

Husbandry systems and sustainable social/environmental quality in less favoured areas in the European Union (EQULFA) The case of biotope management with animal husbandry in marginal areas of Germany

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INTRODUCTION

The protection of cultural landscape in Europe is an important aspect of the reformed Common Agricultural Policy of the European Union of 1992. The characteristic landscapes of nearly every region in Europe has been created or influenced by human activities for thousands of years, particularly in agriculture. This diversified landscape is partly endangered because of the abandonment of farming and of its becoming fallow land. The importance of protection of this human created landscape in Germany is necessary for:

- nature conservation
- preservation of historical rural culture,
- human recreation,
- resource protection (water, soil, genetics),
- production of food and
- regional development in marginal areas.

WHY BIOTOPE MANAGEMENT?

The protection of the different anthropo-zoogenic landscapes is an important target of German society. While in former times the management of the landscapes and (extensive) agriculture were no contradiction, this has changed over the last three

decades. Nowadays, agriculture and the protection of the landscape seem to be a contradiction.

In the last three decades, extensive grazing of sheep and especially goats has been abandoned more and more due to the changes in agricultural structure. Cattle have gone into stables and pastures have been replaced by meadowland or fodder production. The intensification of animal production led to high-yielding but less resistant and adapted animal breeds. The low-yielding but resistant and adapted breeds have disappeared and are now in danger like the biotopes they created.

The protection of the landscape faces the problem: too much (intensive) and too little (no) agriculture has to be prevented. Both lead to changes in the floristic and faunistic composition of the human created habits. Besides the importance of human created landscapes to protect rare plants and wildlife, the preservation of rural culture and recreation areas are important aspects of the protection. Today, huge areas are out of agricultural production, e.g. the LFA's of hilly areas. Many villages do not know agriculture, particularly extensive animal keeping out of stables. Nowadays, in these areas many jobs have been lost which were in or related to farming. Concerning these problems, the variety of rural culture is diminishing, not only plants and wildlife. The results are monotonous and/or cleared land-

scapes without historical rural background. The value for human recreation is being lost, and with it the regional development potential of rural tourism as an income alternative to agriculture for the local people.

After the targets of society concerning environmental protection, landscape management, conservation for rural culture and the promotion of rural tourism became law, the realization was the problem, mainly for the local nature protection authorities. The main problem was and still is the access to the endangered fields in private property. By this, the government bought many of the areas which should be protected. Only the taking over and proclamation of protected areas did not lead to their protection. The anthropo-zoogeic created biotopes need adapted grazing to keep their character. The governmental authorities were not able to ensure these needs for lack of money, technical equipment, animals and experience. The way out of the dilemma were contracts with animal holders (often the previous owner of the fields), to execute the necessary maintenance with financial compensation.

With the contracts/financial compensation, the extinct extensive animal keeping became an interesting activity for many animal holders, particularly the keeping of small ruminants. For the contracts, hobby animal keepers and small holders became important. The modern farmers with intensive production methods do not like to stay on traditional production measures, because it is not profitable for them and it is difficult to integrate into the farming system. The management of animal grazing with restrictions in protected areas is labour intensive and the output is low, even the products are difficult to market (goat meat and mutton). Compared to professional farmers, the economic profitability for hobby animal holders and part time farmers is only one aspect of interest. Besides this, they enjoy animal keeping and landscape management and take it as a special form of recreation.

Table 1. Different nature protection areas in the Landkreis Göttingen (1995).

kind of protection	hectare	no.	share of the total area
total area	999,200	..	100%
landscape protection	72,345	5	27.5%
nature protection	1,724	5	1.5%
§28a-biotopes	431.6	1,739	0.59%

The landscape management with extensive animal keeping is however accompanied by problems. The official authorities are responsible for the control of the effects of biotope management with animals to the vegetation and the wildlife. The personnel at these institutions have only a little experiences in husbandry. In opposition to this, the animal holders know only little about the rare and protected components of the maintained biotope. Landscape management with extensive animal keeping is increasing in Germany. Ruminants are used to keep grass cover low and to browse on invasive shrubs on marginal land like Magerrasen and Feuchtgrünland. Animal grazing is cheaper than the cleaning and management of Magerrasen with machines or manually.

How this problem is managed and solved more or less to an sufficient level shows the example of biotope maintenance with animal husbandry in the Landkreis Göttingen close to the former border to the GDR.

MAINTENANCE OF MAGERRASEN-BIOTOPES BY SMALL RUMINANTS IN THE RURAL AREA OF LANDKREIS GÖTTINGEN

The surveyed area of Landkreis Göttingen (1,000 km²; 135,000 inhabitants) lies in the middle of Germany in the state of Lower Saxony in a hilly area (100 – 700 m a.s.l.). Half of the area (53%) is used for agriculture. Crop production is concentrated beside the rivers on fertile land while animal keeping dominates in the hills. Forest covers 32% of the area, where agricultural use like animal grazing is prohibited. The rest of the area is covered with water, buildings and roads. Small protected pastures, especially Magerrasen, comprise 169 hectares and is distributed on 249 different plots (average plot size 0.6 ha). These are 39% of the so-called §28a-biotopes in Lower Saxony. All these biotopes are protected by law even when in private property. It is not allowed to change anything in the habitat but the owner cannot be forced to preserve it by maintenance. Many of these biotopes are endangered not by "too much farming" but by "no farming".

Since 1988, Magerrasen has been maintained by grazing of small ruminants. Goats and sheep are used on the basis of contracts with private animal holders.

Table 2. Development of nature protection contracts with animal holders in Landkreis Göttingen.

year	wet land (Feuchtgrünland)		dry land (Magerrasen)		total biotopes	
	ha	contracts	ha	contracts	ha	contracts
1988	0	0	15.7	4	15.7	4
1989	0	0	24.6	9	24.6	9
1990	15.7	4	32.8	12	48.5	16
1991	22.5	7	48.8	20	71.3	27
1992	38.6	14	54.1	20	92.7	34
1993	112.0	37	52.9	18	164.9	55
1994	112.0	37	50.1	17	162.1	54
1995	121.0	38	54.0	21	175.0	59
1996	118.0	36	55.1	22	173.1	58
1997	124.0	36	52.5	20	176.5	56

The initiation came from the local nature protection authority, the Untere Naturschutzbehörde UNB. In 1997 about 52.9 ha Magerrasen are maintained by contract with 20 different animal holders. Magerrasen comprises 34% of all landscapes maintained with animals, 66% are cattle and horses used for maintaining wet land (Feuchtgrünland).

The problem was to find animal holders close to the biotopes where the animal should graze. The other problem was to manage and control all the contracts. In total 176 hectares of biotope maintenance appears to be very little but to manage and control 52 contracts distributed on an area of 1,000 km² was the limit.

Over 50% of the budget of the UNB (60,000 DM/a) is used for biotope grazing with animals and 50% are spent on manual work for biotope maintenance. With 60,000 DM/a the UNB is able to maintain over 160 ha of biotopes. If this work would be done manually; the budget would be just enough for the maintenance of 30 ha. Animal grazing is five times cheaper than manual work for the UNB.

The development of such distributed biotope management needs several years. It is necessary to

Table 3. Biotopes managed with animals in the Landkreis Göttingen 1996.

	wet land (Feuchtgrünland)	dry land (Magerrasen)
total managed with animals	112 ha	52.9
animal holders (contracts)	37	18
average plot size	3.0 ha	2.9 ha
<1 ha	43%	30%
1-3 ha	23%	52%
3-10 ha	26%	13%
> 10 ha	8%	4%

come close to the specific issues concerning animal grazing, time which is necessary to find hobby farmers and convince them to join and to establish and identify the management operation system for every individual partner. Because this work was too much for one office they established a special institution to organize the system. Since 1995, the Landschaftspflegeverband Landkreis Göttingen e.V. is responsible for all tasks related to biotope maintenance in the area of the rural council.

The contract conditions are different between the different biotopes and even for each plot. The rural council at first paid only 250 DM per ha and year for grazing plus extra for special equipment (e.g. fences, additional livestock, other breeds, extra complementary work like manual mowing). The sheep and goat keepers complained that this amount was not sufficient for the work they do. After some discussions the UNB increased the yearly compensation to 400 DM per ha in 1994. All animal keepers stayed under contract. The contracts fix the period of grazing (after the protected plants have flowered) from June to September and defined the stocking density. This was not practicable and the latter was scrapped. The animal holder was trained to decide for himself when the maintenance was completed. Low density means long grazing periods and high density short grazing periods. The authorities monitored this grazing and investigated when problems occurred in nature protection or mistakes in the maintenance. While grazing on the biotopes the supplement feeding of concentrates is not allowed. In general, pesticides and fertilizers are prohibited and, because of aesthetics of the macro landscape, even shelters or huts for the animals in case of rainy weather. The majority of these maintained biotopes

Table 4. Structure of the evaluated landscape management in the rural council of Landkreis Göttingen 1996 (n=20).

	wet land (Feuchtgrünland)		dry land (Magerrasen)		total	
	ha	animals used	ha	animals used	ha	animals used
goats	0	50	1	35	1	85
sheep	0	35	8.7	219	8.7	254
mixed	5.7	..	14		19.7	..
horses	14.5	32	11	42	25.5	74
cattle	29.5	73	0	0	29.5	73
mowing	6.3	..	1.2	..	7.5	..
total	55.7	..	35.9	..	91.7	..

are owned privately (51%), 39% by the government, 4% by the church and 7% by the forest department. The UNB rent these plots from the owners and give it to the animal holders without rent but the compensation.

CONCLUSION

From the official authorities' point of view (UNB) the majority of the contracts (88%) are fulfilled. From the animal holders' point of view there are great differences in their attitude concerning the contract conditions. While the animal holders with contracts for wet land are satisfied with the financial contribution, the animal holders with dry land contracts complain. They want between 600 DM (sheep) and 800 DM (goats) per ha and year because the productivity of the plots is low, the animals do not grow and the labour input is high. Further, all animal holders complain that they are not well trained and informed about the issues of landscape management. Better information and communication would be welcomed. These problems exist but nearly none of the contract holders opted out of their contract. Everybody has learned a lot and this example shows how difficult it can be to organize successful sustainable biotope maintenance with social aspects.

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