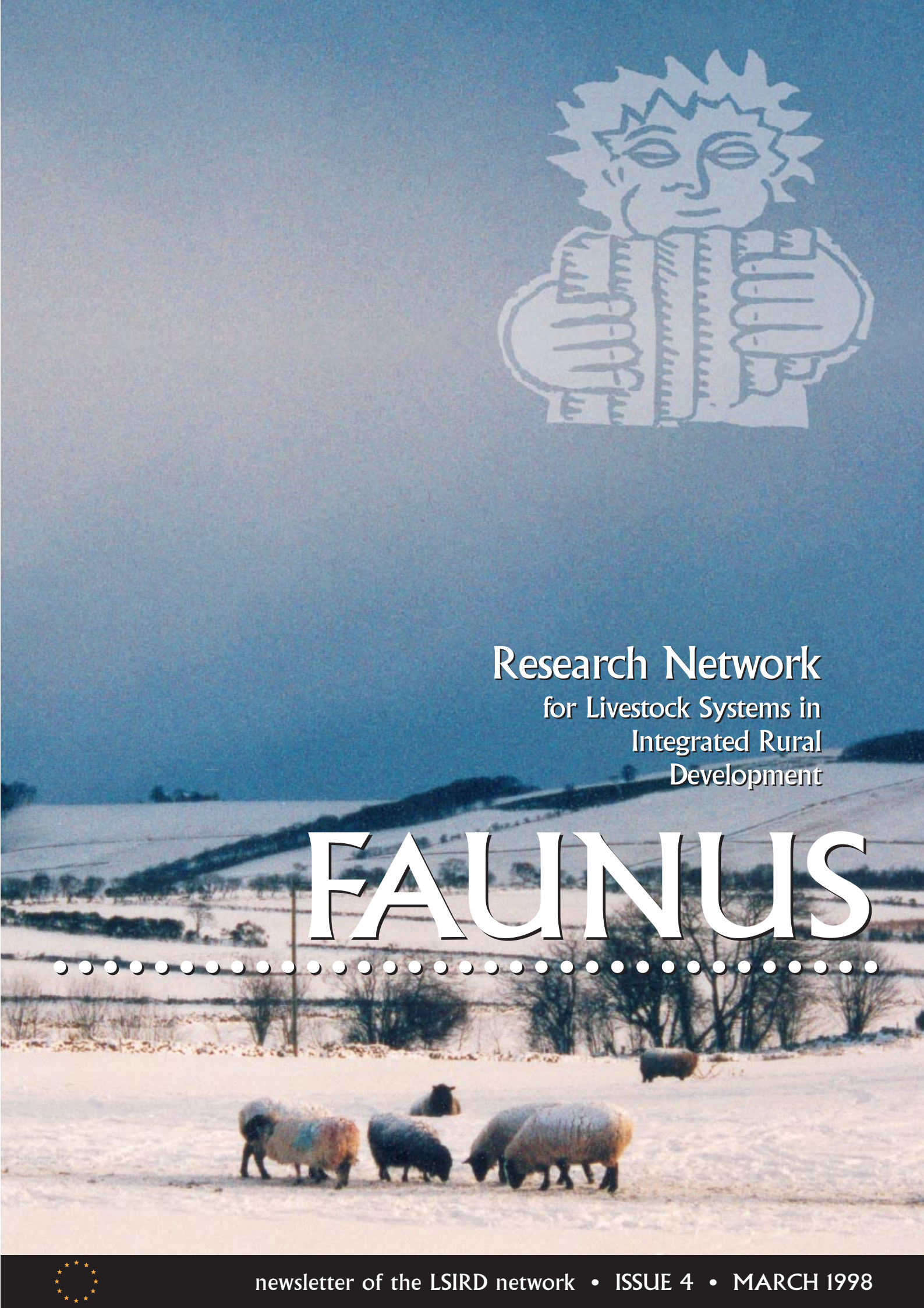

Research Network
for Livestock Systems in Integrated Rural Development

FAUNUS

newsletter of the LSIRD network • ISSUE 4 • MARCH 1998

LSIRD network

A Review of Progress

Our objectives

The LSIRD network aims 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 on the development of the sector through the medium of conferences and focused workshops.

The research community needs to explore the development of alternative ways to maintain income levels in rural areas in the longer term. In the LFAs there is a strong need for such alternatives to be compatible with sound environmental management, particularly with regard to maintaining floral and faunal diversity, an attractive landscape, low pollution and where appropriate, public access to land.

Animal production is one of the principal means by which this can be achieved.

by Jerry Laker

Livestock Systems

maintaining biodiversity in the LFAs

Tour du Valat workshop

Our most recent workshop at Tour du Valat in France has underlined the central role that appropriate livestock systems in the less favoured areas of the EU play in managing biodiversity. In the LFAs, the net productivity (total agricultural production less total value of subsidy) is low, while the same regions have a high environmental value. While assistance to the rural populations in the LFAs is crucial to counteract the process of marginalisation, this support should encourage the development of livestock systems that are compatible with maintaining/enhancing the nature conservation and landscape value of the region. The third workshop of the LSIRD network sought to develop these ideas into specific plans for research and to share experiences of environmental management between research workers in the different regions of the EU. Environmentally motivated policies currently account for a low proportion of total farm support, but there are strong indications that this proportion will increase. Environmental management offers some important opportunities for farmers as a source of income. Farmers need the support of the research community to adjust their farming systems so as to benefit from the shifted emphasis in the CAP.

Metsovo workshop

The final workshop of the series, which will be held in the village of Metsovo in the mountains of central Greece, will explore the implications for livestock systems as the CAP evolves away from farming support towards a broader policy of integrated rural development. The primary objective is to explore the opportunities and needs for research on livestock systems within the context of rural development, i.e. what can livestock production contribute to European rural development and what research is needed to make it happen ?

The combined reports from the workshop series will be published in print and on the internet in the autumn, and reported at our conference in December.

The 2nd Conference of the LSIRD network

The LSIRD Concerted Action project is now in its final year. Since the opening conference in Nafplio in January 1997, we held four workshops, covering a wide range of issues related to the development of livestock systems appropriate for the European LFAs in the next century. The network has published articles and papers from the first conference, the three workshops held so far, and in Faunus magazine, from approximately 80 experts representing all the main LFA regions in Europe. This broad consultation has drawn in specialists in policy, environment, and economics to consider some of the major problems facing LFA livestock producers, and to attempt to create a framework for research to underpin the development of sustainable production systems. We have also commissioned three feasibility studies on diversification opportunites (the first of which is summarised in this issue), to provide a comparative European analysis of the potential of these enterprises.

The LSIRD will be holding its concluding conference in Ireland (2-4 December 1998), which will provide a synthesis of the results of the workshops and feasibility studies, and to put forward a plan for integrated research that will reflect the special situation in the LFAs.

The Conference will be held in at the Royal Hotel in Bray, a seaside resort to the south of Dublin, Ireland on 2-4 December 1998. Registration forms are available from the network address, or on the LSIRD website.

LSIRD online http://www.mluri.sari.ac.uk/~mi361/lsird.htm

FAUNUS

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Cover illustration: A late spring at Bograxie, Grampian Region, Scotland.

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Economics of Mountain Systems

A new Masters course for alpine regions has been established under the EU Socrates university programme dealing with the specific problems of mountain regions.

Europe's mountain regions are faced by specific problems, whose solution requires specialists with an interdisciplinary educational background. However, up till now, there has not been an appropriate training programme for such specialists. The problems in these regions involve a number of subjects, including agricultural economics, ecology, sociology, geography, agricultural engineering etc. It is currently impossible for any one student to cover all these disciplines during their education. Therefore, it was decided to develop a specific postgraduate course which would produce the human resources needed for dealing with the multidisciplinary problems encountered in mountain regions. Since these problems tend to be the same irrespective of the region's location in Europe, it makes sense for all the countries with such regions (France, Italy, Portugal, Germany and Austria) to work together towards this common goal.

The course lasts 1-2 years (part of which must be spent abroad), has a strong vocational emphasis, and makes extensive use of telelearning (virtual network). The five partner universities are each developing specific courses (the degree would be based on a modular format, e.g. agricultural marketing, tourism, agricultural engineering, ecology and landscape design, sociology etc.). For further details, contact the project co-ordinator, Prof. Walter Schiebel.

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the reintroduction of the

ELK

a viable prospect for European wetlands?

by Thiérry Lecompte

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^2. 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/cm2 .

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 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.

A pluri-disciplinary feasibility study, undertaken within the LSIRD network project, and already supported by the Fondation de France, aims to assess this idea, with the final objective to introduce this species in the Vernier marsh (Normandy, France). The report will be published in the autumn alongside the other two feasibility studies (cashmere goats and ostriches), and reported at the LSIRD conference in December.

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Improving results from Welsh Mountain

Sheep Breeding Groups

by Lyn Powell

Welsh agriculture is highly livestock orientated with nearly 30% of total output arising from lamb production. With 80% of the agricultural land designated as Less Favoured Area, hill and upland breeds of sheep predominate and the Welsh Mountain breed constitutes 40% of the total ewe population. There are more examples of schemes to genetically improve the Welsh Mountain through performance recording them with any other hill breed in the UK; but less than 5% of flocks are involved. This situation does not auger well for the ability of the industry to respond to changing market requirements.

A new project (EU 402-13-004: Objective 5b), based at the ADAS Pwllpeiran Research Centre in the Cambrian Mountains of mid-Wales, aims to generate information which will further encourage co-operation between breeders of Welsh Mountain sheep so that a larger pool of performance-recorded animals is available for selection. Existing co-operating groups will benefit and hopes for the expansion of genetic improvement schemes (sire referencing, in particular) will be enhanced. Such co-operation will only be entered into wholeheartedly when all involved are convinced that they might gain and, importantly, reassurance must be obtained that local genotype bears little relationship to performance in modern day sheep management.

Interbreeding of superior animals borrowed from existing groups of co-operating breeders in both 1996 and 1997 provided:

1) males which, it is hoped, will be acceptable for use throughout all Group Breeding Schemes and which will enable comparisons to be made with "home"-bred animals and

2) females which will be retained at ADAS Pwllpeiran Research Centre for 3 or 4 lamb crops in order to evaluate the significance of local genotypes.

Methods

Sheep of higher genetic merit for growth potential and maternal ability (based on an index derived from long term performance recording) were obtained, on loan, from three Group Breeding Schemes ie CAMDA from Snowdonia, Llysfasi from N.E. Wales and CAMP from the Cambrian Mountains in mid Wales. The three Ram Performance Tests involved were at Bangor, Rhayader and Ceredigion. Back fat and eye muscle scanning results were used in compiling indexes for these rams. Twelve mature ewes and two rams were borrowed from each Group Breeding Scheme; and one ram from each Ram Performance Test. All borrowed sheep were of an acceptable physical appearance to their parent Group. Production of offspring was maximised using Multiple Ovulation Embryo Transfer technology (MOET) and gathering of all sheep at Pwllpeiran eliminated management and environmental differences. The aim was for each donor ewe to produce at least 8 viable embryos.

In 1996, the ewes and rams were assembled during the week commencing 23 September and housed. Twelve ewes were programmed for embryo collection and transfer on each of the three consecutive days. Three hundred Welsh Mountain ewes from the Pwllpeiran flock acted as recipients for single embryos with 100 being programmed for each day. The donors were mated by natural service.

Lambing commenced on 10 March and was completed on 19 March. Ram lambs were reared on permanent pasture at sea level while the females were reared on improved mountain at 500 m. Weaning was on 21 and 22 July. Participating flock masters made a selection of 22 ram lambs on 14 August 1997 and these ram lambs were transferred to lowland paddocks on 8 September.

Results

Pregnancy scanning on 10 December revealed that 231 ewes carried a foetus resulting from embryo transfer. The outcome was 223 live lambs at birth with a mean date of birth of 16 March.

On 14 August, 63 breeders from all participating Groups and Tests met at Pwllpeiran to select those ram lambs which might have the potential to develop into 18-month-old males which would be acceptable to the Group Breeding Schemes as stock rams. Eighty six were discarded, partly on liveweight but also on physical appearance. Some had obvious deficiencies in legs, conformation, fleece and horn positioning. Others were rejected because of the shape of the head and lack of a strong masculine appearance. Twenty two were retained and it is at the selection of the final three rams that the debate about type will become most heated. Quantity of red kemp in the fleece will then become a major selection criterion, as will other less easily quantifiable characteristics which go towards defining "type". Mean weaning weight of the selected 22 rams was 40.2 kg compared with 37.6 kg for all ram lambs.

August 1998 brings a critical test. Will all three Group Breeding Schemes be able to agree on a ram which can be used, by AI, over all flocks? Genetic potential is not in question. The project very publicly confronts the pre-occupation with "type" which significantly affects decision making by hill and upland flockmasters. It is only by practical demonstration and frank debate that a major hindrance to genetic improvement of hill breeds will be removed.

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Animal HUSBANDRY

IN THE MEDITERRANEAN REGION OF SPAIN

The Alpujarras, situated in the South of Spain, is a marginal landscape with a considerable variety of micro- and macro-climates. There exist therefore some subclimatical ecoregions extremly rich in botanical variety. Agropastoral farming-systems play an important role in agricultural land use, so that changes in the socio-economic basis of agricultural production are forcing livestock owners to adapt to these changing conditions. This process of adaptation has been investigated in a strategy paper.

Basics

The climatical variety in the Alpujarras includes humid climate of the Sierra Nevada as well as surroundig Mediterranean climates. This leads to a variety of ecoregions characterized by particular vegetation associations and traditional agricultural land-use forms. The Alpujarra can be subdivided into four main ecoregions:

1. Southern Sierra Nevada
2. Alpujarras Altas
3. Piedemonte y Hoyas
4. Sierra de la Contraviesa

Background

Spain's agricultural policy has supported transhumance systems for a long time. In the Alpujarras, there can be found typical combinations of agriculture and animal husbundry in transhumance, and consequently specific cultural and social formations. Spain's joining the European Community was the last step in a series of significant social-economic changes with influences on agriculture. As a consequence, sustainable agropastoral systems in the Alpujarras require adaptation to these new conditions that takes into account natural limits as well as social-economic aspects. An appropiate agropastoral subclimax has to be found.

Study-results

The field study is based on open interviews with herdsmen who were selected according to qualitative principles. Apart from that, the interchange of opinions with agricultural extensionists and advisers, as well as with the respective departments of the University of Cordoba, helped to gain a comprehensive understanding of the situation. During the study differences in sheep and goat husbandry were noted down, especially the importance of EC-subsidies for the economic sustainibility of transhumance husbandry. The farming systems described in the study allow a forward-looking development of animal husbandry in each ecoregion.

Southern Sierra Nevada

This region is said to be one of the richest in endemic botanical species on the European Continent. Due to climatic isolation and long-term transhumance a specific subclimatical vegetation has evolved. The most serious problem lies in the inability to determine carrying capacity according to natural pasture land capacity. Meanwhile, European subsidies increase the incentive for herdsmen to overstock the mountain grazings.

Alpujarra Alta

In the Alpujarra Alta the agricultural component of agropastoral transhumance systems predominates the existing land-use systems. During the six months of winter, goats and sheep generally pasture there, whereas in summer they move up to Sierra Nevada. Agropastoral components are of essential relevance for the social structures in the villages.

Piedemonte y Hoyas

Although there exist farming systems similar to those in the Alpujarra Alta, agriculture is clearly dominated by cash-crops. Animal husbandry has, therefore, to adapt to this economically more interesting branch of agriculture.

Sierra de la Contraviesa

This region is even more clearly dominated by cash-crop production. Goat husbandry still occupies some niches that remain from historical transhumance. In the foreseeable future the extension of intensive agriculture will restrict these niches.

A full copy of the report may be obtained from the author.

Strategy paper for an adapted development of sheep and goat husbandry in the Granada Alpujarras

by Hubertus Beckmann

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ENVIRONMENTAL benefits

of traditional farming systems in European agriculture: a socioeconomic analysis

by Joan Cumming

The traditional livestock system of the Scottish Highlands plays a vital role in creating and maintaining valued wildlife habitats and landscapes. In common with many other environmentally-friendly farming systems throughout Europe, however, it is being lost due to intensification or abandonment of agricultural management.

This situation is being explored in a research project currently being conducted at the Macaulay Land Use Research Institute*. As part of this project, the views of farmers, crofters (small farmers), rural interest groups and policy makers is being sought to establish what opportunities and constraints they envisage in maintaining or reintroducing the traditional livestock system in the Highlands.

Traditionally, livestock farming in the Highlands concentrated on cattle rearing, mixed with sheep production and rotational cropping for winter feed. A form of transhumance was central to the success of this system. Cattle were taken to the more distant 'sheiling' pastures on hill ground for the summer months, enabling crops to be sown on the (then) unenclosed arable land and conserving the grasslands closer to home for haymaking and winter grazing.

Cattle, being less selective grazers than sheep, eat the less palatable, tussock-forming grasses, such as purple moor grass and mat grass, which can become dominant on hill pastures grazed exclusively by sheep. If allowed to grow unchecked, the leaf litter of purple moor grass also inhibits new spring growth. By grazing down these coarse grasses, cattle help to maintain the plant species diversity, the agricultural value and the scenic beauty of the Highland hills. The practice of grazing cattle on hill ground, however, has declined greatly in this region. Many cattle producers now rear continental crosses (e.g.. Limousin and Charolais) which are not adapted to hill conditions and are kept on more productive, improved pastures.

The practices of rotational cropping (with spring-sown cereals and root crops) and haymaking continue in the crofting areas of the far north and west, but are in decline in these areas also. Many crofters now specialise in sheep rearing and there is an increasing reliance on purchased feed. Much abandonment of agricultural use is also taking place. The mosaic of habitats created by traditional cropping, supports a much higher diversity of species than the more intensively managed pastures, silage fields or arable monocultures which now replace it on many areas of inbye land in the Scottish Highlands.

The Environmentally Sensitive Areas schemes (ESAs) operating in various parts of the Scottish Highlands offer annual payments for farmers and crofters to carry out management activities of benefit to wildlife. Many of the management prescriptions follow, or are derived from, traditional practices. However, the ESAs are not designed to promote the continuation or reintroduction of a specific farm system, but rather to encourage the implementation of management practices which benefit specific habitats or species. Incorporating low-intensity, but often highly labour intensive practices, into the day-to-day activities on agricultural holdings, can be difficult if not impossible in cases where the farm system has been intensified or specialised in response to production-led agricultural policy. Management of land for ESA purposes can be little more than an add-on to the main farming activities in these circumstances and farmers often find that land managed under ESA management requirements must literally be fenced off from land managed for crop and livestock production, if ESA management prescriptions are to be followed.

The traditional livestock system on the other hand incorporates practices of benefit to wildlife as part of the mainstream activities. If a method of support was devised which targeted the farm system, rather than concentrating on or isolating specific practices, farmers might find the continuation or restoration of wildlife-friendly, traditional agriculture more of a viable prospect. Furthermore, market prices for agricultural products in the EU are being adjusted downwards in the move towards world price levels, which presents particular difficulties for farmers in the less productive LFA regions. The traditional livestock system could present opportunities for developing value-adding or niche-marketing initiatives, to improve the competitiveness of produce from Highland farms and crofts. For example, the distinctive qualities of traditional breeds (e.g. the particularly flavoursome meat of Hebridean sheep and Highland cattle) and the wildlife and landscape benefits of traditional practices could present marketing advantages.

This research is particularly pertinent at a time when reform proposals for the CAP emphasise the need to de-couple payments from production and re-direct funds towards policies with environmental and social objectives. On 18 March 1998, the European Commission published its detailed proposals for reform of the CAP. This included a model for the future development of European agriculture, which stated the desire to foster 'production methods which are sound and environmentally friendly, [and] able to supply quality products of the kind the public wants' and 'diverse forms of agriculture, rich in tradition, which are not just output oriented, but seek to maintain the visual amenity of our countrysides, as well as vibrant and active rural communities, generating and maintaining employment'. This project will investigate whether the traditional livestock system of the Scottish Highlands could be the type of farm system to achieve such objectives.

*with funding assistance from Western Isles, Skye and Lochalsh LEADER II programme and Comhairle nan Eilean Siar (Western Isles Council).

Traditional farming practice on the Isle of Harris, Outer Hebrides.

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Future options for milk production in the Peak District

by Geraint Jones

Within the UK dairy industry, the recent fall in milk prices and the need to augment diminishing farm profits has made it necessary for farmers to look more critically at their businesses.

For farmers in the LFA of North Derbyshire, the effect of the fall in milk price has been felt harder than in many regions due to a more limited choice of milk buyers. The average herd size (45 cows) is also significantly less than the UK average (80 cows). This has meant that the introduction of heavy transport charges for milk collection by the main milk buyer in the area has had a far greater impact on the milk price than is the case elsewhere. The price differential between small producers (less than 200,000 litres/ year) and large producers (>1,000,000 litres/ year) can be as much as £ 0.01 to £ 0.05 / litre (5-25 % difference) depending on the buyer.

In view of the challenging times ahead a group of farmers from the locality have joined together to form a body, the Peak District Dairy Group, funded under the EU Leader II programme to look at ways to improve the marketing of their milk. ADAS has been appointed within the project to undertake a detailed study of the available marketing options for milk in the Peak District region.

The main objectives of this study are to :

- investigate the implications of creating a marketing structure that allows producers to improve their business stability by grouping together to supply market requirements;
- make an assessment of future market requirements on a national and international basis, taking into account future trends in consumer demand;
- identify potential market gaps or niche markets with particular considerations given to issues such as Quality Assurance schemes;

- answer a number of questions, such as:
  - what existing outlets are available to the producers?
  - if there is no suitable existing structure, what type of new structure will best meet their requirements ?
  - if a new structure is required, how will commitment be secured and information such as market requirements be relayed back to the producers?
- assess how changes to the CAP will affect members and the implications of the Agenda 2000 proposals on dairy farming.

Preliminary findings suggest that the way forward for these farmers will be to try and market their product on a more local basis.

The study also identifies the potential for farmers to join together to form a group structure. A tanker load of milk from a group of farmers in a localised area is far more marketable than milk from individual farms. The study will determine the optimum number of members and the optimum volume of milk, the compositional quality and hygiene standards required for that milk.

From the conclusion of the market research and initial reviews, benefits to producers are being identified. These include an effective marketing strategy concentrating on more localised marketing in order to reduce the burden of milk transport costs. Conclusions also point towards the rapid growth in the regional branding of dairy products, and the possibilities of developing a regionally branded Peak District product.

In view of the increased demand for organic produce, the option of organic milk production is also considered in considerable detail and for many producers this appears an attractive alternative approach.

The study, which is due for publication in May 1998, will outline a plan of necessary steps needed to establish a group, giving clear guidance on the management structure and staffing requirements. All conclusions will be aimed at providing a marketing strategy which gives long-term security and economic returns as well as opportunity for further growth.

The study aims to meet the stated aims for Objective 5b regions - "Local exploitation and marketing of Agriculture and Forestry products involving innovative and small-scale projects".

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Workshop host, François Mesléard.

TOUR du VALAT

Workshop

6-7 March 1998

Viable livestock systems for positive environmental management

It is becoming increasingly clear as the series of workshops moves on towards its conclusion in Metsovo in July, that there is considerable degree of consensus developing between researchers from all parts of the EU on the need for a special approach to the development of farming systems in the LFAs. These areas, in which agricultural activity is marginal, are also highly valued landscapes, particularly significant for nature conservation and outdoor leisure activities. It is essential that this context is taken into account in the development of future policies to support agriculture in these regions, recognising agriculture as an integral activity within the range of land uses in the LFA. Farming is important for employment, both on farms and in ancillary industries, but it is also central to the maintenance and development of landscapes, the maintenance of biodiversity, and indeed in defining the cultural identity of a region. This third workshop, held at the Tour du Valat Research Centre near Arles, France, explored the relationship between livestock farming and landscape/ habitat management and the implications of agri -environmental policies for the future research needs of livestock farming in the LFA.

The programme for the one-day meeting concentrated on three main areas: *Integrating conservation objectives into viable animal production systems; Policy in practice: assessing the implications of livestock and agri-environmental policies for the environment in LFAs;* and *"Marketing" environmental management*. These sections reflect the main areas of research necessary to address the constraints on animal production systems which will deliver sound environmental management.

Appropriate environmental management should be an integral part of a production system. Grazing strategies should balance the need for productivity against achieving an appropriate level of biodiversity for a specific site. This objective, which is closely linked with the need for more sustainable agriculture, should be strongly encouraged by the policy framework within which LFA farmers operate. The workshop heard examples from France, Austria and Spain of projects that are addressing the practical obstacles to establishing, or maintaining high environmental value farming systems. Policy plays a crucial role in the economics of farming in the LFAs and has a fundamental influence on the production systems that are used there. Three papers, from France, UK and Greece assessed the relationship between policy and practice in different regions.

Extensive farming systems generally will return a lower output per unit of land than more intensive systems. This requires that, in order to maintain viability, it is important for all the available opportunities for increasing the value of the products. Organic farming uses the image of its non-polluting, healthy production system in order to justify the higher retail price for its products. There is also in some areas considerable potential for exploiting regional images (attractive landscape, low pollution, traditional farming/food manufacturing etc.) to add value to products arising from livestock systems in the LFA. The workshop heard presentations on two projects in France that are aiming to improve the marketing of products from livestock reared extensively in nature reserves.

The Tour du Valat Research Centre is specifically dedicated to the study of land management for nature conservation in the Camargue river delta. The workshop concluded with a field trip to see some of the key sites in the delta, where grazing by "taureaus" destined for the bull ring is used to control vegetation in the periodically flooded lakes, temporary home to a vast number of migratory birds.

Jerry Laker

"ECOLOGICAL Lawnmowers"

for maintaining biodiversity

by France Drugmant

The disappearance of traditional grazing practices endangers biodiversity in many interesting environments: wetlands, marsh, peat bog, moorland, and dry grasslands. Concerned to safeguard this living heritage, the managers of protected areas in France have experimented with "ecopastoralism" - the management of the environment by extensive grazing. Amongst these, 30 pilot sites have been assembled within a national network for research and demonstration to aid in the sharing of results and experience. This network is known as E.S.P.A.C.E. (Entretien des Sites Préserver par des Animaux Conduits en Extensif)

Data collected on the pilot sites has enabled protocols to be established for the management of natural environments by grazing, and to encourage the involvement of the main actors.

The programme aims to define:

- performance and adaptive capacity of the animals in response to their management and environmental conditions;
- appropriate stocking rates to achieve the environmental management objectives;
- the impact of the animal on the vegetation and dynamics of significant species;
- the cost of management of a given environment given specific objectives.

These protocols ought not only to contribute to the establishment of management plans in the protected sites, but also to the definition of economic ways to manage many land types facing agricultural decline. These concerns have a wider significance than the protected areas of France and apply to all the marginal areas of Europe.

The ESPACE network brings together the French networks of nature reserves, regional natural parks, national parks, regional site conservatoires, into a common programme. While representing a wide rage of habitat types, all the sites have as an objective the maintenance or restoration of an open landscape by extensive mixed or single-species grazing with cattle, horses or sheep.

To keep up with the state of progress, and to reflect on the subject of "ecopastoralism", land managers have an annual meeting. Communication is enhanced by regular publications and a newsletter, "Pique-Boeuf".

The ESPACE programme is cofinanced for 5 years by the Ministry of Land Management and the Environment, the Ministry of Agriculture and Fisheries, the National Office of Hunting (Office National de la Chasse) and the European Commission (DGXI, LIFE environment) and Natural reserves of France. The project is coordinated by the Federation of Regional Natural Parks.

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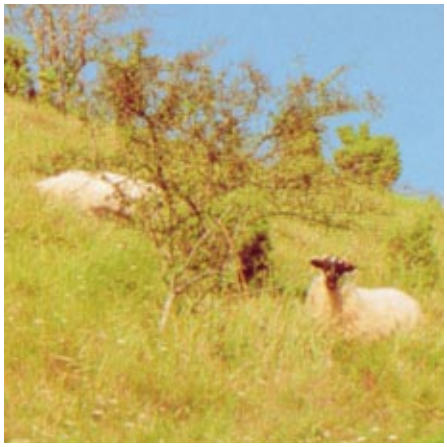

Integration of environmental concerns

INTO MOUNTAIN AND HILL FARMING

The Euromontana project, undertaken by the European Association for Mountain Areas for DG XI, has spent 18 months making a detailed analysis of agricultural practices in mountain areas around the EU, with the aim of identifying the positive and negative environmental impact of Community policy instruments. The Euromontana project is based on 25 case studies, each chosen to be representative of a region, and together to represent a diverse range of situations.

The aims of the study have been as follows:

1. Analysis of the environmental aspects specific to agriculture in the mountain areas: constraints and assets.
2. Environmental assessment of the various community instruments which have an influence on mountain and hill farming: eg. directives on "Wild birds" and "Habitats", agri-environmental measures, forestry measures on arable land, rural development programmes and other structural measures (Objectives 5a and 5b, LEADER, INTERREG, etc.) and market support instruments.
3. Presentation of possible options for detailed integration of environmental concerns into agriculture in mountain areas: modification of existing instruments and/or definition of new instruments; advantages and disadvantages of these options, distinguishing the provisions intended to prevent environmental pollution from those which aim to improve the quality of the environment.

The case studies have been grouped into 5 geographical regions: Mediterranean dry mountain, Nordic region, central and eastern Alps, western Alps, Oceanic region and central Pyrenees. The common and specific characteristics of each have been studied in terms of climatic and topographical constraints; environmental factors, such as water resources, soils, landscape, air quality and biodiversity; agricultural practices; and socio-economic indicators, such as rural employment, demographic trends, farm size, pluriactivity, agricultural incomes and the vulnerability of farm businesses.

Farming practices typical of upland regions, such as summer grazings, transhumance, hay making on slopes or high altitude pastures, and terrace cultivation are crucial for maintaining floristic diversity, typical wildlife, and characteristic landscapes. In many of the regions, abandonment - an extreme form of extensification - is the principal cause of environmental degradation. In others, intensification, principally of animal production, but also plantation forestry etc., is associated with pollution of air, water and soils, and is the greater threat. The Euromontana project makes the case that traditional savoir-faire must be linked with modern techniques that allow an improvement of working conditions and economic profitability, and that this is particularly significant in mountain areas, where the double role of agriculture, for production and environmental management, is at its most obvious.

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CIRVAL

The International Resource Centre for Valorisation of Information in the small ruminants dairy sectors

In LFAs, animal production systems are dispersed and highly diverse. This characteristic is particularly true in the small ruminants sector around the Mediterranean Basin.

There is a real need for more regional-based information systems for farm advice. It is today possible with the development of modern technologies of communication and the establishment of regional trade organisations. However, extension services have some serious obstacles. The adviser's functions are changing rapidly. The extension worker is more and more a "change agent"; his role is to help the farmer or the shepherd to build his own diagnostic and to take the right decisions.

This global approach implies direct access to technical, economical, statistical, and general information. Adding value on information is also an important concept to promote the Information System of Agriculture in the LFAs.

As an operative tool for the Sheep and Goat sector, CIRVAL was set up in order to insure these interests and :

- improve the access to information and its handling by all the operators in these sectors: professionals, industrials, service agents, scientists, teachers, and decision makers (Scientific, technical, economical and statistical information, inventory of Resource Centres, skills and suppliers etc.).
- encourage a collective survey in all the concerned sectors: science, technology, economy, legislation, professional organisation and markets at regional, national and international levels. Promote the organisation of prospective groups and events to encourage the comparison of opinions, to increase synergies and bring together skills.

Activities and services

CIRVAL is a complete and easily used information system with

- A specialised data basis on CD - Rom with a direct access to digitised documents
- The TINTENNA Newsletter every three months
- A web site on INTERNET
- Realisation of synthetic dossiers, animation, logistic support , technological, economic and regulation surveys.
- Organisation of workshops and meetings

Organization

CIRVAL is an independent and specialised organisation with an international and diversified partnership within a Multilateral Constitutive Agreement. They decide and organise the activities and look for the funding. The agreement has as its members and supporters, the French Ministries for Agriculture and Research, Corsican region, international organisms (F.A.O., I.D.F., E.A.A.P…) French and Italian professional organisms, Research institutes (INRA, I.S.Z., IZCS,...), High Schools and Universities. The collective activity is run by an Association (PROCIRVAL).

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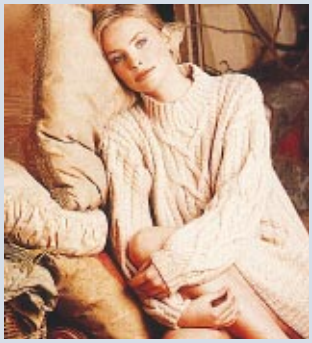

E.U. Cashmere PRODUCTION?

RESULTS OF LSIRD FEASIBILITY STUDY

by Angus Russel

The first of the LSIRD network feasibility studies on alternative livestock species indicates good prospects for the European production of cashmere. The European textile industry (principally located in Italy and the UK) suffers from extremely variable supplies and volatile prices of raw cashmere, most of which comes from China. The technical feasibility of producing high quality cashmere in diverse climatic and topographic conditions within the EU has been amply demonstrated in a now-completed EU project (co-ordinated by the author), and it is considered that cashmere produced in the EU would find a ready domestic market. Cashmere production constitutes an avenue for livestock diversification, well suited to marginal areas, and accords with many of the objectives of the EU's Common Agricultural Policy.

The feasibility study evaluates the costs of the establishment of new cashmere goat enterprises from the importation of embryos or animals, or by the grading-up of native goats using imported cashmere bucks or semen. 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. The genetic potential for the production of high weights of quality cashmere is likely to be greater in herds established from embryos than in those based on animal imports. Although national herds comprising substantial numbers of breeding does are likely to be established more quickly from animal imports, the physical outputs and monetary income of individual cashmere enterprises are likely to be significantly greater if they are based on livestock established from embryos or by grading-up, than if they originate from imported live animals.

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.

One of the production systems looked at in the report is based on castrates maintained on poorer land resources which are not well suited to breeding does. Estimated gross margins range from about 8 to 36 ECU per head, depending on the weight and quality of cashmere produced. Herds of cashmere goats, and particularly of castrates, can be used as grazing tools to bring about changes in botanical composition, including the control and eradication of undesirable plant species. It is estimated that the use of goats to eradicate gorse and bracken can result in benefits worth 29 to 36 ECU per goat per year; these figures comprise savings in herbicide costs and take into account the anticipated additional herbage dry matter production resulting from the eradication of the 'weed' species. Grazing by goats can also be used to reduce the risk of fire in forested areas and of underutilised vegetation on hill and marginal land.

The full report is available on the LSIRD web site, and will be published in print in the autumn, together with the two other studies on the reintroduction of European elk to manage nature reserves, and on the production of ostriches.

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