



Fig. 3. Extensive fodder cultivation in the dehesas.

Forms of sheep husbandry

Partitioning of the 554 farms in the study area by size shows 52% of the farms are small (up to 5 ha) whereas 20% of the farms have more than 50 ha of land. Approximately 92% of the land is in relatively large farms. The smaller farms are operated by the owners and their families who usually do livestock farming as an additional income to other occupations. The owners of the large farms usually do not live on their land. The work on these farms is done by paid employees. The major farm products are milk lambs (*corderos lechales*) and mast lambs (*corderos pascuales*). Milk lambs are exclusively fed by milk, while the mast lambs are weaned one month after birth and from then on receive mast fodder concentrate. Other products like adult sheep, wool, and sheep milk have a low market value because they are rarely consumed in Spain. Ewes and bucks are usually kept on the pastures all year round. The lambs are raised in feedlots until they are sold because free-range grazing is considered a decrease of quality. The Spanish market is characterized by a demand for lamb meat with a very bright color. Free-range grazing lambs with their dark red colored meat

and their relatively flavored taste are scarcely marketable. Basic nutrition for adult animals is provided by grazing. In summer hay and a mixture of barley, corn, and soy are supplied. The majority of the farms in Cuatro Lugares operate with a reproduction system of three births in two years per ewe. Some farms make use of vaginal sponges impregnated with prosta-

genes. The aim is to get a better insemination by rut synchronization if the natural breeding attempts are unsatisfactory in spring.

Before the 1950s almost all farm operations moved their sheep to pastures in the mountainous north during the summer drought (Figure 4). Only 100 farms in the whole province of Cáceres realize these livestock movements called transhumance nowadays. The transhumance of livestock today is carried out with trucks. Reasons for the abandonment of the transhumance system are difficulties in finding leasehold land, the progressive destruction of cattle routes due to human development and road construction, and low prices for fodder in comparison to the costs of manpower. Another problem is the lower productivity in the transhumant operation with just one lamb per ewe and year instead of two lambs in three years in the stationary operation.

New strategies of income maintenance

Animal husbandry will be exposed to strong competition through meat imports as a result of the planned reduction of trade obstacles in the European Union (EU) in the near fu-

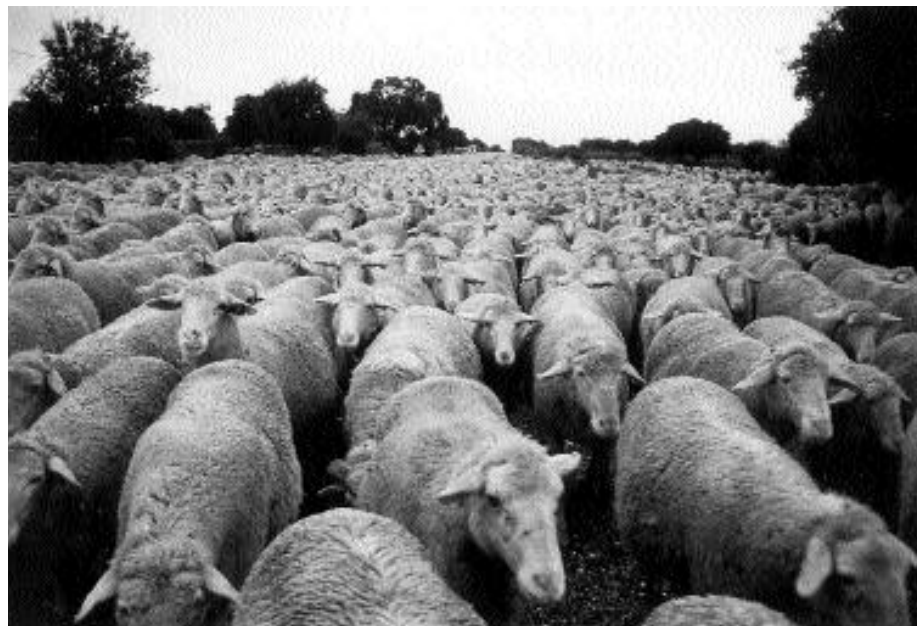


Fig. 4. Merino sheep migrating to their winter pastures in dehesas.

ture. Even today Spain is a net importer of meat stock and lamb meat from other EU member countries (especially Ireland, Great Britain and the Netherlands) as well as from New Zealand and Argentina. The degree of self-sufficiency has continuously declined in recent years. To stay competitive, sheep farmers in Cuatro Lugares are pursuing two strategies: the organization in cooperatives and the certification of sheep products with quality and origin labels.

Organization in cooperatives

There are more than 4000 agricultural cooperatives with a total of 2.5 million members in Spain. Within the study area there are two cooperatives of sheep farms. The Cooperativa Cuatro Lugares was founded in 1992 and markets lambs, adult sheep, and wool of 92 enterprises to end-consumers and wholesalers. Cooperative members receive higher prices than by standard marketing strategies. The cooperative buys and delivers approximately 2000 tons of fodder per year to its members at reduced prices. With an average flock size of 500 sheep the cooperative COPRECA¹ is an alliance of the big landowners. Members of the COPRECA sell their products to wholesalers in the Spanish centers of consumption. As another option they can use the cooperative slaughterhouse with a connected carving house in the area of Madrid which sells its lambs directly to the consumer. Moreover the alliance has its own classification center whose objective is the better division of meat stock according to weight, breed, and other quality criteria. As a result, they can guarantee steady quality and realize higher profits.

Quality and origin labels

Marketing through origin and quality labels is very important in Spain. About 10% of farm products carry such a label. Criteria are either a defined geographical origin, a special livestock breed or the guarantee of a certain quality. The origin and quality



Fig. 5. Quality and origin label CORDEREX.

label CORDEREX² (Figure 5) and the label of certified organic agriculture according to CEPAE³ are an important part of agriculture in the area. CORDEREX requires its members to raise their sheep in Extremadura, to have a base of the indigenous merino breed in the livestock and to slaughter the lambs in Extremadura. Moreover, a string of quality and hygiene criteria during breeding, processing, and storage is required. This label gives a special emphasis to the geographic origin. CORDEREX's aim is to label 15 to 30% of the mast lambs of Extremadura. Three months after its establishment in 1997 there were more than 500 membership applications from farms. The CEPAE is an institution authorized from the EU to prescribe norms for organic agricultural livestock production. Its most important criteria are the prohibition of permanent stabling, the obligation to use fodder that has been produced according to EU standards for organic agriculture and the prohibition of hormone applications. Supported by the incentive of EU benefits for conversion to organic agriculture, the CEPAE attracted 950 member farms in Extremadura in 1998. However a separate added-value marketing of organically grown food does not yet exist in the area.

New economic orientations in the

²Cordero de Extremadura (Lamb from Extremadura)

³Consejo Extremeño de la Producción Agraria Ecológica (Council of Organic Agricultural Production in Extremadura)

area are eco-tourism and hunting. This sector is presently not very important because the visiting season is short, and tourist infrastructure is not well developed. However it is a potentially important area which is currently growing.

Prospects

The trend to emphasize traditional high-quality farm products typical for the region as a reaction to the economic challenge by the market has so far been successful and has added values to livestock production. Spanish consumers have shown a high readiness to pay increased prices for quality products and regional specialties. As a side effect farmers may be able to get further income through benefits from EU agro-environmental programs by employing traditional practices. These programs are designed to support agricultural production methods that are compatible with protection and improvement of the environment (like organic agriculture or the use of endangered, indigenous breeds). Their importance in the EU's subsidy system is very probable to increase. Traditional husbandry practices can benefit rural tourism as well, because they keep the landscape unique and attractive for visitors.

Potential conflicts with biological conservation in the area are the occasional use of pesticides and mineral fertilizers, high stocking levels, the abandonment of traditional pastoral techniques, and the neglect of the tree layer. The holm oaks are of significant conservation importance but their products like acorns (for hog mast), firewood, and charcoal are not profitable any more. Livestock grazing seems to be a relevant factor of their failing regeneration that threatens the long-term stability of the ecosystem. Credibility and statement of power of existing quality and origin labels like CEPAE or CORDEREX would be strengthened with a stronger consideration of these issues.

At present farmers and members of the environmental community in Cuatro Lugares are trying to bridge the gap between them and to cooper-

¹Corderos Precoces Cáceres (Precocious Lambs of Cáceres)

ate closely. Initiatives in other parts of Spain (e.g. in the Valle del Jerte) have shown that an alliance of all local interest groups can advance agriculture, tourism, regional development, and nature conservation likewise. Considering the compatibility of biodiversity conservation and low-input agriculture, the connectedness of local people with dehesas and livestock, and the commitment of farmers and conservationists the requirements for the success of such an alliance in Cuatro Lugares should be met.

Supportive information

Bartolomé García T.J. 1994. Denominaciones de origen y de calidad. *In:* Caja de Badajoz (ed.). La agricultura y la ganadería extremeñas en 1993. Badajoz, Spain. p. 315-332.

Bignal E.M. and D.I. McCracken .1996. Low-intensity farming systems in the conservation of the countryside. *Journal of Applied Ecology* 33: 413-424.

Díaz M., P. Campos, F.J. Pulido. 1997. The Spanish dehesas: a diversity in land-use and wildlife. *In:* Pain DJ, Pienkowski MW (eds.). Farming and birds in Europe. San Diego: Academic Press. p. 178-209.

Donoso Caro J. 1994. Cooperativismo agrario. *In:* Caja de Badajoz (ed.). La agricultura y la ganadería extremeñas en 1993. Badajoz, Spain. p. 353-380.

Joffre R, J. Vacher, C. De los Llanos, G. Long. 1988. The dehesa: An agrosilvopastoral system of the Mediterranean region with special reference to the Sierra Morena area of Spain. *Agroforestry Systems* 6: 71-96.

Marañón T. 1988. Agro-sylvo-pastoral systems in the Iberian peninsula: Dehesas and montados. *Rangelands* 10: 255-258.

Pérez Díaz A. 1993. Evolución, dificultades y perspectivas de la ganadería extremeña. *In:* Asamblea de Extremadura (ed.): Trashumancia y cultura pastoril en Extremadura. Mérida, Spain. p. 183-199.

CORDEREX web site:
www.juntaex.es/consejerias/eic/consejos/corderex/home.html

LSIRD (Livestock systems in integrated rural development) web site:
www.mluri.sari.ac.uk/~mi361/lisird.htm

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