



Research Network
for Livestock Systems in
Integrated Rural
Development

FAUNUS



Our objectives



FAUNUS

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*Cover illustration:
Asturiana cattle in the
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LFA livestock

in a reformed CAP *by Jerry Laker*

The new rural development policy, now the "second pillar" of the Common Agricultural Policy, is finally in the process of being implemented in the EU member states. In principle, the reform offers some significant opportunities to support environmentally and socially appropriate production systems in the LFA. However, achievement of this goal will require considerable efforts on the part of farmers and landowners, and the support of the research community.

Agenda 2000 recognises that, alongside market measures and the requirements of a competitive European agriculture, the varied needs of the rural world must also be protected, together with the expectations of the wider society in general and environmental requirements.

In principle, the reform recognises, and indeed emphasises, the diversity of objectives that the CAP is aiming to achieve. In particular, the multifunctionality of agriculture, i.e. its varied role over and above the production of foodstuffs is a central tenet, and the reform envisages a multisectoral and integrated approach to the rural economy in order to diversify activities, create new sources of income and employment and protection of "the rural heritage".

This will be achieved through more flexible aids for rural development, tailored to regional needs by subsidiarity, promotion of decentralisation, and consultation at regional, local and partnership level.

Overall, the CAP reform identifies 6 key areas that it needs to address in order to strengthen the role of agriculture in rural development. These are discussed by the European Commission in a recent fact sheet, "CAP reform- rural development", available from DG VI.

The new measures will channel indirect aid to farmers. For example, for the purpose of "Adapting production to market developments", aid will be available for researching new commercial outlets and adding value to agricultural products by the processing and marketing of agricultural products. Rural development policy post-2000 also confirms the essential role which farmers play in providing environmental services which go beyond following good agricultural practice and basic legal standards. In the new generation of rural development programmes, agri-environmental measures are the only obligatory element for Member States (although they remain optional for farmers).

Lastly, the new CAP contains a number of measures (known as Article 33 measures) that aim to promote the general development of rural areas. These follow on from the former Objective 1, 6 and 5b measures administrated within the structural funds. There is a long list of works that will be eligible, but most noteworthy for the LFAs will be specific support for marketing of quality agricultural products, basic services for rural populations, promotion of tourism and crafts, and environmental protection linked to agriculture and nature management.

The LSIRD project has demonstrated that there is broad agreement within the research community in Europe of the importance of maintaining family units as the basis for rural development. Within the LFA, the increased efficiency offered by economies of scale, and its associated shedding of labour, may be of transitory benefit, often accompanied by undesirable social consequences and a breakdown in the environmental management role of traditional farm management systems. The key to maintaining small to medium sized businesses as viable units in the future lies in their ability to realise the diverse opportunities offered by quality on-farm food processing and retailing, tourism-related activities, and agri-environmental benefits.

The LSIRD network is a Concerted Action project of the European Commission, DGVI, aiming to identify the ways in which the research community should be reacting to developments in the livestock sector in the less-favoured areas of the EU, and to develop ideas for multi-disciplinary research that will create the livestock systems appropriate for the 21st century. The programme of activities has been designed in order to explore a number of areas in detail that are currently highly influential in the development of the sector through the medium of conferences and focused workshops.

Domestic livestock are an integral part of the cultural landscapes of the European LFAs. Economic and structural changes in LFA agriculture demand the development of new livestock systems to maintain economic sustainability. New animal husbandry systems must take into account the multiple roles of farming, being compatible with sound environmental management, generating rural employment, maintaining floral and faunal diversity, and preserving attractive traditional landscapes.

This edition of Faunus is the last in the current series of newsletters from the LSIRD network, but over the last 3 years we have collected together a wealth of experimental results, experience and observations from all the current EU member states, as well as from those that will soon be joining. European agriculture is rapidly changing as it responds to changing demands and opportunities. Structural adjustment brings with it considerable personal pain and suffering for those farmers forced into leaving the industry. However, we have tried in LSIRD, recognising this, to give a positive view of some of the opportunities offered in the future, and to demonstrate the real contribution that research, in its many different forms, is making to the shaping of new ways of life for rural communities in the European less favoured areas.

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The Hill Sheep and Native Woodland Project

A new approach to land management in the uplands of Scotland

Current systems of extensive sheep production cover approximately 40% of the land area of Scotland and are vital to economic viability of rural areas. Such systems are economically and environmentally limited and extremely fragile and much of the income and infrastructure support depends on a range of subsidies and agri-environmental measures. Agricultural employment is still declining, and CAP Reform poses new challenges and is potentially a further destabilizing factor.

Systems of hill sheep production present harsh environments and challenges to animal welfare, deliver products with limited market potential and often have a detrimental impact on the environment. Reducing stocking rates may achieve environmental objectives but have the impact of reducing the economic activity associated with the farm business. Extensifying already extensive systems is unlikely to succeed in marginal areas without penalties in terms of reduced employment, product quality, animal welfare and ultimately the environment that such measures seek to protect.

Rural development and diversification opportunities outside agriculture are limited where sheep farming is a core activity. Large scale planting of exotic conifers is often the only other viable land use but is not integrated with agriculture, replacing one industry with another. Consequently, abandonment and steep economic downturn are risks due to low incomes and lack of alternative enterprises.

The need for change is obvious. The challenge is to find positive means of achieving change that achieves social, economic and environmental goals.

The Hill Sheep and Native Woodland Project aims to maintain a broad-based sheep industry, including its essential associated upstream and downstream links, and to improve the resource base of upland farms by investing in new woodland, without penalising the current system.

In practice, the project is concentrating on achieving the intimate integration of an innovative sheep husbandry system with the establishment and diverse native woodlands within the same block of land. The woodland will be a patchwork mosaic at various planting densities designed to mimic native pine and birch woodlands. Initially, grazing within the woodland would be prevented but thereafter sheep will have access to the woodland under controlled conditions. Success depends on the removal of the sheep from the hillsides to higher quality pastures (probably off-farm) during autumn and winter. Ewes and lambs would only have access to the wood and adjacent hillsides during the summer months, a time when pasture production is not limiting.

The key objectives are to determine whether hill sheep woodland systems can be: a viable alternative to traditional systems; would improve the short (first 5 years) and long term (6-40 years) upstream and downstream social and economic conditions at a local, regional and national scale; would reduce reliance on agricultural subsidies; and if they can improve the long-term ecological sustainability of the uplands.

The project uses 1600 hectares of hill land to test and demonstrate the approach at a full systems scale. This area comprises two adjoining blocks of hill land in discrete catchments - a 750 ha control, with a traditional sheep husbandry system and no trees, and an 850 ha treatment of which 250 hectares planted with native trees (predominantly birch & Scots pine).

The proposed system will encourage diversification within two land-based industries that could complement each other rather than diversifying outwith agriculture altogether. The benefits of both enterprises are combined for the environment, the farmer and local economy. Non-subsidy income will increase through increased lamb sales initially (in terms of quality and quantity) and timber products eventually. Due to better quality overwinter grazing, off-farm ewe productivity will increase and provide greater flexibility in breed choice. Animal welfare standards should be improved, and the seasonal grazing is expected to increase environmental sustainability. Clearly, costs are likely to increase, but, as income should also rise, overall the total land-based economic activity in an area will be increased.

The agricultural and woodland base of the uplands would both be strengthened and the environmental fabric of the landscape enhanced in a sustainable fashion. The woodland becomes an investment for the future, without penalising the present.



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Improving returns from common grazings in the New Forest

by Gordon Hickman

The New Forest is a unique area of Southern England, which, despite the name “New” Forest, is one of the earliest known areas of ancient woodland. The uniqueness of the New Forest has arisen because agricultural practices have developed in a different way to otherwise similar areas. These differences are a result of the historic use of the area as a Royal Hunting Forest. To avoid disturbance of the game, the amount of land enclosed for improvement was severely restricted. The local population was able to continue to use the Forest and a number of these uses became regarded as ‘rights of Common’ The most significant right that remains in use today is the right to graze (or ‘depasture’) stock on the Forest.

Under this pastoral management system the New Forest has remained an extensive area, consisting of enclosed woodland and approximately 18,000 hectares (44,480 acres) of open woodland, heath and scrub, interspersed by grass lawns and valley mires and bogs which are grazed by livestock. The area is recognised as a landscape of international significance and is one of Europe’s most important areas of ancient pasture woodland and lowland heath and contains 75% of Europe’s remaining lowland valley mires.

Grazing by cattle and ponies is recognised as being particularly important in maintaining the landscape and ecology of the Forest. Currently about 4 10 practising commoners, graze some 3,343 ponies, 2,580 cattle and a few pigs, sheep and donkeys. Commoning is rarely a full-time occupation and in recent years returns have fallen significantly. Unless returns from Commoning can be improved, there is a danger that the practice of common grazing will fall into decline. If livestock numbers fall below a certain, level the unique character and valuable habitats of the New Forest will be threatened.

The Verderers’ of the New Forest commissioned ADAS in spring 1998, to review existing practices and to make recommendations on how to improve marketing of Forest stock with the following overall objective:

“To raise the Conservation status of the New Forest by improving the returns from Commoning, thereby ensuring the numbers of animals grazing the Forest are maintained at the optimum levels”

ADAS has just completed the first phase and has reported its findings. This has involved a review of the current situation, identification of specific market opportunities and options for implementation. The review involved extensive consultation as well as market research and the collection of data on the returns from commoning. We have also assessed the impact of changing support policies. The potential for adding value directly or through collaborative marketing ventures has been an important part of our approach.

The cattle have a reputation as hardy, thrifty and good-natured but to thrive on the Forest they often have Galloway in their breeding and this leads to smaller, slow maturing animals which do not finish easily under thirty months of age, even under intensive feeding. The generally depressed market for beef as a result of the BSE crisis, is even more pronounced for cattle from the Forest which have difficulty conforming to the requirements of the mainstream market. Conclusions from the ADAS study are that there is a good market for Forest-reared beef, but it is very much a niche market that needs careful development and marketing. This will need to include differentiation of the product and linking it to the maintenance of the ecology and landscape of the Forest in addition to Quality Assurance and product traceability.

Traditional management of ponies on the Forest dictates that foals are sold off the mare at 6 to 9 months of age in the autumn of the year in which they are born. These foals require further rearing for three to four years to be attractive to private riders, who form the majority of the ultimate users. The structure of Commoning gives little scope for rearing foals close to the Forest or even holding foals off the market if

prices are low. This rearing gap has also been identified as a problem as far as marketing is concerned. During this period many foals lose their identity as “New Forest”, through lack of individual identification.

It is a basic principle of marketing that a product has to be differentiable and identifiable, to be able to promote it as a desirable item. If New Forest ponies are entering the riding market lacking such identity, then no amount of promotion can increase sales or the price achieved. A system for maintaining the identity of New Forest foals is essential. This can be achieved by encouraging registration of foals with the Breed Society or by encouraging hot branding of the foals before sale

The number of poor quality foals being presented to the market needs to be minimised. A number of recommendations designed to improve the overall quality of stock have been made. These include the removal of poor quality mares and changes in the way stallions are selected and moved around the Forest.

Improvements in the way ponies are sold, including using a different location and a new method of presentation (e.g. halter broken and led) are being considered. ADAS research shows the end consumer is looking for a ‘ready to ride’ pony. Ideally these would be provided directly by the Commoners. This will take many years to set up and achieve but the initial steps of finding partners and the improvements in branding and marketing arrangements can be implemented quickly.

The market for New Forest ponies and cattle has changed and the way Commoners present and sell their stock will have to adapt to meet that market. This research has set the direction for this to be achieved in a way that can enable the Commoners to retain a sufficient proportion of the final price to keep Commoning viable. To meet the demands of the new market, Commoners will have to co-operate to a much greater extent and to recognise that marketing their stock is now a job in itself. To ensure that this occurs and the future of such a valuable environmental resource is preserved further support is being sought to facilitate the process.

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Development of sustainable systems in marginal heathland regions

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In the north of the Iberian peninsula, there are extensive regions dominated by heathland. Considering the Cantabrian zone, the Pyrenees, and the northern part of the Iberian zone (some 31.8 of the area of Spain), mountainous brushwood (non-timber trees, scrub and undergrowth, including heather moorland, represents 14% or some 2,249,837 ha. Because of the low digestibility and nutritive value of this type of vegetation, its use for animal production is extremely limited. For this reason, these heaths tend to accumulate large quantities of combustible material, which when they do burn, lead to loss of soil, and a high risk of erosion, as well as a reduction in productivity and biodiversity.

Research work at Monte Carabayal Experimental Farm in Asturias has studied what is the minimum area required to be improved, by establishing higher quality grasses, to be able to develop ecologically and economically sustainable systems. The species differences in behaviour have been analysed, as well as the most appropriate management systems.

Vegetation dynamics

It has been proved that goats control the accumulation of biomass in the heather moorland to a much greater extent than do sheep, while cattle hardly utilise this vegetation at all. Grazing with either small ruminant species significantly reduces the accumulation of biomass in comparison with ungrazed plots. Also, the components of the accumulated biomass differ significantly, depending on whether there has been no grazing, grazed with sheep, goats or in a mixed herd. The goat limits the accumulation of woody species, and favours the growth of herbaceous species, while the sheep has a greater effect on herbaceous plants, with lower utilisation of woody species. The response of the vegetation to mixed grazing (50% sheep, 50% goats) is closer to that observed in plots grazed by goats alone.

Animal production

The experimental results demonstrate that small

ruminants, preferably kept in mixed flocks during the spring, are the most appropriate species for managing heather moorland. Thus, on a plot of 15 ha, with 4 ha pasture improved by minimal fertilisation and seeded with ryegrass and clover, it has been shown that under the same management conditions and forage availability, the mixed sheep/goat flock produces three times as much as the cattle (Table 1), during the months of spring (April-July), a season which most favours those species like cattle, which have a greater ingestive capacity.

Once the offspring have been weaned at the start of summer, and reduced the nutritive requirements, the sheep and in particular the goats, are able to improve their live weight and body condition only using the natural heather moorland vegetation. Also, flocks kept in this extensive way, on heterogenous areas in terms of vegetation, topology and soils, in general have an improved level of health (e.g. lower parasite burden) and select a more balanced diet in fibre and minerals than those that graze exclusively on improved pastures, and which generally are kept at higher stocking rates.

Sustainable management of the vegetation cover

Sustainable management is understood to be that which guarantees the continuation of the capacity of regeneration of the biological systems, promoting the ability to generate renewable resources, with a commercial value, in a form compatible with the fluxes of energy, water, organic matter and nutrients. The experiments carried out indicate that the improvement of one third of the vegetation area is sufficient to allow the development of ecologically and economically sustainable animal production systems, encouraging at the start an increase in biodiversity, and moreover reducing the risk of fires, generating employment and income in these disadvantaged areas.

Options for sustainable development

For the less favoured areas, the animal production system to choose to stimulate sustainable develop-

ment depends on the quantity, quality and accessibility of the forage resources.

In general, the species most appropriate are those with smaller body size, such as sheep and goats, combined in a proportion depending on the relative proportions of herbaceous : woody species. In some vegetation types, for example those dominated by *Nardus stricta*, however, cattle achieve the highest level of forage utilization. If the proportion of herbaceous : woody species is 50 : 50, grazing with a mixed flock is advised, while if herbaceous vegetation is scarce, sequential grazing first with goats, then followed by sheep is preferable, with the object of reducing the scrub biomass leaving the herbaceous plants found at the base of the vegetation structure, accessible to the sheep.

In situations in which only extensive areas of woody vegetation are available, with little or no possibility for action to improve the quality of the grazing resources, the production of cashmere fibre, or of fine wool, are interesting options, as the demand for nutrients for these products is little more than that required for maintenance. These primary materials can contribute to employment and income for women, for the processing of the fibres into high quality goods, marketable within their own rural region, or in the cities. Another potential product would be the management and rational utilisation of the combustible material. This would help to maintain biodiversity and reduce the risk of fires and their consequent social cost. However, in such situations that it is possible to act without generating a risk of erosion, extensive animal production systems, involving the improvement of one third of the vegetation resource, are economically and ecologically preferable.



Table 1. Animal productivity during spring & summer (24/4 - 13/8) on heather moorland with one third of the available area improved.

	Flock			
	Single species	Mixed		
	Cattle	Sheep	+	Goats
Number of animals	12	85/110		85/110
Live weight gain/loss (kg/day)				
mothers	0.24	0.077		0.108
offspring	1.16	0.172		0.126
Productivity (kg liveweight/day)				
mothers	2.88	6.54		9.18
offspring	13.92	18.92		13.86
	16.80	25.46		23.04
Total system production (kg live weight/day)	16.80		48.50	

Putting LFAs on the research map

some of the progress made by the LSIRD network

J.P. Laker, LSIRD network, Macaulay Land Use Research Institute

INTRODUCTION

The Less Favoured Areas (LFAs) of the European Union represent some 56% of the EU total surface area, and contain much of our most wild and valued scenery, support some of the rarest of our wildlife and flora, and also a considerable proportion of the traditional low intensity farming systems that still remain. The LFA is defined by the permanent natural handicaps that hamper agricultural production, and in compensation for these handicaps the area receives extra financial support from the Common Agricultural Policy (CAP) of some 1.37 billion ECU/year. As defined by the EU, the main objective of this support is to ensure the continuation of farming in those regions and thereby maintain a "minimum level of population or conservation of the countryside".

The LSIRD Network (Livestock Systems in Integrated Rural Development) has been for the last 3 years aiming to advance the role of livestock systems in integrated rural development in the LFA. A more co-ordinated interdisciplinary approach within the research community has been aided in work on grazing livestock systems appropriate for the LFAs. This is a summary of some of the milestones over the course of the project.

THE LSIRD PROGRAMME

In January 1997, the LSIRD network organised a conference in Nafplio, Greece. Entitled "The Role of Livestock Systems in European Rural Development", the Nafplio conference was an attempt to draw together experts in production systems, policy and economic research, and environmental management, in order to identify opportunities for synergy between the disciplines, and form a conceptual basis for the future activities organised by the network.

The degree of consensus displayed between the participants on rural development issues was striking, in particular that it is essential that LFA farming systems must necessarily take on board sustainable agriculture principles, and exploit to the fullest extent the opportunities offered by value-adding activities, such as regional and eco-labelling, on-farm processing and marketing and, where appropriate, co-operative ventures between rural production and retailing enterprises. It was strongly felt that LFA livestock farming needs to develop as a distinct research field in its own right, as high technology alone cannot solve the problems encountered by farmers there.

Technological progress is essential, but only within the constraints set by sustainable agriculture principles, such as the need to maximise the use of on-farm resources, and minimise the use of non-renewable energy sources and off-farm inputs, such as fuel and fertilisers. The key to making such Utopian systems viable is that their products must achieve significantly higher prices in the market. Market differentiation can be achieved on the basis of production system (e.g. organic farming), breed (e.g. Aberdeen Angus), or region of origin (e.g. the Rhön Biosphere Reserve). On-farm processing (for example yoghurt and cheese making) can add an important margin, as can linkage of any of these activities with tourism.

The Agenda 2000 reform package of the CAP gives every indication that within the LFAs, future policies will place increased importance on rural development, sustainable farming 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, or regional identification, to generate added value to their products.

The LSIRD network has considered how these diverse issues in rural development, value-adding and environmental management can be addressed by future research, and has identified future interdisciplinary and vertically integrated (production chain) approaches to studying problems facing the economic development of livestock systems in the LFAs.

Typically, agriculture in the LFAs is in decline, rural development initiatives for the most part have concentrated on providing alternative employment, such as in light industrial development, hi-tech industry, and teleworking. This in itself has strong implications for the livestock sector, as one result of this may be more part-time farmers, with their own special needs for livestock systems - simplicity and low labour requirements, and the skills and infrastructure needed to market high-value products. The development of more rural and agri-tourism will also have important implications for livestock systems, as will moves within rural development initiatives to develop the small-scale agri-food sector in rural areas. Agri-environment schemes may go some way towards mitigating the effects of diminishing direct production support. However, longer-term viability and sustainability for these areas is likely to depend more on reconnecting the products from the land to developing and growing markets, such as for speciality and regional products, and a multi-disciplinary, vertically integrated agricultural - environmental - economic research approach.

The evolution of rural economies and farming systems will be influenced by changes in other areas of policy, such as the effects of reform of EU structural funds, the development path of acceding Eastern European countries, and increased subsidiarity in policy formulation / implementation.

The combined effects of such policy and political evolution, are complex to unravel, and will vary regionally. That livestock farmers are going to be under heavy financial pressure throughout the EU, however, is a certainty, and it was agreed that there is a pressing need for research to support efforts to achieve the simultaneous goals of improving regional development and at the same time preserving traditional farming skills and knowledge. Whilst such examples (local cheese, dairy and wool products) exist and make a contribution to employment, they are operating in a small way, and individually have a limited impact on employment and regional development. It is, however, the small-scale nature of such projects that contribute to the



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diversification of local industry, and help improve producer incomes, and retain the essential landscape and biodiversity of these areas, as well as attracting further development and inward investment in the region.

It is essential that the trend towards marginalisation and abandonment of land in the LFA is halted. This process is causing undesired changes in landscape, rural societies and severe damage to valued pastoral ecosystems. There are many imaginative and traditional examples around Europe of farmers using their endeavour to secure a place in the added-value market using sustainable farming systems through on-farm diversification of farming enterprises, agri-tourism as well as integrated intersectoral (vertical) regional collaboration.

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. Low input systems suitable for part-time farming are likely to be important, 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.

CONCLUSIONS

To improve the profitability of enterprises in the European LFAs, there are generally three alternatives open to farmers: reduce the costs of production, often through reducing labour or other fixed costs; increase the intensity and productivity of the system; or to increase the value of the products sold. The first two of these (not mutually exclusive) alternatives often carry with them undesired social and/or environmental costs. The third, which can be achieved in many different ways, is popular within the context of the Agenda 2000 CAP reforms as the alternative which potentially offers most opportunities in terms of maintaining some of the desired characteristics of LFA agriculture - rural employment, traditional landscapes, and a pollution-free rural environment.

The LSIRD network has sought to stimulate and integrate ongoing research in Europe that is currently contributing to the development of both economically and ecologically sustainable farming systems appropriate for the EU LFA regions. Pulling this work together, for example in the proceedings of the two conferences (Laker & Milne, 1997; Laker & Milne, 1999), and publishing project reports in FAUNUS has made the information more accessible to research and extension workers. It is hoped that a way will be found to continue this service, but more importantly that it will have given some support and encouragement to those trying to develop truly viable and environmentally appropriate farming in the Less Favoured Areas. We have demonstrated that there is a wealth of experience in Europe, and enthusiastic research and extension workers keen to make their contribution in defence of an increasingly threatened way of life. This enthusiasm needs to be channelled into a wide range of well-networked projects throughout rural areas, as well as into developing policy mechanisms that will allow a healthy balance to be struck (or maintained) between economic and environmental pressures for the benefit of all rural land users.

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Participants at the LSIRD Bray conference

Co-operative grazing systems: an alternative concept for the management of endangered open landscapes

A new project at the Institute for Landscape Planning and Ecology, University of Stuttgart is developing new concepts of sustainable land use to conserve and restore species-rich open grassland ecosystems in Southern Germany. Valued ecosystems, such as heathlands, grasslands and fens were once widely dispersed throughout Europe. Many have their origin in extensive management practices like hay making, sheep grazing etc. Many species are dependent on such extensive land use because their original habitats, such as natural bogs and flood plains, have been lost due to human intervention. However, old systems of management are often no longer economically viable, such that the ecosystems they created are now threatened on the one hand by intensification of land use and on the other by abandonment. Several programmes have been initiated at various administrative levels (European, national and regional) to conserve traditional forms of land use. Their main disadvantage however, is that their aims are against the economic interests of the farmers and hence inevitably incur high public expenditure. As a consequence, the programmes tend to be undertaken at a small scale and have short-term benefits.

The idea behind the current project, financed by Federal Ministry for Education and Research (BMBF), is to support and optimise co-operative farming and grazing systems which are both ecologically and economically more efficient than the currently used system of mowing practised by farmers and nature conservation agencies. The last remnants of large traditional grazing areas (Allmende) in the Pre-Alpine moraine landscapes of Southern Bavaria (Allgäu) provide an opportunity to study large scale grazing systems which are still economically relevant. The areas typically cover approximately 50-150ha and include species-rich dry and wet grasslands, base-rich fens, bogs and forests. Farmers traditionally use these areas for grazing young cattle and horses, at a low stocking density from April to October. Typical elements of these extensively grazed areas are transitional ecotones between differentially structured habitats, such as alder forests (*Alnus glutinosa*) and open fen vegetation (*Carex davalliana*), resulting from diverse park-like landscapes. These ecotones are particularly important for insects with differentiated habitat demands, e.g. certain rare butterfly species. Twelve different research areas are being analysed and evaluated from both an ecological and economical point of view. The ecological approach will map and produce inventories of flora, vegetation and specific fauna groups, focusing on certain 'target species'. Successional trends are being analysed according to the intensity of grazing, as deduced from direct studies of permanent plots, interpretation of historical maps and relevés and the indirect comparison of differentially managed areas. The impact of grazing intensities on the restoration of herb-rich grasslands from intensive or fallow grasslands involves the study of soil seed banks, colonisation and dispersal of 'target species'.

The economic approach will focus on describing and analysing co-operative farming systems in the study area. Issues to be examined will include economic potential, yields, economic outputs and the significance for farmer's incomes. A key question is whether the farmers are currently using this system optimally or if improvements could be made. In addition, it will be considered whether EU or national programmes could be adapted to address specific problems.

Finally, it will be examined how an optimised system could be stabilised and adapted as an appropriate model for other landscapes in Central Europe.

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Integrated economic development of rural communities engaged in livestock production

by Santiago Menéndez de Luarca, Spain

The Common Agricultural Policy (CAP) has seen dramatic change since its inception at the Treaty of Rome. The direction of change as envisaged by the EU in Agenda 2000 has been to develop the CAP as an instrument for regional development and a defence against marginalisation and abandonment in the less favoured areas (LFA). Competitiveness is sought through improvements in food quality, derived from aspects of production such as: geographical origin and the contribution of traditional farming systems to regional image; production methods; transformation; use of old breeds and varieties; and the conservation of the agricultural environment.

Animal production is left with a dilemma - to aim for specialisation and uniformity or for diversity. Within the LFA, the future for the uniformity option is limited, as enterprises, particularly in mountain areas, are unlikely to be competitive with better-sited farms. The usual characteristics of extensive pastoral systems are that stocking rates are low, there are long production cycles, problems with winter or summer feeding, poor infrastructure, bad services etc. The diversity of such farms is expressed by other parameters, such as tradition, unique farm products, culture, rarity etc.

Alternatives for livestock systems

When I started to work in this field, some thirty years ago, the key word was "system". By this I mean that it was clear that it was necessary to work simultaneously with all elements of the production chain, as exemplified in Prof McMeekan's seminal Grass to Milk - feed production, nutrition, genetics, reproduction, breeding, health, management, grazing, stocking rates, fencing, etc. Until that time, each discipline was addressed in isolation. The systems approach was a positive advance, considering the system as a whole, a synthesis, building up, as opposed to an analysis, breaking down, information.

It is nowadays still appropriate to take a systems approach, but it is recognised that there are ever more links in the chain. The system extends beyond the farm gate to the point of retail to consumers (valuation of quality), and for its society effects (environmental impact). Agri-industry and marketing must be considered. As such, it is an agri-food system. Adding value through a genuine typification and differentiation, marketing and distribution is a powerful force in generating the necessary extra returns necessary to support artisanal and farm-processed livestock products from less-favoured areas. Society can support LFA farming through two routes:



buying high added value products from farms and/or contributing in direct subsidy.

Adding value

Farmers must offer quality and evidence of origin: a rare product with a trademark. Consumer confidence is extremely important in the marketing of farm products. False copies of trademarks can cause almost irreparable damage to product image, as can mistakes by the genuine producer, variable quality or incorrect sourcing, for example. A system to ensure traceability to the farmer from the consumer is also an important consideration.

In Spain, the prices of raw materials, including both vegetable and animal products, are, on average, 85% greater for PDO or PDI-protected products than for their non-protected equivalents. In Italy, the situation is similar for milk destined for PDO-protected cheeses. In Spain, PDO-cheeses are typically twice the value of other cheeses, as are hams from the dehesa regions, protected under three PDOs. For non-PDO or PGI products, there is the alternative of protection of the label under Specific Characteristics Certification according to Council Regulation (EEC) 2082/92.

Denominations of Origin and Geographical Indications in rural development PDOs and PGIs are important policy tools which aid the development of markets for differentiated quality products from specific areas. The regulations have had, amongst others, the following impact on development in rural areas:

1. Maintaining the regularity and originality of quality products originating from a specific area;
2. Limiting supply by defining the geographical area and restricting the outlets;
3. Establishing and protecting product differentiation. The identity of the product allows a distinctive quality and pricing policy to be maintained in competition with other products of a similar nature;
4. Ensuring consumers of the origin and manufacturing process of the product;
5. Setting up common rules in the region for production, manufacturing and marketing introduces a unique trading environment of collaborative competition;
6. Prevention of fraud and unfair competition by improper use of the regional image, and attempts to achieve these same objectives in the international field.
7. PDOs and PGIs establish a common agenda to collaborate to the mutual advantage of producers by generally increasing regional quality reputations, and to co-ordinate the overall effort in promotional activities.

In conclusion, PDOs and PGIs underscore the protection of small-scale regional economic interests within rural development policies, delimiting exclusive areas for the manufacture of some products which are linked to a geographical area, and stimulating the associated processes of product transformation and market

presentation. These measures are not just a marketing tool, but must also guarantee the identity and quality of the product. In this sense, it is essential that there must be strict enforcement of quality guarantee regulations.

The PDO and PGI system opens the possibility to develop a differentiated agricultural model in the face of increasing market pressure from the agri-food multinationals, whose own brands are strongly protected. Traditional forms of animal and land resource management, as well as small-scale product manufacturing, which generally involve higher costs, can be maintained outside the influence of enterprises beyond the production zone.

From a social perspective too, the PDO and PGI are seen by many producers as part of a defence of their traditions, culture and identity, in addition to their role in enhancing access to high value markets.

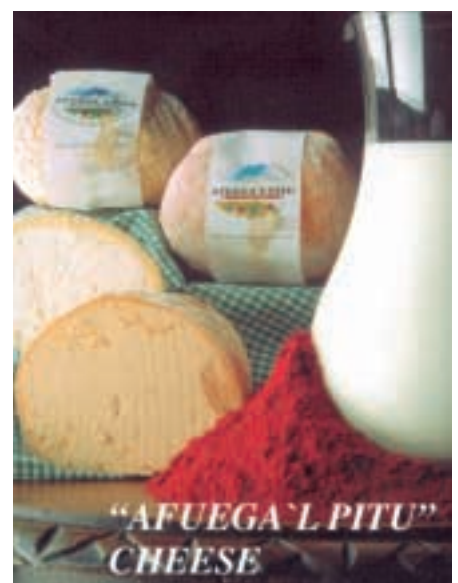
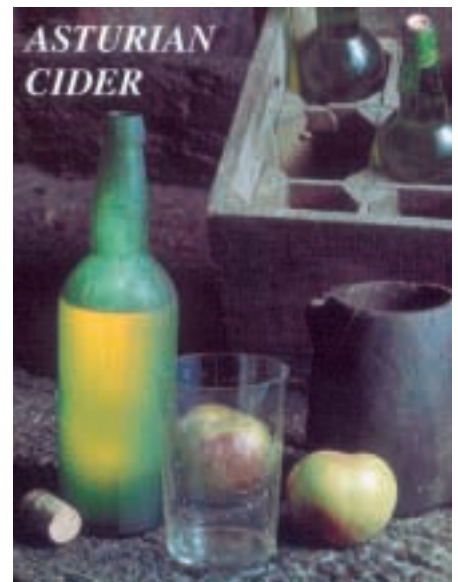
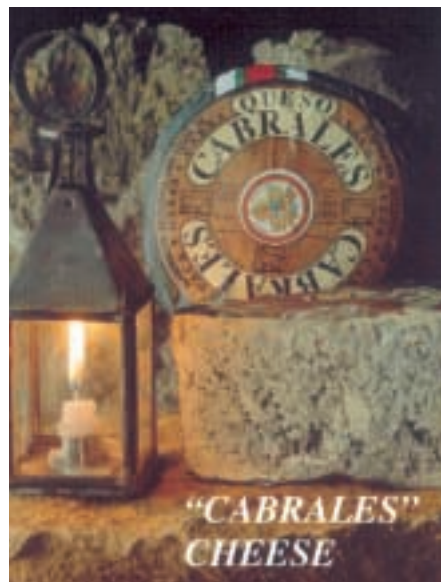
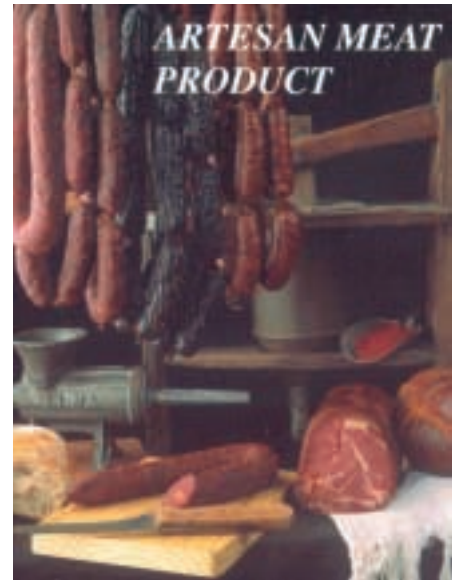
Contribution of subsidy

Society is also paying for extensive farming systems through aids such as the compensatory allowance, agri-environment programmes, LEADER, etc. I feel that there is some justification for weighting such subsidies more in favour of the LFA, reducing the total level available to more productive and competitive regions. This would reduce the problems with the World Trade Organisation (WTO), and in the end would lead to a more equitable and even efficient situation, from both economical and environment points of view.

In most cases, infrastructure and services need improvement, while at the same time respecting the environment. Improvements in infrastructure that degrade the resource, however, should be avoided, as for example the case of the cable car and railway development to Bulnes in the Picos de Europa mountains. Bulnes was an isolated village on a mountain in a national park, and has proved to be a great attraction to visitors, who with the improved communications are able to visit in great numbers. This has greatly undermined the peaceful and isolated ambience of the village, paradoxically, the main attraction in the first place.

Researching the whole chain

Research is required on the whole production chain. Not only grass to milk, but farmer to consumer. Such work has been undertaken at Davis University, USA on the wine production chain from the roots to consumption, including human and health habits, and this could usefully be employed as a model for research in other sectors. The involvement of local agents in training and linking with research would be an essential part of such research.



Promotional material for artesan products of Asturias



Forthcoming conference

Recognising European pastoral farming systems and understanding their ecology

The 7th European Forum on Nature Conservation and Pastoralism

Sat. 17th June 2000 - Wed. 21st June 2000

Falls Hotel, Ennistymon, Co. Clare, Ireland

The Forum, in conjunction with the Heritage Council of Ireland, is pleased to announce that its conference in 2000 will be held between Saturday 17th and Wednesday 21st June 2000 at Ennistymon in the Republic of Ireland.

The meeting is linked to the high priority the Forum places on producing a typology of European farming systems for environmental purposes. This is fundamental to understanding their environmental impacts and in the provision of advice on landscape, nature conservation, pollution and the development of policies to ensure good agricultural practice and encourage environmental enhancement.

The meeting will use this part of County Clare as a base from which to consider in a practical way some of the topical European environmental issues associated with Agenda 2000. These will include cross-compliance, good agricultural practice, agri-environmental measures, area payments for the livestock sectors and the developing concept of integrated rural development.

The workshops will use the information collected in the field, and from elsewhere in Europe, to look in more detail, and in a wider context, at how regionally distinctive farming systems and the environment are currently being influenced - or could potentially be influenced in the future - by policy, market and social pressures. The four workshops will run under the headings: mainstream agricultural support, agri-environment schemes, rural development and ecological understanding. It is planned for at least one of the joint chairmen for each workshop to be an economist, a policy-maker, an agricultural advisor and a scientist, respectively.

Further details, registration and booking:

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Improved fodder Turkey

for small livestock under local conditions in

by Mike Alderson



Despite considerable structural change the agricultural sector in Turkey continues to retain a significant role in terms of its contribution to GNP, national employment and international trade. However, the land area available for arable production is considered to be approaching its maximum practicable limit. Agriculture in the Kahramanmaraş province is characterised by intensive cotton and other arable production on the plains and small-scale mixed farming on the semi-uplands. Consequently, intensive production and the associated development of a textile industry have marginalised the production of small livestock. Additionally, competition arising from the growth of the poultry sector have undermined shifts towards the more intensive production of small livestock. Erosive pressures have therefore developed from overgrazing and the shift of traditional mixed systems on to more vulnerable soils.

In an attempt to address some of these problems in the Kahramanmaraş province of Turkey, staff from the Kahramanmaraş Süctü Imam University and Harper Adams University College in the United Kingdom are co-operating in a British Council-supported project.

To date, the co-operation has involved the extensive gathering of information on the status of a range of agro-ecological variables using rapid rural appraisal techniques. This has provided the focus of the project which is to encourage the cultivation of an indigenous vetch (*Vicia sativa L.*) as a means of increasing soil cover and as an improved fodder source for livestock. Under local conditions the vetch is high yielding and nutritionally valuable in addition to its nitrogen fixing properties. These benefits have been explored by means of a twenty-four plot field trial with soil loss measurements under differing crop rotations and cultivation practices. Preliminary findings are promising.

The next stage is to complete the trial cycle and simultaneously to transfer the technology within the framework of established practices in both the semi-uplands and plains. In order to encourage the adoption of these techniques local farmers have been involved in the development of the proposed crop rotations. The second phase of the project will monitor the cultivation of vetch under local conditions and evaluate the wider economic benefits from its production in both types of farming system.



Further details of this project can be obtained from either Nigel Hall (nwhall@haac.ac.uk) or Mike Alderson (alderson@haac.ac.uk).

Ostrich Farming

An Option for the Less Favoured Areas?

The feasibility study, commissioned by the LSIRD network on the potential for ostrich farming as an opportunity for system diversification in the European LFAs, has now been published. The study was undertaken by John Adams and Brian J Revell of Harper Adams University College, UK, and reported at the LSIRD 2nd conference in Bray, Ireland.

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.

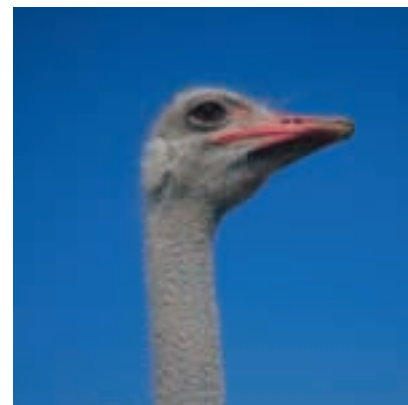
Despite a lack of official support, experience in the UK and elsewhere over eight years of rearing ostriches has formed the basis of a sustainable industry, combining production, processing and marketing within the EU itself.

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.

The report: "Ostrich farming: - a review and feasibility study of opportunities in the EU", published by the LSIRD network is available on the Internet at:

(<http://www.mluri.sari.ac.uk/~mi361/feasibility/ostrich.htm>).



For further details, contact:

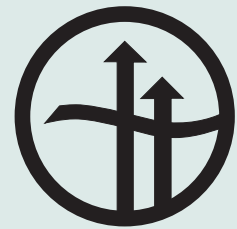
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Quality Beef Production

ADAS

A New Future for Wales • David Roderick, ADAS Project Manager

The total land area of Wales is 2.1m hectares of which 1.7m hectares (82%) is in some form of agricultural use and of this 80%, 1.35m hectares, is in the less favoured Area.

Wales is characterised by high rainfall, sloping land and poor quality soils (80% land classification grades 4 + 5). Of the agricultural land 60% is more than 150m above sea level, with 27% over 300m above sea level.

The agriculture industry is therefore heavily dependant on livestock production which accounts for 85% of total agricultural output, with milk accounting for 35%, sheep 30% and cattle 20%.

There are 7 Environmentally Sensitive Areas (ESAs) in Wales covering approximately one quarter of the land area. The practise in these areas is to encourage farming in an environmentally friendly system of production.

About 10% of the rural workforce is directly employed in agriculture with up to 20% in Mid Wales being dependant on agriculture.

The BSE crisis in early 1996 brought the Welsh farming industry and in particular beef production into public focus with its human health implications.

As a consequence beef production, welfare, environment and traceability issues were scrutinised. The subsequent collapse in the red meat market, has created a need to assist farmers adjust and has exposed a number of other issues which need to be addressed, in particular:

- low unit cost of production
- efficiency of production
- producing the carcass quality and weight required by retailers
- agreement/co-operation between producers - processors - retailers
- facilitation of the marketing process

Future Marketing arrangements in Wales will need to ensure that beef reared to a known specification can be readily sourced and marketed to the retailers.

This requires involvement and dialogue between producer, processor and retailer. Such dialogue is difficult, with the current unorganised nature of producers endeavouring to engage with a centralised highly organised processing and retail sector. A facilitation process is required to accelerate the change and organisation of producers.

ADAS through its industry involvement, from primary producers to the retailers, was in a unique position to facilitate the process whereby efficient production and retail requirements could be brought closer together.

Through the Objective 5 Structural Funds and money from the Welsh Office a £1.2m project is now tackling the restructuring of the Welsh Beef Industry.

'Quality Beef Production in Wales' was launched in December 1997, Welsh Institute of Rural Studies (WIRS), Institute of Grassland & Environmental Research (IGER), the Countryside Council for Wales (CCW) and ADAS are the partners. It is supported by the industry and the two Welsh farming unions.

Project aims

- To produce a comprehensive review of the beef industry in Wales.
- To improve the technical efficiency and marketing expertise of Welsh Beef producers, focusing on efficient management, product quality, farm assurance traceability and environmental protection.
- The use of commercial Development Farms in demonstrating beef systems 'best practise', the introduction of recent R&D/Technology to the Development Farms and its subsequent rapid transfer to the beef industry in Wales.
- Information dissemination to Welsh beef producers via farmer technical groups, project newsletter and the press.
- Initiatives to provide opportunities to market Farm Assured Welsh Beef, produced, slaughtered and sold in Welsh retail outlets.

Methodology

Five commercial Development Farms, reflecting differing beef production systems in Wales, have been set up to enable technology transfer to farmer groups, so that best practises can be widely adopted. The five predominant beef systems in Wales are:

- Finished Suckler Beef (Continental x Cows)
- Finished Suckler Beef (Non Continental Cows)
- Organic Beef
- Suckled Calf Production.
- Beef from the Dairy Herd

Marketing outlets, using specific abattoirs in Wales for the beef produced from

these groups, have been set up by Livestock Marketing Ltd., working on behalf of ADAS.

Progress

With the development farms selected and the formation of the first 8 groups of farmers (technical groups) the next phase is now under way. Development farms have been equipped with IT and weighing facilities to allow physical and financial monitoring, record keeping and total traceability.

Up to 300 farmers who participate in the technical groups can receive a grant for the purchase of IT hardware and relevant software for their own farms, to improve the quality and effectiveness of record keeping and monitoring.

ADAS consultants, staff from the collaborating organisations and farmers from the technical group are now putting in place a programme of review, target setting and technology transfer from the Development Farms.

The information from the project is being disseminated to beef producers in Wales via a project newsletter, farming union journals and by press and media coverage.

Successful co-operation

An example of organisations working together and how co-operation is becoming crucial is demonstrated by the involvement of the following organisations in supplying a niche product, Extra Mature Welsh Beef from a group of progressive producers in North West Wales.

This initiative was started by the Llyn Beef Producers Ltd., with assistance from the Welsh Agricultural Organisation Society (W.A.O.S). The initiative has subsequently led to the involvement of the other organisations.

ADAS
Llyn Beef Producers Ltd.
Cwmni Cig Arfon Ltd.

Livestock Marketing Ltd.
Farmers Marts Ltd.
Welsh Lamb & Beef Promotions Ltd.

The 'Quality Beef Production in Wales' project is providing the technical advice through ADAS consultants using the Development Farm owned by the Chairman to focus on husbandry improvements. Members of the marketing group also benefit from the exchange of technical information as part of the project.

This group of committed producers will provide continuity of supply for a top quality product. In return for their commitment they receive a guaranteed price plus a premium.

A farmer/investor owned co-operative acts as procurement agent. They liaise with the abattoir who have field-staff that visit the producer farms to source livestock. The livestock go directly to the abattoir in accordance to welfare guidelines. Point of sale promotion of the branded product is the responsibility of Welsh Lamb and Beef Promotions Ltd.

It is intended that this success will be replicated throughout Wales.

Facilitation

The benefits of facilitators encouraging key organisations to work together to ensure a successful beef sector are already being felt and are equally directly applicable to the Lamb Sector

To ensure success in the longer term it is already clear that a livestock industry body must initiate and co-ordinate marketing at a strategic level. Its role will also need to encompass continuing industry development through commissioned R&D, promotion and information dissemination as is currently happening via the EU EAGGF-funded ADAS 'Quality Beef Production in Wales' project.

David Roderick

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Richard Parry, farmer, Pullbelt, Wales with his Charolais X beef cattle.