Characteristics of Traditional Sheep & Goat Breeding in Marginal European Rural Areas

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Background

The ECONOGENE project is funded by the European Union within the Quality of Life V framework programme, a programme that comprises six Key actions aiming to enhance the quality of life of European citizens and to improve the competitiveness of European industry.

ECONOGENE combines a molecular analysis of biodiversity, socio-economics and geo-statistics to address the conservation of sheep and goat genetic resources and rural development in marginal agro-systems in Europe. To assist *in situ* conservation and address the relevant socio-economic factors, a co-ordinated approach will be developed to define strategies of genetic management and rural development. Knowledge of sheep and goat genetic diversity will be greatly extended at the molecular level, examining many unstudied, local breeds, and identifying gene pools to map conservation priorities. A map of development perspectives will be produced, to identify areas where sustainable conservation of valuable populations could succeed. Maps of conservation and development priority will be over-laid and the value of biodiversity estimated, to justify economic intervention, and suggest appropriate guidelines and actions. The major objectives addressed in the project are as follows:

- To extend previous knowledge of sheep and goat biodiversity using new molecular technologies and examining many unstudied marginal breeds
- To investigate geographic patterns of genetic variation with and without the classification of breeds and populations;
- To identify populations deserving high conservation priority and to map conservation priorities;
- To investigate the socio-economic conditions where these breeds are raised, constructing a map of development perspectives;
- To identify areas where the sustainable conservation of the most valuable populations has a high chance of success, overlaying the maps of conservation priority and development perspectives;
- To obtain an estimate of the economic value of biodiversity for these species, in order to justify specific management or conservation actions from an economic point of view;
- To suggest guidelines and actions for an economically viable conservation of local breeds

Introduction

This paper presents a description of the socio-economic characteristics of farms raising traditional sheep and goat breeds in marginal European rural areas. A questionnaire was submitted and data collected from 604 farms in ten different EU-25 countries as part of the ECONOGENE project http://lasig.epfl.ch/projets/econogene/.

The questionnaire consisted of four different parts. The first part addressed socio-economic characteristics such as family structure and revenues, outside-farm activities, and the role of subsidies in total revenues. The second and third parts included data on sheep and goat breeding, as well as the structure of revenues from different agricultural activities on the farm, and marketing strategies. The fourth part was dedicated to the particular breed(s) raised on the farm and comprised data on husbandry and relevant breed characteristics. Data is analysed so that aspects of raising traditional breeds are described. The current situations is discussed and future possibilities / trends for these farms are illustrated in the context of the Common Agricultural Policy and the role of subsidies.

Results / Discussion

The project sample consisted of data from ten EU 25 countries and Romania. Figure 1 illustrates the number of participating farms per country and shows the number of farms from which usable data was acquired. It can be seen that the majority of countries with participating farms provided data that could be analysed in the project with only a few farms not providing usable data. This is with the exception of Portugal that did not provide any usable data. The final sample therefore included data from nine EU 25 countries and Romania.

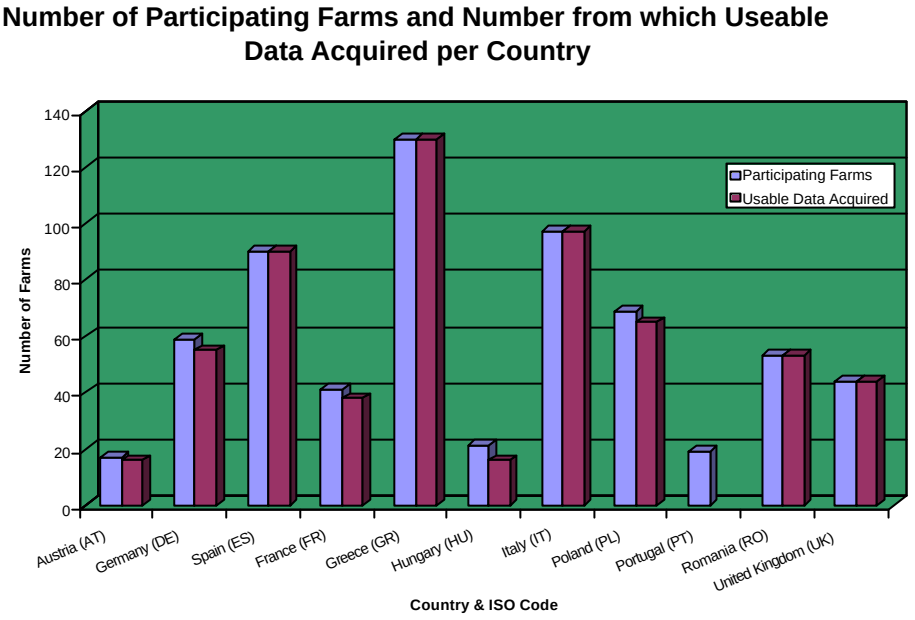

Figure 1

The dataset varied between country due to the willingness of farmers to participate and the different numbers of hill/mountain sheep and goat breeds. The final sample contained data from 604 farms with an average of 60.4 farms per country. The figure for some countries was significantly higher than the average, for example Greece with usable data from 130 farms. Unusable data could be attributed to some farmers not being inclined to answer some of the questions on the questionnaire or recording errors.

Figure 2 illustrates the numbers of farms with usable data participating in the project per species per Country. It can be seen from the graphical representation that in most Countries farms were sampled that kept sheep and goats, although the simultaneous raising of both species on the same farm is not so frequent. One exception was Austria, where only goats where sampled for genetic analyses and consequently the questionnaire was submitted only to farms keeping goats . It is important to notice that this data is only representative for farms raising breeds sampled within Econogene and not for those raising other breeds (e.g. cosmopolitan, relics, recently formed breeds and other non sampled local breeds) or species. This is illustrated in figure 5 where it is shown that sample farms in Austria in fact do keep sheep,

however they were not of the breeds that were being studied in the genetic analysis part of the Econogene project.

Figures 2 & 3 illustrate that within the sample there was a higher proportion of sheep raised than goats. Sixty four percent of the sample was made up of sheep with the remaining thirty six percent raising goats. This was influenced by Econogene sampling, that targeted a larger number of sheep breeds compared to goat breeds (57 sheep & 45 goat).

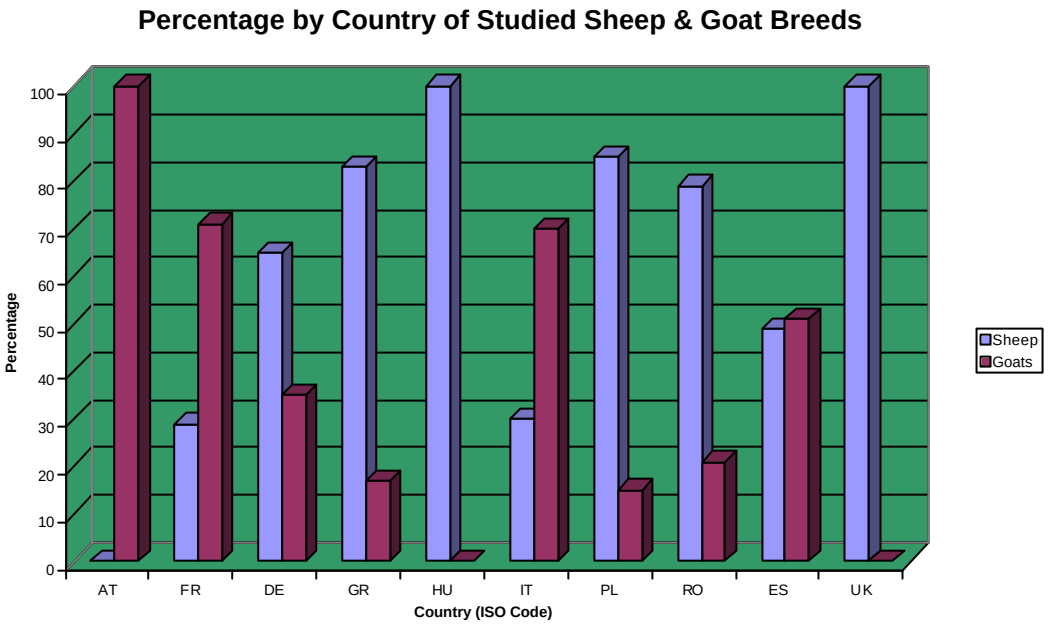

Figure 2.

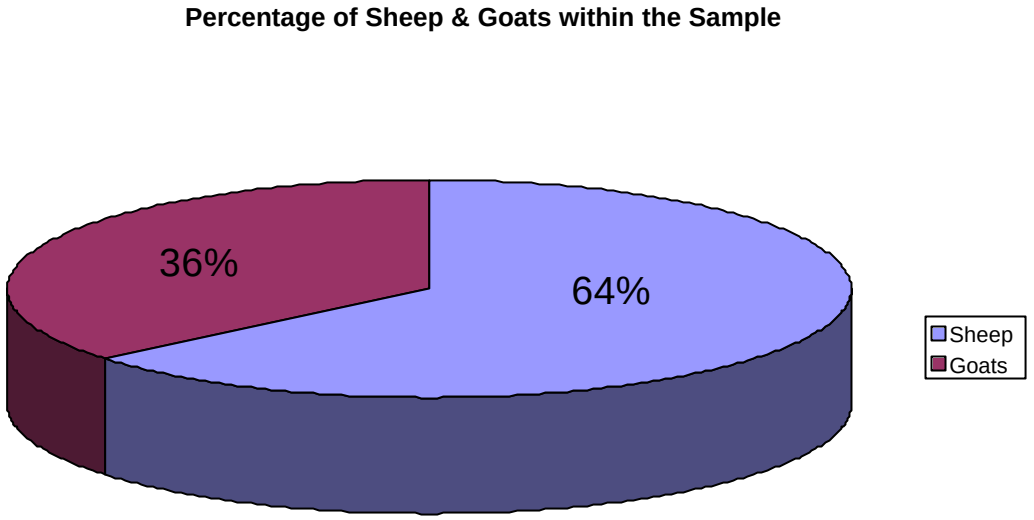

Figure 3.

The questionnaire survey of sample farms also looked at the other species that were raised on the farms, including those sheep and goat breeds that were not part of the genetic study. Figure 5 illustrates the percentage of animals raised on the sample farms broken down into the main domestic species: sheep, goats, cattle, pigs and other agricultural species.

From the results Figure 4 it is again evident that sheep (76%) are the most popular species raised in this sample of marginal European rural areas, with goats (46%) being the second most popular species. Cattle (29%), Pigs (19%), and Other Animals (22%) are utilised to a lesser extent in these farming systems. Overall these proportions are sufficiently representative of the agricultural systems supporting sheep and goat breeds in this study of hill / mountain farms.

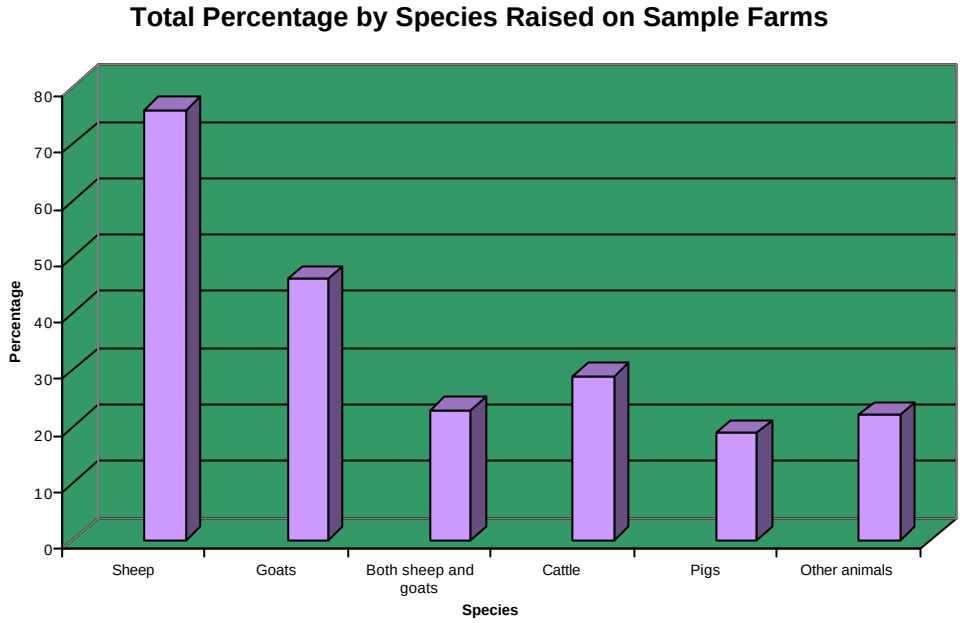

Figure 4.

The results in figure 5 illustrate an important point in respect to the Mid-Term-Review (MTR) of the Common Agricultural Policy (CAP). The advent of a single farm payment becoming gradually decoupled from headage payments and becoming more related to environmental concerns through cross-compliance may pose large issues for some Countries and in particular some farms. It is difficult to comment on what is likely to happen in the future, after the MTR due to the fact that each member state is responsible for setting its' own regulations etc, however some general statements can be made in the light of these sample results.

Looking at four countries in particular (Austria, Greece, Italy & U.K.) these issues can be highlighted. Austria and Italy have a diverse species structure to the sample farms indicating a more multipurpose approach. Greek and U.K. sample datasets show a more specialised approach: Greek sample farms specialising in sheep and goats; U.K. sample farms specialising in sheep and cattle. Although influenced by the sampling strategy and therefore not completely representative of whole areas or whole Countries, these are trends observed in a relevant number of farms in marginal rural areas and therefore deserve consideration. .

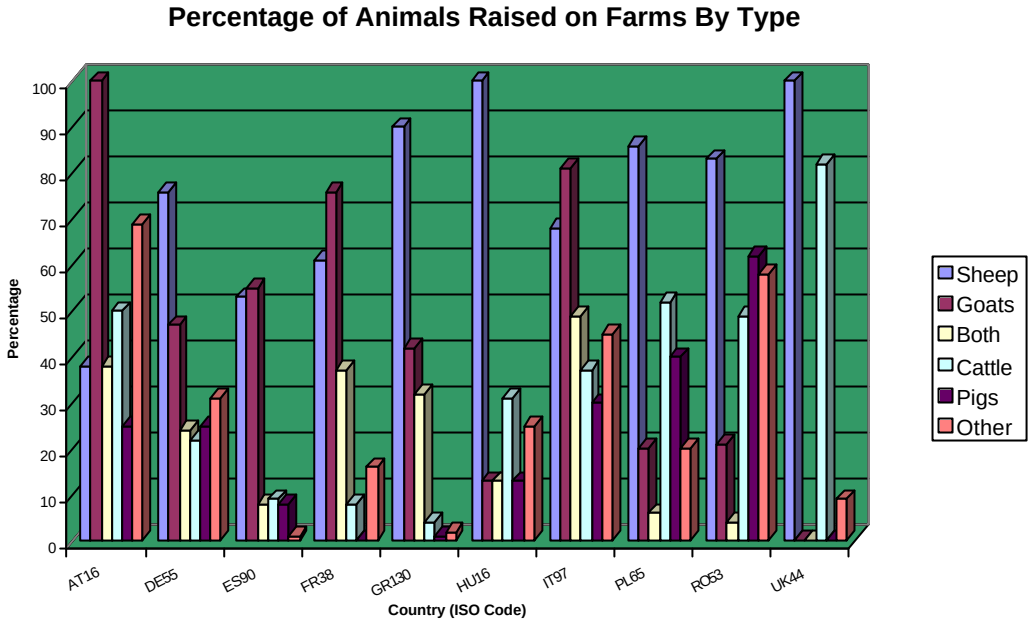

Figure 5.

It could be suggested that these specialised farms are placed under greater pressure due to the MTR because of their specialisation. New environmental regulations will affect these farms more because they have no other income from other species. For example, new stocking number regulations for hill farms may require stock numbers to be reduced by 50%, farmers will need then to balance the reduced income from stock and the requirements of the environmental regulations in order to keep income level constant. Unless the environmental payments can be set at a level where, by the loss of production revenue is covered, then these farmers will be placed in a difficult position.

The U.K. sample farms, for example, were 100% sheep with 86% keeping cattle; imposing reduced hill stocking rates upon these farms would have a large impact and leave the farmer unable to fall back onto other sources of income from other species, therefore forcing these farmers to diversify into new forms of income generation. However, those farms in the sample that are more diverse in the species raised are potentially in a better position with regard to the MTR. Depending again on the particular environmental regulations that are attributed by the member state, these diverse farms will not be forced to diversify into new income generation, rather to extend existing income methods.

The above points that are made in relation to the MTR will be further affected within the sample due to the age profile of farmers. Figure 6 illustrates the age profile of farmers within the sample. The youngest farmer was a Romanian at the age of 18 and the oldest farmer was an Italian at the age of 97. It has been illustrated in previous studies that age plays a crucial role in the ability and willingness of a farmer to diversify. In general, it is accepted that a younger farmer is more likely to be open to new business ideas and diversification of the farming business, whereas older farmers tend to resist change in favour of tried and tested methods. The average age range of

sample farmers is between 43 and 52, giving an average age for the sample of 47 years of age. This, in general terms, does not appear very promising for the diversification of farm businesses or the adoption of new environmental regulations through decoupling.

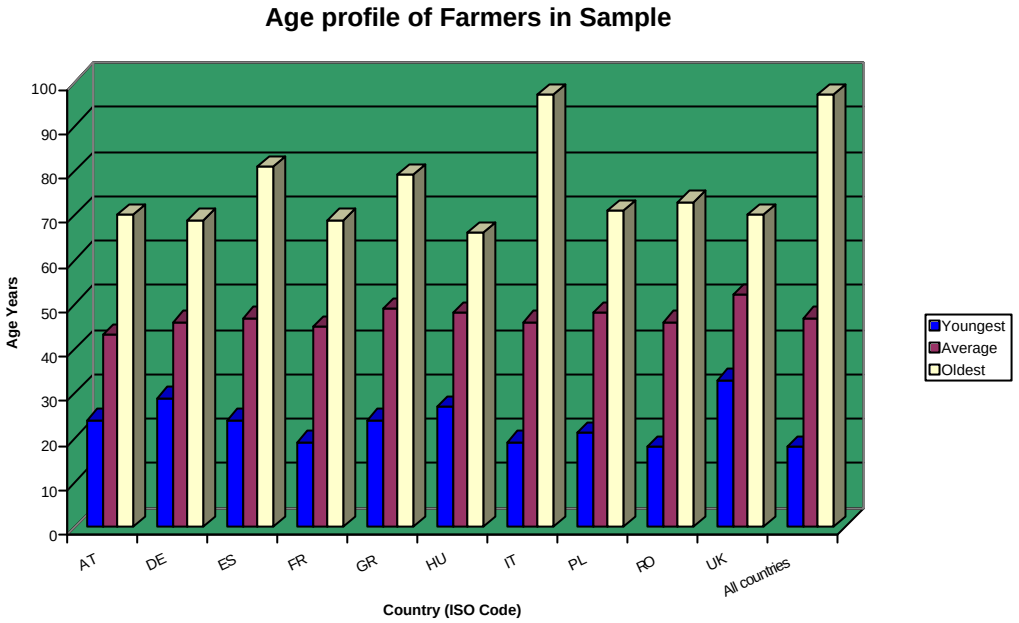

Figure 6.

The age profile of the sample farmers becomes a greater issue with regard to the continuity of traditional hill sheep and goat breeding in marginal rural areas in the future. Some points can be made after examining Figure 7.

The nation with the oldest group of farmers in the sample is the U.K., with 82% being over 45 years old, and 18% over 60 years old. Continuity of hill sheep and goat production can only continue if young people begin to farm or take over existing farms. In this respect the U.K. is in a promising position with a succession rate 100% for those farmers already over 60 years of age. So long as this rate is maintained then it could be stated that there is no large concern for the continuity of this form of agriculture in the future. Assuming that the successor is of a younger age, then this may also look promising for the diversification of this sector and the adoption of the MTR. It follows however, that it will be important to maintain the attractiveness of this agricultural sector in order to secure the existing high succession rate. The current level of attractiveness might be endangered by the prospect of the MTR and the perception that decoupling will make things more difficult for the farmer. Other initiatives may affect this issue too, such as the EU Scrapie Eradication programme and the proposals EID Tagging and individual recording for the traceability of livestock, all of which will require additional burdensome activities by farmers.

Considering the results in Figure 7 it would appear that France may be in a difficult situation due to the fact that none of the sample farmers over 60 years of age have a successor. This however, is not of great concern given the fact that only 8% of French

sampled farmers are over 60 years of age, the rest being younger with 39% being below 45 years of age.

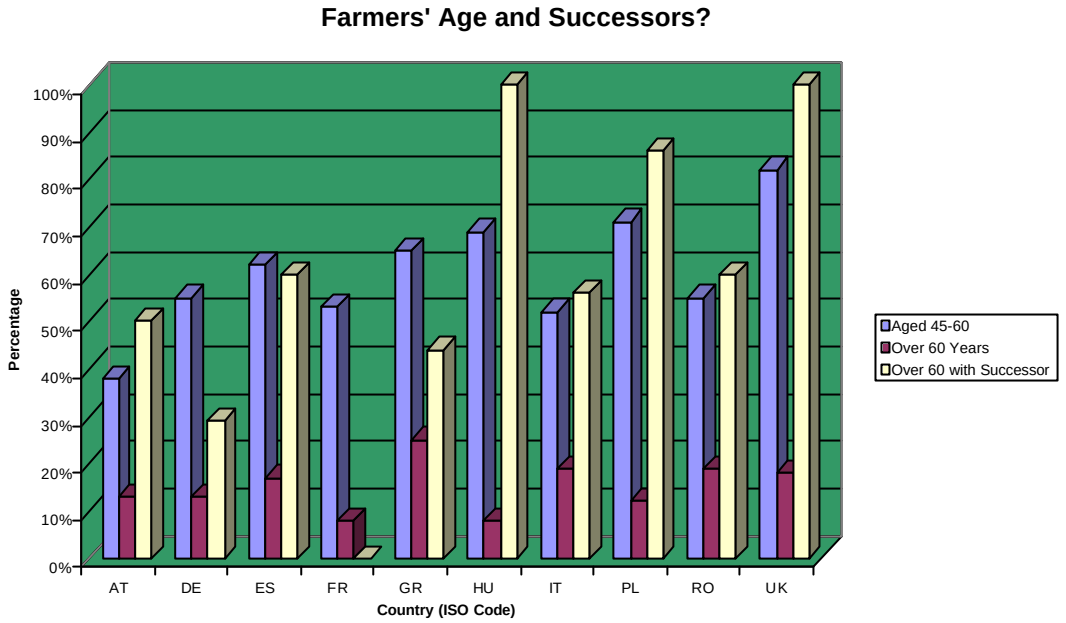

Figure7.

As part of the questionnaire the farmers sampled were asked to detail their other sources of income, and in particular, their major source of income after agricultural subsidies. Figure 8 shows the percentage distribution across the whole sample of the major sources of income. It is important to see that the main sources of income come from: 1. Sheep Meat, 2. Sheep Milk, 3. Goat Milk. If decoupling and the MTR are going to have an effect on sheep and goat populations it is noteworthy that this would have the biggest effect on the farmers from marginal rural areas in this sample as the majority of their income (70%) is directly from sheep and goat production. It is interesting to note that 0% of farmers stated that sheep wool was a major source of income. With the advent of more sustainable farming sheep wool, in particular, will have to be developed into new markets, (for example household insulation) in order for farmers to sustain their income and for more environmental sustainability from using a renewable by-product of the sheep farming industry.

Other animal products account for 14% of the major sources of incomes. This for example could be from the production of cows milk and the sale of beef or pork. Goat meat only accounts for 5% of the major sources of income and indicates that goats tend to be used for milk production, whereas sheep are more equally used for meat and milk production.

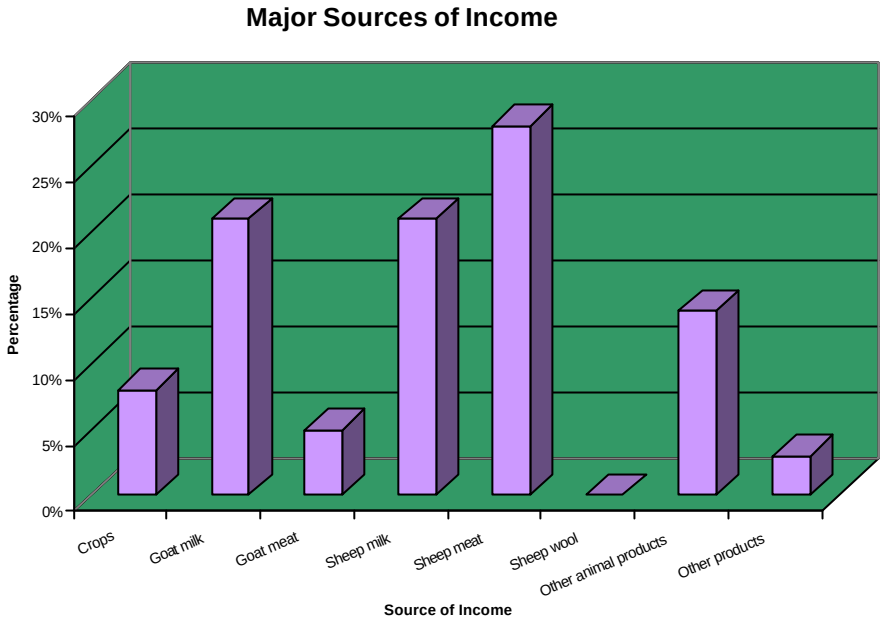

Figure 8.

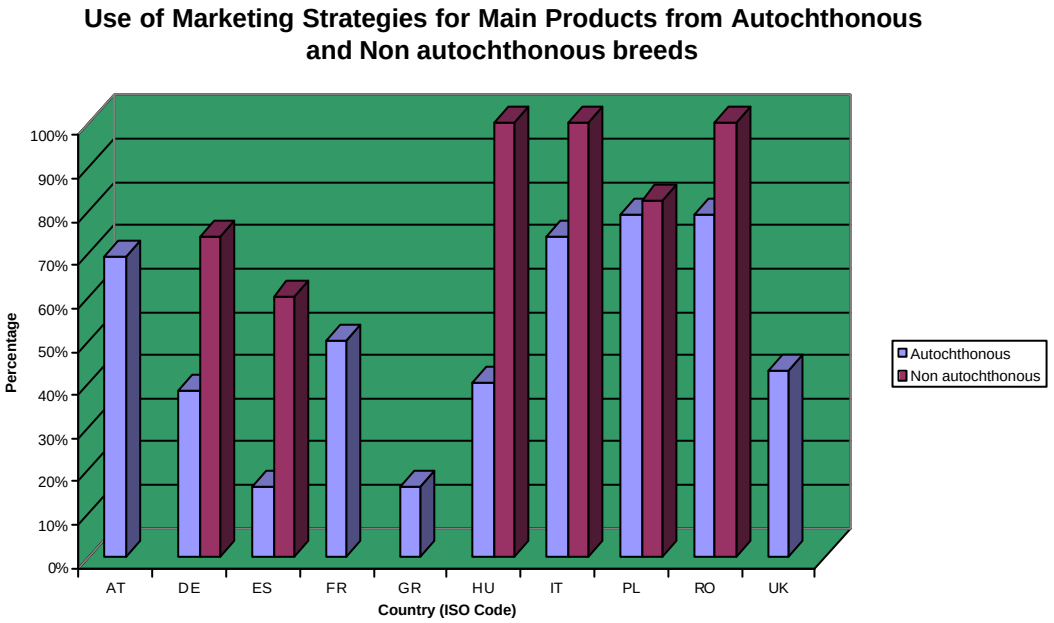

Figure 9.

Related to the major sources of income is Figure 9, which details those farms in the sample that partake in some kind of marketing strategy for their main source of income. The figures are split between autochthonous and non autochthonous breeds. It can be seen that Countries like Austria, France, Greece, and the U.K. only have marketing strategies for their autochthonous breeds. Those countries that have a low percentage show that there has been little activity by the sample farmers to move towards more vertical integration, i.e. producers linking more closely with the end

consumer. This may be due to their existing markets or possibly farm size. Both those farms with a small number of animals and low farm area, and those with a large number of animals and large farm area may not have the need for more vertical integration, albeit for different reasons. The smaller farms are likely to be an integral part of the rural community and will probably sell locally, therefore the need for active marketing in not necessary. Similarly, those large farms may not wish to move toward vertical integration, preferring instead to sell in bulk to their existing larger markets taking advantage of this larger bargaining power.

What is certain, given the MTR, is that farmers within the sample are going to have to become more vertically integrated in order to survive, or they will need to become larger, which seems not to be possible for many of them.

The advent of the MTR and decoupling of production-related subsidies, with a move to environmentally related payments will, as has been illustrated, impact upon the agricultural businesses detailed in this study. This impact will vary per country as the levels of subsidies received is different. Figure 10 below details the levels of subsidies claimed per country as a percentage of total income to the farm. It can be seen that farmers in Romania are not that likely to be affected by the MTR as subsidies for the most part do not make up a significant proportion of their income.

Percentage of Total Revenue Arising from Subsidies By Country

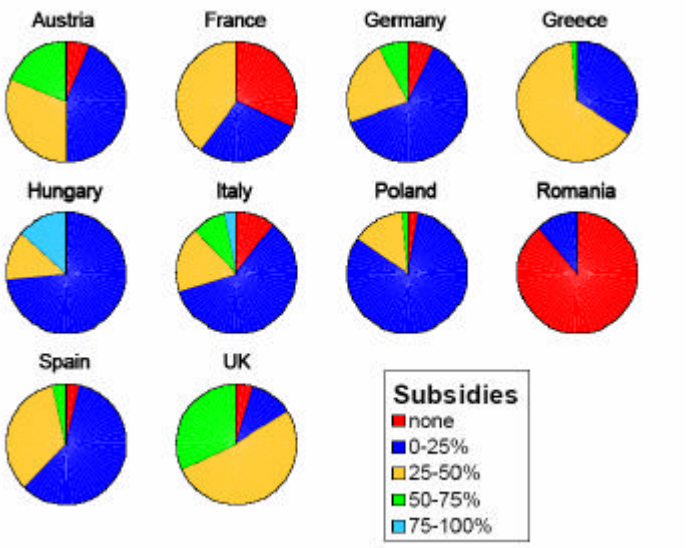

Figure 10 (Bertaglia, 2004)

As would be expected those countries in Western Europe have a higher proportion of their income gained from subsidies and here the effects will be greater. The U.K. for example has around 75% the sampled farms receiving 25-75% of their income from subsidies. The other participating countries gain around 25% of their income from subsidies, therefore the U.K. seems much more susceptible to changes from the MTR than some other EU countries that rely less on subsidies.

Other important aspects to look at when thinking about the MTR and the results obtained in this project are the farm size and number of animals kept (Figures 11 & 12). Both of these have bearing upon the type of production system and therefore the levels of subsidies and integration into the rural communities. The U.K., for example, has a larger farm size than the rest of the sample with 75% of the farms being 100ha or larger. This being in contrast to Austria, Romania and Greece that have the majority of farms being below 50ha.

The numbers of animals follows a similar pattern in that the U.K. has just below 75% of its sample farms utilising more than 750 animals. Again this is contrasted, as would be expected, with the majority of other countries that have sample farm utilising up to around 200 animals.

Utilised Agricultural Area By Country

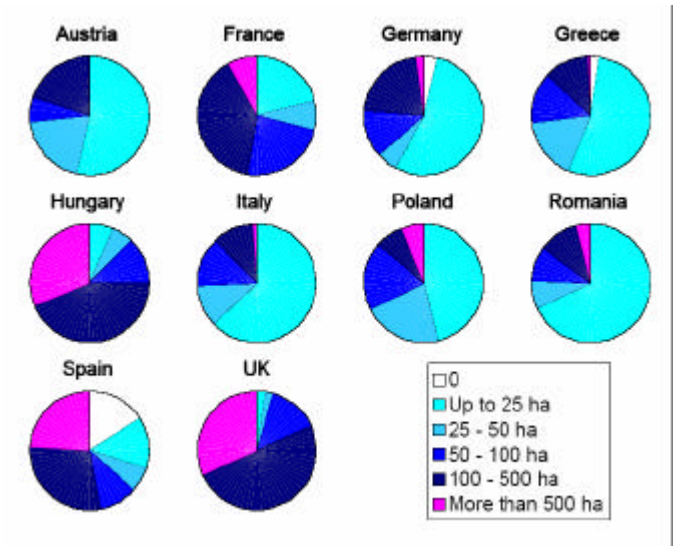

Figure 11 (Bertaglia, 2004)

Number of Animals per farm of Sheep & Goat Breeds By Country

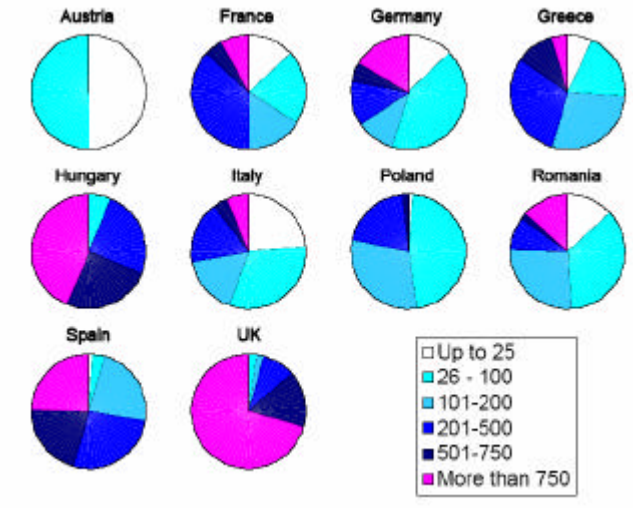

Figure 12 (Bertaglia, 2004)

Conclusion

All of the information that has been analysed here will be of use to those planning for the implications of the Mid-Term-Review of the Common Agricultural Policy. It is important to note that a "one-size-fits-all" approach will not work as the production systems are too diverse for this to be effective. Each Country should look at its marginal rural areas and see how best to balance the needs of the MTR for better environmental conditions alongside the continuing future of traditional hill sheep and goat farming in these areas. The environment is shaped by the management of stock in these areas and the reduction or loss of stock from these areas can only lead to poorer environmental conditions due to the lack or inability to manage the land for the good of the communities. Coupled to these decisions is the influence of farmers age to this equation. The age of the sample is comparatively old compared to other industries and the need for replacements is paramount, as stock management is something that is learnt over a lifetime and cannot be taught quickly. If the farms are left or forced to go out of business then, should a need arise for land management through the use of stock, there will be no people with the right experience to re start this industry.

References

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