

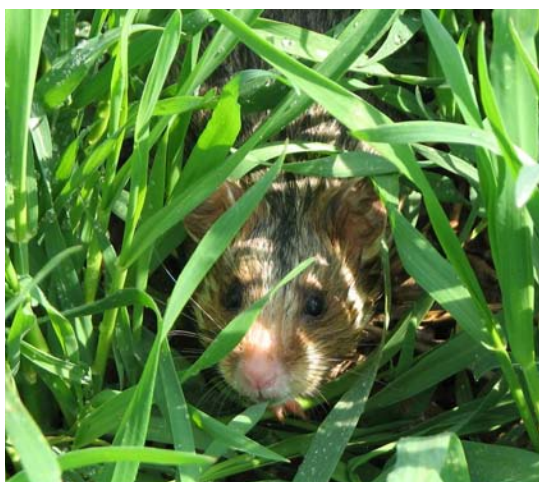
Managing farmland in Natura 2000

CASE STUDIES

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Guidance on management of farmland in Natura 2000

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Case Studies

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INTRODUCTION

The present document offers a compilation of 27 practical case studies on the management of farmland in Natura 2000 sites from different countries of the EU. The overall objective is to illustrate the various kinds of initiatives that have been successfully undertaken to promote and support farming practices which actively contribute to the conservation of rare and threatened habitats and species protected under EU nature legislation.

The case studies have been selected to represent a wide range of diverse circumstances involving different types of:

- Habitats and species
- Agricultural land
- Farming conditions and management practices
- Conservation requirements and measures
- Farmers and land managers.

They are intended to reflect the range of challenges that farmers, public authorities and nature conservationists face when looking for ways to reconcile farming and conservation objectives. Particular attention has been paid to selecting examples that look for win-win solutions which not only benefit nature, but also support the economic viability of the farmers involved, and provide valuable services to society at large.

The examples have been taken from a range of sources:

- National or regional Agri-environment schemes under the RDP (2007-2013)
- Other measures under the RDP
- National, regional or local public or private initiatives and programmes
- LIFE projects (often key to kick starting new local or national initiatives)

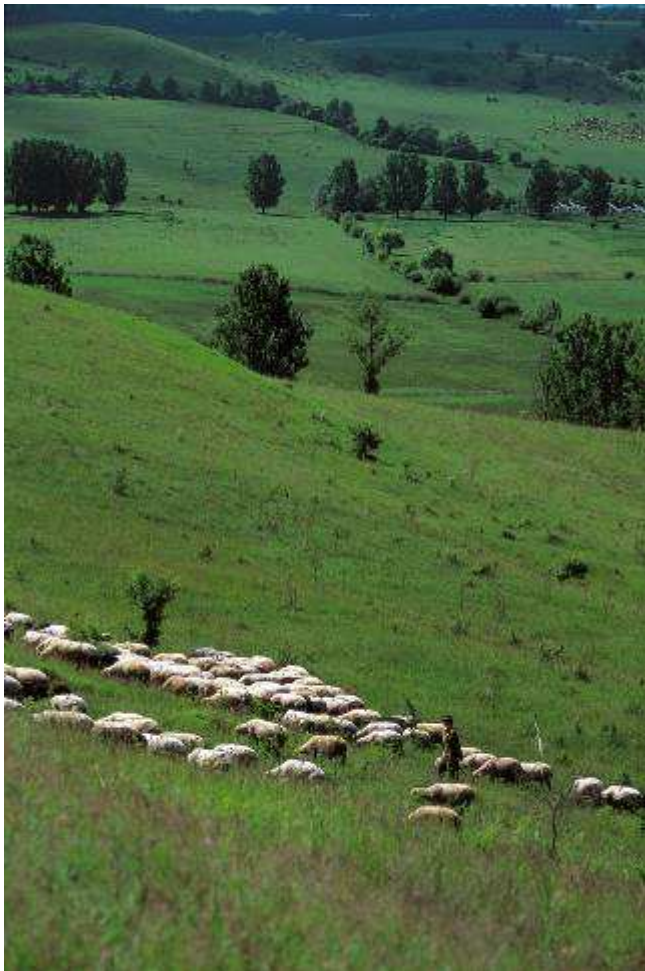
Each case study examines the background and the context in which the initiative was undertaken, the type of farming and nature conservation issues at stake, and the key measures that were implemented. It then goes on to look at both the main strengths and elements of success as well as the key weaknesses that have been identified during the analysis.

As such, it is hoped that the case studies will provide some useful food for thought as to the different types of approaches and measures that can be successfully taken to better integrate nature conservation needs into day to day farming activities. It serves as a useful compliment to the EC's guidance document on farming in Natura 2000 published separately.

The case studies have been written by a team of experts, with the help of the public authorities, stakeholders and NGOs involved in the initiative wherever appropriate. We would like to take this opportunity to thank all those who have assisted in the preparation of this report. Full details are provided at the end of each case study.

Case Study

Tarnava Mare. Supporting farmers in Natura 2000 in Transylvania, Romania



Sheep and cattle grazing in Viscri, Tarnava Mare area (Min Wood)

Romanian biodiversity and agriculture

Romania has very high diversity, with 5 bio-geographical regions, and varied topography from low-lying areas along the Danube Plain to the heights of the Carpathian Mountains, which curve through the centre of the country. 35% of Romania's agricultural land is Less Favoured Area (LFA). This varied climate and topography supports very high biodiversity - for example, the Carpathian Mountains are home to 60% of Europe's Brown bears, 40% of Europe's wolves, and 35% of Europe's lynx. It also supports a wide range of arable, livestock, fruit and other farming systems.

Land use patterns vary considerably across Romania. Arable and more intensively farmed areas are in the south and east of the country, where 85% of agricultural land is arable and only 9% permanent pasture and 6% forest. Livestock farming and permanent grasslands are concentrated in the north and west of Romania, where less than 20% of agricultural land is arable, 50% permanent grassland and 30% forest.

Romania's population is remarkably rural by EU standards, with 48% of the population still living in rural areas. Farming is chiefly subsistence and semi-subsistence. There are about 3.8m holdings in Romania, of which 68% are under one ha and thus are not eligible to receive direct payments. Of the 1.2m holdings over 1 ha in size, 90% are under 5 ha. These small farm sizes are not economic, and rural depopulation and ageing is a problem. Since the accession of Romania to the EU in January 2007, livestock (especially dairy cow) numbers have fallen significantly. The decrease of extensive dairy farming has affected landscape management and grassland biodiversity, as a result of abandonment, intensification, and conversion of large areas from cattle grazing and hay-meadows to sheep grazing.

The most striking aspect of Romania's farmed landscape is the ecologically well-preserved semi-natural grasslands: the extensively grazed areas in the uplands, and the mosaic landscapes of mid-altitude areas. The Carpathian and Sub-Carpathian regions of Romania probably have Europe's greatest area of wildflower-rich semi-natural grasslands, of particular importance because of their associated biodiversity, and because they are still in ecological working order.

Natura 2000, key habitats and species, and agricultural issues

The Tarnava Mare area was declared a Natura 2000 Site of Community Interest (SCI) in 2007. It covers 85,374 ha within the southern bend of the Carpathians with approximately 35% grasslands (pastures 16,400 ha, meadows 17,250 ha), 43% forest (41,500 ha), and 6.5% arable (6,000 ha). It is a High Nature Value farmed landscape, one of the largest Continental (lowland) Natura 2000 sites in Romania, and a source of livelihoods for over 20,000 people scattered in 24 small villages, almost entirely dependent on small-scale farming for their income. It provides very significant public goods including high biodiversity, clean water, food security, climate change mitigation, natural and farmed habitat resilience, resistance to fire and floods, recreation, and cultural/aesthetic values.

80% of the area overlaps with an SPA, Podisul Hartibaciului, and so is covered by both the Habitats Directive (HD) and the Birds Directive (WBD). At least 60% of the grassland area is made up of Annex I habitats associated with agriculture: Sub-continental Peripannonic scrub (40A0*); Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) with important orchid sites (6210*); Sub-Pannonic steppic grasslands (6240*); and Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) (6510). There are also significant areas of managed forest (habitat types 9110, 9130, 91E0*, 91V0, 9410, 9420, 9160).



Wildflower-rich grassland habitat 6210* (Tibi Hartel)

The extensive semi-natural vegetation supports a remarkable diversity of flora and fauna including numerous Annex I and II* species. Of the 600 flower species identified in the area, many represent plant communities that have disap-

peared elsewhere in Europe. 5 plant species are listed in Annex I or II*, and 77 species are on the Romanian Red List. There are 5 Annex I and II* mammal species, 8 Annex I and II* invertebrate species, and 47 bird species listed in the Birds Directive.

The key habitats and species being conserved within this Natura 2000 site, and the management measures they need are:

- Mammals: *Canis lupus*, *Ursus arctos*. Measures: maintain landscape mosaic and connectivity;
- Lepidoptera: *Lycaena dispar*, *Maculinea teleius*, *M. arion*. Measures: maintain damp and dry grasslands especially late-cut meadows, by controlled grazing (establishing minimum and maximum stocking rates), and late mowing, after 1 August at least once a year;
- Plants: *Echium russicum*, *Crambe tataria*, *Angelica palustris*, *Adenophora lilifolia*, *Campanula serrata*, *Iris aphylla* ssp. *Hungarica*. Measures: maintain by controlled grazing, and late mowing, after 1 July, at least once a year;
- Birds: *Crex crex*, *Aquila pomarina*, *Pernis apivorus*, *Bubo bubo*, *Ciconia ciconia*, *Lanius collurio*, *Lanius minor*. Measures: Maintain grasslands, avoid abandonment which will make hunting for food more difficult in the breeding season. Avoid machine mowing/disturbance in the breeding season. Maintain forest for nesting. Late mowing after 1 August to protect nesting birds (*C. crex*).

The community assemblage is more important than any individual component plant species. Such species-rich, dry meadow-steppe and damp meadow grasslands have disappeared over most of Europe. Not only are the habitats important in themselves, but they also provide a model of how traditional agricultural practices can contribute to maintaining threatened habitats and species.

Traditional methods of grazing and haymaking have led to the development of these species-rich semi-natural grasslands, and continued traditional management is key to their survival. This land management, which has continued more or less unchanged for 800 years, consists of

1. Dairy cattle grazed in village herds on commonly-owned land in summer, kept in during the cold winters. Winter forage comes from privately-owned hay meadows which are often in small parcels, leading to a mosaic mowing that pro-

motes biodiversity by the constant provision of food (for example nectar for insects) and refuges/nest sites (for vertebrates and invertebrates), as well as enough areas that are mown late to allow seeding of flowers. Species diversity is also assisted by hand-mowing, still practiced especially on steeper slopes, at varied dates.

2. Sheep are also grazed in village flocks, but with fewer requirements for hay in winter.
3. Cattle and sheep are grazed on hay meadows after cutting, but otherwise there is a strict separation between hay meadows and pasture.
4. There are many isolated trees and gallery treelines in the pastures, as well as a patchwork of forest areas.
5. Income is from the sale of cow milk, sheep milk and cheese, and from lamb and veal meat.

The species diversity is associated with low soil fertility that has resulted from constant mowing, application of little or no farmyard manure (FYM), and no artificial fertilisers or pesticides. Field research has shown that meadows near villages where FYM is occasionally applied have a mean of 29.2 species per site, whereas the terraces and steep banks and dry grasslands, where no FYM is applied, have on average 43 species per site.

The local agricultural economy, almost entirely dependent on small-scale agriculture, has declined as a result of Romania's transition to a market economy. After land restitution, 90% of villagers have farms under 5 ha and have fewer than 5 cows. Village populations have a high average age and average incomes below the poverty line.

In these circumstances, any conservation programme that has an impact on land management will be viewed critically, and will only receive local support if the programme is seen to take local peoples' interests into consideration.

Without support, this type of landscape will disappear, as it has in much of Western Europe. As rural depopulation occurs, there is increasing land abandonment in less accessible pastures and meadows, and intensification in more accessible grasslands. 30% of hay meadows are abandoned and are gradually becoming invaded by scrub, especially hornbeam.

The replacement of cattle by more profitable sheep is more destructive of flowers and herbs, and of butterfly eggs. It also increases the ten-

dency to convert hay meadows into more monotonous pasture, a trend that is already marked in the area, resulting in a noticeable loss of floristic diversity.

Measures implemented to address conservation needs

Joint Farm Advisory Service for small-scale farmers (administration, NGO and local community)

A Farm Advisory Service linking biodiversity conservation, Natura 2000 habitat and species conservation obligations, and rural income support has been active in the area since 2003, led by NGO Fundația ADEPT Transilvania in cooperation with local communities and Romanian Ministries of Agriculture and Rural Development (MARD) and Environment and Forests (MEF). Its vision is to achieve biodiversity conservation at a landscape scale not primarily by creating protected areas (the stick approach), but by working with small-scale farmers to create incentives to conserve the semi-natural landscapes they have created (carrot approach).



Haymaking in Viscri, Tarnava Mare area, Transylvania (Min Wood)

This project has carried out mapping and inventories of the area, developed conservation guidelines, worked with MARD in the design of agri-environment measures, and helped farmers to gain access to agri-environment programmes and to markets for products linked to biodiversity image. This has proved effective on many levels: improved conservation status of grasslands, improved farmer incomes, and improved agri-environment measures. This project has also had an influence at national and EU level (including on the design of the CAP 2014-2020).

The Tarnava Mare Farm Advisory Service project resulted in the following:

- a. Increased uptake of agri-environment scheme by farmers as a result of the Farm Advisory Service (6.5 times the number compared to control areas without advisory service);
- b. Increased grassland area under traditional management, rather than abandoned or intensified, through agri-environment schemes and through commercial incentives (solving milk marketing problems, developing farmers markets, developing nature tourism);
- c. Prevention of loss of HD and WBD habitats and species, and measurable improvement of habitat condition especially through scrub clearance and regular mowing.

Successes and challenges encountered by the project

Improving access to Pillar I direct payments (SAPS) for small scale farmers

About 60% of holdings in the project area are below the minimum size (1 ha total, made up of minimum 0.3 ha parcels) required to receive direct payments. However, this does not appear to have caused a significant problem. Management of land, rather than ownership, is the basis for eligibility of applications. Many owners with holdings below 1 ha are not active farmers, and rent their land to more active neighbours who can apply for payments. This is bringing land under management that, without incentives, would be abandoned.

Agri-environment payments

There are only two grassland agri-environment packages in the area: High Nature Value Grassland (214/1) and Traditional Farming (214/2). Romania has designated eligible areas for its grassland agri-environment payments based on a rough assessment of HNV grassland distribution in Romania, which in turn was based purely on the percentage of permanent grassland cover at commune (NUTS 4) level. All communes in the project area are eligible. The HNV package requires: no use of artificial fertilisers and pesticides, organic manure allowed up to 30 kg N/ha, annual mowing or grazing obligatory (mowing at least once a year and not before 1 July

each year; grazing must be at under 1 Livestock Unit per ha), and ploughing is forbidden. Payment is 124 Euro/ha. The Traditional Farming package requires the same conditions except that use of machinery is forbidden, with an additional 58Euros/ha.

The advantages of these measures for farmers in the area:

- Easy access by farmers. They were deliberately designed as simple packages, and the land for which the commitment is signed is verified via the IACS system so land register papers are not required. In the project area, 1,390 small farmers on 17,641 ha are currently in one of the packages. This is over five times the national average participation rate, and this is a result of the Farm Advisory Service activity.
- Strict inspections on parcels under the scheme have strongly enforced the obligation under GAEC to maintain grassland condition and to prevent scrub invasion. Although this is a general GAEC requirement, enforcement is much higher in agri-environment parcels. There are clear and measurable improvements in grassland condition in the project area, with large areas (approximately 20% of grassland) being visibly cleared of scrub.

Disadvantages are:

- The 1 July first mowing date is applied across all eligible areas in Romania, regardless of altitude. There is a greater cost for lowland farmers, since grasses seed and lose nutrient value earlier. Grassland maturity date varies from year to year: in some years, farmers complain that the losses are greater than the compensation received. In other years, such as 2011, the 1 July start date is not a disadvantage.
- Pastures as well as meadows are eligible for the Traditional (non-mechanised) package. Many graziers, especially shepherds, obtain the higher Traditional payment for no extra work, while farmers who manage meadows have additional costs for hand-mowing.
- There is no obligation to remove cut scrub from the grasslands. In most cleared grasslands, heaps of cut scrub are left on the fields. Burning is forbidden. This makes the restoration of habitat condition incomplete.

Mosaic management suited to small-scale farming results in good overall conservation management

About 20,000 ha of scrub and grassland habitats of conservation importance exist in the project area. These all need to be maintained by regular but not excessive grazing or mowing to maintain floristic conservation status. Only the damper lowland hay meadows have some additional requirements – more restricted grazing in the wet season, and avoidance of use of heavy machinery.

The traditional pattern of mosaic management, with a variety of mowing dates, which arose for socio-economic reasons in the project area (chiefly small-scale ownership and lack of machinery), results in the constant availability of refuges for animal species and of sources of plant seeds to recolonize other areas.



Mixed farming landscape (Tibi Hartel)

Conservation of some of the HD and WBD species classically requires later mowing dates. For example, there are species-specific packages in other regions of Romania, including 214/3.1, targeting *Crex crex*, requiring unmown strips and mowing from 1 August, and 214/3.2, targeting *Lanius minor*, *Falco vespertinus*, requiring phased mowing before 1 July.

However, the ideal system to suit the varied demands of the different fauna and flora groups seems to be mosaic management, where small parcels of land, often 0.3 ha or less, are mowed at different times in neighbouring parcels. In our opinion, if measures can be found to maintain this management, more complex species-specific management packages are not required.

Long term models for common grazing with agri-environment payments

An additional element of agri-environment payments is their potential to support common grazing. Common grazing is a strong tradition in Tarnava Mare, and is essential to the survival of the small-scale farming communities of the area. However, it is breaking down under economic pressure. Common land is owned by Town Halls who are not eligible to receive agri-environment payments, and Town Halls are not permitted to sell common land.

Increasingly, Town Halls are renting out common land for periods of 5 years or over, so that the land users can claim agri-environment payments. Typically, a Town Hall owns 2-3,000 ha of common land. Of this, generally 2,000 ha are rented out to shepherds, and the remaining 1,000 ha is used by village grazing associations, usually made up of over 30 small-scale farmers. Until now this land has not been eligible for agri-environment payments, but in one village in the project area, the Town Hall has rented 1,000 ha to the grazing association for 5 years.

The grazing association is using the income derived (224,000Euros/year from direct payments and agri-environment payments combined) to buy machinery for scrub control, improve tracks and cattle drinking troughs, etc. This is an excellent model for linking common land to incentive payments.

Advice and capacity building for the dairy sector

Small-scale dairy production is key to the survival of the HNV landscapes of Romania. Over 50% of registered producers (that is, excluding those with under 1 ha of land) have fewer than 5 cows. Small-scale farmers depend mainly on dairy cow or ewe products for their income.

Small producers all deliver to one or two milk collection points in each village, from which the processors take delivery. These communal milk collection points have quality problems: not only poor cow health and unhygienic milking and milk storage, but also watering down milk by some farmers to obtain higher volume payments.

In 2009, as a result of cheap imports and of stricter milk quality controls, many milk producers lost their market: this threatened the economic survival of these communities, and

the survival of surrounding grassland habitats. Surveys showed a reduction of cow numbers by 25% in 2009 alone. The Farm Advisory Service raised funds to improve the hygiene of milk collection points, and to carry out other actions to improve hygiene and discipline (including workshops with individual farmers and with village dairy associations).

Eight villages have had their milk collection reinstated under the project, giving income again to over 200 small-scale farmers, and reversing the fall in cow numbers. In the villages with new milk collection points, the number of cows and number of owners supplying the points are already rising now that a profit motive has been restored. Over 700 cows are now in the area which would not be without intervention – about 1,000 ha of grassland are therefore under continued management which might otherwise have been abandoned.

This project was fully funded by the Norwegian Government. Such investment activities are eligible for support under various EAFRD Pillar I measures, such as Measure 123 Adding Value to Agricultural and Forestry Products, but the 50% co-financing requirement is a problem for small producers.

Adding value to agricultural products

The Farm Advisory Service also helps small-scale farmers to produce high-quality products, including developing a design for food processing units for village use that meet minimum EU hygiene requirements.

A free manual detailing the design of the processing units, and other marketing advice, has been distributed. This has been combined with development of a local brand and labeling, and of farmers' markets. This is bringing significant additional income for biodiversity-branded products to local producers (currently 25 producers, total 78,000 €/year from sales at farmers markets). This will help develop economically viable small scale farming that is not entirely dependent on agri-environment payments.

It is worth noting that the sale of these products in farmers markets was threatened by inconsistent interpretation of EU hygiene regulations, especially those relating to authorisation of premises for small-scale production and of points of sale (especially farm-gate direct sales).

The Farm Advisory Service worked closely with the state food hygiene agency to clarify that a flexible approach should be applied to local and direct sales by small-scale producers in marginal areas. This message was published in a booklet supported by EU Delegation funds, in 2007, in order not only to reassure small producers, but also, equally importantly, so that local inspectors receive a clear message from central government that this is an approved approach.

As above, such activities are eligible for support under Measure 123 (although 50% co-financing is a problem for small producers); and Measure 142 Setting up of producer groups (although thresholds are too high to help small groups in initial stages).

Conclusions: demonstration value for other countries and regions

The key message of the Tarnava Mare Farm Advisory Service is the importance of a good delivery service to help small-scale farmers gain access to schemes for which they are often the prime targets, but which farmers find intimidating in the application process.

The case study illustrates that:

1. Continued traditional management by farmers is the most effective way of maintaining HD habitats and species at the landscape scale. Simple incentive schemes that have high uptake and keep farmers on the land and farming as they have done in the past is the main requirement.
2. Although the grassland agri-environment scheme has been simplified in Romania and uptake is generally good, small-scale farmers are blocked from EAFRD investment measures by the complexity of the application process, requirement for co-financing, and cash-flow problems because of retrospective reimbursement.
3. Small-scale farmers generally will not take the initiative to solve practical problems to meet quality and other commercial standards, but respond to advisory services where they are available.
4. Agri-environment payments linked to other economic development such as

adding value to products, and diversification, offer long-term solutions to the problem of small-scale community sustainability and the conservation of important habitats and species, at landscape scale, in agricultural protected areas.

Effective consultancy and advisory service for small scale farmers in partnership with NGOs

This case study suggests that improvements in consultancy and advisory services will deliver much improved results on the ground, in terms of uptake by farmers. The study also shows that if the range of NRDP support measures is combined in an innovative way, it can be very effective in supporting small-scale farming communities.

The challenge is to broaden such activity from localised, patchy implementation to wider, national-level implementation: for this, highly trained and motivated advisory services are required.

This case study also shows that the role of NGOs can be significant, by helping government agencies to deliver policy in a very cost-effective manner, and by providing feedback from farmers to guide modification of NRDP measures where suitable. However, these local actions are not currently eligible for support under NRDP Measure 143 (Providing Farm Advisory and Extension Services).

Partly as a result of the Farm Advisory Services, the potential role of NGOs in such local actions has been recognized, and future financial support has been included in the legislative proposals of the CAP post 2014, as the Co-operation Measure. This could have an important effect, supporting replication of such projects more widely in Europe.

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Case Study

Preserving unique steppes, producing macaroni and spaghetti

Dry farming in Belchite, Aragon (Spain)

The steppes of the Ebro Depression

The Ebro Basin hosts steppe ecosystems composed of scattered shrubland on poor, gypsum and locally saline soils. Aragon harbours the best examples of this habitat type and a significant proportion of its total European surface. Steppe habitats are peculiar ecosystems very similar to those found in North African or Asian steppes. Aragon has included 75,000 ha of these habitats within several areas of the Natura 2000 network, including the Belchite steppes, among others.

In the central part of the region, the Belchite plain is characterized by extensive farming systems, especially herbaceous crops on poor soils or even locally saline, in an extremely continental climate with scarce rain and extreme temperatures. Here thrive some of the unique natural and semi-natural steppe habitats in the world, interspersed within a mosaic landscape of small plots of crops, pastures and sparse scrub with endemic species.

However, not far from this area runs the river Ebro, which is the Spain's largest river in volume. As a result irrigation means a possibility that could introduce profound changes for the agricultural and natural systems throughout its area of influence.



El Planerón Reserve (SPA), Belchite, Aragon (J.C. Cirera – SEO/BirdLife)

These unique landscapes make up a mosaic with traditional dry land cultivation that has been carried out since ancient times in these flat or slightly undulating lands. The area also includes saline lagoons, the so-called *saladas*, which are dry over most of the year and are surrounded by halophytic habitats with salt-tolerant plants.

This environment hosts a rich biodiversity where some endemic species of insects and other arthropods are found together with a diverse community of steppe birds, including great bustard, little bustard, pin-tailed sandgrouse, black-bellied sandgrouse, stone curlew, lesser kestrel and Dupont's lark among others. Due to this rich birdlife several SPAs have been designated within the Ebro Basin and the Belchite field.

These peculiar environments are *per se* quite fragile and thus vulnerable to several human threats. According to *Eduardo de Juana*, university professor and president of the Spanish Ornithological Society (BirdLife Spanish section), *"The greatest threat for the steppes lies in the progressive uniformity that agriculture currently imposes to the landscape, through a series of interrelated processes that often include:*

- *The land consolidation (larger plots and smaller proportions of boundaries).*
- *The crop specialization (for example, stopping the growth of leguminous plants in the cereal countryside).*
- *Reduction in fallow areas (which is possible due to the increased use of fertilizers).*
- *The removal of natural vegetation areas (by ploughing, drainage and reforestation)."*

Some other negative factors should be mentioned, such as: low land productivity (600-800 kg/ha of wheat) and the abandonment of agriculture due to an aging population. However, the area also has a number of strengths, including the excellent quality of some agricultural products and the ease with which one can convert traditional agriculture and farming into organic production.

Taking into account the particular features of this steppe region, there have been important initiatives in the Belchite area to promote rural development based on the coexistence of agriculture and conservation of the existing natural values.



Pin-tailed Sandgrouse, *Pterocles alchata* (J.M. Cereza)

Agri-environmental measures in Belchite

Three main types of measures have been applied since 2000 in the Belchite area:

- Maintenance of stubble and fallow.
- Creation of biological corridors through dry-land lucerne planting.
- Organic farming in dry-land herbaceous crops.

Maintenance of stubble and fallow

This measure aims to protect soils against erosion and to improve their conditions (organic matter, microbial activity, water storage) as well as to improve the steppe habitat for wildlife, providing increased food and shelter and avoiding the use of pesticides during the non-crop period.

It also involves keeping the stubble in dry-land herbaceous crops until 31 December every year, in a minimum surface of 5 ha during 5 years, and maintaining an equivalent fallow area (in other words, half of the farm under fallow and the other half with stubble, alternating the following year). It is also necessary to leave the straw on the ground in at least 50% of the stubble surface, and not to use pesticides during the non-crop period. The farmer receives 60 €/ha for agreeing to these terms.

An additional voluntary commitment can also be made for not ploughing the fallow land between

1 April and 30 September. This offers a higher premium (72 €/ha if this additional commitment is made).

The agri-environmental measure has been generally well received: it offers an attractive supplementary income for the dryland cereal farmers and, technically speaking, it is very simple to carry out since what it requires is very similar to the traditional wheat crop in the area. Highest uptake of this measure was reached in Campo de Belchite in 2007 with more than 2000 ha and around 90 requests.

Creation of biological corridors through dryland lucerne planting within Natura 2000

The main goal of this second measure is to promote the conservation of steppe birds. It is therefore mainly applied within SPAs and within the range of those species. More specifically the measure is designed to enhance feeding resources for wildlife, improve the breeding success of steppe birds that nest on the ground, fix atmospheric nitrogen, protect the soil and improve its structure, establish connectivity between areas of natural vegetation and control fire risk.

The farmer undertakes to maintain a permanent cover of dry-farmed lucerne for five years, without grazing or ploughing in April, May and June, and also in March if they are applying another sub-measure for "steppe birds". Harvesting must be carried out after 15 September. The amount of this measure varies from 90 to 120 €/ha, depending on the sub-measure applied.

This has been the measure that has reached the highest uptake, mainly due to economic reasons, since the subsidies are high, but also because it does not require any additional investments for the farmer over the five years. The only costs required are those derived from the planting of the lucerne in the first year.

Its uptake has increased steadily over the last years and nowadays no new applications can be financed. In 2010 more than 4,400 ha were covered by this measure, with around 165 applications.

The measure has successfully promoted the dry farming of a species commonly grown under irrigation in an area with low rainfall. Experts consider that this measure has been very original and innovative in its conception and quite challenging in its implementation. The vegetation

cover that is achieved is not very high, but a cover of around 50 or 60% is considered very valuable from the environmental point of view.

Preliminary results of a study by SEO/BirdLife which is evaluating the effectiveness of this type of AE measure for steppe birds in Spain, has revealed that the parcels benefiting from this measure contain up to 65% more birds than those where the measure was not implemented. Moreover, the absence of tillage allows the appearance of wild flora within the clearings among the lucerne, which contributes to the regeneration of the native steppe vegetation.



Wheat cultivation in Belchite (J.C. Cirera - SEO/BirdLife)

However, the extraordinary character of this measure, highly adapted to local conditions, also requires that controls are adapted to natural conditions. In this case, it is considered technically unfeasible to achieve a full coverage of the ground with the crops and the growing of spontaneous native vegetation (including low-size woody species such as *sisallo*, for example) is unavoidable after two or three years without tillage.

As a result, several 'sanctions for non-compliance' against the farmers were taken, mainly due to their apparent failure to meet the standards set in the Cross Compliance rules, since they "allow" the proliferation of perennial plants, and this led to disappointment of farmers who consider that such reductions in their payments are not justified. Some of them have expressed that "*an inspection especially hard in this matter is causing that many farmers reconsider the possibility of continuing this practice*".

Organic farming in dry-land herbaceous crops

Belchite Field, with a total of 10,000 hectares, has a good representation of organic farming for different kind of crops, particularly for durum wheat with almost 5,000 hectares in 2010 making use of this measure.

With a minimum commitment of 5 ha for 5 years, growing conditions are those laid down within the European Union and the Aragon Region regulations on organic farming and appropriate certificates are required. The amount of the aid to this type of farming is 60 €/ha.

The popularity of this measure in the Belchite area is mainly due to the technical ease for its implementation, as the durum wheat has traditionally been grown in this area in a very similar way to the requirements for organic farming, with crop rotation, fallow practice, little or no use of pesticides and chemicals in general and limited use of fertilizers. Organic farming has the added value of benefiting species and habitats since it is based in a high adaptation to local conditions and in a strong reduction of interventions, resulting in an extensive way of farming, quite similar to the traditional farming here.

Complementary measures

Marketing of pasta: product and origin differentiation

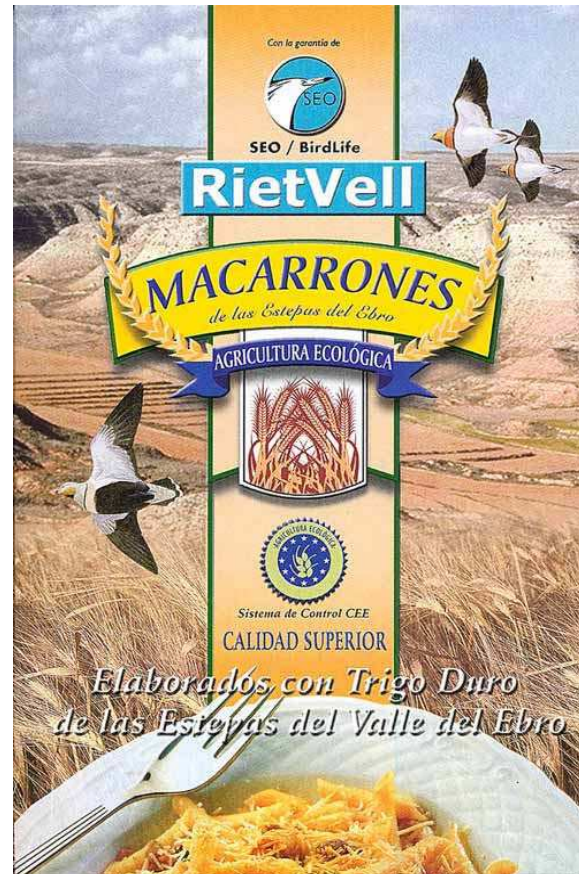
SEO/BirdLife, with financial support from the regional government and the bank *Caja Rural de Aragon*, studied in 2001 the feasibility for the marketing of local organic products from the best steppes of the Ebro Valley in Aragon (Monegros and Belchite) under a quality brand linked to the conservation of steppe birds.

As a result of this study, the company *Riet Vell* was set up with the support of SEO/BirdLife, in order to launch a pioneering initiative that seeks to promote the cultivation of dry land cereal in the main steppe areas of the Ebro valley.

Riet Vell S.A. is a company devoted to the production and marketing of organic products linked to nature conservation. For this purpose, they purchase organic durum wheat from Belchite and Monegros steppe areas, prioritizing those cultivated within Natura 2000 areas, and turn it

into macaroni and spaghetti of high quality, thanks to the special characteristics of this local durum wheat.

The marketing of the product is then made using its link to the conservation of steppe birds and habitats. From 2003 until now, *Riet Vell* has sold around 180,000 kg of pasta.



Macaroni produced with organic durum wheat from Belchite (Riet Vell S.A.)

Other business initiatives

Currently there is also a cooperative in the area, *Ecolécera*, which produces and sells local organic durum wheat, mostly from Natura 2000 sites; another company, *Ecomonegros*, has restarted bakery production and marketing of traditional varieties of organic wheat.

Recovery of traditional grazing

SEO/BirdLife has done some pilot monitoring on the effect of controlled grazing on the conservation of natural steppes in Belchite; it found that far from being harmful for the steppes, it may even be positive for its maintenance. In fact, this land use supports the adequate structure of the vegetation and enhances biodiversity in these habitats.

SEO/BirdLife is also studying the appropriate level of stocking rate in order to use livestock as a tool for managing the steppes and increasing the value of other products linked to the conservation of nature and culture.

Results and lessons learnt

The most valuable result from the implementation of the aforementioned agri-environmental measures and other initiatives is the gradual creation of conditions that allow the resurgence of diverse rural development initiatives and socio-economic options that help to maintain traditional agriculture that supports also the conservation of the Natura 2000 features.

Main results and achievements

- The conservation of steppe habitats; according to some experts there is now a "perfect mosaic" with a combination of naturally grown steppe vegetation and cultivation of cereals and lucerne. An increase in biodiversity of the steppe vegetation and for the populations of birds and insects has been noticed.
- The reserve of *El Planerón* has become in its 20 year history a basic reference for the conservation of steppe habitats.
- Thanks to the agri-environment payments, a better perception of the Natura 2000 Network by local farmers has been achieved, and even a farmer has stated that *"If the Natura 2000 network would be enlarged, it would be welcome since the heritage is preserved and payments are given"*.
- The organic farming of durum wheat improves the environmental conditions in the cultivated area and allows a higher price for the product. It also provides a new financial opportunity for farmers without the need for significant new investments on their part.
- Overall, these measures have allowed to maintain the traditional agriculture, so fighting against depopulation and contributing to the socio-economic viability of the area.
- The marketing of local products using a label related to its origin in the steppes of Aragón and in Natura 2000 areas, which is in turn linked to the conservation of steppe birds, has helped the continuation of wheat crops

which could otherwise disappear. It has also shown that there is a real economic potential for products derived from traditional farming that supports nature conservation and that the survival of these farming systems does not have to be solely dependent on farming support mechanisms.

- The quality of the local durum wheat, a variety that was at risk of disappearance, has been recognised, as well as the essential role played by many farmers in the conservation of unique natural values in Europe.
- The promotion, although still in its inception stage, of traditional grazing as a measure for biotope management and product enhancement is another beneficial practice introduced in the area.
- The promotion of tourism linked to nature and cultural values can provide an increase in local revenues. There is also a growing activity of educational and environmental volunteer programs in the area.
- An "Association of Friends of the Belchite steppes" has been set up, which has improved the dialogue with the administration.
- The creation of dynamic synergies between conservation, agriculture, tourism, hunting and local associations makes possible diverse rural development options.

Environmental services

- The measures implemented have had an impact on soil conservation and erosion control. Limiting tillage improves the soil structure and texture, increases organic matter and microbial activity, which allows better use of the limited water by plants and reduces the need of fertilizers.
- The cultivation of nitrogen-fixing plants, such as lucerne, reduces the need for mineral fertilizer. Its permanent cover protects the soil from erosion and can contribute to reduce the spread of potential fires.

Key aspects to improve

- Despite its initial successes, the uptake of the AE measures is too limited. Larger success and more positive results could be achieved with a more careful planning.
- The planning and coordination within the whole area could be improved. Overall objec-

tives should be agreed with local stakeholders seeking to optimize every investment or effort, as well as to properly frame the development of any new initiative. Farmers and other stakeholders should play a crucial role in an improved planning and coordination.

- Certain payments can favour the "business as usual", rather than becoming a real engine for rural development. As an example, many aged farmers prefer those payments that mean "doing nothing" on their land, due to the administrative and technical ease, instead of choosing measures that require some effort but bring enhanced production and value. This is usually linked to the education level and the presence of entrepreneurial spirit.
- Agri-environmental and other measures could be promoted also in areas outside Natura 2000 that are also important for steppe habitats conservation. Farmers would need more Technical Advice regarding the implementation of the measures. This is essential to youngest farmers, also in order to combat depopulation.
- It is necessary to promote and support traditional grazing as a main factor in the origin and maintenance of the steppe habitats in the region.

Lessons learnt and potential demonstration value

- The definition of measures well adapted to environmental and socioeconomic specific conditions has been successful even in the case of measures that seem to be risky (eg. dry framed lucerne).
- It is important to have an organisation that promotes cooperation and tries to boost the coexistence of agriculture and Natura 2000 network, working on the ground with all relevant stakeholders and with a long-term strategy.
- It is also important to give market value to products that are linked to unique or special conditions, for example creating or supporting brands that acknowledge the link between the product and those conditions.
- The coexistence of agricultural production and Natura 2000 protection can be achieved, but this requires a good understanding of the local conditions (both natural and socio-

economic) when defining, implementing and monitoring the measures. According to a local farmer and cooperative manager *"this experience has shown that nature conservation doesn't prevent farmers from producing"*.

- The design of agri-environment measures well adapted to the area, including specific and realistic commitments defined with the involvement of all relevant stakeholders (agriculture administration, farmers, nature managers, etc.), as well as proper field monitoring, are key factors for a successful implementation and a good coexistence of agriculture and the Natura 2000 network.

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Case Study

Conservation of semi-natural grasslands within SPAs in Bulgaria

High Nature Farmland in Bulgaria

Bulgaria retains a substantial area of high nature value (HNV) grassland. It is estimated that a third (ca 1.8 million ha) of the total Utilized Agricultural Area (UAA) is permanent grassland. Of this, 1,138,981 ha have been identified as HNV farmland (Bulgarian NRDP, 2007).

These HNV grasslands are essential for a wide range of rare and threatened species and habitat types of EU importance, including globally threatened birds such as the Imperial Eagle (*Aquila heliaca*), Saker Falcon (*Falco cherrug*), and European Roller (*Coracias garrulus*), amongst others. Significant areas of grassland are now also included in N2000 in view of their high biodiversity value.

Today, most of the farming on HNV grasslands continues to be done on a subsistence or semi-subsistence basis. The average plot size tends to be small or then very large. According to the Bulgarian NRDP, in 2003, around 75% of all agricultural holdings cultivate areas of 1 ha or less. Small-scale farmers are also the ones holding most of the livestock (61%). At the other end of the spectrum, farmers having more than 50 ha account for less than 0.8% of all agricultural holdings, but together they manage 78% of all UAA in Bulgaria.



High nature value farmland at Besaparski hills. Photo: Svetoslav Spasov

The main threats facing Bulgaria's HNV grasslands come from both land abandonment and land conversion. Land abandonment has led to a sharp drop in livestock numbers during the 1990s and the subsequent overgrowth of grasslands. Since the country's entry into the EU, farmers have also begun to transform large areas of grassland into arable land, vineyards or orchards, spurred on by generous EU agricultural subsidies under Pillar 1 of the CAP.

A pilot project for preparing HNV agri-environment schemes

After joining the EU, Bulgaria began to reformulate its agricultural policy in accordance with EU Regulations. Axis 2 of the National Rural Development Programme (NRDP) gave recognition to the importance of HNV farmland. Seven separate schemes (later expanded to nine) were foreseen for HNV farmland under the Agri-Environment Measures, along with a specific scheme for Natura 2000 payments.

In order to assist in the preparation of these RDP schemes, the Bulgarian Society for the Protection of Birds (BSPB) began a GEF/UNDP project in 2007 on HNV semi-natural grasslands, with the support of the Bulgarian Ministries of Agriculture and Environment. The project's objective was to assist the government partners in preparing for the implementation of the anticipated Agri-environment schemes (AES) and Natura 2000 payments in HNV farmland. Until then, Bulgaria had no practical experience in the running of such schemes (The first pilot SAPARD agri-environment scheme only opened to farmers in late 2006 after many years of delays).

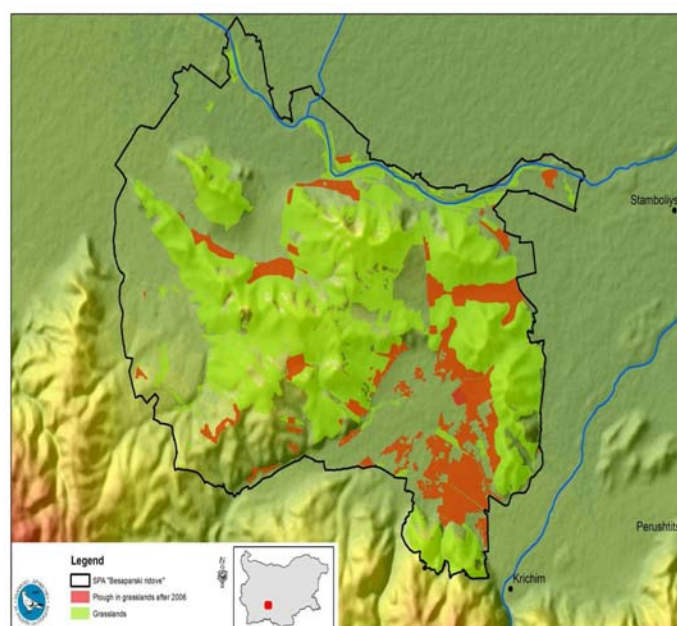
One of the key actions of the project was therefore to develop and implement a pilot scheme for HNV farmland management, mirroring the various measures available under the new NRDP. After a two year preparatory phase, the grant scheme was launched in 2010.

It included 4 types of measures:

- a) Natura 2000 payments - to compensate farmers for extensive grazing and mowing in semi-natural pastures that are not eligible for direct single area payments under Axis 1.
- b) Agri-environment payments – for farmers who implement specific management prescriptions, such as transforming arable land into pastures and ensuring their extensive maintenance.

- c) Non-productive investments –investments that do not increase the farmer's income but are beneficial to biodiversity, such as planting trees, installing nesting poles, building ponds, clearing areas of invasive alien species.
- d) Productive investments –aimed at assisting farmers to improve their facilities and livelihoods (e.g. buying machinery second hand which is much cheaper than new), thus encouraging them to increase their livestock and the area managed, as well as improving their ability to benefit from other NRDP measures.

The scheme was tested in two demonstration areas: Ponor Mountains (SPA BG0002005, 31,380 ha) and Besaparski Hills (SPA BG0002057, 14,765ha). Both are designated Natura 2000 in view of their importance for various grassland habitat types (e.g. 6210, 6220*, 62A0, 6410, 6430, 6510, 6520) as well as for a large number of species protected under the Habitats and Birds Directives.



Ploughing of grasslands and pastures in BG0002057 Besaparski Hills SPA, Source: BSPB Bulgaria, 2011

The scheme proved to be very popular with local farmers in both regions and demand far exceeded initial expectations. The success of the scheme can be put down to a number of factors: its careful preparation (the scheme was underpinned by good scientific data on the grasslands), the strong efforts made to involve farmers and help them access the scheme, as well as the open and transparent way in which the scheme was managed.

Relations with the farmers in both sites were especially important. The project team not only held regular information sessions for local stakeholders to explain the scheme's purpose, eligibility criteria and management measures but also met personally with most of the farmers to discuss the management options available to them and to ask for their feedback on the proposed scheme.

This helped stimulate an interest in the scheme as well as provide useful pointers for further refining it in a way that is best adapted to the needs and constraints of small scale farmers. The project also set up two Mobile Advisory Units (MACs) to further support its implementation. The MACs were responsible, amongst others, for advising farmers on the pilot scheme and helping them to fill in the application forms. By the end of the two year trial period the MACs had managed to build up a good reputation for the pilot scheme at both national and regional level, particularly amongst the farmers.



Close dialogue with farmers ensured the success of the pilot scheme Photo: Svetoslav Spaso

Another key element of the project's success was that, before its launch, detailed field surveys were carried out to identify, map and assess the distribution and conservation status of key grassland habitats in both Ponor and Besaparski Hills. This was integrated into a structured GIS database which could then be used to help orientate the pilot scheme towards the most appropriate grassland areas and subsequently monitor individual agreements with farmers.

The project also developed comprehensive guidelines on grassland management, based on the best scientific expertise available in Bulgaria which would be a valuable source of information

for further developing the nationwide HNV schemes under the National RDP.

LIFE project for conservation of raptors

Building on the success of the UNDP project, BSPB launched a series of further projects in 2009 – this time with EU LIFE funding - to continue to help with the development of suitable HNV schemes for semi-natural grasslands (and Natura 2000 payment measures) under the NRDP and to demonstrate how these could be effectively implemented on the ground.

One of the projects focuses on the conservation of the imperial eagle and saker falcon in Bulgaria. It is working to secure the conservation of their core habitats within 10 SPAs across Bulgaria. Together, these SPAs cover around 20% of the Natura 2000 Network and host a very significant proportion of the HNV grasslands in Bulgaria.

As elsewhere, many of these grasslands are under threat from a lack of management, as well as large-scale conversion to arable land (and other developments such as solar panels, wind farms, afforestation etc.).

Several of the successful actions that were tried out in the UNDP project are now being replicated through the ten LIFE project sites. Detailed field surveys are underway to map the distribution of grasslands within each site and to assess their conservation status. The results are then combined with other up-to-date spatial data regarding current agricultural use, land ownership, livestock numbers etc where they exist (e.g. using recent satellite images, LPIS...).

The resulting GIS database provides an invaluable source of integrated and up-to-date information on grassland habitat distribution, conservation requirements and land usage in all ten SPAs. Such a tool is not only useful for the LIFE project work but should also greatly facilitate the Ministry of Agriculture's task of identifying suitable areas for implementing the HNV agri-environment schemes and Natura 2000 payments within each of these sites (especially in view of current problems caused by out of date and inconsistent official data – see further below).

The LIFE project is also continuing to raise awareness amongst farmers of the RDP schemes for HNV grasslands and Natura 2000 payments. Local support groups are helping farmers to fill

in the necessary application forms, prepare final reports, complete field checks, etc. and generally providing advice and support wherever possible. So far BSPB has provided consultations and support to over 100 farmers within the project sites, and a further 300 farmers on a nationwide level.

In addition, the LIFE project is carrying out various demonstration activities to illustrate how grassland management can be undertaken in a way that supports both the local farmers and the nature conservation interests of Natura 2000. Two model farms have been set up which have already been showcased to around 500 farmers nationwide. A model is also being developed for the sustainable management of upland pastures.

As with the UNDP project, the LIFE project team has remained in continuous dialogue with the Ministries of Agriculture and Environment in order to lend its support to the development and practical application of the various HNV agri-environment schemes and Natura 2000 payment measures under the NRDP programme.

In addition to offering technical advice and feedback on the national schemes based on its own observations and experiences it also submits detailed recommendations for improving the performance of the existing measures, addressing implementation problems and introducing additional HNV schemes as foreseen in the RDP.

The RDP's HNV and Natura 2000 payments: experiences so far

As the previous sections illustrate, the NGO projects have succeeded in developing a wealth of good practice experiences as regards the design and implementation of RDP schemes for HNV grasslands. In principle this should have greatly facilitated the task of the Ministry of Agriculture in preparing well designed schemes under the NRDP for HNV grasslands and Natura 2000 sites, and ensured their efficient and effective implementation.

Unfortunately, despite the projects' best efforts, the government schemes remain fraught with problems, delays and incompatibilities. According to the Mid Term Review the uptake of Axis 2 was extremely low – only 4.6%. By 2009 only 20,337 ha of HNV pastures had been authorised for payment under the AES scheme for restoration and management of grasslands, which

represents just 1.8% of the total HNV permanent grassland identified in 2007.

The following key problems that have been cited for this exceptionally low uptake:

- Poorly formulated cross compliance rules and GAEC standards for HNV grassland. During the preparation of NRDP in 2007, the total area of permanent pasture identified as HNV farmland was estimated at 1,138,981 ha (cf Attachment 4 to the 214 measure in the annex 5 of the NRDP). However in a subsequent statement, the Ministry of Agriculture announced (in 2009) that the area of permanent pastures defined as being in good agricultural and environmental condition (GAEC) was only 435,597 ha, meaning that over 700,000 ha of permanent grassland failed to meet the requirements for Single Area Payments.

The reason why such a large area of grassland was excluded seems to be because the Ministry of Agriculture decided that only permanent pastures or meadows 'that are cleared of unwanted bushes' qualify as being in Good Agricultural and Environmental Condition and are therefore eligible for Single Area Payments (following EC guidelines). The standard does not consider the fact that, in Bulgaria as elsewhere, a significant proportion of the valuable HNV grasslands contain bushes, shrubs and even trees which are an integral part of the grassland ecosystem and a vital feature for the conservation of many rare and threatened species that use grasslands as their main foraging or breeding habitat.



Start of ploughing in HNV site close to imperial eagle nest within Sakar Hills SPA. Photo: K. Sundseth

After much discussion, the GAEC standard was eventually adjusted in 2010 and split into two, with a new separate standard in-

roduced specifically for HNV farmland schemes, Natura 2000 payments and other protected areas.

This allows farmers entering the AES contracts and applying for Natura 2000 payments to retain scattered single trees or copices, shrubs, hedgerows covering up to 25% of the overall grassy area. However this new GAEC standard does not apply to Single Area Payments (SAPs) and other area based support payments under Pillar I. Instead the original standard of requiring permanent pastures and measures to be cleared of unwanted bushes remains in place.

This double standard has had a very negative impact on HNV grasslands in Bulgaria. Because of the lack of recognition for the value of their HNV farmland, farmers that were initially excluded from receiving SAPs have been encouraged to clear their grasslands of valuable bushes and scrub and convert them to arable land in order to qualify for the lucrative SAPs, even in Natura 2000 sites where such activities are normally prohibited according to the N2000 designation orders. It is estimated that in Sakar and Bessaparski Hills SPAs 19% and 17% respectively of HNV grassland has been ploughed over between 2007 and 2010 already.

Low payment rates for AES schemes: The difference in standards for GAEC has also had a negative impact on the uptake of agri-environment schemes for HNV grasslands. The payment rates for these AES schemes do not take into account the loss of income from not being eligible for SAP payments (due to differing standards) nor does it take sufficient account of the opportunity costs of prohibiting new drainage and ploughing and fertilisers use, or the need for new and specialized equipment (and other investments) to carry out extensive grazing or mowing.

- Payments rates for the restoration and management of grazing or mowing on grasslands currently offers rates of 151 €/ha. Faced with a choice between the easy-to-access SAPs to convert their HNV grasslands to arable and the complicated payment schemes for maintaining HNV grassland, many farmers, understandably choose the former. The procedures for obtaining these payments are far easier and there is little control, unlike for the HNV payments which are far more complex and constraining on the farmer. As a result, the SAP payments have become a major driving force behind the conversion of pastures into arable land.

- Administrative problems with the implementation of AES schemes: According to the mid term review of the NRDP, the implementation of the AES schemes is also severely hampered by administrative problems, poor implementation and delays which has led to a significant loss of interest and even suspicion amongst farmers. There have been long delays, sometimes over a year, in the processing of applications and payments which created timing and planning problems for farmers. The application procedures have also been criticized for being overcomplicated and not sufficiently transparent which has, in turn, lead to a large proportion of the applications being rejected.

The criteria for eligibility were also changed during the course of the agreement which meant that many farmers who had applied in good faith and carried out the works in accordance with their AES contracts finally received no payments because in 2010 Ministry of Agriculture and Food excluded certain lands, mainly low productive pastures, from the land eligible for agricultural subsidies. These changes were done based on aerial photo images and distance checks and not on the spot field checks which would have reflected the real situation.

Also apart from the work done by the NGOs through the LIFE and UNDP projects there was little publicity and almost no support or advice to farmers to guide them in applying for the various HNV schemes.

- Incomplete and out of date information on grassland distribution and agricultural land use. The implementation of agricultural payments under Pillars I and II is strongly dependent on the existence of various registers which should contain reliable information on the types of agricultural land. According to the Mid Term Review this should function properly and contain information representing the *actual situation* on the farms.

However, it became clear early on in the process that the Land Parcel Identification Systems which are used by the MAF and SAF to determine the eligibility of land for agricultural subsidies, especially for grasslands often contain out of date information. When this is used by the State Fund Agriculture to control payments it gives a misleading picture of the condition of the grasslands. As a result, there have been numerous reports of errors where plots should have been classified as arable land instead of grassland, or

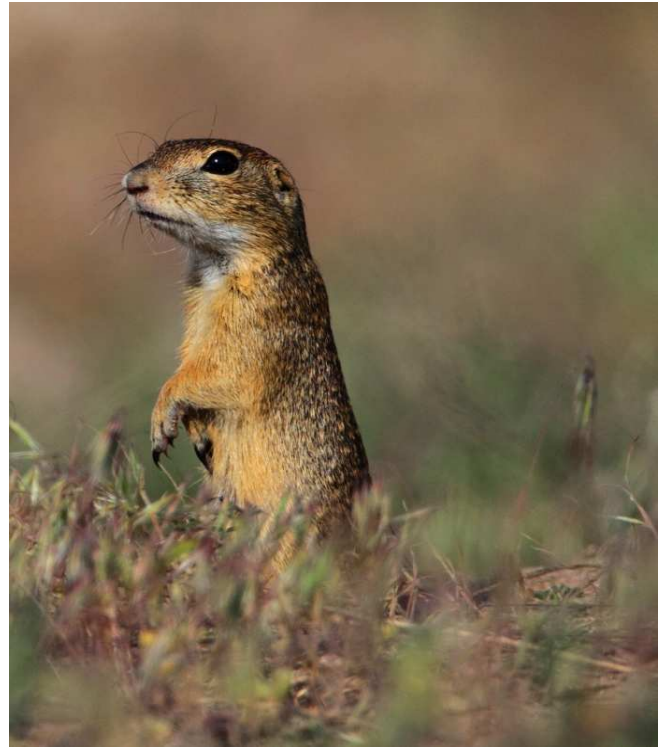
vice versa. This has not only caused long delays in processing AES applications but has also led to some farmers unfairly receiving heavy penalties for 'over-declaring' their land.

- Delays and conflicting rules regarding Natura 2000 sites: In Bulgaria, All Natura 2000 must have Designation Orders in place which are approved by the MOEW. These Designation Orders should specify the conservation objectives of the site, the species and habitat types of EU importance for which it is protected, and, where appropriate, any restrictions on, or compulsory activities within the site. The designation orders for some of the ten SPAs of the LIFE project for instance include important management prescriptions such as a ban on ploughing of pastures, the conversion of grassland to arable land or forestry, a ban on the use of rodenticides and cutting / removing of hedges etc.

However, these are often very succinct and do not provide sufficient information as to when and where such activities are prohibited. They are not always underpinned by precise and up-to-date information and maps on the distribution, current state of conservation and land use of the EU protected habitat types and species present (although this information is to a certain extent available in summary form in the Standard Data Forms for each site). Nor are they supported by more detailed management plans since the Ministry of Environment has decided not to develop such plans for individual Natura 2000 sites unless they are also National Parks.

As a result, it is very difficult to control illegal activities that contravene the restrictions imposed in the Designation Orders. Within the ten LIFE project SPAs, there have been numerous cases of valuable grasslands (even within a 5 km radius of an imperial eagle nest site, or core areas for the European souslik) being ploughed up and converted to arable land, or cleared of scrubs and bushes, in order to qualify for SAPs, even though such activities are prohibited by the Designation Orders. The NGOs have submitted complaints with documentary evidence, based on their own up-to-date field surveys and on the spot inspections, to the MOEW in order to bring attention to these problems. But so far no sanctions have been taken.

According to MOEW the plots in question are identified in the land cadastre as arable land



The souslik, the main prey species for the imperial eagle. Photo: Svetoslav Spasov

and are therefore not subject to the same restrictions as for grasslands. The fact that the land cadastre is often very old and out of date and no longer reflects the current situation is not taken into account, nor is the fact that many arable plots have in the meantime reverted back to grassland which is why they were included in Natura 2000 in the first place. The continuing differences between the MOEW and MAF land control system are having a serious impact on all AES measures as well as on the Natura 2000 payments.

The Designation Orders also needed to be in place before the Natura 2000 payment scheme under the NRDP could be launched as it is the basis for determining the compensation and extra management costs for farmers of being in Natura 2000. The scheme was finally launched in 2011 but uptake so far has also been exceptionally poor.

According to the feedback received by the LIFE project, local farmers in the ten SPAs are unwilling to enter into the scheme because of uncertainties over the eligibility of their land and the poor rate of payment which does not take sufficient account of the loss of opportunity costs resulting from a ban on ploughing or hedge cutting etc...

Strengths and weaknesses encountered

Success factors

The pilot scheme for supporting HNV farmland, funded through the UNDP/LIFE projects, proved to be very popular with farmers and helped to demonstrate the viability of rural development schemes for the management and restoration of HNV grasslands in Bulgaria. The experiences gained from the pilot scheme and the lessons learnt should in theory have greatly facilitated the task of the Ministry of Agriculture in preparing similar schemes for HNV grasslands at national level, as foreseen under Bulgaria's NRDP (2007-2013).

The following key success factors have been identified from pilot scheme:

- The use of accurate up-to-date spatial data on the distribution and status of grasslands within the two pilot SPAs, as well as on existing land uses was vital for underpinning the scheme and orientating it towards the most appropriate HNV grassland areas.
- The development of comprehensive guidelines on grassland management, based on best scientific expertise available, also helped to guide the type of management measures to be included in the grant scheme and to calculate the appropriate payment rates according to RDP rules.
- There was strong public participation and dialogue with local farmers, involving not only information sessions and publicity campaigns but also practical assistance and individualized support to farmers wishing to apply.
- There was close cooperation and dialogue with the Ministries of Agriculture and Environment to pass on good practice experiences in the running of the scheme and to share any lessons learnt.

The fact that Bulgaria's first NRDP gave particular emphasis to the value of HNV grasslands and foresaw a series of specific agri-environment measures for HNV farmland can also be considered an important strength factor since it lays down the framework for ensuring the long-term sustainable management of a significant part of the valuable semi-natural grasslands in Bulgaria.

Weaknesses

The AES schemes and Natura 2000 payments represented the most significant opportunity for the conservation of HNV grasslands in Bulgaria, but the implementation of these measures was not smooth and included many delays, with the result that the interest in the scheme from farmers remains extremely low. Paradoxically, instead of supporting HNV grassland management – the current measures under Pillar I and II are causing their large scale destruction.

Many of the problems and delays (listed above) can be put down to:

- The use of inappropriate and inconsistent GAEC standards which has led to the exclusion of over 60% of all HNV grassland areas identified in the original NRDP of 2007. The change in the GAEC standard for Pillar II measures in 2010 has not resolved the issue since Pillar I continues to require clearance of all shrubs and bushes in order to be considered in GAEC and qualify for SAPs.
- The lack of recognition of the cost of the restrictions imposed on Natura 2000 sites in the payment rates for HNV farmland and Natura 2000 agreements.
- The lack of consistent, accurate and up-to-date information within the LPIS database reflecting the actual situation on the farms and the continuing differences between the MOEW and MAF land control systems.
- The poor capacity within the institutions responsible for the scheme to manage them in an efficient, transparent and timely manner.
- The low level of communication and dialogue with farmers about the schemes. Currently, only the National Agriculture Advisory Service is formally responsible for providing support on AES at national level.
- The lack of cooperation between the Ministries of Agriculture and Environment over the management of HNV farmland and Natura 2000, and inconsistent rules regarding management requirements and restrictions within Natura 2000.

Next steps and future challenges

The government authorities and NGOs are currently looking at ways to improve the existing schemes and overcome the difficulties encountered so far. In particular, efforts are being

made to ensure that the LPIS system is improved so that it contains accurate, up-to-date information on agricultural use etc. The Axis 2 working group within MAF is also considering a proposal to include a separate GIS layer for permanent grasslands within the LPIS, using data from the detailed field studies carried under LIFE and UNDP projects.



Grazing in Sakar Hills, just before the field was ploughed over. Photo: Svetoslav Spasov

New HNV measures have also been introduced in the 6th modification of the RDP in 2010 and were launched for the first time this year (2012). One of the schemes, which BSPB helped to develop, is to support farmers who want to convert arable land back to grassland. If the scheme is used to its fullest capacity it has the potential to convert large areas of arable land back to grassland (paradoxically this may include converting arable lands that were only recently ploughed in order to receive SAPs).

Unfortunately, in its first year, the deadline given by the Ministry for receiving applications was extremely short (less than one month) and, as a result, only 9 applications were received largely thanks to the efforts of the LIFE project team. But, provided the farmers are informed well and given sufficient time to submit their applications, it is expected that the uptake in the 2nd year may be substantially greater since the scheme has captured the interest of many farmers in the SPAs in particular.

Nevertheless, the overall problem regarding the conflicting GAEC standards will continue to incite the degradation and destruction of valuable grasslands until it is resolved. Until then it is quite possible that the new RDP/CAP schemes will do more harm than good to HNV farmland and valuable grasslands in N2000 sites.

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Case Study

Managing cereal steppe land for birds in Southern Portugal



Little Bustard (Gabriel Sierra & Juan M. Simón)

Background

Mainland Portugal is almost entirely (86%) classified as rural with a very low population density (41 inhabitants per km²), which is significantly lower than the EU average. Biodiversity in general – and the diversity of bird species in particular – is very high in Portuguese rural areas.

Since Portugal's accession to the EU, there has been a considerable effort towards the modernisation of farm holdings and agri-food businesses, through infrastructure development and improvement with an emphasis on irrigated land.

This is also reflected in Portugal's RDP since one of its main objectives is to enhance competitiveness in the agricultural and forestry sectors. Because of this, the largest proportion of the EARDF investments has so far been earmarked for intensification of farming and forestry activities.

The Portuguese RDP does however also recognise the fact that the Natura 2000 network represents 16 per cent of all farmland and managed forest.

The RDP is conceptually in line with the National Strategy for Conservation of Nature and Biodiversity (NSCNB), especially with regard to four strategic lines which are common to both documents:

- to ensure the conservation of the Natura 2000 network;
- to develop specific actions for conservation and management of target species, habitats and landscapes;
- to integrate nature conservation policies with the policies and planning of other sectors and
- to promote education and training on subjects relating to nature and biodiversity conservation.

Yet, in practice, very few agri-environment schemes (AES) have been set up to date or implemented to support the conservation of nature friendly farming in Natura 2000 sites.

This case study examines one of the few initiatives that is in existence to maintain habitat quality for steppe birds in Portugal.

Natura 2000, key habitats and species and agricultural issues

Located in south Portugal the Special Protection Area of Mourão/Moura/ Barrancos lies in a region that is characterised by poor soils and an arid climate. This has led to the dominance of extensive agricultural systems based on rotational cereal cultivation. This habitat, known as cereal steppe or pseudo-steppe, is typical of the Iberian Peninsula.

It is characterised by a mosaic of habitats that include cereal areas (mainly oats and wheat), stubble plots, fallow land, non-irrigated legume crops and pastures and covers more than 33.900 ha, around 40% of the SPA area.



Cereal steppe in Alentejo (SPEA/LIFESisão)

The area is of extraordinary importance for steppe birds. Among other species, it hosts important populations of Little Bustard, Great Bustard, European Crane, Black-bellied Sandgrouse and Stone Curlew. These birds rely on the maintenance of open extensive cereal crops based on rotation schemes, the maintenance of traditional olive groves and the preservation and restoration of cork and holm “montado” areas.

But as elsewhere, such activities are under increasing threat from the combined effects of land abandonment and agricultural intensification. As in other inland areas of mainland Portugal, human population density is low: a mere 7.62 inhabitants per km², against a national average of 113.20 in/km². A high proportion of the population is dedicated to agriculture but because most farmers (63.63%) are older than 55 years, many are abandoning their traditional practices.

In 1999 the SPA area hosted 4.602 families dedicated to traditional farming. In the last agricultural census, undertaken in 2009, this number had decreased to 3.830.

Since Portugal's accession to the EU, in 1986, the evolution of the agricultural landscape also started to depend on the Common Agricultural Policy (CAP) programmes, which tended to encourage the reconversion of the extensive pseudo-steppe systems into more productive uses, namely through the irrigation of areas with more productive potential, the reforestation of the less productive land and the installation of permanent crops such as vineyards and olive groves. Although olive groves were a traditional culture, they were confined to small areas and integrated in the DOP (Denominação de Origem Protegida) “Azeite de Moura” but the tendency now is for large companies to purchase large land plots and install intensive olive groves.

More recently, this tendency has been supported by the construction of the Alqueva dam, the largest artificial lake in Europe and the core of the Alentejo Irrigation Plan, which aims at achieving the economic development of the region, based on promoting the agricultural and tourism sectors. Although the entire complex of the Alqueva will not be completed until 2025, on February 2002 the reservoir started to fill and since then, several irrigation projects have been developed, drastically changing the traditional agricultural practices and deeply impacting on wildlife in general and steppe birds in particular.

Because only a small part of the CAP funds are available for agri-environmental measures they are not able to counter-balance the negative impacts on wildlife of the other RDP measures which are used to finance more productive agricultural systems.

A LIFE project aiming to find ways of maintaining traditional farming practices

Between 2002 and 2006, a partnership was established between SPEA (the Portuguese Society for the Study of Birds, BirdLife partner in Portugal), the government agency responsible for nature conservation (ICNB - Institute for the Conservation of Nature and Biodiversity), and two local farmers' unions (AACM - Association of Farmers from the Municipality of Mourão and AJAM - Association of Young Farmers of Moura).

This partnership launched a Life-Nature funded project aimed at conserving the Little Bustard in Alentejo through the implementation of a Species Action Plan and an experimental land management plan which was developed together with local farmers so as to benefit the little bustard while maintaining farmers' incomes.

This project developed and tested out a pilot agri-environmental scheme for open farmland in Mourão/Moura/Barrancos. Its objective was to support the traditional farmers who continue to farm the land in a way that preserve the steppe habitat.

The proposed scheme included the following elements:

- Rotational farming: to keep the structure of the habitat, the farmland management was to include threshold percentages of four crops: dry cereal, dry legume crops, permanent pasture and fallow;
- Maintenance of fallows: a minimum percentage of fallow in each farmland was required and there was to be non farming interventions during the breeding period, in order to guarantee the availability of safe nesting areas;
- Legume crops: a list of legume species and varieties was recommended, which included preferentially those used by birds as food, like alfalfa, silage-pea, and chick-pea.



Legume crops (SPEA/LIFESisão)

The pilot scheme proved to be very popular with the farmers. During the four years of the LIFE project a total of 127 contracts were signed with 45 different farmers inside the SPA, targeting a total area of 3.241 ha, approximately 12% of the SPA's agricultural area.

Farmers were paid an agreed amount per hectare, variable according to the specific actions implemented in each case. The project also established an inventory of breeding and wintering little bustards in the region in order to identify key populations which should be targeted by the new agri-environmental scheme.

In addition, an awareness campaign was developed and implemented to inform decision-makers, farmers and the general public about the need to preserve the little bustard and other dry grassland birds of Alentejo and a regional action plan for the little bustard was drafted, in co-operation with farmers, local and central administration. The drafting of the action plan started with the organisation of a workshop with the participation of 36 experts in agriculture and nature conservation from farmer unions, environmental NGOs, administrations and universities of Portugal and Spain.

The action plan identified the following specific objectives for the conservation of Little Bustard in Alentejo:

- To maintain the suitable habitat during breeding, post-breeding and wintering periods in the whole distribution area;
- To secure a survival rate large enough to maintain the actual distribution of the species and the higher densities in the most important areas;
- To fill in gaps of knowledge regarding the biology of the species;
- To raise public awareness about the conservation of the species.

By the time the Life project reached the end, in December 2006, a momentum had been reached with the local farmers who, together with the NGO charged with the project coordination, successfully lobbied the competent authorities to include their pilot agri-environmental scheme into the next RDP programme.

A new agri-environment scheme aimed at supporting extensive rotational cereal cultivation

The new agri-environment scheme was designed to support the maintenance of the rotation scheme dry cereal – fallow, as proposed by the Life project.

To be eligible for this measure, farmers were required to declare the totality of open land of their agricultural holding (except intensive irrigation areas), which must be larger than 5 hectares and have less than 10 trees per hectare.

Farmers have to agree to maintain the eligibility conditions, keep the whole open land area free from scrub cover, keep a record of the area covered by each crop and all the farming operations undertaken. In addition, the total stocking density must not exceed 0,7lu/ha (livestock units per hectare of forage area) + 10% of the area must be contain small-grain cereal.

A rotation scheme approved by the Local RDP Support Structure (LSS) must be put into place that guarantees, each year, a minimum of:

- 20 - 50% of the open land area covered by small-grain cereal crops;
- 10 - 30% of the open land area left as fallow;
- 5 - 10% of the area mentioned above must be fallow for two or more years (in those farm holdings where there is no fallow at the onset of the contract, there is a period of two years for this compromise to begin being fulfilled).

The minimum cereal area defined by the LSS cannot be cut for fodder, except under exceptional climacteric situations defined by the LSS as well.

The farming calendar and set of allowed farming techniques will be annually defined by the LSS but between 15 March and 30 June, grazing, fodder cutting and soil mobilisation are restricted in at least 20% of the fallow (depending on the agricultural and climacteric conditions of each particular year, grazing or fodder cutting can be authorised by the LSS until 31 March).

Under favourable conditions where there is no erosion risk, the LSS may determine that part of the fallow (always inferior to 10%) should be mobilised until 15 March to create areas of bare soil favourable to steppe birds. Only one soil mobilisation is permitted per year and the way it is undertaken is conditioned to the erosion risk.

Land plots subject to chemical weeding must include untreated stripes with an area equal or larger to 5% of the plot.

Farm holdings larger than 50 hectares must include on accessible water point per 100 hectares and specific crops for fauna (e.g. back-eyed-peas, chick-pea, vetches, grasspea) in a 1:50

proportion, distributed in non-contiguous crops with areas of 1 ha or less.

Fencings, installation of arboreal hedges, small woods or increase of the crown cover can't take place without previous permission from the LSS. Finally, existing temporary ponds must be preserved and a 20 m protection stripe around them must be kept without soil mobilisation or use by livestock.



Seeding (SPEA/LIFESisão)

Success factors and lessons learnt

The involvement of the governmental agency responsible for agriculture during the pilot project was crucial to the subsequent creation of specific agri-environmental measures by adapting the proposals made by the project, first for the SPA of Mourão/Moura/Barrancos and later for the remaining SPAs recently designated¹.

However, although the new agri-environmental scheme was proposed in 2006 immediately after the end of the LIFE project, it was only approved within the RDP in December 2010. This led to a significant loss of momentum and interest on the part of the farmers who were initially very supportive of the scheme.

Also the final version turned out to more complex than the initial proposal made by the LIFE project and, unlike that one, it had not been negotiated with the farmers. As a result, the take-up of this measure has been disappointingly weak.

¹ A major achievement of this project was also the designation of new SPAs for steppe birds in 2008.

Some of the additional reasons pointed by the NGOs for this lack of up take are that:

- the measure has not been sufficiently advertised;
- the level of payment is too low when compared to the high level of obligations and additional management activities imposed on the farmers;
- the overall budget allocated to this measure is too limited to cover even the most important areas within the Natura 2000 network.

The farmers that do take up the measure, benefit from technical support for its implementation from local support structures which are well organised and include NGO representatives, who have good communication channels with the farmers' community. However, these structures have insufficient funds, which limits their ability to intervene.

In order to achieve better results it would be important to:

- properly advertise the new measures
- make the measures more appealing, by increasing the subventions
- reduce the administrative burden associated with the scheme
- guarantee the local support structures the necessary funds to adequately support the farmers in the implementation of the new measures
- finalise and approve the SPA management plans so as to ensure the AE measures are targeted towards the most important areas for the birds and habitats of EU importance.

An important lesson learned with this case study is that it is possible to design and implement a successful agri-environmental scheme, but in addition to the initial time and effort invested through this LIFE project, there is a need for sustained action as well. This example shows that when there is no continuity and long term commitment by the relevant competent authorities, valuable measures carried out in agricultural areas within Natura 2000 may be largely lost.

At the moment, 45% of the budget spent on agri-environment measures in Portugal has been allocated to landscape preservation in the Douro river vineyard region, the maximum support being 900 €/ha. This region is outside Natura 2000 and represents 10% of the area covered by the measures. On the other hand, all the remaining regions, enclosed by Natura 2000 and covering

90% of the area have been granted 55% of the budget but the maximum support rates reach only 90 €/ha.

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Case Study

Preserving sand grasslands on the Szenes pasture and other parts of Transdanubia, Hungary

The status and chances of conservation of HNV grasslands in Hungary

Almost all Hungary's large geographical regions still have some form of traditional farming. In the Great Hungarian Plain, which was almost completely turned into intensive agricultural fields, grasslands have only survived as fragments.

The interconnected patches of these grasslands, most of which are High Nature Value (HNV) areas, serve as ecological corridors, and are indispensable for a large proportion of Hungary's natural values, ranging from birds of prey of European importance to populations of corn-crakes, great bustards, ground squirrels and many nationally protected and endangered insect and plant species. For some of these species there are targeted agri-environmental schemes in the Rural Development Plans (RDP), while other species are affected favourably indirectly.

Grasslands represent almost thirty percent of the Hungarian Natura 2000 network, and RDP measures, which target also 'reversing biodiversity decline', include payments for Natura 2000 areas, agri-environment and Less Favoured Areas (LFA). The only quantifiable tar-



Grassland in Szenes (Ferenc Elblinger)

get however relates to farmland birds: stock index of wild birds nesting at agricultural areas increases by 12%.

Geographic location, key Natura 2000 habitats and species and agricultural issues

Mezőföld is the Transdanubian part of the Great Hungarian Plain, which lies between the rivers Danube and Sió at an altitude of 100-180 m. Originally a steppe, it is now an agricultural area of high quality. The landscape includes intensive cropping fields and extensive grasslands, with soils affected by sediments from the nearby streams and sand. Native ecosystems vary from sandy steppes to humid meadows and alluvial forests with *Alnus glutinosa*.

The fauna is rich in endemic and endangered species such as the nosed grasshopper (*Acrida hungarica*) or the tiger moth (*Ammobiota festival*).

The Szenes pasture Natura 2000 area is located at the southern part of Mezőföld. It is a part of the largest adjacent grassland mosaic of the area. No management plan has been drawn up so far for the pasture itself. However, the main conservation objectives have been identified by the national park officially responsible for all conservation activities in the Szenes pasture Natura 2000 site. These are the following:

- to prevent encroachment by shrubs with grazing and mowing;



Sand dune and sandy grasslands typical of Szenes pasture (Hungarian Geocaching Association)



Iris humilis subsp. *arenaria* (Wikimedia Commons)

- to maintain the population of ground squirrels by permanent grazing;
- to conserve the population of *Iris humilis* ssp. *arenaria* by using an adequate grazing method;
- strict protection of habitats in order to maintain populations of plant species of European importance (*Eleocharis caniolica*, *Sphagnum* spp.) and rare and characteristic species of the habitat types (*Iris pumila*, *Iris humilis*, *Stipa borysthena*, *Orchis morio*, *Dianthus superbus*, *Alkanna tinctoria*, *Orchis militaris*, *Listera ovata*, *Eriophorum latifolium*);
- to halt the spreading of the invasive plant species (black locust, tree of heaven, common milkweed and Canada goldenrod);
- to maintain the desirable water regime in humid habitats;
- to preserve the wetlands in the area.

The grassland communities found in the area, i.e. the Pannonic sand steppes and the lowland hay meadows (*Alopecurus pratensis*, *Sanquisorba officinalis*) are habitats of a wide range of species of European importance like *Iris humilis* ssp. *arenaria* and species under national protection such as hoopoe (*Upupa epops*), red-backed shrike (*Lanius collurio*),

saker falcon (*Falco cherrug*) and *Lycosa sin-goriensis*. The main threats to these habitats are abandonment of pastoral systems on the one hand and the intensification of the agriculture on the other which in many cases lead to these valuable grasslands being turned into croplands.

The steppe polecat (*Mustela eversmanni*) occurs here as it can feed on the stable populations of rodents to whom this mosaic of habitats is favourable.

The situation is less favourable for the European ground squirrel (*Spermophilus citellus*), due to the many barriers to migration between colonies and to habitat fragmentation, intensive agriculture, and afforestation or lack of management of primary or secondary steppes. Ground squirrels abandon sites where the grass grows tall, probably because short vegetation can facilitate the detection of predators or conspecifics.



Ground squirrel (MME archive)

These habitats and species were preserved and maintained by traditional grassland management in the past, providing a living for farmers. But some of the former grasslands were converted into intensive arable fields, while others were abandoned.

This was due to a number of reasons, including intensification of agriculture, higher financial incentives for crop production rather than for animal breeding, loss of knowledge and culture of animal husbandry during the years of large co-operatives and, last but not least the changing life standards (urban vs. rural life)

Rural development measures targeted to maintain the traditional grazing and mowing type of grassland management provide the only chance to preserve these species and habitats. These measures are the following:

- agri-environment (particularly the zonal schemes),
- payments for Natura 2000 grasslands,
- LFA payments,
- preservation of native and endangered farm animals' genetic resources through breeding and
- assistance provided to non-productive investments.

A future potential source of income could be linked to eco-tourism, taking into consideration the attractive landscape, the presence of the ground squirrel population and the native sheep herds in the area. Meat and milk products might be sold later with an eco-label, but this opportunity has not been used yet.



Feather grass meadows in the Mezőföld area (MME archive)

Schemes, programmes and measures applied in the Mezőföld area to preserve HNV grasslands

In the southern Mezőföld area the most widely used agri-environmental scheme for grasslands is the general agri-environmental grassland scheme. The requirements of this scheme are very basic, such as:

For grazing (area grazed only):

- grazing density 0.2–1 LU /ha must be between on the grassland;

- no chemical weed control, fertilization, irrigation is allowed;
- by the end of the third year of the scheme 0.3 LU /ha value for grazed livestock should be reached;
- application of shepherding / sectioning grazing;
- haymaking is allowed for winter feeding;
- annual clearing cutting to be carried out in the autumn, thereafter the hay should be removed from the land by 31 October;
- time of mowing should be reported to competent authority.

For cutting (area cut only):

- grasslands should be utilized by 2 cuttings a year;
- no chemical weed control, fertilization, organic manuring and irrigation is allowed;
- after cutting, the hay should be removed from the land by 31 October;
- time of mowing should be reported to competent authority.

Out of the 2178 ha of grasslands in the protected part of the southern Mezőség area this scheme is used by some tens of farmers on only 294 ha. The only reason for this is the insufficiency of funds: many other farmers have applied and have been rejected due to the lack of resources.

A scheme with somewhat stricter requirements is also run in a small area of the southern Mezőség. Additional requirements for this are the following:

- harrowing, grassland aeration is prohibited;
- 10% uncut area to be left;
- bird friendly mowing methods;
- bird deterring chain use when mowing;
- bale removal within 1 month;
- draining of surface waters is prohibited;
- 1st cutting is after 15th June;
- reporting on bird nests found to national park directorate (NPD);
- reporting the timing and location of the mowing to NPD;

- only daytime machinery work is allowed;
- electric fences can only be settled by the permission of NPD.

These requirements are set to maintain the nesting and feeding sites of ground-nesting birds (such as corncrake, short-eared owl and Montagu's harrier) and the habitat for protected plant species. The only user of this scheme in this area is the Danube-Drava National Park Directorate which manages 110 ha of grasslands here. Being more complex, this scheme is not very popular among farmers here.

The Szenes pasture was a model area for the LIFE 05NAT/HU/000117 project "Habitat Management on the Pannonian Grasslands in Hungary" run by BirdLife Hungary (MME) in partnership with some of the Hungarian national parks between 2006 and 2010. One of the goals of the project was to elaborate a more sophisticated scheme to be used and monitored on different sites. One of these was the Szenes pasture Nature 2000 area. The scheme is more tailored to the needs of biodiversity (as explained later), but can only be taken into practice with a wider group of farmers if they are provided with advice on a regular basis.

The sandy hills were grazed by a native breed of sheep called cikta, re-establishing an old traditional practice.



Flock of traditional cikta sheep near Szenes (Hungarian Geocaching Association)

Grasslands with higher yields were maintained using a mower dragged by a tractor, at the front of which a frame was fixed with chains hanging from it and making a big noise so that

animals like nesting birds or small rodents have a better chance to escape. The width of the mower used in HNV areas should never exceed 3 meters. According to experiments, the survival rate of these animals at a given area can increase 2 to 3 times this way.

In areas where encroachment has already started or weeds are more dominant, flail mowers have been used.

In order to prevent non-native and other dominant weeds from spreading, regeneration of the abandoned grasslands was enhanced by sowing seeds of native plants, regular mowing and by a sophisticated grazing method. These would mean extra costs for farmers, so need to be compensated.

The fact that the Danube Drava National Park manages grasslands in the area allowed for some experimenting in plots separated from each other with fences. Results are still to be analysed and discussed.

Regular biomonitoring has been an integral part of the programme. Botanical surveys were carried out for 5 years at each phases of succession. It showed e.g. that grazing and mowing results in a much easier regeneration of the grassland: the grazed and mowed plots had the highest plant cover with the lowest litter depth. It also showed that the idea about propagules of a protected grass species *Stipa borysthenica* arriving through grazing on the sheep's hair does not work and additional propagule introduction would be necessary in the following year.

Some important lessons learnt are connected with the season and the frequency of mowing during one year: mowing should be carried out once, between July and August. This would benefit biodiversity and the farmers' needs for a hay yield. The mower type (sickle mowers giving a better result than rotary ones) and the height where the mower is set are also important factors.

Another positive aspect was the full-time employment of shepherd during the Life project—a profession that has almost disappeared in Hungary due to the unfavourable conditions and low living standards the profession offers.

To disseminate the results and also to draw people's attention to the importance of nature conservation in HNV areas a number of stakeholder have been held, information posts were installed on site and brochures have been produced from the LIFE project.

Although the project itself was finished in 2010, the Danube Drava National Park is planning to continue with awareness raising activities started during the Life project on the importance of nature conservation in HNV areas, as well as the regular biomonitoring of the sites affected. The National Park has been using the practices developed during the project in the area managed by them since then.

As the Danube Drava National Park manages grasslands in the area it was possible to experiment in different plots and with different results

Main results and lessons learnt from the experience

Biomonitoring data and observations show that populations of the ground squirrels and the plants of European importance have been preserved, pointing out that further monitoring is needed to detect the long-term effects of the different methods applied.

The main conclusion is that HNV grassland ecosystems are complex and their protection can only be ensured by specific and well-planned programmes: well-targeted schemes are necessary for the conservation of specific natural assets.

To preserve what remains of Hungary's HNV grasslands and their biodiversity it is vital to define the sufficient payment levels to get farmers on board. Their involvement is therefore fundamental during the planning of the next period of agri-environmental and other rural development schemes.



Chained frame on tractor (MME archive)

Small and cheap inventions like a frame with chains at the front of the tractor dragging the mower can help a lot to save a significant part of the fauna of grasslands. To get these into everyday practice, the collection and publication of good examples, best practices is needed as well as an active network by which these can be more easily spread among farmers participating in agri-environmental schemes.

It is also important to have an adequate advisory service to share with farmers information on natural values, make them understand natural processes and help them to implement best practices that contribute to nature conservation at no or very low cost in many cases. These services do not exist in Hungary at the moment, with the exception of the work carried out by some national park employees and a few green NGOs. Involving stakeholders from the very start in the preparation of management plans could offer an important contribution to raising farmers awareness of nature's need and also to improve the knowledge of farmers needs by naturalists.

Further capacity and a programme with a much more solid funding base should be established to monitor how successful agri-environmental schemes are in preserving biodiversity in HNV and especially in Natura 2000 areas.

Although in many cases it is crucial to run conservation programmes with specific objectives, taking into consideration the limited financial resources available for these, we can conclude that in the next planning period rural development measures need to be elaborated in a more targeted way, measurable indicators need to be established against which a real evaluation is made throughout the programme.

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