
Permanent labour force needs of farms in the Pogoni Area	33 man units
-Farms of zone A having permanent labour force needs	3.9 %
Permanent labour force employed by farms of zone A out of totally employed in the Pogoni area	54.5 %
-Farms of zone B having permanent labour force needs	3.7 %
Permanent labour force employed by farms of zone B out of totally employed in the Pogoni area	45.4 %

Substitution of family for hired labour (seasonally used or on a permanent basis), comprises one type of adjustment strategies securing survival in the area. This usually takes place in several cases of flocking, concerning bigger sheep producers in the area. For instance, the most recent case study findings (Kazakopoulos *et al.*, 1996) suggest an increase of hired labour as shepherds for the larger sheep farmers in the semi-mountainous community of Vissani and more likely in zone B.

A smaller in importance form of adjustment strategy for sharing labour and other farm resources (machinery) is noticed especially among a few extended types of households of bigger sheep farmers in the area. In such cases, the farm business is organized on the basis of informal partnerships, mainly among brothers succeeding the out-going father.

Farm mechanization levels in the village community

Farm enterprise change by substituting human for mechanical labour may be another source of diversity among farms in the area due to the greater flexibility obtained for farm changes (expansion of sheep numbers or the irrigated crop area, ability to enter a new enterprise or to integrate more livestock production and farming).

Mechanization of farms throughout the Pogoni area, according to the last census data (Table 3), is rather limited since at best less than two in ten farms have a tractor and the above ratio is further reduced, depending on the type of mechanical equipment and zone of the area considered each time. The ratio of farms having tractor equipment is almost triple in the plain communities in comparison to that of the communities of the less favourable zone (18.2% and 6.6% respectively). This mechanization gap between the two zones broadens to several multiples, when the comparison is based upon other types of mechanical equipment (soil tillage machines, grass cutters-collectors) that are mostly associated with the type of farming practiced in each zone (irrigated vs. arid in zones A and B respectively). However, it seems that in both zones, the bigger farms in the area are so mechanized (Table 3), which makes them a special type of farms.

Table 3. Farm mechanization across zones A and B of the Pogoni area according to 1991 census data (National Statistical Service of Greece, unpublished data of the 1991 census especially processed)

Type of mechanization	Zone A	Zone B
Number of farms with tractor mechanization	33	27
Farms with one or more tractors in each zone (%)	18.2	6.6
Average farm land area of farms with a tractor (ha)	24.6	13.8
Average number of tractors per mechanized farm of this category	1.2	1.2
Number of farms with soil tillage machines	19	11
Farms with soil tillage machines in each zone (%)	18.4	2.7
Average number of soil tillage machines per farm of this category	1.1	1
Number of farms with grass cutters - collectors	18	6
Percentage of farms with the above type of mechanization in each zone (ha)	9.9	1.5
Average number of machines per farm of this category	1	1.5

Diversity of household structures in the area

The recorded changes in population size and structure as well as in the economic base of Pogoni area during the last decades have reached such a state as to be in many ways variously shaping the existing household structures and their available resources (labour, land, capital, knowledge) in the area. A variety of household units and subsequent sheep farm types has emerged with variations in their size and member composition as well as in their reproductive potential. Past household history and operation as well as the specific stage of the family cycle each household is considerably affect strategic choices by farmers and their families for adopting a particular farming system (Gasson and Errington, 1993). Hence, the various forms of household structures existing in the area have a direct bearing upon the nature and extent of diversity of the functioning sheep farm types.

Table 4 presents the distribution of major types of household structures among the surveyed sheep farmers that is those having more than 50 animals. The majority of the households (64.8%) consists of the nuclear type of households with two at maximum generations within them. Around 70% of these nuclear type of households are only two-member households mainly with aged people as farmers, in the pre-retirement or retirement stage, mostly in the process of disengagement from the practice of sheep farming completely. Only 13.2% of the households in the area belong to the nuclear household type with younger farmers as heads and with children working or not in the farm. However, within the above broader category of the nuclear type of household structures there are visible in the area two additional variants, albeit quite less numerous (around 5% of the total nuclear households each): (i) the one-member widowed households; and (ii) the pluriactive households having some member of the couple employed permanently outside of agriculture.

Table 4. Distribution of the major types of household structures among the sheep farmers of the Pogoni area (survey data especially processed)

	Number	%	Notes
One or two generation households			
Nuclear type of households with man sheep farmer as head	12	13.2	Two generation households mainly with one or more unmarried children working in the farm.
Two member households with man sheep farmer as head	41	45.0	Households primarily with elderly sheep farmers.
One member households	3	3.3	Mainly widowed people with children that have left or no children at all.
Nuclear type of households with woman sheep farmer as head	3	3.3	Husband works off the farm.
Subtotal	59	64.8	
Three generation households			
Extended type household of parental unit with married son as head	21	23.1	Relatively young or middle-aged couples with grand parents present and their children present or left.
Extended type of household having as head the aged father	7	7.7	In most cases these households include also a married son or daughter.
Extended type of household with woman sheep farmer as head.	4	4.4	Most of these households have a widowed wife with her children and grandparents.
Subtotal	32	35.2	
Total	91	100.0	

Less numerous appears to be the next broader category of household structures in the area, the extended types of households which are including three generations within them. In their entirety they represent a little more than one third (35.2%) of the total number of the sheep farm households in the area. It is within certain subtypes of these household structures that succession prospects and the reproduction potential of the sheep farm enterprise is more likely to be feasible. Most numerous among the extended types of households in the area are those having the married son as head (23.1% of all the households surveyed in the area), followed by those headed by the aged father (7.7%) and less by those headed by a woman sheep farmer, replacing the retired husband or being in a state of widowhood.

In short, this great diversity of household structures of sheep farms existing in the Pogoni area along with their being at different stages of the domestic household cycle turns out to be one of the basic sources of diversity of the existing sheep farm systems in the area but also elsewhere, as relevant studies suggest (Ilbery, 1991).

Functional diversity of farm and livestock enterprises: The ethnographic approach

The ethnographic study has focused mainly on the Doliana and Vissani cases while in the case of the extremely marginal community of Dolos the concern was mainly to give a brief account on the general profile of the community and the most important constraints that development initiatives face in this type of problematic and marginal areas.

Doliana is a community with a population of about 1200 inhabitants (in 1991) and with most of its agricultural land located in the plains, where irrigation is available. During the mid-war period Doliana was the trade center of the neighbouring communities. After the civil war in Greece and up to the

sixties the community suffered from a rapid exodus which resulted in the abandonment of vineyards, since there was not any labour force available for their cultivation. Additionally, many trade shops of the community closed, thus leaving farming and livestock production as the main form of employment for the people. Nevertheless, the influx of a group of nomadic stock breeders from a less prosperous area significantly contributed to the development and improvement of stock-breeding in relation to the shift of farming towards the production of animal fodder. In general terms, nowadays, the community may be characterized as a place for pensioners residence, since 63 out of 144 households are regarded as such. The community has not yet been able to tap some of the potential for touristic development, and the young people of the community have only a few opportunities for work outside the farm sector. With the exception of the successors of the most dynamic stock breeders, they are forced to search for and stay with jobs outside the community.

On the other hand, Vissani is a semi-mountainous village of about 300 inhabitants. Most of its inhabitants are pensioners and stock breeders (sheep and goats). Less than 1% of the community´s area is cultivated land under arid conditions (arid alfalfa being the main crop), while 40% of it is communal pasture land. Again in the case of Vissani the civil war triggered an emigration stream which resulted in the abandonment of traditional crops in the community (vineyards). During the 1970's quite a few immigrants returned to the village as pensioners practicing farming and livestock production on a small scale. Nowadays, no opportunities for employment outside of agriculture are available, while livestock production remains the main form of occupation for the remaining people. The lack of irrigation in the community is a serious constraint against the development of more dynamic farms. Under these conditions, it is not surprising that the demographic profile of Vissani is quite problematic, as the younger age groups (20-35 years old) are virtually non-existent. It is worthwhile to note that in both the above communities, as elsewhere in rural Greece, rural families encouraged their children to find jobs outside the village in the past. For instance, the Vissani´s school provided a relatively high level of education to them which among other things included the compulsory learning of French language. This reflected the general culture of the villagers, who during the pre-war period were traveling traders in the Balkans with experiences of a cosmopolitan way of life.

Finally, Dolos, the most marginal of the communities studied, is a remote small village located very close to the Greek-Albanian border, consisting of 46 residents. Its geographic position has condemned it to underdevelopment. However, due to the massive settlement of new groups of people coming from various places of Epirus, which was authoritatively dictated by the state, Dolos, during the early post-war period, retained its social life at an acceptable level. Nevertheless, nowadays Dolos is composed, in fact, of about ten households of elderly people. The harsh environment surrounding the community has rendered livestock production as the only form of occupation for the villagers.

The Doliana case

Four types of farms were identified by the ethnographic approach in the plain community of Doliana. The first category of the (sheep) farms, about a little less than half of the farms in the community (6 farms out of 14), were those owned and managed by aged sheep farmers, having relatively small sheep flock sizes and utilizing a small land area (privately owned and rented in) for grazing purposes. Investments on this type of farm are generally kept to very low levels (usually a small barn), while the almost complete absence of successors makes the reproduction of this type of sheep farm impossible. These sheep farmers could be characterized as the disengagers from farming (CEC, 1993). It is under this mode of sheep farming that aged people find the only way to continue keeping some form of activity and self-employment. Its preservation has a social rather than economic basis by being primarily a way of life than business. In this sense, it is doubtful whether in case of subsidy reductions, even the number of this type of sheep farm holdings will not be correspondingly reduced. Of course this does not preclude some probable reductions in flock size, or the exit from sheep farming due to biological reasons.

The next type of sheep farms in the plain community studied consists of those farms that have relatively younger owners, with one at least of the household members engaged for employment outside of farming (2 farms out of 14). The farm is managed by the couple member (husband or wife) that is not engaged in off-farm employment. It has relatively small number of animals with limited farmland at its disposal, which is mainly used for grazing purposes. It is a kind of pluriactive type of

sheep farm, where sheep farming absorbs the labour resources of one family member while farm income has a complementary character to that obtained from employment off the farm. In this farm type, the succession issue does not appear to be of central importance, and farm investments are generally kept at a low level.

The third category of farm enterprises mainly includes the big sheep farm enterprises, with considerable investments in machinery and buildings. This farm type, however, has aged farmers as heads, and has serious succession problems (2 in 14 farms). At present, the viability of this type of sheep farm enterprise is secured only partially, through the relatively cheap labour force available locally, mainly provided by the great influx of Albanian illegal immigrants employed as shepherds. However, its long-run viability potential is questionable since it is directly related to the future length of time the present owner will be actively involved in the management of the farm.

This type of farm is a kind of professional farmers but with poor prospects of continuity in farming during the next generation due to two rather discouraging parameters. First, the fact that the labour markets in the vicinity of the village near which the farm is located are rather poor and thereby constituting inadequate poles of attraction for employment. Second, the fact that the farm youth seeking off-farm employment, do not feel that their personal interests, professional aspirations and economic expectations are satisfactorily met by the local society. We call this type of sheep farmers the professional disengagers from farming.

Finally, the fourth type of sheep farms in the plain community of Doliana, somewhat less than the one third of the farms in the community (4 in 14), consists of the more entrepreneurial, professional and dynamic enterprises in the area, that are mainly based on their available family labour force. This type of sheep farms are mostly those with an extended household structure (three generations present) and have a well specified division of labour level. During the peak periods of labour demand the sheep farm may meet its labour needs by hiring seasonal but not permanent labour force as was the case in the previous type of sheep farm enterprise. Besides hired labor, another household resource that is contributing to the successful performance of this type of sheep farm is the large size of the privately owned farm land, the size of which has been gradually enlarged through timely and carefully planned farm land purchases. This land is mainly devoted to the cultivation of alfalfa and maize. These conditions, in combination with the past investments made in machinery and buildings, and the good succession prospects existing in most cases, secure the future viability of this type of farm enterprise, which seems to be less vulnerable to probable CAP changes in the future concerning farm income subsidies. This type of farm represents the most intensive and viable form of sheep farm in the community studied and more broadly in the area. More generally speaking, these sheep farmers represent the professional type of sheep farmers in the area.

The Vissani case

As far as the semi-mountainous community of Vissani is concerned, a smaller diversity of sheep farm enterprises is observed in comparison to the Doliana case. Two major farming types were identified. The first type, which is overwhelmingly numerous in the community, a little less than the three fourths of its sheep farms (17 farms out of 25), has the following characteristics: (i) a small number of animals; (ii) limited privately owned farm land area; (iii) an aged owner; (iv) negative succession prospects; and (v) a minimum of investments. The sheep farm owner may have retired and livestock production for him may be a way of life and some form of employment. Like the case of disengagers from sheep farming in the plain community of Doliana to which these farmers correspond, sheep farming is again in this case a form of employment rather than a profitable economic activity. The sheep farm is not employing any outside labour force (besides probably some labour exchanges with other sheep farmers) and the EU income subsidies comprise a major support for household survival.

The second type of sheep farms observed in the community of Vissani is less numerous but of a larger size (8 out of 25). The main differentiation from the professional type of sheep farms in the community of Doliana is the extensive nature under which sheep farming is practiced here. It is mainly this type of sheep farmers that moves during the summer months to the high altitude range lands and, as elsewhere has been verified, is contributing more to the forms of organization of complementarity in the use of grazing resources (Manrique *et al.*, 1996) and to more extensive production modes. The

sheep farm survival of this type is mostly predicated on the availability of labour and the size and quality of pasture land available (owned or rented), yet quite less on the available farm land, given the fact that irrigation agriculture is not feasible in this type of community. That is why these farmers are not raising maize as a crop but only arid alfalfa. However, like the professional type of sheep farm enterprises in the plain areas, investment levels are quite high, but primarily restricted on buildings (barns, shelters). From some points of view, these farms resemble more with the professional disengager type of farm of the Doliana community considering: (i) their mostly negative succession prospects; and (ii) their great dependence on outside labour force (mainly used as shepherds). The main critical differentiating point between them is the extensive character of the former and the intensive one of the latter (emphasis on mechanization, integration of sheep farming with crop production).

Concluding, diversity among the sheep farms observed within the frame of the ethnographic type of approach and the two communities studied is clearly higher in the plain community of Doliana. In this case, a continuum seems to be formed from the small sheep farm enterprise as the starting point and sheep farming as a mere form of employment prevalent in both communities and ending up with the professional family type of sheep farm enterprises in the Doliana case, having good margins of profit and equally good prospects of reproduction. On the contrary, the adverse natural conditions (soil, climate) and the poor socio-economic infrastructure of the semi-mountainous community of Vissani do not encourage the development of a more professional type of sheep farm enterprise there.

In general, based on the Vissani case one could say that the future of sheep farming in the mountainous and semi-mountainous areas faces serious problems under its present organizational forms. Apart from its hardships caused by the low level of technological innovations introduced in the extensive type of sheep farm system, it is even more difficult for the larger farms there to reach satisfactory levels of economic performance. Under this primarily extensive mode of production, it appears that some potential outlet might be the protective environmental role that could be assumed by the sheep farmers, if they were properly strengthened from a training and organizational point of view, and if their work was more properly rewarded economically. Farming activities and especially livestock viability are associated with the environmental conservation function (Wit, 1989; Gibon, 1994; Manrique *et al.*, 1996). Equally important from a social point of view is the human presence in these remote and marginal areas.

The Dolos case

The Dolos case is an example of individualistic grassroots initiative showing that the human factor plays among others an essential role in implementing "resistance" to marginalization. In 1992, Christoforo, the only young resident and returning migrant of the village decided to participate in LEADER I, aiming to establish a traditional hostel and a center for the realization of cultural events in Dolos. His project was approved by the developmental non-profit agency in charge of the programme´s management (IRIROS A.E.) on the basis of its pioneer role as far as touristic development in remote and frontier areas is concerned. More specifically, the main advantage of Christoforo's project was its multidimensional character: along with the construction of the traditional hostel and the cultural events center, the natural beauty of the nearby Kouvara gorge would be promoted. Therefore, the project acquired three dimensions: the touristic, the cultural and the environmental one, thus, becoming a project which fulfilled the basic requirements set by the LEADER regulations and its corresponding integral development logic.

In the course of the project´s implementation there were encountered several difficulties, due to the typical strict bureaucratic logic of the public agencies in charge of the supervision and control of the project. As a result, the project owner had not received up to the time the ethnographic work in the field was in progress (July, 1955) the entirety of the money he was entitled to. On the other hand, he added some supplementary constructions to his project: two bars and a greenhouse for the production of vegetables used for the meals of the tourists, for which he did not demand to be financed. His further plans have to do with the construction of a restaurant type kitchen. Christoforo´s courage and personal commitment along with his entrepreneurship are the most crucial elements due to which his project was at stake up to the time the case study of Dolos was carried out. His experience gained during the encounters with the bureaucratic apparatus taught him that the final outcome of such a pioneer project depends heavily on the agency (personal effort and commitment).

Evolution and character of diversity: Discussion

Taking into account the previous discussion, it becomes clearer that the issue of diversity in the Pogoni area derives from the interaction of a number of essential factors including the prevalent conditions of the biophysical environment and the levels of economic and social development gradually reached. These conditions, in combination with past demographic processes in the area and their implications on population density, dispersion and structure have initially marked the distinction between the two zones delineated and compared on a number of parameters (land use patterns, demographic, socio-economic and technological). In addition, the gradual demographic decline of the area and its inability to differentiate its economic base beyond the primary level of production have shaped the gradual evolution of a spectrum of household structures with varying continuity potentials. This variation of household units has been reflected in terms of their reproduction potential in the subsequent sheep farm types that have been identified by the ethnographic approach.

More specifically, based on the survey results that have focused on the better off sheep farmers of the total area, a rather gloomy picture emerges for the current and future demographic status of the area and its long term vitality. The bulk of the households in the area are of the nuclear type with the overwhelming majority of them (around 80%) being two or one member households of elderly and in a very few cases widowed people. The extended types of household structures in the area that have more abundant labour resources and on the average a better continuity potential, are the minority and are gradually declining. They currently represent a little more than one third of the sheep farm households surveyed in the area. However, it is on the positive side of these households that in their great majority (around 66%) the married son is declared as the head. It seems that these aged sheep farmers of the area, have adopted as an effective adjustment strategy the transmission at an earlier stage of their managerial responsibilities to their sons due to the hard nature of the sheep farming work as such (especially under its extensive mode) and as way to secure successors, who on the average are reluctant to take over the farm. It is also under this extensive type of household structure that there have been developed, albeit in very few cases, informal types of partnerships among the succeeding brothers. The latter remain in the area by collaborating, sharing and further developing the resources (farm land, pasture land, mechanization, etc.) of the inherited parental sheep farm. This fact gets more important when considering that the state has not yet taken any steps for the official support of new organizational forms in agriculture or livestock production as are the partnership kind of arrangements.

The ethnographic approach, despite its limited focus, was quite illuminative in mapping some major sheep farm types in the communities studied on the basis of their continuity potential and their intensive or extensive mode of production. Cautiously generalizing from the case of the plain community of Doliana, one could say that sheep farming in the plain part of the area has a greater diversity and has been better integrated with crop production due to the option for irrigation agriculture available. From another point of view, it seems that the competition over the available land use options (cultivation or grazing) between the local farmers and livestock producers in the plain community studied is especially strong. This situation is due to the shortness of supply in grazing fields, which makes the cultivation of maize and alfalfa an imperative for sheep farmers and livestock producers more generally. Land rent prices have been pushed upwards, according to the way the land is planned to be used (for cultivation or grazing). The CAP subsidies permit to farmers and livestock producers the cultivation of maize to the rented in land. However, despite these constraints, livestock production in the plain areas is of a more intensive and professional character, whenever the available land area, the existing climatic conditions and the mechanization level of the farm permit the cultivation of such crops as corn and alfalfa. The two professional types of sheep farms identified in the plain community of Doliana (the professional farmers and the disengaging professionals) are practically the two sides of the same coin. Both types of farms have more or less similar farm structures and resource endowments (besides the labour resources). However, their major difference seems to lie in their quite different reproduction potentials. It appears that the professional disengager type of sheep farms, the long-term objective and strategy is the exit of their children from sheep farming, despite their satisfactory resource and modernization levels reached. In this case, it is not the marginality of farm that pushes youth out of sheep farming and the area itself but rather the marginal conditions prevailing in the latter (lack of basic infrastructures and services, as well as the low levels of the differentiation of local economy resulting in very poor off-farm labour markets). These conditions deteriorate further in the less favourable zone, where disengagement from sheep farming has a stronger momentum.

On the other hand, the integration of farming with livestock production in the less favourable zone is much more difficult, restricting in this sense the options for a more entrepreneurial approach to livestock farming and thus making the extensive modes of production a necessary option in most cases. Only in this sense is explained the restricted spectrum of diversity of sheep farms observed in the semi-mountainous community of Vissani, where also the competition over the available land use options is quite weaker or completely absent. However, in both communities studied the number of disengagers from sheep farming being either in a marginal position (small sheep farms, elderly farmers) or in a state of more professional farming (professional disengagers) is quite high. The continuity prospects of these types of sheep farms are very poor. Marginality both at the level of sheep farm enterprise and at the area level, the latter especially for the more marginal type of community of Vissani, are pushing the overwhelming majority of these farms out of production for the next generation. These trends pose serious threats for the long-term vitality of the entire area, if its economy as a whole will not be possible to diversify so as to provide its inhabitants and especially the youth with a better standard of living as well as with employment opportunities. These conditions raise further questions and challenges for the future of such areas from an environmental point of view, not only due to their gradual demographic decline but also from the standpoint of the remaining elderly farmers' potential to respond effectively to current societal demands for environmental preservation and improvement in this type of sensitive areas.

Last but not least, the ethnographic approach was quit sensitive and revealing when suggesting as a special mode of sheep farming in the plain community of Doliana the pluriactive type of sheep farm. This type of farm deserves more attention in the future. It is more or less characterized by quite good viability prospects for itself and for the area, if its wider presence is strengthened through appropriate measures. However, it seems that its importance currently is quite restricted in the area, given the census type of data.

Conclusions

This paper attempted to outline the diversity of sheep farming in one of the so-called mountainous and less favourable areas of the Greek countryside. We were particularly interested to illustrate the nature of diversity existing at various levels in the area and especially the continuity potential of a number of sheep farm types identified on the basis of an ethnographic type of approach.

The census type of data have made obvious the heterogeneity existing at the study area level by distinguishing its plain and less marginal part and its mountainous and more marginal section. Furthermore, in more general terms, the ethnographic type of data suggest that two main versions of sheep farming predominate in the area along the continuum of intensification/extensification. The picture of a more diverse sheep farming with a professional and entrepreneurial character, intensive and well integrated with farming, characterizes the plain part of the area. However, quite numerous appear to be also the extensive types of sheep farms in this zone, having a combination of social and economic significance for it. On the other hand, less diverse and more extensive forms of sheep farming within all ranges of flock sizes is the prevalent production mode in the less favourable zone where the integration of farming with livestock production is a much less feasible operation. From the available research evidence, it is concluded that the exit from sheep farming without replacement is expected to be high in the future for the retiring elderly sheep farmers of both zones in the area. Such trends, if not reversed, raise serious questions for the vitality of such types of areas which have already felt the pressures of a declining and ageing population along with the reduction of economic activity almost completely around the pole of agricultural and livestock production and mostly under extensive modes of production. Even the functioning of the larger extensive sheep farms in the less favorable part of the area would have been undermined, were it not for the inflow of migrant labour from Albania which has solved problems of labour supply and cost.

The type of data available and the inherent limited character of the ethnographic approach followed do not permit the articulation of specific policy measures for such types of marginal areas as the one studied. However, they are suggestive for policy principles and directions that should draw our attention. It seems that agricultural policies and policies for the development of Greek countryside should allow for the above outlined diversity, a point suggested from other relevant studies in Greece as well (Kasimis and Papadopoulos, 1994). The research evidence available suggests the importance of mainly supporting the survival struggle of the most viable types of sheep farms observed

(professional sheep farms, pluriactive sheep farms and larger extensive sheep farms of the less favourable zone) for various reasons in each case (social, environmental and developmental of the area in general). In this sense, appropriate interventions in the area must pay more attention to those sheep farms that have a more clear continuity potential by making the best use of the available EU and national measures. Also, important seems to be the concern for the formal introduction and promotion of new organizational schemes in sheep farming, as are the partnership types of arrangements that have informally and spontaneously sprung, at least for a few cases noted in the area.

The revitalization of marginalized areas very much depends on local or broader initiatives, public or private, that could slow down the decline and reinforce the endogenous resources of development (Bazin and Roux, 1995). In fact, the studied area possesses a resource potential either in the form of natural resources (pastures, especially the mismanaged communal pastures of the less favourable zone) and extensive modes of their exploitation, or in the form of biological ones (upgrading of livestock breeds) along with its remaining human resources and aspects of social heritage (culture, traditions, local building styles and architecture). However, apparent is at the regional and especially at the local level the lack of the appropriate administrative and institutional apparatus as well as of the minimum endowments in entrepreneurship that could mobilize local resources in combination with guidance, financial help and subsidies from outside (region, state, EU).

In conclusion, the Dolos case is indicative of the multiple and interrelated aspects on the issue of marginal and problematic areas' development. First, it is clear that one-sided activities, such as tourism alone, cannot provide the basis for such development. A more integral approach on that issue is needed, combining several parameters. More broadly speaking there is an urgent need in the area for such a type of integrated development approach that will help to diversify its narrow and in several cases precarious economic base beyond the level of agricultural and livestock activities and thus reinforce its economic and social cohesion. Second, a greater flexibility on the part of the administrative agencies is needed in the course of such projects' implementation, due to the fact that there is lack of a type of intermediary level of organization between the regional and local levels of action, which will have more flexibility than the public sector, and more linking effectiveness with local types of organizational structures (local associations, etc.). Finally, the most crucial factor influencing the development process in marginal areas is human agency, that is the commitment of the project owners to the realization of their goals.

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