



Research Network  
for Livestock Systems in  
Integrated Rural  
Development

# FAUNUS



# LSIRD a network

## TAKING SHAPE

by Jerry Laker

### Widening the net



### FAUNUS

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One of the lasting impressions of the Nafplio conference was the degree of consensus displayed between the participants on rural development issues, in particular, that it is essential that LFA farming systems must necessarily take on board sustainable agriculture principles, and exploit to the fullest extent the opportunities offered by value-adding activities, such as regional and eco-labelling, on-farm processing and marketing, and where appropriate, co-operative ventures between rural production and retailing enterprises. The message that many took away with them was that LFA livestock farming is developing as a distinct research field in its own right. There is an opportunity now to take the LSIRD network a stage further, and bring in more of the people who are active in research projects. The proceedings from Nafplio, (available now on the WWW, and soon in print) set out some of the concepts that will be developed over the next two years by the workshop series and this publication.

I would ask you to spread the word about the network, and encourage colleagues to register.

After one year we have a functioning network of innovative research workers. In the coming year, we can harness this dynamic, and develop LFA livestock research as an identifiable multidisciplinary field.

After almost one year, the LSIRD network is fast becoming established in its role to provide an effective channel for international co-operation, collaboration and idea-sharing for research workers interested in the special issues encountered in the European less-favoured areas. There are already some 350 signed-up members, representing 218 organisations spread across the EU engaged in livestock-related research, and we have held a major European conference. This is the first stage in building up a network of contacts that will be a powerful resource for those embarking on interdisciplinary projects.

Last November's Cork Declaration established the philosophy, at an EU level, of "integrated rural development", i.e. that policy structures aiming to stimulate the rural economy must recognise that agriculture plays only a part, albeit a major one, in a wider range of rural economic activities. This is likely, in time, to have far-reaching effects on agricultural systems, particularly in the LFAs - some 56 % of the farmed area of Europe. Livestock rearing is commonly the major agricultural sector in the LFAs, and it is being increasingly recognised that future systems will be encouraged to incorporate elements of traditional husbandry methods which have played an essential role in creating and maintaining the characteristic habitats and landscapes.

Future systems must be compatible with positive environmental management, as well as returning an adequate income to farmers, a demand that is leading to an increasing number of farmers engaging in some form of processing or speciality marketing to add value to their products, possibly in co-operation with other local businesses, such as restaurants and retail outlets.

### 1st LSIRD Conference NAFPLIO, GREECE

This drive to integration of rural development initiatives opens up new challenges for livestock research. There is increasing need for collaborative, interdisciplinary investigation which will combine existing knowledge and new technologies. The Network held its first conference, which took place in Nafplio, Greece on 23rd-25th January 1997. The Nafplio conference was an attempt to draw together experts in production systems, policy and economic research, and environmental management, in order to identify opportunities for synergy between the disciplines, and form a conceptual basis for the future development of the LSIRD network (*see full report on page 8*).

### LSIRD Directory of Current Research

The valuable contacts made in Nafplio will be developed and extended through the directory of members interests. Work on this has begun, and the progress to date can be found on the Internet site. This medium offers great possibilities both for getting current work known in scientific circles, and for establishing a detailed and user-friendly information resource. The database will be developed as a Web-based service, but will in the future be published in print. In the meantime, we can supply printouts to anyone without access to the database. An essential element of building up a useful information resource is your cooperation and enthusiasm. A leaflet giving details of the simple procedure to deposit and update information is available from LSIRD.

**LSIRD**online

<http://www.mluri.sari.ac.uk/~mi361/lsird.htm>



# Regional Targeting of EU AGRI-ENVIRONMENTAL SCHEMES

an integrated methodological approach

by Mark Morgan

The challenge facing agricultural policy makers throughout Europe today is to find a way of switching production from the current system towards one which is economically, socially and environmentally sustainable in the longer term. A key to achieving this end must come through a redistribution of CAP money to promote more sustainable forms of agriculture. A start has been made following the agreement of EU regulation 2078 made in 1992 whereby a percentage (4%) of all CAP money has been re-directed for spending on Agri-Environmental Programmes (AEP's).

The EU has now recognised the need for integrated research to look at ways to improve agri-environmental programmes in the future. The ultimate aim of EU Project AIR3 CT94-1296 is to arrive at scientifically justified recommendations for the optimisation and regionalisation of AEP programmes. Through the methodologies being worked on towards this end it is hoped that it will also be possible to develop tools for monitoring the environmental benefits resulting from AEP.

Two key areas of research are being followed by project participants:

- a Europe-wide analysis and evaluation of current AEP scheme design, delivery and acceptance by farmers which will enable future schemes to be designed in an optimum way so as to achieve their desired effects.
- an analysis of the current conflicts, both actual and potential, between the environment and agriculture which will allow recommendations to be made concerning regional targets which should be aimed-for in order to move towards more sustainable production.

The final recommendations will be based upon an integration of these two approaches. Results will be tested through a series of planned 'platform discussions' between farmers and policy makers in each study region before final presentation to policy makers in the EU and at national/state level in the member countries. Results will be ready at the end of 1998.

During the first 2 years of the project, methodological-development and data-collection has been co-ordinated by means of four interdisciplinary sub-groups (Table 1). The four groups work at different vertical levels (geographic and political) within each of the countries and, where possible, apply the methodologies to collect data from study areas selected in each of the countries involved. Within each of the study regions an AEP of some form (established there under EU regulation 2078/92) is offered to the farmers. The regions cover a broad range of agri-geographical conditions from intensively-used polders in the Netherlands to the uplands of the Swabian Alp in Southwest Germany.

The answer to the problem of how to achieve valid recommendations for each region must come from a careful vertical integration of the results from the various levels within the study regions. This will proceed in two steps. First all data must be collected from the various levels and used to build a complete picture ('leitbild') of the study region. Examples of the factors which should be known for each study region include:

- its agri-geographical location, including the physical environmental characteristics and the limitations they place on agriculture,
- spatially defined agri-environmental conflicts in the area, both actual and potential,
- the history and development of agricultural and environmental policy of the area,
- idealised socio-economic and environmental targets for the region,
- effective measures to achieve these targets which are within acceptable limits,
- an assessment of the effectiveness of actual agri-environmental programmes in the area and the characteristics of farmers who adopt the measures.

The main aim has been to develop a methodological approach to optimising AEP's throughout Europe, rather than attempting to make firm recommendations on what should be done in each area. It is

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**Table 1:** Specialisation and responsibilities of the 4 project sub-groups

| Sub Group | Specialisation                                       | Responsibilities   |
|-----------|--|--|
| I         | Institutional approach<br>- state and European Level | to understand and document the origins and development of agri - environmental policy. To investigate the implementation structure in the participating countries.   |
| II        | Targeting approach<br>- state and regional level     | develop a GIS based methodology for a regional landscape analysis which defines risk/conflict zones where AEP should support land use compatible with environmental targets for these zones.                 |
| III       | Modelling approach<br>- regional and landscape level | develop user friendly tools for rapid analysis of the effects of current and future AEP's on various social-economic and environmental parameters.   |
| IV        | Farm level approach                                  | to investigate the reasons for farmer participation or non participation in AEP. To identify areas where scheme design and delivery are necessary. To evaluate the ecological benefits of AEP participation. |



# SUPPORTING THE Countryside

## Policy Paper from the Scottish Landowner's Federation

by Maurice Hankey

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believed that through the regionalisation of measures, targeted to match the social, economical and ecological characteristics of any area, future agri-environmental programmes will play an extremely important role in supporting European farmers in a way that integrates viable production with the protection of our diverse natural and cultural European landscape.

### PARTICIPANTS

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Further information on this project may be found in the LSIRD directory, or from:

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The Scottish Landowner's Federation proposes a radical review of how public support is delivered, across Europe, to the countryside and its dependent communities. The 1992 reform of the CAP has brought stability to the farming sector, but existing support is restricted to certain sectors, and is now also determined by eligibility criteria, such as quotas and eligible land. The system is bureaucratic, distorts land use and fossilises the countryside and businesses. Production under the present CAP remains sheltered from the market place. These factors suggest that the CAP, as at present, is not an appropriate way of ensuring the health and well-being of the larger countryside, its businesses, and its rural communities. A much wider, and more integrated approach is called for.

In common with a number of other papers on the future of the CAP, the paper advocates a move towards world market prices, and the dismantling of existing support and supply management schemes (including all quotas).

In their place, and in line with the first aim of the Federation, the promotion of high standards of management and use of land, the paper proposes the introduction of an integrated Rural Land Use Support Scheme. This would provide essential support for the whole countryside in which the need for food and timber production is balanced with the needs of rural communities and the wider natural heritage.

The Rural Land Use Support Scheme would be backed up by wider measures to assist rural businesses and communities, including housing and infrastructure measures, provision of training and retraining facilities, and encouragement of co-operative and locally value-added initiatives.

Support would be provided through decoupled area payments, in response to submitting a 5-year management framework under which the land would be managed. Plans would be flexible and

capable of revision, but at all times would be required to conform to guidelines of good practice, and be appropriate to the locality, and to the resource available.

"Eligibility" for payments would be calculated by adding the support available under each of four "Levels", according to the commitments given in the plan.

Level 1: Land management payment (for adherence to Codes of Good Practice etc.)

Level 2: Environmental and Systems supplement.

Level 3: Social supplement for disadvantaged areas.

Level 4: Support for capital projects.

Receipt of payments would depend upon the level of "activity" generated by the plan, measured in terms of standard labour units. Each unit would qualify for tranches of support at each Level, subject to availability. This effects a form of moderation of support on an activity- rather than a size-basis, but does not constitute a job-subsidy. It provides a means by which support can be delivered to large and small businesses on an equal basis. The Scheme could be applied on a European basis, with member states determining the proportional relationship between the different levels, within an overall ceiling.

The approach of using a framework plan facilitates delivery of support to land-using businesses, often in areas where market-based income alone could not sustain them, whilst at the same time providing a means of applying environmental controls and incentives in a free-market situation.

Further information and a full copy of the report, Supporting the Countryside, Future Opportunities, may be obtained from:

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# REGIONAL IMAGES

## AND THE PROMOTION OF Quality Products and Services

IN THE  
LAGGING  
REGIONS OF  
THE EU  
(RIPPLE)



**A**griculture in the LFAs faces many uncertainties following CAP reforms of 1992, the GATT agreement on world trade and further EU reforms which will become necessary to cope with difficulties in the beef and dairy markets as well as to modify market and structural policies to cope with the addition of new member states from Eastern Europe in the next millennium. While much research to date has concentrated on farm-diversification as a solution to declining farm household incomes, this has often been conducted without any analysis of the markets for products from diversified enterprises and the wider framework of local and regional economic activities and structures within which they would need to develop.

The RIPPLE project which is being funded by the EU under the FAIR programme more generally will aim to help public and private institutions to develop strategies, policies and structures to assist in the successful marketing and promotion of quality products and services in the lagging regions of the EU. Innovatively, it will work on regional imagery and marketing in relation to the relative success and failure of quality products and services, both of an agricultural and non-agricultural nature.

More specifically, the project will:

- measure the local and regional cost-effectiveness of current marketing strategies and promotional activities among small and medium enterprises, including farms, and assess the producers' perceptions of any existing regional image-marketing activities in relation to their products;
- explore consumers' perceptions and requirements in purchasing quality products from lagging regions and the social, psychological and economic motivators for their purchasing behaviour;
- examine the marketing environment and strategies and institutional structures initiated by local government or development agencies to improve the marketing of products from lagging regions and identify good practice with

respect to regional promotion of quality products and threats to the image of these products from lagging regions;

- provide an overall evaluation of regional marketing initiatives and the quality products from farms in the lagging regions of the EU.

In particular, the project will help towards the development of models of regional images and marketing and criteria for assessing a priori the effectiveness of future policies and strategies to promote quality products. It will therefore enable individual farmers, farmer groups, small scale processors, local development agencies and local authorities to evaluate and develop more appropriate strategies for promoting their quality products on the basis of regional identity. The study will initially hope to focus on products such as organic foods, cheeses and rural tourism services.

**The project commences March 1997 and will run for 27 months. It will be co-ordinated by:**

Department of Geography,  
University of Coventry.

**Other partners are:**

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Rural Economy Research Centre  
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Improving wool quality and natural colours in the

# SOPRAVISSANA Sheep



by Angeliki Riganatou

The Sopravissana was first bred in the seventeenth century by crossing a local Italian breed with French Merinos. The breed became known for its wool quality (about 20µm). With competition from Australia and New Zealand, wool quality became a less important production trait, and breeders turned their attention to milk and meat production, including crossbreeding with other sheep breeds. This process has resulted in a reduction in the wool quality of the Sopravissana, which is now 22-25 µm (still a reasonable standard), and also the near extinction of the breed.

The breeding of Sopravissana sheep was a traditional rural activity in central Italy - the name originates from a small town in the Sibillini Mountains National Park, that extends through Umbria and Marche. Our project involves six farms in Marche, all situated in disadvantaged rural areas, three of them close to the National Park.

The objective of the project is to create a Breeding Centre for natural coloured sheep, by mating brown and black New Zealand Merinos with 200 Sopravissana ewes, for the following purposes:

- to improve the quality of Sopravissana wool. The Merino rams that are being used are extremely fine (16 µm).
- to create a genetic line of coloured sheep, in order to avoid all the toxic and dangerous procedures used to dye wool white (there is a further study that we are carrying out, investigating the processes of dyeing white wool with vegetable dyes. Creating the genetic lines will enable us to study genetic transmission of colours, especially brown. We will create a database and conduct experiments on mating and breeding coloured sheep, with particular regard to nutrition.
- to revive traditional local craftsmanship, and to promote this as a tourist attraction in a niche market. The project aims to create a linked chain from the breeding of the sheep to the final manufacture and marketing of the wool products, in order to stimulate the local economy. We are studying fibre quality, in collaboration with ENEA and CNR, and we also intend to examine the possibility to blend different kinds of fibres to improve the product.
- to create a shearing service for the use of wool producers in the region and to provide courses of instruction in shearing.
- to create a Central Italy Wool Centre, alongside other projects in Umbria involving alpaca and mohair.
- to create a market for coloured sheep, and a local network of coloured sheep breeders and wool craftsmanship.

The project began in March 1996, and involves a number of Italian organisations: FSAM, Ovi.Ca, University of Camerino, ENEA, CNR, CTA.

Ovi.Ca is a part of the Italian Agricultural Confederation (CIA), an association active in the promotion of development in rural areas. Other projects currently being undertaken include investigating methods to protect agricultural land from the activities of wild boar in the Apennines, and another to assess the damage done to livestock by wolves and wild dogs.

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## MARKETING BEEF



by Geesje Kuit & Hielke van der Meulen

In the Netherlands, farmers and nature conservation organisations manage an important part of nature reserves with beef cattle. By 2015, further extensification of farm land use will create a total area of 315,000 ha of semi-natural grasslands, which can produce 120,000 head of cattle - "nature beef" - i.e. some 10% of the domestic beef slaughter.

Husbandry, beef quality and marketing systems show a broad diversity, arising from differences in the ecology of the reserves, breeds used, and supplementary feeding strategies. A surplus value of about 20% above the current wholesale prices is obtained by producers selling to organic butchers or direct marketing to consumers. The cost/benefit-ratio appears to favour direct selling. Niche-marketing is gaining importance through the rise of specialised retailers selling to quality butchers in urban areas and stylish restaurants.

In the present investigation, 10 case studies have been made at different stages in the production chain - producer, processor and market. The cases contain a variety of types of producers (individual farmers, groups of farmers, nature conservation organisations and also a consumers' group), regions, breeds and husbandry systems. Four systems of beef production systems can be distinguished:

1. year round grazing system in self-regulating nature reserves. Low stocking rate (10 to 30 ha per LU); free range management with such breeds as Heck-cattle, Galloway and Scottish Highland.
2. extensive seasonal grazing system on poor natural grassland. Stocking rate 0,75 LU per ha; suckling cow management with breeds as Limousin, Charolais, Blonde d'Aquitaine.
3. semi-extensive seasonal grazing system on richer natural grassland. Stocking rate 1 LU per ha; suckling cow management with French beef breeds and dual purpose breeds as Maas, Rijn and Yssel-vee (MRV), Blaarkop and Lakenvelder.
4. Seasonal grazing system integrated with arable farming for fattening. Stocking rates and breeds as mentioned under 2 and 3, roughage and concentrates for finishing from nature reserves and/or organic farming.

It is estimated that in the future, the proportions of meat produced from these systems will be 0,3, 21,3, 28,5 and 49,9%, respectively. At present, most beef (about 85%) is from system 2 and 3 (suckler cows).

Beef from nature reserves is considered to be a high quality product by producers, aware retailers and consumers, principally because of the superior taste and structure of the meat resulting from the production methods - slow growth rate, type of vegetation consumed, characteristics of the cattle (sex and breed) and meat processing (ageing). Extrinsic quality aspects are also important for consumers: the emotional value of "nature", known origin and reliable production process, contact with the producer, the price, the ease of stocking beef in the freezer, etc.

The origin and quality of the beef partly defines the marketing

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## THE VORARLBERG POINT-MODEL

*integrating agricultural support within***Bioland Vorarlberg****AUSTRIA***by Erik Schmid*

The Vorarlberg Point-model (*Vorarlberger Punktmodell*) is the outcome of the working-group “Market measures and Quality assurance”, which I presented in connection with AGEX (*Arbeitsgruppe Existenzsicherung der Landwirtschaft; consultant, Dr. Berthold Pohl*) at the end of 1994. The *Point-model* is an integrated system for support, consulting, quality-control and marketing for livestock-farmers in Vorarlberg on an uniform basis.

Especially in livestock-farming we as veterinary-officials are often required to define the meaning of “appropriate stockmanship” and to objectify this for juridical implementation in administration. For this purpose we developed the so-called “*Tiergerechtheitsindex*” (index for species-specific welfare requirements) of Prof. Dr. Bartussek from the *Bundesanstalt für Alpenländische Landwirtschaft* in Gumpenstein, Austria. The objective of this index is to grade practices (fields), significant to the well-being of animals, in degrees of quality, finally to assess the overall quality of stockmanship as appropriate to the animals concerned. Just as appropriate stockmanship an important component of sustainable agriculture, so the *Tiergerechtheitsindex* is also part of the Vorarlberg Point-model. Besides stockmanship, the feeding and soil cultivation practices were also included. The main objective is to develop a humane, and ecologically balanced agriculture, with a clear categorisation between conventional and organic systems.

The point-model offers for the first time the possibility to classify a farm on the basis of “ecological processing”. The farm first gets described in the various fields and is then classified on uniform criteria. The system structure is simple and clear, so that every farmer is able to classify himself with respect to his farm.

The farmer finds his own position on a fine scale from “conventional” to “biological” and always has a short-term and achievable aim in view.

The difference in the method is that we want to guide our farmers to the high target of “biological agriculture” by a step by step policy. The holistic classification of the farm also requires that farmers identify with the principles involved and see the scheme not only as the fulfilment of certain conditions to get particular subsidies. The transparency of this system of farm support gives high social acceptance for further payment of subsidies and social control between the farmers by each other. It is crucial that the transaction of the whole of the agricultural subsidies is simplified. With the unified description and classification, authorities are able to withdraw direct control and to delegate many steps of control to self-responsibility and self-documentation. There even exists the possibility to organise and carry out the controls of the farms, which have to be done every year on the same criteria, by the farmers themselves in a form of mutual assistance. Most important is the fact, that within this model there is an incentive for performance on subsidies.

The point-model offers the possibility to sustain several classification-criteria which are important for consumers, such as animal-welfare, renunciation of fertilisers, feeding of forages and so on, into regional label-production without any additional efforts.

Further information is available from:

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channel. For example, Heck-cattle are sold as aurochs to top restaurants in Paris; Limousin-cows from De Peel in beef-packages are sold directly to local consumers; and double-musclé cattle from Flevoland are supplied to artisan butchers in the region. A proportion of the cattle from nature reserves is sold to organic butchers. Selling whole carcasses to restaurants and butchers is generally difficult, because they are used to buying from wholesalers. An experiment has been set up by a large-scale slaughterhouse for production, processing and marketing of steers (castrated bulls) from nature reserves, aimed at low production costs and sufficient uniformity.

Differences in husbandry and meat quality of “nature beef” is a constraint for achieving the scale advantages of the conventional marketing channels. This diversity however, at the other hand gives the opportunity for quality-distinction (for example regional differences), which can be used as a marketing-tool. Further research will give more information about organoleptic differences. The benefit of direct selling to consumers is well understood by farmers, being confronted with extremely low wholesale prices. This practice is increasing and can be a promising marketing channel for large quantities of beef, when effectively promoted. Efficiencies of scale for the processing and marketing of labelled “nature beef” can be obtained by producer co-operatives, such as in an experimental arrangement between a group of 70 farmers in Waterline (North-Holland).

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# Nafplio Conference

*Setting the agenda for the LSIRDnetwork*

The programme for Nafplio was designed to explore the areas in which different research disciplines could be applied to address the specific problems encountered in LFA livestock production, and possible approaches to enhance the role of livestock in European rural development.

The conference began with three perspectives on some of the biological, social and economic problems facing livestock farms. It was regarded as vital that the relationship between livestock operations and economic development of the rural population should be well understood in order to develop strategic and policy recommendations. The types of constraints facing farmers in disadvantaged areas were categorised into 5 types - availability of labour, management skills, grazing resources, status of other land uses (e.g. forestry and nature reserves), and infrastructure.. Work was reported that aims to characterise the processes linking agricultural policy and marginalisation of farming operations in the EU.

Key elements in many programmes to improve the profitability of farming enterprises are on-farm processing and direct marketing of the products. Value-adding activities give farmers the opportunity to realise some of the market potential provided by their location in regions identified with quality products, and a clean environment. Three papers examined regional differences in on-farm processing, and the opportunities and constraints that farmers face to develop and exploit a quality image.

The third session demonstrated some of the current work that is being carried out aiming to identify the opportunities for species diversification, using cashmere production from goats as an example. Attempts to identify the current relationships between European fibre-producing groups, were reported, relating in particular to two such fibres: mohair and camelid hair. Through a series of market-orientated models, future opportunities for co-operation between present and potential contributors to the European fibre pool were identified, highlighting areas of current strength and weakness.

In the light of the shifting emphasis in agricultural support resulting from, amongst other pressures, the WTO negotiations, environmental management is emerging as possibly the key role, and indeed purpose of, livestock keeping in disadvantaged areas.

Many of the ecosystems found in disadvantaged areas are managed through the presence of large herbivores, mainly domestic ruminant species, and there is a great need to identify grazing strategies for different farmed species to meet nature conservation and environmental needs.

These different aspects of farming - overcoming the physical constraints, realising the maximum product value, and managing vegetation effectively and sustainably - are all intimately influenced by the wide range of policy instruments acting in disadvantaged areas. These policies were examined in detail, and the effects of the environmental measures introduced in 1992 were discussed, using UK LFA beef farming as a case study.

The importance of farmers in the rural areas of the Union, and in particular in less-favoured areas, was recognised by all. Agricultural activity will undoubtedly need certain aids to compete on open markets, and this may be more or less direct granted or given as compensation for the occupation and maintenance of land. However, there was a diversity of views expressed on whether the priority should remain to maintain agricultural and livestock production activities oriented around economic and market objectives, or if this might be replaced by a new ethos in which agriculture should be a means to maintain landscapes, and traditional ways of life.

Arguments were put forward recommending closer integration of rural development and environmental policies into agricultural support mechanisms. In order that appropriate policies may be tailored to suit the diversity of climatic and geographical situations covered by the CAP, it was stressed that considerable flexibility should be left, in order that local decisions, e.g. investments in local infrastructure, subsidies for direct marketing and processing, subsidies for investments outside agriculture or for the creation of tourism facilities etc., may be made at a local level.

The ideas explored at Nafplio will be taken forward and examined in closer detail over the next 18 months in the LSIRD workshop series, beginning in May with the policy workshop :- "The future development of EU rural policy mechanisms and the implications for livestock farming research in the disadvantaged areas", details of which can be found on the LSIRD website.



# Livestock Systems

## in FARMING HOUSEHOLDS

*in a semiarid area of*

# Spain

*by Déa de Lima Vidal*

The long-term viability of livestock systems, and of the farms that operate them, depends on the level of productivity, at present the most important parameter, and on the total family income. Hence the future of farming activity and the maintenance of the quality of the characteristic landscapes of these regions are seen to be linked, not only with the improvement in viability of farming systems, but also in the existence of policies which can compensate for the poor ability for accumulation of capital experienced by farms in the regions.

We have been studying the relation between income levels of households, and practical systems, using the rural space hypothesis, in order to pursue the identification, modelling and the analysis of the viability of different production systems in households engaged in sheep-goat and cereal-sheep production, searching for their possible relationships in the economy and the degree of land intensification, and work factors in the households sampled in semi-arid Aragon (Spain).

The classification of family households was carried out for the differentiation of production systems practised in the central Ebro valley. Relating the structural characteristics with the land productivity, we observed that the households with the highest forage and irrigated agricultural area demonstrated the highest economic productivity with respect to the total utilised surface.

The highest total economic return, and the greatest labour productivity are obtained by dryland and irrigated households with a large flock size, and high availability of land. Flock size, the subsidies received and the presence of the irrigated cereal production explain the favourable results. The lowest incomes are obtained by dry households with small flocks and intermediate land availability, and irrigated households with the lowest utilised agricultural area and all group size flocks. Among the dry farms, there are some which use more economically and structurally extensive systems. The irrigated households are those which have high economically and structurally intensive systems.

In general we can see that profitable intensification is not directly related with the family revenue level and neither with the utilised agricultural area. Nevertheless, these systems are economically very fragile as they depend on the uncertain future of the protection measures of European agricultural support policy.



Further information on this work, which forms part of a doctoral thesis, may be obtained from:

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## LOW INTENSITY

# Farming Systems in Germany

by Rainer Luick

Germany is probably not the first place that comes to mind when talking about low intensity farming systems - most regions in Germany are characterised by highly intensive agriculture. However, the current status of extensively managed meadows and pastures is of great concern.

As is still the case in Mediterranean regions, low intensity pastures in Germany covered vast areas of land until the middle of the last century. It was normal at that time to keep livestock outdoors for most of the year, before storage of fodder for the winter was commonly practised.

As a result of poor management, the pastures were certainly rich in structure. On the other hand, the economic forces for a maximal exploitation of all natural resources caused these pastures to be overused, and resulted in ecological devastation. It is quite important to bear in mind that the present ecologically highly-valued grasslands have their origin in this devastating agriculture of previous times. To some extent, it is the withdrawal of agricultural activities which leads to landscapes rich in structure.

The widespread adoption of intensive agriculture, and the abandonment of farming in the most marginal areas has led to a dramatic decline in extensive grasslands. The only examples of regions with considerable areas of extensive grasslands in Germany are alpine pastures in remote areas, the pastures in the southern part of the Black Forest, and the Central-German-Mountain-Range (i.e. Eifel, Vogelsberg and Rhön), the heaths of the Swabian and Franconian Jura, and in northern Germany (e.g. Lüneburger Heath), lowland pastures along the Elbe-river and flooded saltmarshes along the coast-line of the North and Baltic Seas. Even in these areas, extensively managed grasslands are still only found on a very small scale. Some regions correlate with the distribution of indigenous and endangered livestock species such as the Black Forest-Hinterwald-Cattle, the Red-Vogelsberg-Mountain-Cattle, the Rhön-Sheep or the "Schnucke" (sheep) of the Lüneburger-Heath.

One of the most attractive regions with a tradition of pastoralism is the southern part of the Black Forest in Baden-Württemberg. There are remnants of a medieval type of agricultural system, with common grazings. Although the number of the communal pastures has decreased in the last decades, they still extend over an area of approximately 10,000 hectares. The communal pasture land region is also the breeding area of the Black Forest Hinterwald-Cattle which is the smallest and lightest Central European Cattle species.

The biggest threat to all mountainous regions in Germany is the dramatic number of closures of dairy farms which are the basic economic structure for many low intensity farming areas. In the south-western part of Baden-Württemberg, about 70 % of dairy farms disappeared within twenty years and with them about 40 % of the cattle. The landscape reflects these changes, and in some places only small strips of cultivated land are left down in the valleys.

Sheep-keeping and ecologically-rich chalk grasslands are found in the Swabian and the Franconian Jura. The system of transhumance practised in the Jura is unique in central Europe. The system developed as late as at the end of the 18th century when the Merino was introduced from Spain. The typical feature of the Swabian transhumance were the use of pastures during summer on the heaths of the Swabian and Franconian Jura and from autumn to spring in the valleys of the Rhine or Danube or by Lake Constance. Today, transhumance in the Swabian Jura exists only on a small scale and shepherds are confronted with many problems to maintain the system.

New features of extensively used landscapes in Germany were created by the conversion of industry-like cattle farms in the new länder into suckler cow farms as for instance in coastal regions along the Baltic Sea. There are farms which operate on several thousand hectares of land with low livestock densities.

One of the most important aspects in the current discussion of endangering factors and concepts for conservation of low intensity farming systems is the question of how agricultural systems can be maintained in regions less favoured for agriculture. Because production of milk or meat in areas such as the Black Forest will never be able to challenge the global agricultural market it is necessary to set up local cycles of processing and consumption.



- Like most cattle breeds, the Red Vogelsberg Mountain Cattle was traditionally a triple-purpose breed, of which traction used to be the most important.



- Vogelsberg mountain - this patchy landscape with hedgerows, tree-lined farm-roads, pastures and meadows is becoming increasingly rare.



- In the middle part of the Elbe river which was the previous border between East and West-Germany one of the ecologically richest areas in Germany has survived.

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# BIOSPHERE Reserve Rhön

by Dieter Popp

## A MODEL FOR RURAL REGIONAL DEVELOPMENT

In 1991 the Rhön, which covers parts of Bavaria, Hesse and Thuringia in central Germany, was recognised as a biosphere reserve by UNESCO to serve as a model region for low mountain areas with meadows and pastures. In case of the biosphere reserve Rhön, special attention must be given to the preservation and sustainable development of this cultivated landscape which was shaped by farmers over centuries. From the primeval forests of the region, once known as "Buchonia" (land of beeches), there emerged a "land of open spaces" as a result of cultivation and clearing the higher regions of forests. These ecologically valuable extensive mountain meadows and pastures, which are also important for tourism, can not be kept in this open state under the general provisions of the European Union's agricultural policy. Many of these low-productive mountain meadows and pastures would, as a result of this policy, be earmarked for the heavily financially subsidised forest restocking program. As a result of this, a unique European cultivated landscape would be lost.

The three governments in Bavaria, Hesse and Thuringia and the local communities in the six counties concerned agreed on the importance of preserving the open-space condition of the mountain meadows and pastures for reasons of nature conservation and tourism. This open-space policy was originally funded by the taxpayer. The annual costs for the most ecological valuable areas came to about 20 million German Marks. These sums are now no longer available.

A new program, "Man and Biosphere", has recently come into effect. The population of the affected areas have developed their own concepts within the framework of a unified approach to regional development. Only the technical presentation of the contributions to the discussion and findings were arranged by external advisors. By opening up new income alternatives resulting from the marketing of high-quality products from the region, a large proportion of the approximately 4000 agricultural smallholdings supplementing the main



- As good utilisers of coarse feed Rhön sheep preserve the cultivated land of the Rhön region - the "Land of open spaces."



### Achten Sie auf dieses Zeichen!

- Meat from the Rhön sheep is available in hotels that display this emblem.

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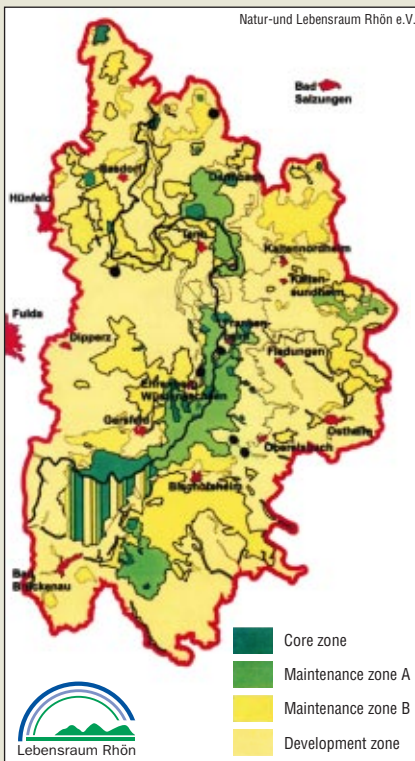
income can be assured of a continued existence. Commercial farming and forestry procedures in the Rhön, when conducted in an accord with nature, will ensure the production of high-quality goods which then are finished or processed by skilled tradesmen and then collectively marketed. This is the novel point of departure for the biosphere reserve Rhön to serve as a model. The emphasis here is not on the protection of nature by prohibitions, but on a sustainable development in accord with nature.

Since 1991 over 300 projects adopting this new line of approach have originated in the biosphere reserve Rhön and they are well-known far beyond this region. The establishment of regional shops to provide the population with high-quality foodstuffs of local origin is one of these projects. The co-operation between farmers, skilled tradesmen for processing and innkeepers is an additional interesting starting point which has attracted much interest and imitation throughout Germany and in the neighbouring European countries.

Finally, there are a number of projects which contributed to the increasing acceptance of the biosphere reserve Rhön by the native population, which at first had sceptical of it as "a reserve imposed on them from the powers above". These projects have included the construction of new buildings in typical regional styles and built with a view to reduce the strain on resources, high-quality finishing of native timber produce in skilled craft workshops in the Rhön, a unified energy consumption plan for the Rhön and an integrated rail and bus system. Another contributing factor was the creation of about 300 qualified jobs over a period of only five years. Only with a firm conviction established in the minds of the population can the objectives of this regional development approach bring about the success which is needed for the long-term endurance of the project. The most important foundation for this future perspective was the development and the realisation of the objectives and projects by the local population.

# THE PROCESS OF ZONING IN THE BIOSPHERE Reserve Rhön

by Regine Albert



## The Biosphere Reserve Rhön (BSR) - Part of a Worldwide Programme

Biosphere reserves are part of the international programme "Man and the Biosphere" (MAB), whose expressed aim is no longer to remove human influence from protected areas as is usual in the context of conventional nature-protection plans. The separation of man and environment should be abolished, as natural and human habitats are understood as one whole. The cultural landscape of the Rhön, resulting from the usage of land by small farmers, offers the ideal experimental area to model a concept of protection which includes the active effects of man on nature.

The Rhön was recognised as a biosphere reserve on the 7/03/91 by UNESCO. Through this acknowledgement came the requirement to protect the diverse landscape areas of the region. The Rhön is also one of the largest biosphere reserves, covering in total 184,939

hectares. It constitutes Europe-wide a habitat for endangered and highly specialised species which must be conserved. In this respect, the Rhön is a representative example of the world-wide preservation of habitats within the UNESCO strategy.

## The process of zoning - adjustment of spatial emphasis

The aim of establishing zones is to develop a representative protected area, in which all valuable habitat types, as well as all natural habitat types are included in sufficiently large areas. Zones comprise, ideally, of three surface categories which are structured according to the intensity of human intervention. In the Rhön there is a cluster of discrete zones, where the diversity of agricultural and cultural structures is taken into account by establishing several core zones which are physically separated from each other.

## Establishing zones in the Biosphere Reserve Rhön

In 1991, the federal states involved in the BSR: Bavaria, Thuringia and Hesse agreed on a general framework plan which included:

- the division of the zones
- the development principles and aims
- suggestions for the final fencing off of the area.

Starting with one of the most significant aims of the MAB programme, the preservation of genetic potential, biotope mapping was carried out as an initial step. The protection status was established on the basis of ecological-biological criteria and land use objectives were derived from it. Accordingly, importance is placed on species and biotope protection in development planning, as the extinction of a species involves an irreversible loss of genetic potential.



The results of the stock-taking of the nature area were presented in an initial interim report by the concerned institutions. This report (1992) was the basis for planning the

integrated development of the BSR Rhön. Public hearings of the report were made with community representatives. Suggestions for changes and additions were discussed. It was particularly stressed that the differing claims for land use should be in tune with each other. For example, positive development of extensive land cultivation should not be spoiled by measures taken to develop tourism.

Less problematic than establishing the core zone was to distinguish the maintenance zone. This was surprising, as socio-economic effects are to be expected through the realisation of nature protection-technical goals. Next to the core zone, the maintenance zone shows the most ecologically valuable elements of the landscape with the biggest claim for protection. In the Rhön, the maintenance zone was subdivided into zone A and zone B. Their higher nature-protection value is to be preserved by specific measures. Due to the high sensitivity of maintenance zone A, supporting measures are necessary, such as cessation of further development (traffic, housing, trade), measures of tourist guiding, as well as marking permitted walking areas.

Maintenance zone B (53,069 ha) represents further sections of the cultural landscape which should be protected for the preservation of the Rhön's individuality. The traditional practices of extensive agriculture should be continued and adjusted to improve its nature protection role.

These are cultivated areas whose future management should be undertaken following nature protection-specific criteria. Conflicts between farmers and representatives of nature protection organisations, sparked off by conflicting ideas of how to adjust cultivation, have prevented adequate cultivation up to now. Generally however, the application for protected status was welcomed by the communities, not least because they realised that the cultural landscape - as the most important asset of the Rhön - is to be preserved through specific maintenance measures.

After three years of the planning process and discussion with all the communities, authorities and associations, an integrated plan for dividing the area was presented in 1994.

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