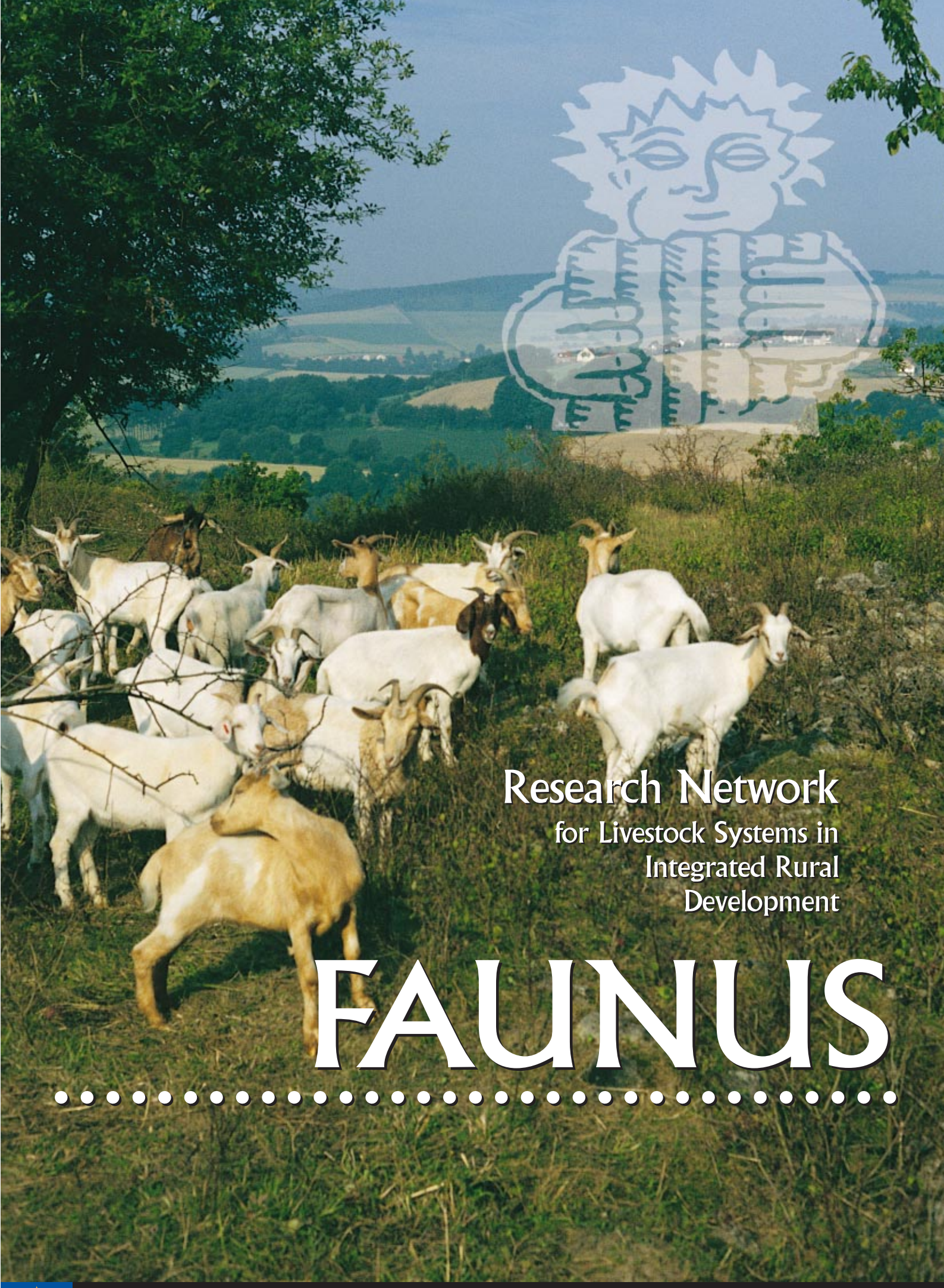

Research Network
for Livestock Systems in
Integrated Rural
Development

FAUNUS

newsletter of the LSIRD network • ISSUE 5 • NOVEMBER 1998

Our objectives

The LSIRD network is a Concerted action project of the European Commission, DG, 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 on 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.

Improved networking between European scientists is one small step in the achievement of these goals.

FAUNUS

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Cover illustration:

Witzenhaüser Landschaftspflegeziege

New breeding for new functions of animals in biotope management in Germany.

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Integrated Rural Development

by Jerry Laker

NEW CHALLENGES FOR RESEARCH

The Agenda 2000 reform of the Common Agricultural Policy will redefine the objectives of LFAs to the effect that EU support should contribute to:

- ensuring continued agricultural land use and thereby contributing to the maintenance of a viable rural community
- preserving the countryside
- maintaining and promoting sustainable farming systems
- assuring environmental requirements (Agenda 2000, Article 13).

This represents a fundamental change in emphasis within the LFAs, placing increased importance on rural development, sustainable farming and environmental management. Falling prices for agricultural commodities will continue to challenge farmers, but also put an increasing pressure for those farmers to seek out new markets for their products. Particularly in the LFAs, farmers will need to exploit niche markets by direct marketing, quality labelling, organic farming, or regional identification, to generate added value for their products. The pressing need to develop husbandry systems in the LFAs that are compatible with long term nature and landscape conservation as well as with rural support policies also raises some important challenges for research, to which the LSIRD network aims to respond.

The four workshops held over the last 2 years, and reported in this and previous editions of Faunus (collected workshop papers now available to order), have highlighted many issues specific to the European LFAs which demand a special approach from the scientific community. Central to these is the European policy framework, its political and social objectives, and the availability of agricultural and rural development funding. It is essential that the opportunities represented by this funding are not lost, and that investments are made, particularly in developing marketing channels for farmers in the LFAs, that will help these regions to become economically sustainable and less dependent on direct income support. Vertically integrated multi-disciplinary agricultural research that will link appropriate and sustainable farming systems, based on traditional knowledge and skills, with real, high value markets is urgently required. Such research is the central theme of the forthcoming Bray conference of the LSIRD network.

Meeting future economic, environmental and policy objectives through integrated research. LSIRD Bray Conference

The LSIRD network is drawing towards the concluding phase of the Concerted Action project. In December (3rd-5th), the 2nd conference will take place aiming to draw together the concepts developed through the workshop series for effective vertically-integrated research to support farmers adjusting to the changing conditions of the next century. The results of the workshop series will be summarised by LSIRD coordinator, John Milne, and LSIRD partner, Brian Revell, and the three feasibility studies commissioned by the LSIRD network on diversification options for livestock and vegetation management in Europe will be presented. There are, in addition, nineteen offered papers, representing some of the most promising ideas in ongoing projects around Europe, to be presented over the 2 day programme of talks. A discussion session is planned for the Friday evening on "Implications of Agenda 2000 for livestock agriculture in the European LFAs", introduced by Dr Owen Jones of the Forward Policy Unit of the European Commission, DGVI agriculture. The third day of the meeting, more relaxing, but no less interesting, is a guided tour of rural development initiatives within Wicklow National Park. With 70 participants registered, covering 13 EU countries, the conference promises to be a stimulating event and demonstrates the widespread interest and enthusiasm for research on sustainable livestock farming in the LFAs.

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

Ise-Niederung

Low intensity management of meadows and pastures in the highly intensive agriculture of Lower Saxony

by Karsten Borggräfe & Oskar Kölsch

The use of meadows and pastures in northern Germany has experienced significant changes during the last few decades. The form and intensity of landscape use has changed and restricted natural dynamic processes. The main development has been the ongoing loss of grasslands in favour of arable land and, parallel to this, an increase in the intensity of use of the remaining grasslands.

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An example of such development is the Ise-Niederung in Lower Saxony. The landscape has been widely adapted to the demands of intensive farming. The interests of nature conservation did not play any part. A project *"Revitalisierung in der Ise-Niederung"*[1] has attempted to revitalise this cultivated land. New strategies and approaches to encourage alternative, but nature-compatible, land uses have been established.

In the beginning, in 1990, the project met with disapproval and great scepticism from the farmers. Faith was gradually built up in the progress of the project through dialogue-orientated planning and activities, as well as attention to communication with all participants. With this faith, a great number of achievements were possible such as the buying of areas, small wood plantings and the reduction of river maintenance.

An important step was to buy land alongside the river Ise. Between 1991 and 1995 about 650 ha of riparian agricultural land in the Ise-Niederung was purchased by the *Aktion Fischotterschutz e.V.* (Otter protection campaign), the national forest administration and the regional council and it was put into extensive grassland use with unused grassland margins. From the 650 ha, about 300 ha of former arable land was converted to grassland. The meadows and pastures were rented under certain conditions by about 47 interested farmers.

This strategy to purchase a large amount of land, which was certainly right in the beginning of the project, does however tie up a lot of available funds. Another cost-effective approach to find support for nature-compatible land use is represented by regional marketing initiatives. A marketing association was established under the name **Ise-Land** by, at present, 14 farmers and 2 butchers. Management practices were negotiated between conservationists and farmers to ensure that their production systems were nature compatible. The farmers achieve for this way of production more than ca. 30 % above the normal meat price from the butchers. Two butchers situated in towns near the Ise-Niederung offer their meat at a price which is about 10-15 % above the conventional level. These products and their way of production were promoted through an extensive publicity campaign (farm-parties, reports in printed media, radio and TV). In addition to the purchased conversation areas, more than 340 ha of meadows and pastures are thus covered by management contracts and are run in a manner compatible with the environment, without the receiving of the usual 400 - 800 DM/ha/year of governmental compensation payment for this extensive running.

Within in the first year 13 t of beef was sold. The range of products was expanded to include sheep meat and it is planned to expand to other agricultural products in the future.

At the moment an advance survey of the Ise tributaries is being carried out aiming to expand this participatory model of nature conservation in the agricultural landscape.

[1]The *Erprobungs- und Entwicklungs-Vorhaben "Revitalisierung in der Ise-Niederung"* is financed by the *Ministerium für Umwelt, Naturschutz und Reaktorsicherheit, the Niedersächsische Umweltministerium,* the *Landkreis Gifborn* and the *Zoologischen Gesellschaft Frankfurt e.V.* and the Ise-Land project is financed by the EU.

The Protected Denomination (PDO)

secures added value for traditional production systems in the Basque Country

The Basque country has an ancient history of livestock grazing. Probably since Neolithic times, the Basques knew how to exploit the passing of the seasons by moving their cattle from the pastures on the coast in winter to the mountain grazings in spring and summer in the practice of transhumance which still survives today.

This tradition is based on three elements:

- a sheep - the Latxa, a hardy breed, perfectly adapted to its environment, resilient, good for exploiting mediocre pastures, and which produces a milk of the highest quality, though until recently in small quantities.
- an environment - formed by this seasonal cycle which has shaped the landscape found today in the high pastures of the mountain ranges - the *sierras* of Aralar, Urbesa, Gorbea, Aitzgorri etc. that give their names to the cheeses that are made in the old cabins of the shepherds.
- a cheese, today known as Idiazabal, a registered PDO product. Having arrived at the conviction that the small variations in the production methods between farmers did not alter the essential nature of a unique cheese, Idiazabal has been defined as a raw milk cheese, made with natural rennet, pressed, either smoked or natural, and that is cured for a minimum of three months.

It is a scandal that because of result of natural and traditional production methods, the use of raw milk in the production of artesan cheeses is questioned. To make a cheese with pasteurised milk would not enable us to save all the laborious (and expensive) steps which determine the quality and the specific origin of our cheese: the same sheep, or the natural methods that the sheep and their shepherds have helped to define since the dawn of time.

This region, which has no more than 500 shepherds, of which some 100 make cheese with their own milk, plus about a dozen small-scale cheese manufacturers, has experienced in recent years a logical evolution provoked by some significant changes that have affected this sector:

- firstly, technological change in the broadest sense. There is a great selective pressure on the ewe in that in the past she was asked little more than that she survived and had a lamb. Now brucellosis and tuberculosis, which were widely endemic, have been eradicated, the nutrition has improved, production has increased, and control over the quality of the milk has allowed a substantial improvement in the quality of the cheese, whose manufacture has benefited from modern equipment (stainless steel) and better awareness of physico-chemical parameters.
- secondly, the creation of the *Denominación de Origin* (PDO) *Idiazabal* has catalysed the changes which the sector has had to make:
  1. The PDO has established a true market for the milk and the cheese, the value of which it has enhanced;
  2. It has attracted new consumers, and elevated the product to a high level of gastronomy.
  3. As a direct result of the PDO, production of the 1,200 tons/yr of the cheese has continued, and will be better secured in the long-term as a product essentially for the local market, protected from imitations and fraud.

The definition of the cheese has brought to light a product, made with respect for the essential characteristics of its quality and differentiation: the Latxa ewe, the grasslands, the raw milk, natural rennet and the smoking process. These characteristics secure added value in a society which desires not only to protect the environment but also to consume natural products of the highest quality.

Annttón Pérez de Calleja,
Presidente del Consejo Regulador
de la Denominación de Origen
Queso Idiazabal
Address supplied

The potential for organic farming in Less Favoured Areas

by Ray Keatinge

Background

The hills and uplands represent 53% of the land area of the UK, sustain approximately 60% of breeding ewes and suckler cows, and have well recognised ecological and landscape value. Most farms are traditional, family run units with modest incomes and limited opportunity to diversify to other farming enterprises. Historically, there was little incentive, financial or otherwise, to consider conversion to organic farming. However, against the current background in the UK of falling farm incomes, long-term CAP reform, and an improvement in the market for organic produce, previous inhibitions are being left aside and a greater number of producers are willing to consider the organic option.

The Project

At ADAS Redesdale, an experiment funded by the UK Ministry of Agriculture, Fisheries and Food was established in 1991, to evaluate the performance of organic farming in hill and upland areas. The Centre is one of 10 ADAS Research Centres, and is situated on the Pennines of Northern England. In elevation, the land lies between 160 m and 378 m. Soil type is mainly peat, over an impervious clay. Annual rainfall is 860 mm. The organic experiment consists of 500 hectares of hill and upland pastures supporting 700 breeding ewes (in four flocks) and 35 suckler cows. Grassland management is a variation of the 'Two Pasture' system, making use of inbye (3 per cent), improved hill (17 per cent) and native hill land (80 per cent) for sheep and beef production. The main management differences between organic and conventional stock are the provision of suitable organic rations, a modified grazing and veterinary programme, and the sale of organic store rather than finished animals.

Comprehensive data are collected on the physical performance of grassland and livestock, animal health and financial performance. Central to the project is the direct comparison of organic and conventional systems at the same stocking rate. Two further system studies, at reduced stocking rates of 15% and 25% respectively, provide information on the interaction of stocking rate with individual animal performance, changes in botanical composition and the overall profitability of organic production. Specific experiments have been set up to evaluate technical issues such as animal nutrition, controlling internal parasites, grassland pests and maintenance of soil fertility. In addition, further data (including full farm costings) are being collected from ten commercial organic farms linked to the main study.

Outcomes

The overall performance of the organic system has been above average for a hill and upland unit. Organically managed inbye fields produce at least 80% of the forage output achieved from highly fertilised conventional pasture. Clover content has typically been double that of the conventional fields. Smaller differences occur on the improved hill, with little or no difference between organic and conventionally managed native hill land.

At the same stocking rate, individual animal performance (ewe live weight, body condition score, lamb growth rates) has been lower than the conventional system.

However, reducing sheep stocking rate by 25% improved individual performance to a level above that of conventional stock. Flock health has generally been satisfactory, but an alternate grazing system with cattle and sheep has been required to control stomach worms.

Historically, market premia have been low for organic beef (10-15%), and particularly lamb (5%-10%). Markets and infrastructure have been improving in recent years. During 1998, organic store cattle and lambs were sold from the unit at prices 25-50% above conventional levels, reflecting current undersupply and the downturn in conventional prices.

Implications for farmers

Over the first six years of the experiment, payments made under the Organic Aid Scheme, a premium on the sale of organic store animals, and reduced forage costs have enabled the organic system to achieve similar, or improved, net farm income relative to the directly comparable conventional system. The potential for integration of other agri-environmental schemes has also been demonstrated. Where stocking rate had been reduced by 25%, a combination of the Organic Aid and Moorland Scheme payments, actually increased flock gross margin during the first five years after conversion.

The sustainability of the organic system will require longer-term evaluation. Issues remain, for example, about long-term profitability, maintenance of soil fertility, weed control, and aspects of animal health related to developing EU standards for organic livestock. The relatively underdeveloped market for organic stock would benefit greatly from an expansion in lowland organic agriculture, providing greater marketing opportunities for organic store animals and breeding stock. Organic farming may not be the universal way forward, but for many hill and upland producers it is an increasingly valid option, particularly relevant for more extensively managed farms where the costs of conversion are limited. Organic farming is one strategy with potential to exploit the natural advantages of the hills and uplands. It is also a system that could help farms adjust to future changes in CAP, and is compatible with broader economic, environmental and social objectives for these areas.

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Sheep Grazing

in the Holm Oak Forests (Dehesas) of Cuatro Lugares, Spain

Situation, Problems and Possible Solutions from an ecological and socio-economical point of view

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Approx 3.5 million hectares of the Southwest of the Iberian Peninsula are traditionally used as semi-open grassland (*dehesas*). Dehesas have been created by agrosilvopastoral land-use lasting for centuries and consist of a sparse tree cover of Holm Oaks (*Quercus ilex*) and Cork Oaks (*Q. suber*), as well as extensive grazing and arable cultivation. The study area of "Cuatro Lugares" (400 km²) is situated in Extremadura/Spain and is, according to the EU-classification, an Objective 1 region and a Less Favoured Area. Some 56% of the working population are employed in agriculture. The dehesas have a strong international importance as breeding and hunting areas for globally endangered species like the Spanish Imperial Eagle. A research project of the University of Göttingen/Germany in collaboration with ADISA, a local organisation for regional development, is investigating the following questions:

- The extent of dehesas in Cuatro Lugares
- Does the actual pattern of vegetation agree with ideas for conservation?
- Are traditional management practices still carried out, like arable cultivation with long fallow periods or transhumance?
- How are products of the dehesas commercialised ?
- How do the Common Agricultural Policy and other public programs influence the development of dehesas?
- How can appropriate management be guaranteed permanently by means of public programs and added-value marketing?

Methods
The study area was mapped by means of aerial photographs. The identified areas of dehesa were overlaid by land register maps in order to describe the structure of landed property. On eight farms (*fincas*), an inventory of vegetation was recorded. On the same fincas, estate managers were interviwed about their agricultural practices and the economical situation of their enterprise. Further information was obtained through evaluation of statistics and literature as well as through discussions with experts.

Results
About 30% of the study region is covered by dehesas. Unusually in South-west Spain, there is a high proportion of dehesas in public or common ownership. More than 90% of the tree layer consists of one species – Holm Oak – and has an unbalanced distribution of age classes. The traditional raising of free-running pigs has declined. Domestic sheep and cattle, however, have strongly increased. Local breeds like the merino sheep still have – as well as introduced, highly productive breeds – a high relevance. The traditional shepherding and transhumance in summer have completely lost their importance. The sheep farms are producing semi-intensive lamb that is commercialized through a local cooperative directly to the centres of consumption in Spain. Some farms are marketing their meat for an extra charge by means of a protected certificate of origin and quality as "lamb from Extremadura".

Conclusions
The most threatening factor for the continuity of the dehesas is the gradual clearing of the tree cover due to ageing and the lack of regeneration. This is caused by an increase of livestock density, changes in the grazing regime and the loss of the economic value in the products of the trees. A sustainable development of dehesas could be reached by a reform of the Common Agricultural Policy, especially by optimising existing agri-environmental and forestry programs specifically for the region and the dehesas. New marketing strategies emphasising quality and conservation aspects could lead to increases in income from the farms.

The project report will be available in December 1998.

The Iberian Pig
IN THE SPANISH DEHESA

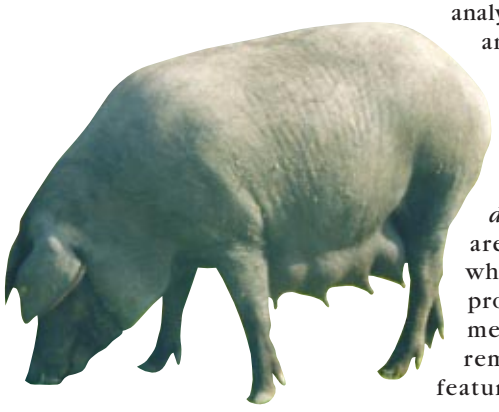
a brief history and thoughts based on technical and economic data

The Iberian pig derives from the primitive *Sus scrofa mediterraneum*, which colonised the Iberian peninsula in the sixth millennium B.C. Its exploitation was important for the ancient tribes, such as the Iberi, who erected monuments in its honour called *toros* or *verracos*. Later, the Romans came to appreciate the quality of the meat products derived from Iberian pigs. In the first century B.C., Columela explained in his book *On the labours of the country*, the production system used for the Iberian pig, some aspects of which are still found today. Pig production continued through the subsequent centuries, affected neither by domination from the north, nor by the subsequent invasion by the Arabs. With the discovery of America, the Iberian pig also colonised the new territories - according to some authors, playing a role even more important than that of the horse.

In the 18th century, there was a spectacular increase in the pig population, and by the second half of the 19th century it appears that this created a serious agricultural crisis. The first half of the 20th century was marked by intensification and replacement of indigenous breeds by exotics. This was the start of the crisis for the *dehesa*. By the publication of the first official census of breeds in the 50s, the number of sows of exotic breeds were shown already to equal the number of Iberian pigs. Then came African Swine Fever. This disease had far reaching effects, pushing the Iberian pig to the verge of extinction, and contributing to a massive clearing of the oak woods (that were no longer "profitable")

The recovery of the breed and its production systems began during the 1980s, achieving a significant expansion in the million hectares of wooded *dehesa* of Extramadura. The production systems used for Iberian pigs are diverse. The system differences, such as the cross-breeds used, infrastructure, etc., are related to the phase in the development cycle in the *dehesa.* But the great difference from the old systems is that formerly pigs were a complementary product - using the acorns in mountain areas mainly for fattening, though sometimes also for sows and gilts. Today the Iberian pig is the main economic product in the majority of the *dehesas* in which it is found, reserving the acorns exclusively for fattening.

Today, there are a number of important questions about the future technical and economic viability of the Iberian pig production systems. An EU project "Technical and economic analysis of the mountain and *dehesa* systems" (8001-CT90-0028) has analysed over a period of three years the management of 5 privately owned *dehesas,* covering an area of 3,000 ha, in which Iberian pigs are produced. The above-mentioned diversity remains a significant feature, with respect to crosses (inter- and intra-breed), buildings and equipment, reproductive strategy (one or two litters per year, one litter, followed by fattening in the mountains), supplementary feeding (home or commercial preparation), etc.



The supplementation with respect to the nutritional needs of the sows, though very high in some cases, is occasionally insufficient during times of scarcity of natural resources (summer). These periods of undernutrition are reflected in a reduction in reproductive indices (lower number of piglets per litter, reduced fertility, increase in perinatal mortality etc.), and as such reduce the productivity of the system.

One of the most important components of the technical viability of enterprises producing Iberian pigs is the specialisation and dedication of the workers. During the years of the analysis, a reduction has been observed in the hours spent on pig production on all the farms, as a consequence of the falling market prices. Moreover, in those *dehesas* in which there is still a pigman (*porquero*), the technical indicators are better than in those enterprises which leave responsibility for the pigs to casual workers

From an economic perspective, the Iberian pig constitutes the most important element of *dehesa* management, in some cases producing more than three-quarters of the enterprise's income. However, it is also these enterprises which generate the highest costs, if the use of the mountain areas (grasslands and acorns consumed) is taken into account. The non-existence of state support for the production of Iberian pigs impedes the improvement of gross margins. Pig producers are at a clear disadvantage with respect to other species produced in the region of *dehesas,* such as sheep, whose profitability stem fundamentally from the subsidies.

The exploitation of the Iberian pig in Extremadura shows promise. The following examples are contributing to progressive development:

- The presence of producer associations (AECERIBER)
- the regulation of the quality of the products (PDO *Dehesa* de Extremadura)
- the formation of cooperatives to connect the producer with the industrial sector
- research on the selection and improvement of the breed (Finca Valdesquera)
- process technology of cured products (Technology developed by the Veterinary faculty of the University of Extremadura, UEX)
- replanting of deforested former *dehesa* areas with Holm and Cork oaks.

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Productive efficiency

OF CATTLE AND SHEEP GENOTYPES UTILISING MOUNTAIN VEGETATION IN DISADVANTAGED AREAS

by K. Osoro, J. M. Vassallo R. Celaya & A. Martínez

The vegetation of less favoured areas in mountain regions can differ considerably in respect to the proportions of the different plant species present. Differences are also found between grazing animal species in these regions in terms of their grazing ecology, and within each animal species, there are genotypes differentiated in respect to their adult size, hardiness etc. and consequently with different management requirements.

The objective of the research projects briefly presented here and discussed was to compare the responses of two genotypes of cattle and two sheep genotypes when grazed on areas either dominated by herbaceous species (*Agrostis-Festuca-Nardus*), or with woody scrub (*C. Vulgaris*).

The experiments were carried out at an experimental farm (Cueva Palacios-Quirós-Asturias-Spain) located at an altitude between 1,600 and 1,800 m, whose vegetation consists principally of *Agrostis, Festuca, Nardus* and *Calluna*, with the presence of *Genista florida*. Two breeds of sheep, the *Latxa* (42.4 kg live weight) and the *Gallega* (33.1 kg live weight) and two breeds of cattle: *Asturiana de los Valles* (481 kg live weight) and the *Asturiana de la Montaña* (416 kg live weight) were used. Within each species, the breeds were chosen for their contrasting adult live weights. Both breeds of each species were kept in separate areas differentiated in respect to the vegetation composition, such that in one area herbs were dominant, covering 70 % of the area, while in the other *C. vulgaris* occupied some 70 % of the available surface area.

The work that was carried out over three years with all the species, demonstrated that the largest breeds had the highest growth rate and absolute intake in situations where the forage availability was highest (mean sward height > 3.0cm), though their productive efficiency in terms of live weight gain per kilo live weight of the mothers was not significantly different. However, when forage was scarce (mean sward height < 3.0 cm), as a consequence of grazing pressure, season, or the predominance of scrub cover, it was the breed of smaller stature that was clearly more productive, as much in absolute terms as relative to its live weight. In the most disadvantaged situations, it was the smaller breeds within each species that were found to be most efficient in their utilisation of forage resources (Figure 1).

Equally, in the comparison between species, production from the animals of smaller size, i.e. sheep, was clearly shown to be more efficient, especially in situations where the vegetation cover was dominated by *C. vulgaris*, as can be seen in Figure 2. Only in circumstances, where the height of herbaceous plants present in the mosaics between the *Calluna* scrub exceeded 5-6 cm, were cattle equal in efficiency to sheep. On the mountain grasslands, this makes little difference, as in most cases, after the first weeks of grazing, the height of the herbaceous component in the mosaic is reduced to less than 3.5 - 4.0 cm as a result of selection and grazing pressure.

As a result, when establishing a strategy for utilising a disadvantaged area with livestock, a number of parameters need to be considered, such as the components and quality of the available biomass; the animal species; the breed; and physiological state, with the aim of achieving the most efficient utilisation of grazing resources. Such systems should, as well as contributing to the maintenance of biodiversity, as far as possible be economically sustainable. On the mountain vegetation of *Agrostis-Festuca-Nardus* and *Calluna*, the smallest species and breeds, i.e. sheep in general and the *Gallega* breed in this case, are recommended in the areas most disadvantaged in respect to the vegetation resources, the topology, and climate.

These conclusions, derived from projects whose objectives provide the setting in which the priorities for the Common Agricultural Policy (the establishment of sustainable systems of animal production that increase profit to the farmers, contribute to sustainable land management, favour biodiversity and reduce the risk of fires and erosion) can be considered, require reflection and discussion, particularly in respect to the orientation of genetic improvement programmes. In many cases, the genetic improvement programmes for indigenous species and breeds are carried out with the almost exclusive objective of obtaining the highest growth rate per animal, with little attention to the quality of the meat, and without considering the environmental options and the type of production system, more than in a generic form, as a function of the effect on the farm enterprise. In the case of breeds less competitive in housed systems, but generally more hardy, their value as a tool for land management tends to be forgotten, as do the positive ecological qualities of their production.

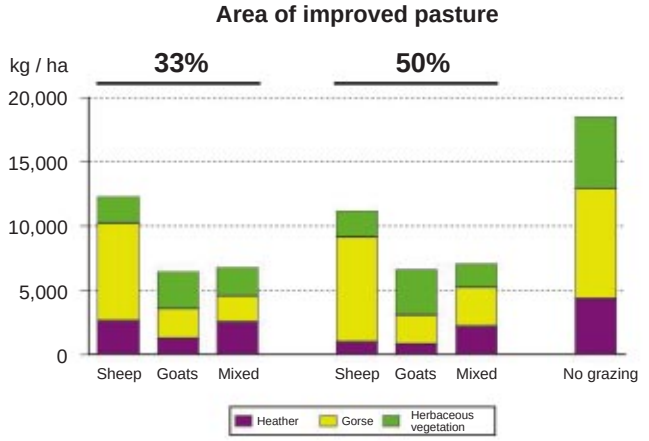

Figure 1: Biomass accumulation in partially improved areas of heather/gorse grazed with sheep, goats or with mixed grazing.

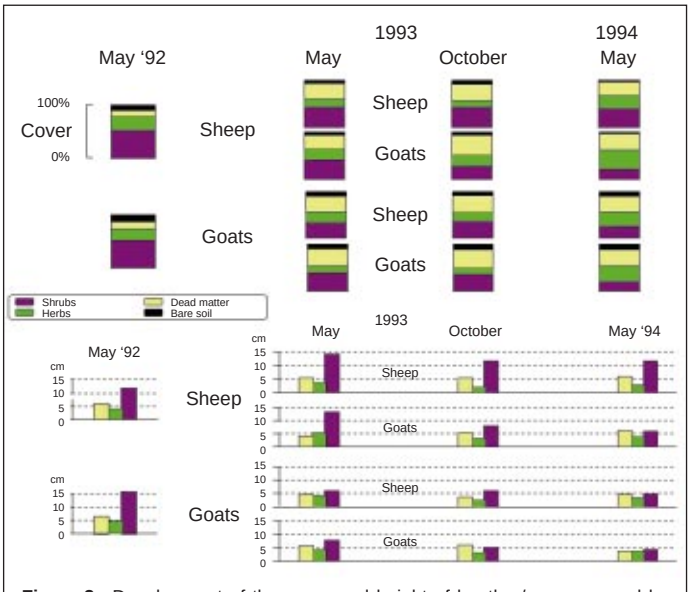

Figure 2: Development of the cover and height of heather/gorse, grazed by sheep or goats.

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PROJECT Elbe-ecology

MARKETING THE PRODUCTS OF NATURE CONSERVATION IN THE ELBE VALLEY

by Antje Wirthgen

Within the European Union, regional marketing concepts are receiving increasing interest – in particular in the less favoured areas. In many cases, these LFAs are also highly valued landscapes. One such example is the Lower Saxony part of the Elbe Valley Protection Area (*Großschutzgebiet Elbetal*) in Germany - as one part of the international "Elbe-Biosphere Reserve". This region, with its unique virgin landscape and diversity of biotopes and species, is particularly significant for nature conservation. Besides several nature parks and reserves, the area includes an integrated national park. Land use plays an essential role in the development and maintenance of this unique landscape.

Project "Elbe-ecology" is run by 8 University departments (with specialisations in vegetation, fauna, biotopes, nature conservation, land use, regional and environmental planning, economics and marketing), coordinated by NNA (Alfred Töpfer, Akademie für Naturschutz) and funded by BMBF (Bundesministerium für Bildung und Forschung). The project as a whole is looking at the central question, "How can agriculture and nature conservation be brought in accordance with one another ?". It is intended to show perspectives for sustainable agricultural development considering equally-weighted economical and ecological aspects. Thus, it is necessary to define regional models of nature conservation ("environmental quality criteria") and land use perspectives that the development of a regional marketing concept can be based on.

Besides limited tourism, farming represents the central economic base. As in similar areas, production is focused on meat, milk and cereals. The main objective of the marketing part of the project is to research the opportunities for, and threats to, regional marketing, with respect to the competitiveness of this specific production area,. A regional marketing concept is to be developed aiming to improve the efficiency of distribution channels. The focus is set on improving the marketing structure by grouping together in horizontal and vertical co-operations. This essential idea is accompanied by the attempt to add value throughout the development of a regional brand strategy, taking into account future trends in consumer demand. A regional brand can only be based on the image and the peculiarities of the region. Nevertheless previous economic studies, as well as the EU law for the protection of regional brands (EWG 2081 and 2082/92), state that the regional aspect on its own is not enough. Additional quality criteria are required. In this case, for example, an environmentally friendly production system.

The success of this project is highly dependent on the integration of the farmers living in the Elbe valley, as well as on the acceptability of, and preferences for, regionally and environmentally produced food in the distribution channel, especially retailers and consumers. This research objective makes it necessary to survey all levels of the food chain, including production.

At this time, first results of a farmer survey and an analysis of secondary research papers and marketing theory form the base for the planned further surveys (retailers, industry companies and consumers) in 1999. Finally in the year 2000 this project shall be finished off with an economic evaluation of the suggested concepts. Meetings will be held continuously with farmers of the Elbe valley in order to discuss aims, expectations and possibilities of the production stage.

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AGENDA 2000

What do the CAP reform proposals mean for the UK uplands?

Farming in the hills and uplands is under threat. Not only do farmers face the challenges of a harsh climate and poor soils, they are also facing declining incomes.

The British Countryside Agencies1 are concerned that agricultural support, through the Common Agricultural Policy (CAP), should reflect the importance of upland farmers in maintaining some of our most valued wildlife habitats and landscapes whilst ensuring that the rural economy remains viable and prosperous.

Mechanisms under the CAP, such as livestock premia and Hill Livestock Compensatory Allowances (HLCAs), have encouraged intensification and specialisation of farming methods in the hills and uplands.

Proposed changes to Less Favoured Areas policy

The Agenda 2000 draft regulations propose changes to the Less Favoured Areas policy (LFA) as part of a new Rural Development Regulation which will also include agri-environment schemes and a range of rural development initiatives.

- LFA support will be transformed into a "basic instrument to maintain and promote low-input farming systems";
- switch from headage payments to an area-based system;
- inclusion of areas affected by "specific handicaps", especially "specific environmental constraints".

The British Countryside Agencies believe that rural policy in the uplands, in the short to medium term, should incorporate:

- financial support decoupled from production with direct payments linked to environmental and social objectives;
- increased support for agri-environment schemes;
- commodity support subject to basic environmental conditions;
- a more integrated approach to rural policy, linking agriculture, the environment and social objectives.

Our objectives for agricultural support in the uplands are to:

- maintain viable and environmentally sustainable livestock farming
- encourage environmentally sustainable grazing levels across the LFA;
- improve appropriate management of livestock, especially sheep, through shepherding, etc.;
- support upland farming systems which sustain rural jobs and incomes;
- maintain and encourage variety in farming systems across the uplands;
- encourage farmers to carry out positive environmental management through appropriate incentive schemes;
- maintain, and if possible, increase the rural labour force and the rural skills base;
- ensure policy and land management practice contribute to the objectives under the UK Biodiversity Plan and for special sites;
- encourage the re-introduction, maintenance and development of locally distinctive "traditional" breeds adapted to grazing semi-natural vegetation;
- encourage marketing opportunities for the varied products of upland farms;
- improve opportunities for public enjoyment.

The above is a précis of issues and ideas on reform of LFA policy presented as one of a series of working papers by the British Countryside Agencies2 on aspects of the Agenda 2000 proposals. A further research contract is currently underway to develop these ideas further and will be concentrating on payment options within the LFA, transitional arrangements and redistributional impacts.

[1] Countryside Commission, Countryside Council for Wales, English Nature and Scottish Natural Heritage

[2] English Nature, the Countryside Commission, the Countryside Council for Wales, Scottish Natural Heritage and the Joint Nature Conservation Committee (1998) *Agenda 2000: CAP draft Regulations 1998. Working papers from the countryside agencies of Great Britain.*

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METSOVO Workshop

4th-5th July 1998

Integrated economic development of rural communities engaged in livestock production

The workshop series of the LSIRD network has aimed to encourage a more co-ordinated approach from the research community to the problems encountered by livestock producers in the European LFAs. The meetings have served to highlight the "special case" of the LFAs, and of the importance to establish in these areas farming systems that will enable farming incomes to be maintained, but that will also be able to fulfil the increasing demands of other countryside users and policy makers for landscape and habitats, local industry and products, and employment.

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 objective of the meeting held in Metsovo in June was to look at how these diverse issues in rural development can be addressed by future research, and to consider future interdisciplinary and vertically integrated (production chain) approaches to studying problems facing the economic development of livestock systems in the LFAs. Fifteen scientists from across Europe attended the one-day meeting, which was followed by a one-day field trip to see examples of rural development initiatives in north western Greece.

In the context of the Metsovo meeting, it was the crossover between livestock research issues, and those more normally thought to come within the realm of rural development, that were important. As, 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. The workshop heard of encouraging examples from Spain (Santiago Menéndez de Luarca, Consejo Superior Agrario), Greece (Dr Dimitris Katsaros, Institute of Mountain and Rural Economics) and the UK (Brian Angell, ADAS), of projects within each country developing small scale regional agri-food industry in rural areas, using support under the Objective 5b structural funds or the LEADER programme.

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 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 was argued that the trend towards marginalisation and abandonment of land in the LFA should be halted. This process is causing undesired changes in landscape, rural societies and damage to valued pastoral ecosystems. There are many imaginative and traditional examples around Europe of farmers using their endeavours 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.

Sustainable Agriculture

and Steppe Biodiversity in Russia and Ukraine

Steppes are a particularly good example of a land use where agriculture can co-exist with high natural and scenic values. Indeed, in the absence of wild herbivores, extensive domestic grazing systems may actually serve as indispensable management substitutes for the natural ecosystems. The low intensity of cultivation in the region has supported reservoirs of species that are capable of rapid expansion. There is therefore a window of opportunity over the next few years to throw a new perspective on how future agricultural development in Eastern Europe can integrate sustainable production with biodiversity conservation in the steppe zone. There could also be significant lessons for landscape management and reform of the Common Agricultural Policy in the European Union, which in turn has implications for the accession and integration states.

Since 1996, the European Programme of IUCN – The World Conservation Union has carried out a project on Sustainable Agriculture and Steppe Biodiversity in Russia and Ukraine. The principal aim of the project was to investigate the feasibility of a rural development model by the integration of sustainable use practices with the maintenance and restoration of biodiversity in steppe zones, leading directly to wider applicability of management practices and the development of a national policy for sustainable agriculture. The project is now in its closing stages, and preliminary results have proved encouraging.

Study farms were selected in Russia and Ukraine to develop business plans that would encourage ecologically sustainable agriculture, including arable reversion to steppe habitats. These studies provided many insights for the future restoration and sustainable management of steppe landscapes; although the farms operate within similar political, legal, economic and social contexts, their ecological circumstances differ and so the proposed strategies are also different. There is only space here to mention one study, and the Russian one has been selected as the farm was large enough to constitute a landscape in its own right.

The farm Druzhba ("Friendship"), which has an area of 17,800 ha on the eastern bank of the Volga River in Saratov oblast was constituted as a Limited Company in 1992 by the reformation of a state collective farm. The region where Druzhba is located is characterised by an arid, moderate to hot climate, with light-chestnut soils, which often form complexes with alkaline (salty) soils. It lies in a transition zone between dry feather-grass (*Stipa)* steppes and arid to semi-arid wormwood (*Artemisia*) shrub steppes. It is tentatively estimated that Druzhba supports about 300 species of vascular plants, about 2,500 species of invertebrates, 180 species of birds (including migrants), and 50 species of mammals. Several species, including the great bustard *Otis tarda,* the mantis *Bolivaria brachyptera*, and the tulip *Tulipa gesneriana* are listed as globally threatened.

The production statistics for the farm livestock operations between 1992 and 1996 clearly indicate a declining trend over the period of about 40% for milk and 72% for meat, as a consequence of the reduction in numbers of cows and pigs on the farm, and the lack of adequate forage (in terms of both quantity and quality). The poor results from agricultural production, combined with rapidly growing costs, have led to a very difficult financial position in the company.

Against this rather discouraging background, the IUCN study nevertheless revealed that there was significant potential for developing ecologically sustainable agriculture at Druzhba, combining higher levels of income while at the same time enhancing the conservation of steppe ecosystems. In fact, the introduction of ecologically sustainable agriculture at Druzhba is probably the best economic strategy for this farm given its geographic location and economic circumstances in Saratov region: it also possesses sufficient land, material and labour resources, as well as a satisfactory level of

administrative and management capacity.

As a first step to improve the ecological conditions and conserve scarce species, it is proposed to retire some 300 ha of arable land and 800 ha of steppe pasture, and to plant 160 ha of new shelter belts. These conservation measures can be compensated by introducing new systems of land use based on modern organic production methods on the rest of the farm, and by better utilisation of existing processing facilities, which would generate higher levels of financial resources, some of which could be needed to meet the costs of conservation management in the short term.

With respect to crop production, the IUCN management plan provides for:

- a crop system based on soil conservation with the use of fallow and leguminous crops;
- a four-field crop rotation system;
- conversion of arable land to agrosteppe pastures with cattle grazing controlled at a level compatible with maintaining a diverse steppe vegetation;
- investment in better agricultural machinery, especially hoes for weed control and manure-spreaders.

With respect to livestock production, it was recommended that:

- the cost of milk production must be greatly reduced by improving fodder availability and quality, eliminating low producing cows from the herd and investing in fresh breeding stock;
- a study should be made of the feasibility of reducing milk production in favour of increasing the level of beef production.

It is estimated that an initial investment of US$50,000 would be enough to start the recovery process, mainly through the establishment of an on-farm bakery. Thereafter, the farm would start to make a useful cash income that could be applied to further investments, which have been identified in the IUCN management plan.. In due course, it is anticipated that the conservation measures would provide new sources of income from sustainable harvesting of medicinal and ornamental plants, bee-keeping, and even farm-based tourism (e.g. camping, riding, angling, hiking).

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