

European Network for  
Livestock Systems in Integrated Rural Development

## **Opportunities for species diversification for farm and environmental management**

Three European feasibility studies

[Angus Russel - Cashmere](#)

[Brian Revell - Ostrich](#)

[Thierry Lecompte - Elk](#)



©Macaulay Land Use Research Institute  
Craigiebuckler  
Aberdeen AB15 8QH

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## **Introduction and Executive Summary**

### **The LSIRD Feasibility studies**

The LSIRD Network (Livestock Systems in Integrated Rural Development) is a Concerted Action project of the European Commission, operating between 1996 and 1999, to aid the development of livestock systems appropriate for integrated rural development in the LFA regions of Europe.

The Agenda 2000 reform package of the Common Agricultural Policy (CAP) gives every indication that within the LFAs, future policies will place increased importance on rural development, sustainable farming systems and environmental management. Commodity prices for livestock and crops are likely to continue their downward trend, and this will put an increasing pressure on farmers and farmer's co-operatives to seek out new markets for their products. Particularly in the LFAs, farmers need, where possible, to exploit niche markets by direct marketing, quality labelling, organic farming, diversification or regional identification, to generate added value to their products.

Research is required that will help farmers to develop a diverse range of responses to falling farm gate prices. Sustainable farming systems and the marketing of the products of these systems deserve particular attention, as well as strategies to manage and market the products of specific agri-ecosystems and cultural landscapes. Large areas of marginal land no longer have food production as their primary use, and are being used as nature reserves or are managed within agri-environmental schemes. This is creating a growing need for effective low-cost vegetation management systems, and for mechanisms for marketing the animal products from such systems. Low input systems suitable for part-time farming are likely to be important too, and need to be integrated with the development of alternative rural incomes, such as teleworking, and rural locations for "clean" industries. In the case of regions which may be spatially and conceptually differentiated from surrounding regions (for high landscape and tourism value) there are obvious market rewards for environmentally sensitive farming systems, but each region will need to develop its own strategy, appropriate for the individual level of agricultural and economic development of the region, for exploiting those rewards.

The LSIRD network, within its programme of conferences and workshops, commissioned three feasibility studies in species diversification of herbivores, which have a potential role to play in 21<sup>st</sup> century pastoral systems for the LFAs. Three contrasting species for livestock diversification and nature reserve management were selected: an autochthonous species (cashmere goat), an exotic species (ostrich), and a re-introduced species (elk).

#### **Cashmere Production in the European Union**

Information is presented on the rate of growth and cashmere production, over ten years, of national herds based on a common starting point of a 250 doe herd, comprising imported animals or native goats used as recipients for imported embryos or for grading-up. Five production systems, in which surplus stock are sold at different ages, are also considered, and estimates of the physical and monetary outputs from the sale of cashmere and animals slaughtered for meat and sold as breeding stock are used, with estimates of the variable costs attaching to each system, as the basis for gross margin analyses. In general, these indicate that systems in which the surplus stock are retained for the longest periods are likely to be the most profitable. Estimates of gross margins range from about 45 ECU per breeding doe in a system in which surplus kids are sold at approximately six months of age and from which there are no sales of breeding stock, to almost 220 ECU per doe where the surplus juvenile stock are sold at approximately 18 months of age after the harvesting of a second cashmere fleece, and from which sales of breeding stock constitute a major source of income.

#### **Ostrich Production in the European Union**

The study found that the intrinsic quality of ostrich products and the possibility for value-added processing of meat and leather in an integrated operation makes ostrich production an attractive proposition for rural development in the less favoured areas of Europe. However, many legislative, welfare and operational

issues in the rearing of ostriches have still to be addressed. Because of the industry's development history, little technical knowledge about ostrich production has been gained through published scientific research. A lack of market development for meat and leather products, a lack of research into ostrich production under European conditions, and a lack of a developed infrastructure hamper progress towards a successful ostrich industry in the UK and the European Union.

There is a reasonable level of demand for ostrich meat in many countries of Europe, but this is currently being met predominantly from outside the EU. However, increased global production in 1996-7 combined with the Asian crisis to cause the industry worldwide to fall into a state of depression. The future viability of the enterprise will require the development of new products and markets for the highly durable and attractive leather, as well as increasing the existing demand for ostrich meat. The range and quality of products derived from the ostrich are potentially excellent and present the opportunity to develop value-adding activities which could contribute to part of the economic activity of existing farming businesses and in other parts of the rural areas of Europe.

Despite a lack of official support, experience in the UK and elsewhere over eight years of rearing ostriches has formed the basis of a sustainable industry, combining production, processing and marketing within the EU itself.

Research is needed to resolve the outstanding husbandry and welfare issues. The ostrich offers an opportunity to develop a range of value-adding activities, as well as a diversification opportunity away from traditional farming systems, and is therefore suited to the concept of integrated rural development in the less favoured areas of Europe. Expansion of European production will require support to increase knowledge of the ostrich as a farmed animal through research. Several fertile areas for future international collaborative research have been identified. The most important of the various welfare considerations is to establish the climatic suitability of conditions in northern Europe for successful ostrich farming. Increased demand for ostrich meat and other products will depend on consumer acceptance of the methods employed in production of ostriches in the EU, as there is no fundamental resistance to the concept of eating ostrich meat.

The ostrich industry will also need assistance in developing and expanding markets for ostrich products, and a consistent legislative framework in which producers and processors can operate is still required. The EU Commission may need to investigate allegations of illegal S African meat imports to ensure that competition does not unfairly disadvantage EU producers. However, the enterprise can be viable without subsidies, although initial capital set-up costs for breeding stock may be prohibitive on very small farms.

#### [Elk for vegetation management in wetlands](#)

The trend in abandonment of agricultural practices (livestock production, reed and osier bed cultivation) in many wetland areas of temperate Europe results in ecological succession to trees, such as willow, alder and silver birch. This closing of valley landscapes that were previously open, leads to a significant erosion of biodiversity. Different land management authorities, after assessing of the situation, have proposed a number of alternative measures. The revival of livestock systems, funded by subsidy (agri-environmental measures), represents the classical way to reopen the landscapes in wetland areas. However, for this approach to be successful, farmers must already be there, which is often not the case. In the opposite circumstance, the authorities (Natural Parks, Natural Reserves, Hunting organisations) must use semi-wild herds, such as old breeds of horses or cattle, which must survive without any human interference all year round.

Such a system, which is similar to the primitive livestock herding, has been well-tested and validated over the past 20 years in the peat bogs of the Vernier marsh (Normandy). This bog is one of the most important in France and is the responsibility of the Parc Naturel Regional de Brotonne. However, in some conditions, this tool is not the optimum one. Horses and cattle are not great consumers of woody material. They are herbivores, and this characteristic is a problem in an environment where the herbaceous stratum is scarce, due to the presence of woody species. Moreover, the shrub vegetation occurs mainly on weak soils, on which classical herbivores, even light ones, exert a pressure on the ground of 750-800 g/cm<sup>2</sup>.

For these reasons, it can be envisaged to use animals from the Cervidae family. These animals have an alimentary tract which can be better adapted to digest a diet with a high proportion of ligneous species. The elk (*Alces alces*) consumes during the winter between 20 and 25 kg/day of branches, twigs and bark from pioneer species in wetland areas. Moreover, the specific structure of its foot allows it, when the terrain is soft, to rest on 4 pads (per foot), linked together by an inter-digital membrane, which results in a ground pressure of only 420-440 g/cm<sup>2</sup>. The return of the elk in less northern latitudes of western Europe

may seem unusual when the current distribution of the elk is considered. However, elk used to be distributed much more widely and, in the Middle Ages, was still present in France, Belgium, Switzerland, and Germany.

The utilisation of elk in wetland biotopes does not constitute an animal introduction, such as ostriches, llamas or American bison. It is, on the contrary, the re-introduction of a "missing link" in a fragile ecosystem. In addition to ecological utility, this project has good socio-economic potential. The development of nature tourism could indeed contribute to the farmers' income. Such unusual animals like the elk, maintaining a natural landscape and wildlife diversity, as well as being interesting for nature tourism, could be an important economic asset for these marginal regions, where the failure of agricultural intensification on one hand and the change in the perception of humid areas on the other hand, has led to changes back to land use based on sustainable development and land resource management. Elk venison is said to be of better quality than that of deer (the price of which is 4 times more expensive per kg than beef, and which is imported in large quantities - 5000 t/year).

The elk represents for vast less favoured wetlands an interesting opportunity, because it can integrate ecological interests in the management of disused land, with social and economic objectives through environmentally orientated livestock breeding, hunting and tourism.

### **Conclusions**

These feasibility studies were undertaken with the objective to present ideas in a way that would enable the most significant economic and environmental issues involved in the adoption of such systems to be evaluated. In particular, the analysis is structured to facilitate the assessment of the viability of these systems in different regions of the European Union.

The results should be interpreted with some caution, as there are a range of obstacles and risks associated with the establishment of novel systems. Some of the most significant obstacles to the development of alternative systems are: market, hence price, instability; cultural resistance to change; unequal treatment within agricultural support measures; and underdeveloped marketing infrastructure. At an early stage in the establishment of new systems, the small-scale nature of the operations are themselves an impediment to market development. Finally, full environmental impact assessment is an essential element in the consideration of diversification options for all new species.

The studies do, however, show the obvious potential of these alternative systems. The Agenda 2000 reform of the EU Common Agricultural Policy is one step in a process of farm sector reform that is radically altering the nature of farming systems and their functional priorities. The adoption of diversified and high quality production aimed at high value markets is likely to increase in importance in the future, and objective information on the various options available is essential. Similarly, the study on elk for nature reserve management reflects the growing importance of the vegetation management role of herbivores, as land use priorities shift in marginal areas. This publication provides some basic data on 3 alternative species that may have a role to play in future land management.