LIFE Project Number

LIFE04NAT/HU/000119

FINAL REPORT

Covering the project activities from 01.09.2004 (project start date) to 31.12.2008

Reporting date

31/07/2009

LIFE PROJECT NAME

Grassland restoration and marsh protection in Egyek-Pusztakócs

Data project

Project location	Tiszafüred and Egyek villages, Hortobágy NP, Hungary
Project start date:	01/09/2004
Project end date:	31/12/2008
Total Project duration (in months)	52 months
Total budget	€ 1 040 000
EC contribution:	€ 700 302
(%) of total costs	67.34
(%) of eligible costs	100.00

Data Beneficiary

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1. TABLE OF CONTENTS INCLUDING ANNEXES

2. LIST OF KEYWORDS AND ABBREVIATIONS

Key-words:
adaptive ecosystem management, alkali steppe, Birds Directive Annex I species, collaborative management, enhancing conservation status of Natura 2000 habitats and species, extensive agriculture, fire management, grassland management, grassland restoration, grazing, habitat restoration, Habitats Directive Annex I habitats, Hungarian grey cattle, loess steppic grassland, prescribed burning, priority habitat types, restoration ecology, systematic conservation planning, traditional land use

Abbreviations:

BD	Birds Directive
EC	European Commission
EPMS	Egyek-Pusztakócs Marsh System
FIMP	official Forest Implementation and Management Plan
HD	Habitats Directive
HSH	Hungarian State Holding (Magyar Nemzeti Vagyonkezelő zRt.), the new organisation after the integration of the National Land Fund with two other state holding companies
HNPD	Hortobágy National Park Directorate (Beneficiary)
LNR	Land Registry Number
LP	Land purchase
LR	Land Registry
MEW	Ministry for Environment and Water
MP	Master Plan for the Long-term Rehabilitation of the EPMS
NAC	Nagyiván Agricultural Company
NLF	National Land Fund of Hungary
PA	project area
PBC	Hortobágy Nature Conservation and Gene Preservation Public Benefit Company
PC	Project Coordinator
PM	Project Manager
TIMPGR	Technical Implementation and Management Plan for Grassland Restoration
UD	University of Debrecen (Partner)

3. EXECUTIVE SUMMARY

3.1. PROJECT OBJECTIVES

The overall objective of the project was to implement the second phase of the long-term, landscape-level habitat rehabilitation programme of the EPMS, which focused on terrestrial habitat types but also contained simultaneous actions to protect the marshes already rehabilitated in the first phase. Specifically, the proposed project aimed to:

- establish corridors between grassland fragments and create buffer zones around marshes,
- transform arable lands in designated corridors and buffer zones into grasslands or wooded areas,
- eliminate the degrading effects of goose farms,
- allocate grazing to ungrazed areas,
- apply grazing and fire to open up homogeneous reedbeds and increase habitat diversity, and
- provide feeding and nesting resources for birds of prey and waterbirds.

To achieve the above objectives, we have implemented 7 habitat restoration/management actions (4 non-recurring, 3 recurring), purchased land in 2 actions, carried out 3 preparatory actions, 2 public awareness actions and 3 operation and monitoring actions.

- We established two ecological corridors by purchasing 11 ha arable land, restoring grasslands on 42 ha arable land on 28 land parcels and by extensive cultivation of 31 ha arable land on 4 land parcels.
- We established 11 bufferzones in critical areas by restoring grasslands on 364 ha arable land on 135 land parcels neighbouring marshes.
- We restored grasslands on an additional 341 ha arable lands on 29 land parcels to reduce the proportion of arable land within the protected area from 32% to 14%.
- In total, we started the restoration of two Natura2000 priority habitat types on 747 ha, of which loess steppic grasslands (code 6250), the most threatened open habitat type of the region, were restored on 93 ha and alkali steppe grasslands (code 1530) were restored on 654 ha.
- We purchased 59 ha arable lands on 65 land parcels for grassland restoration.
- We eliminated goose-farming from alkali steppes by purchasing 306 ha grasslands and by transforming the area to sheep- or cattle-grazing.
- We established a grazing scheme involving 18 farmers/farming companies on 2580 ha grasslands, which includes 820 ha grasslands not grazed before the project and which also gradually includes newly restored grasslands depending on their conservation status.
- Grazing on 400 ha was applied in 4 marshes and fire management was carried out on 120 ha in 1 marsh to open up homogeneous reedstands.
- 148 ha arable lands were cultivated extensively (without using any chemicals) to enhance populations of small mammals to strengthen the food base for BD Annex I birds.

The key results of the project are:

- Fragmentation of N-SW and SW-E grasslands has been eliminated and marshes are now protected by extensive buffer zones.
- Target grass species became dominant in Year 2 after restoration and Year 1 to 2 appeared as the turning point of restoration for plants.
- Restoration has resulted in grasslands with a plant species set similar to that of target native alkali grasslands in only three years.
- The restoration of loess grasslands was slower, but the number and density of target species increased in every year.
- Grassland arthropod communities became more similar to those of target native grasslands from Year 2 to 3 after restoration.
- The abundance of farmland birds increased significantly after grassland restoration.

- An information campaign based on personal meetings with farmers was highly successful in establishing cooperations with farmers in various areas. As a result of this activity, 18 farmers or farming companies are now involved in the grazing system that covers the overwhelming majority of grasslands in the area.
- The grazing system is quite exceptional in the Hortobágy region, where there is a general problem of undergrazing due to inadequately low numbers of livestock.
- The grazing system is based on the self-interest of farmers and ensures the long-term maintenance of grazing as the optimal way of management of alkali and loess grasslands.
- Homogeneous reedstands were opened up and marshes became more diverse, benefiting numerous plants and BD Annex I birds.
- The abundance of small mammals increased considerably by the extensive cultivation of arable lands compared to intensive cultivation.
- Breeding and wintering populations of raptors have increased and the area was recolonised by great bustards as a nesting species.
- The project has attracted exceptional interest from conservation professionals, was invited to 4 national conferences and presented results in 9 journal articles, 14 talks, and 7 posters.
- The project initiated a thawing of relationships between the national park and local stakeholders, who now view national park activities and programs as an opportunity to cooperate rather than as a threat to their interests.
- We directly contributed to this process by 3 open days events, one workshop/village forum and close personal contacts with the major stakeholder groups.
- A project brochure in 4 languages, a project booklet in 2 languages, a website, 4 information boards and a layman's report ensures the efficiency of general dissemination activities.
- The habitat restoration and management actions have greatly increased the ecotourism potential of the area, as can be seen by the successful operation of several businesses offering accomodation and food to such tourists in Kócsújfalu, the Nyugati fogadó and Egyek village.

3.2. LIST OF KEY DELIVERABLES AND OUTPUTS

Action	**Key deliverable or output**
A1 Preparation of land purchase	Preparation of 71 land purchase contracts for 92 land parcels on 364 ha
A2 Plant and community inventory	Report on inventory of plant species and communities
A3 Development of mgmt. plans	Management plan for restored grasslands [TIMPGR] Management plan for newly created wooded areas [FIMP]
B1 Land purchase (arable lands)	65 land parcels on 59 ha surface area purchased in 3 locations
B2 Purchase of goose farm lands (grasslands)	18 land parcels on 306 ha surface area purchased in 1 location Goose-farming eliminated, replaced by sheep and cattle grazing
C1 Grassland restoration	Two ecological corridors and 12 buffer zones established; restoration on 760 ha arable lands (loess 95 ha, alkali 665 ha)
C2 Afforestation	80 ha area in 8 parcels afforested but damaged by external forces
C3 Purchasing cattle	50 grey cattle purchased
C4 Construct fold for cattle	Complete grazing infrastructure constructed, 1 fold, 1 shepherds' home, 3 electric fences (2 stationary, 1 mobile)
D1 Grassland mgmt. by grazing	820 ha grasslands newly involved in grazing, 18 farmers/farming companies grazing 2580 ha grassland in PA
D2 Grazing, fire mgmt. in marshes	Cattle-grazing on c. 250 ha in Fekete-rét marsh and c. 25 ha in Meggyes marsh; 120 ha marsh burned in in Fekete-rét marsh
D3 Management of wooded areas	22 ha wooded areas mowed in Year 1; replacement by 30 000 *Quercus* saplings

D4 Ext. cultivation of wildlife lands	9 crops grown on 148 ha arable land cultivated without chemicals
E1 Awareness raising	1 website in Hung./Eng., 4 information boards, 3000 project brochures in Hung./Eng./German/French each, 500 project booklets in Hung./Eng. each, 3 open days for locals and 1 for conservation experts, 1 scientific conference and 1 workshop, 1 local stakeholder workshop, project logo, 9 papers, 14 talks, 7 posters, layman's report
E2 Developing guidelines	"Guidelines for the restoration and management of pannonic steppes" document
F1 Project operation and management	Nomination of PM, PC; Project Implementation Team and Advisory Board; decree by HNPD Director on project mgmt., successful implementation of all actions (exc. afforestation)
F2 Biological monitoring	Monitoring system of permanent plots marked by wood exclosures, data, 2 monitoring reports, 1 master plan for rehabilitation, photo documentation, 9 papers, 14 talks, 7 posters
F3 External audit	Audit completed.

3.3. SUMMARY OF ACTIONS

The 5000-ha EPMS is the site of one of the oldest and largest habitat rehabilitation programmes in Hungary and in Europe. The first phase involved the hydrological reconstruction of degraded marshes, whereas the current project improves the conservation status of grasslands and protects the rehabilitated marshes. Five habitat restoration/management actions were conducted on c. 3700 ha: grassland restoration (747 ha), afforestation (80 ha started), grazing of grasslands and marsh edges (2580 ha), fire management of marsh edges (120 ha) and extensive cultivation of arable lands (148 ha). The extensive field activities required preliminary actions, e.g. land purchase to establish ecological corridors and buffer zones and to eliminate goose-farming, preparation of a baseline assessment and management plans for restorations. The actions also needed adequate monitoring and communication to the general public, regional/local stakeholders and farmers.

The key results are very promising. 92% of lands targeted for purchase have been purchased and more than 98% of the grassland restoration targets have been reached. Afforestation has been started earlier than foreseen, but it ended without any success due to damage by wild boars and drought. Grazing management of grasslands and marsh edges is implemented by local farmers and by the project cattle using the infrastructure constructed in the project. The fire management of Fekete-rét has been successfully implemented in 2007 after two unsuccessful attempts. Lands cultivated for wildlife increased small mammal abundance and attract high numbers of birds of prey. Awareness-raising activities have produced the deliverables foreseen and reached a large audience of conservation professionals, non-governmental organizations and local stakeholders. The project had a well-defined and operating management structure, and comprehensive knowledge has been acquired by extensive biological monitoring of the habitat restoration and management actions.

The involvement of local stakeholders has induced several changes but resulted in both greater conservation benefits and greater involvement by farmers in the implementation of the project and in the maintenance of the results. The positive attitude of HNPD to the farmers was rewarded by fruitful cooperations with farmers and created the conditions for the long-term maintenance of the achievements of the project. The changing attitude of local stakeholders is the most beneficial socio-economic effect of the project.

The project directly benefitted two Natura 2000 priority habitat types and numerous Natura 2000 species, and has provided extensive knowledge on restoration and subsequent management of the two habitats. The innovation novum of the project is that it attempts to maximise the diversity of habitats in order to maximise landscape-level biological diversity. This project draws attention to the importance of considering geographically and biologically intertwined habitats and the specific need to address the role of their diversity in maintaining landscape-level biodiversity at the policy level.

4. INTRODUCTION

Background, problem, targeted conservation issues and threats: The EPMS is the last remnant of alluvial habitat mosaics, consisting of extensive pannonic salt grasslands and marshes (Natura 2000 code: 1530) and fragments of pannonic loess grasslands (code 6250). A slow but steady deterioration of the marsh system started after floodings by river Tisza had ceased due to river regulations in the 1850s. The drying of the area accelerated in the 1920s and 1960s, resulting in a further expansion of arable lands and higher human impacts, e.g. chemical pollution from agriculture, degradation by goose-farming, increased drainage of the marshes. These in turn caused the decline of wet habitats and a substantial loss of biodiversity. The rehabilitation of the EPMS is the largest and oldest of such programmes in Hungary and possibly in Europe as well, involving c. 5000 ha and 30 years. In the first phase of rehabilitation (1976-1996) the hydrology was restored by the construction of a water supply system. The hydrological restoration led to the revitalisation of the marshes, but did not improve the conservation status of grasslands.

Overall and specific objectives: The overall objectives are to protect grasslands and marshes from fragmentation and pollution and to reestablish spatial connections by restoring grasslands on alkali flats and loess plateus. The specific aim was to restore grasslands on 760 ha, of which at least 36 ha is loess steppic grassland and the rest is pannonic salt grassland (Natura2000 priority habitat types). To reduce degradation of grasslands, goose-farming was to be eliminated by purchasing 306 ha land around the farms. In addition, the project aimed to increase habitat diversity in the entire landscape by afforestation on 80 ha and in marshes by grazing and burning edges on c. 90 ha. Grazing by cattle was planned on c. 520 ha non-grazed grasslands and 300 ha marsh edges, and by sheep on c. 300 ha degraded grasslands. Finally, the project aims to benefit Bird Directive Annex I raptors and waterbirds by extensive cultivation of 148 ha to enhance prey populations and provide feeding sites.

Site involved and habitat types/species targeted: The site involved by the project is a 5000-ha area of the EPMS. The entire project area is an SPA and most of it is SAC. EPMS is a Wetland of International Importance and is a World Heritage Site as part of HNP. The project aims to benefit both Natura 2000 habitats (Habitats Directive Annex I priority habitat types 1530 and 6250) and species (Birds Directive Annex I species, e.g. *Falco tinnunculus*, *F. vespertinus*, *F. cherrug*, *Haliaeetus albicilla*, *Grus grus* etc., and several priority species: *Botaurus stellaris*, *Aythya nyroca*, *Aquila heliaca*).

How did the project come about: The long-term rehabilitation of the EPMS, laid out in several documents, consists of three phases, of which the current project is the second phase. This phase extends the marsh rehabilitation to a complex, landscape-level rehabilitation programme. 2004 was an excellent starting year, because several 10-yr rental contracts terminated that year and were renegotiated with project objectives enjoying priority.

Socioeconomic context: Most (85%) of the project area is owned by the state and managed by HNPD, which offered good chances for successful large-scale habitat management actions. Local farmers and farming companies renting these lands as well as farmers owning lands cooperated with HNPD in the restoration/management of these habitats and in the after-LIFE maintenance of the

system. Although land was easy to buy in most of the project area, complex land ownership in one area made land purchase progress slowly but steadily.

Expected results: 1650 ha habitat will be restored or managed according to the objectives. Land use will be irreversibly changed on 760 ha. Degrading effects will be eliminated on 300 ha, and grazing is extended to 520 ha. Heavy use and human impact on the area will substantially decrease. Increased availability of natural habitats, better land use structure and more diverse habitats will result in favourable conservation status for the entire landscape. The various restoration and management actions will benefit populations of many species of Community interest. The project will serve as a model for adaptive ecosystem management in Europe.

5. LIFE-PROJECT FRAMEWORK

Working method: project actions, subactions and planning: The project applies five main actions, two habitat restoration actions (grassland restoration C1, afforestation C2 and D3) and three habitat management actions (grazing D1 and D2/1, fire management D2/2, extensive wildlife lands D4) to improve the conservation status of the EPMS. Smaller actions include establishing infrastructure for habitat management (purchase of livestock C3, construction of infrastructure for grazing C4) or follow-up treatments (management of wooded areas D3). Preparatory actions are necessary for habitat restoration and management (baseline survey of target habitats A2, development of management plans A3), and land purchase is necessary to eliminate degradation or to implement restoration of grasslands (A1, B1, B2). Actions were planned along two ways. First, modern concepts of conservation biology (e.g. ecological corridors, buffer zones, habitat mosaics) were applied to design actions to reduce or eliminate as many threats as possible within the scope manageable. Second, actions were designed to increase the diversity of habitats at the landscape level to increase biodiversity, resulting in various actions with variable targets and measures. An overview of the framework followed during project development is given in **Annex 1**.

Presentation of Beneficiary, partners and project-organisation:
HNPD (Beneficiary) is a regional government body administering protected areas in NE Hungary. UD (Partner) is a premiere higher-education regional institute. The project organigram is attached in **Annex 2**. Tasks were divided between Project Coordinator 1 (everyday project coordination, preparation of meetings/negotiations, overseeing field actions, working with local stakeholders, record-keeping) and the Project Manager (overall planning, scheduling, evaluation of progress, strategic negotiations, report-writing and presentations). HNPD staff and UD researchers participate in small project implementation teams organised for specific actions.

Modifications in project: Several technical changes and related financial changes were part of a request for project modification in December 2006. One preparatory action has been conducted by the Beneficiary rather than by the Partner. Lands to be purchased were proposed for reduction because some lands had previously been owned by the state. Goose-farming was proposed to be eliminated by purchasing lands but not the farms themselves. Project organisation changed because the PC was employed by HNPD for the project duration (foreseen as Ext. Assistance in the revised application). The modification has been officially accepted by the Commission and an additional clause was granted in 20/02/2007.

6. PROGRESS, RESULTS

For the geographic location of entities named in the actions, please see **Map 1** in **Annex 3**.

6.1. "A" PREPARATORY ACTIONS/MANAGEMENT PLAN PREPARATION

A.1: Preparation for land and farm purchase

No.	Activity	Output	Status with date of start/completion)	Responsible person
1	Participating in tender for large Villongó area	175 ha land contracted	Completed 30/09/2004	L. Megyery, PC
2	Assembling all information on landowners	Database on all lands to be purchased	Completed 30/11/2004	PC, L. Megyery
3	Organising meeting for landowners, stakeholders	Village forum in Egyek (64 participants)	Completed 24/02/2005	PC, L. Megyery, PM
4	Prep., negotiations for 2nd large Villongó area	76 ha land contracted	Completed 31/07/2005	L. Megyery, PC
5	Prep., negotiations for 3rd large Villongó area	Final 54 ha land in given area contracted	Completed 31/08/2005	L. Megyery, PC
6	Contact with landowners in Csattag area (Egyek)	Letters to 180 persons, numerous phone calls	Completed 31/08/2005	L. Megyery, PC
7	Negotiations with owners in Bőgő marsh area	8 ha land contracted	Completed 30/06/2006	L. Megyery, PC
8	Negotiations with landowners in Csattag area	Several small land parcels purchased	Completed 31/12/2008	L. Megyery, PC
9	Contact with landowners in all remaining areas	Letters, phone calls to numerous landowners	Completed 31/12/2008	L. Megyery, PC

We expected from this action that "the land and farm purchases will go smoothly, efficiently and in a timely manner, and that the purchase of a total of 730 ha of land and farm will provide the very basis for other, management-type, actions." (hereafter a citation of the "Expected results" section from the revised application will start the description of each action).

A decree by the Director of HNPD (signed 16/05/2005, see more on this in F.1) appointed Mr. L. Megyery as coordinator for land purchases in this LIFE-project. Mr. Megyery has been responsible within HNPD for land purchases in the Hortobágy region since 1990. The decree also laid out detailed responsibilities related to land purchase (preparation, contacts, negotiations, before-purchase and after-purchase land registry work, HNPD recordkeeping procedures etc.) and a sharing of these tasks between the land purchase coordinator and the law office representing HNPD.

The preparations for the purchase of Villongó grasslands progressed without substantial problems or delays. Landowners were especially cooperative near Bőgő marsh, where two-thirds of the target lands were purchased in spring 2006 and the rest was purchased in fall 2008. Due to complex land ownership near Csattag marsh, the preparatory action has taken more time and work here than foreseen in the revised application. Many of the landowners have deceased or moved to unknown addresses and some cannot legally prove ownership of their property. The indicators to test performance are (i) the number of contracts prepared (over 90 contracts completed), (ii) land parcels purchased (18 parcels consisting of 288 subparcels in Villongó, 6 parcels near Bőgő-marsh,

1 parcel near Kis-Jusztus and 56 parcels near Csattag), and area purchased (305 ha in Villongó, 8 ha near Bőgő, 4.6 ha near Kis-Jusztus and 43.9 ha near Csattag).

In summary, 361 ha land or 92% of that foreseen in the modified application (392 ha) has been purchased in actions B.1 and B.2 until 31/12/2008 (please see **Table 1**), and the preparations for these purchases all belong to action A.1. In addition, HNPD has purchased 14.8 ha on 20 parcels in the Csattag area outside of the current LIFE-project for swapping lands for grassland restoration in the eastern bufferzone of Csattag marsh.

Table 1. Summary of the results of land purchase activities.

Area name	Action	Project modified target (ha) [a]	Purchased in project (ha) [b]	%
Bőgő	B1	5.77	6.7	116
Csattag	B1	67.77	43.9	65
Kis-Jusztus North	B1	12.68	4.6	36
B.1 Subtotal:		86.22	55.2	65
Villongó	B2	305.68	305.68	100
	Total:	391.9	360.88	92

[a] After adjustment with lands previously owned by the state, and based on HNPD's request for project modification, approved by the Commission in 2006; values are from the text of the modified application.
[b] Lands purchased, and sales and property right changes recorded in Land Registry as of 31/12/2008.

This action required more work than foreseen for various reasons. The compilation of the list of landowners, especially in the Csattag area (Egyek village), took several months and the notification of landowners has progressed slowly due to the high number of people who moved to unknown addresses or deceased. Experience suggest that for successful purchases, negotiations in person are necessary with the landowners, who are often elderly people, which thus takes a lot of time and travel. In some cases, they also needed to be transported by car to the lawyer's office in Debrecen to sign the purchase contracts. These are the reasons for relatively high Travel costs (493 €). The rest of the work associated with contracting is considered under B1.

A.2: Inventory of plant species and communities on native grasslands

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Field survey of vegetation	Updated habitat map on 1600 ha target area	Completed 31/10/2004	PM, researchers
2	Systematic sampling of plants, invertebrates, birds	Data on flora and relevant fauna	Completed 30/11/2004	PM, researchers
3	Data processing, report-writing	Report on species and communities inventory	Completed 31/03/2005	PM, researchers
4	Interpretation of results	Inferences regarding habitat restoration and management	Completed 31/07/2005	PM

The expected results from this action were "seventy 2*2-m quadrats will be surveyed on c. 540 ha native grasslands. Data on species and communities will be used to select key species for grassland restoration and to judge the success of restoration."

The inventory of species and communities was conducted in 2004 by the involvement of five researchers. We started by delineating habitat patches based on aerial photographs available from 2003 from the area in and around Csattag marsh, an area which contains all major habitat types of

the EPMS and which were not targets of restoration or management actions (other than extension of the grazing system, see later). Field-work was conducted throughout the vegetation period, with detailed study of plant associations twice in 2004 (early June and late July). During the study, 264 plots (2x2 m) were surveyed in 60 characteristic habitat patches. The number of plots was at least 3 per patch, and we surveyed additional plots in heterogeneous patches (average 4.4 plot per patch). The sampling of plant-dwelling and soil surface-dwelling invertebrates was conducted by sweep-netting in 60 patches and by Barber pitfall traps in 29 patches. Finally, point counts of birds were carried out in 60 patches. In summary, the area studied encompassed c. 1600 ha and the number of quadrats was also well above that foreseen in the revised application, without a concurrent increase in costs.

The results, presented in a report entitled "Baseline assessment of major terrestrial habitat types of the EPMS", revealed that both the species diversity and community diversity of the areas studied are higher than previously expected. A total of 30 plant associations have been identified and the composition and abundance patterns within each association were described. A total of 439 species were detected in the habitat patches studied. Plants were represented by 196 species, whereas 177 invertebrate species were found, of which most species were Carabidae beetles (67 species) and spiders (51 species), whereas 31 Orthopteran, 19 Hemipteran and 9 Homopteran species were also detected. Finally, 66 bird species were observed to use the habitat patches. Several species of conservation or biogeographical interest have been found (e.g. two spider species new to the fauna of Hungary, four beetle species with less than 5 records from Hungary in the last 100 years) and the data were used in evaluating the success of the actual grassland restoration activities in the project (e.g. Déri et al., *in press* in the journal *Restoration Ecology*, Török et al., *in press* in *Biological Conservation*). The baseline assessment report was attached in Annex 5.1 to the Interim Report and the coordinates of the sampling sites, as well as the complete set of abundance/dominance tables for all permanent plots, and the identification of key species for restoration were attached in Annex to PR2 upon the request by the EC in letter 18/04/2007.

This action was conducted by the Beneficiary and not by the Partner, as foreseen in the revised application due to a delay on the Partner's side to sign the Partnership Agreement. This change was approved by the Commission as part of the 2006 project modification. Apart from which project participant contracted the researchers, the action was carried out in full accordance with the plans, including the expenditures. The costs of this action were as planned and consisted of subcontracting the field and laboratory research work to researchers (5146 € EA). The indicators used to test performance include the number of habitat patches surveyed (60) or the number of plots surveyed (264). Besides the report mentioned above, we have used various parts of these data as reference values for the restoration in 21 conference presentations (6 international) and 9 scientific papers (2 international refereed).

A.3: Developing management plans for restored grasslands and wooded areas

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Developing and reviewing TIMPGR	2 drafts of TIMPGR written, commented, revised in HNPD	Completed 28/02/2005	PM
2	Reviewing of internal draft of TIMPGR	Meetings with HNPD and external experts	Completed 28/02/2005	PM, PC
3	Incorporating comments by external experts	Third draft of TIMPGR	Completed 30/03/2005	PM
4	Commenting on third draft	6 meetings with local	Completed	PM, PC

	of TIMPGR, adjustments evaluated and incorporated	stakeholders (PBC, Nagyiván Agricultural Ltd., private farmers)	30/04/2005	
5	Assembling information on lands for restoration and management	Georeferenced database on all field actions of the project (LRN-based database not available)	Completed 15/05/2005	PC
6	Preparation of final draft of TIMPGR	TIMPGR adopted by HNPD	Completed 30/06/2005	PM
7	Field survey of lands planned for afforestation, 2 meetings on technology	Habitat evaluation report (part of FIMP) for 6 sites	Completed 31/07/2005	PC, I. Mihalik, subcontractor1
8	Drafting of afforestation management plan and negotiations	Forest implementation and management plan (FIMP) for 4 of 6 sites	Completed 31/07/2005	PC, I. Mihalik, subcontractor1
9	Designating lands to be divided for afforestation	3 on-site meetings with land registry officials	Completed 30/11/2005	PC, I. Mihalik, subcontractor2
10	Field survey (geodetics) for land division	Basis outline map	Completed 30/04/2006	PC, subcontractor2
11	Land Registry official process of land division	Official resolution on land division	Completed 31/05/2006	PC, subcontractor2
12	Drafting of afforestation management plan	FIMP completed for remaining two sites	Completed 31/10/06	PC, subcontractor1
13	Submission of FIMP to forestry authority	Approval of FIMP for each site	Completed 30/11/06	PC, I. Mihalik
14	Revision of TIMPGR by including lands originally planned for afforestation	Revised TIMPGR	Completed 12/31/2008	PC

The Expected results in this action were that “two management plans will contain detailed plans to manage c. 85 ha loess steppic grasslands, c. 585 ha salt steppes and c. 70 ha wooded areas that are planned to be restored or created in this project.”

The technical implementation and management plan for grassland restoration (TIMPGR) has been completed by 30/06/2005 (please see Annex 5.2 to Interim Report). We have put a special emphasis on working with local stakeholders in the framework of collaborative management, thus, the TIMPGR was also discussed with all stakeholders (NAC, PBC, and 15 private farmers), which caused some delay in the completion of the plan. By principle, requests by stakeholders were considered only if the changes involved greater conservation benefits than the original plans (for details, please see Request for project modification).

By law, the official forest implementation and management plan (FIMP) for each wooded area needs to consist of (i) a habitat evaluation study and (ii) an implementation plan, both prepared by an authorised forestry company (subcontractor). Habitat evaluations were completed for each of the six sites on time. Official implementation plans in Hungary can by law be prepared only for full land parcels bearing their own LRNs. For this reason, the implementation plan could be completed for six parcels at four sites, but two parcels had to be divided for official forest planning to progress. The division of land parcels caused extra work (please see table above). The basis outline map (completed by 30/04/2006) was satisfactory for this purpose, thus, by 31/10/2006, the FIMP for the remaining two sites could also be completed (please see Annex 5.3 to Interim Report).

As an unforeseen activity parallel to the development of the management plans, a georeferenced database on each action by LRNs, landowners/users, renters etc. has been compiled, which greatly helped the further technical planning, management decisions and negotiations with stakeholders. This is not trivial because at the time of the project development and negotiation (2003-2004), there was no official LRN-based electronic database available to HNPD (or anybody). We had originally planned this project in 2002-2003 using unmanageably large sheets of paper maps, the only source of LRN-information available at that time.

The action progressed mostly as foreseen. A delay was caused by the legal requirement that official forest implementation plans can be developed only for parcels under separate LRNs and such a division of two lands has taken c. 1 year. However, this delay has not caused further problems as afforestation was foreseen only in autumn 2006 in the revised application. The specific indicators for this action are the two plans completed. Complete versions of both the TIMPGR and the official FIMP were attached in Annex to the Interim Report (Annex 5.2, 5.3).

After our efforts of afforestation failed due to external circumstances (see below), the EC in their letter of 11/04/2008 requested that the TIMPGR be updated with the lands on which afforestation had originally been planned but where grassland restoration was implemented after the failure of afforestation. This activity has been accomplished in the fall of 2008 via a subcontract to Rotkiv Bt., who had previously participated in the fieldwork as a subcontractor for the Partner and had overall experience on both major project developments and grassland management in general. The revision also included a correction of some errors and an updating of the list of land parcels where grassland restoration was carried out in the project. A revised version of the TIMPGR is attached to this report in **Annex 4**.

Most of the costs of this action was subcontracting the development of the grassland restoration management plan (1347 € EA), the complete revision and update of the plan (1161 € EA) and they also involved travel to discuss the plans with stakeholders (156 € TR) and collection of professional literature by purchasing books (103 € CM) and photocopy (17 € EA).

6.2. "B" PURCHASE/LEASE OF LAND AND/OR RIGHTS

B.1: Purchase of land to create buffer zones and ecological corridors

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Contracting with owners of lands near Kis-Jusztus	4.6 ha land purchased	Completed 30/06/2005	L. Megyery, PC
2	Contracting with 1st group of owners in Bőgő area	8.0 ha land purchased	Completed 30/06/2006	L. Megyery, PC
3	Contracting with landowners in Csattag area, rounds 1, 2, 3 and 4	28.2 ha land purchased	Completed 31/12/2006	L. Megyery, PC
4	Contracting with 2nd group of owners in Bőgő area	6.0 ha land purchased	Completed 30/06/2008	L. Megyery, PC
5	Division of 9 ha near Kis-Jusztus	4 ha available for swapping	Completed 31/08/2008	L. Megyery, PC
6	Land-swap with owner near Kis-Jusztus	4 ha land swapped	Completed 31/12/2008	L. Megyery, PC
7	Contracting with owners in Csattag area, rounds 5, 6, 7	13 ha land purchased	Completed 31/12/2008	L. Megyery, PC

	7			

We expected that "By becoming the owner and manager of the land, Hortobágy National Park Directorate will be able to manage the lands so as to maximise their conservation benefits. Ca. 215 ha buffer zones will protect rehabilitated marshes and two ecological corridors will establish spatial connections between the northern and southern grasslands.". According to the project modification approved by the Commission in 2006, land purchase in B.1 was planned to take place in three areas, the Kis-Jusztus, the Bőgő and the Csattag area (please see **Map 2** in **Annex 3** for an overview, as well as clear delineation of the original and revised PA boundaries as requested in EC letter 10/05/2007).

In the Kis-Jusztus area, HNPD purchased 4.6 ha (LRN 0187/11 a, b, c, d), which parcel contains parts of Kis-Jusztus marsh and neighbouring arable lands (**Map 3** in **Annex 3**). The owner of the neighbouring parcel (0187/12a, Péter MAJOR) was not willing to sell the entire parcel (8.6 ha). Instead, he entered into a long-term nature conservation maintenance agreement with HNPD in which he agreed to the establishment of a 3.8-ha buffer zone with restored grassland between his cropland and Kis-Jusztus marsh. In return, HNPD allowed him to use five small land parcels (total area: 3.5 ha) purchased outside the project area from HNPD's own budget (0818/167, 97, 98, 101, 102). We officially started the division of the 3.8-ha part of 0187/12 in the land registry, and a basic geodetic map ready to be submitted to Land Registry for recording was prepared. The official recording of the division will be possible after HSH designates HNPD as manager of the state-owned lands purchased in the project (this situation is the same for two other divisions of newly purchased lands, see below). The division line runs in a straight line corresponding to the highest points of the parcel. This way the runoff and infiltration of potential chemical pollutants from the remaining eastern part of the arable land is not likely to reach Kis-Jusztus marsh. The buffer zone (0187/11 plus the entire western part of 0187/12 a) were restored in 2008 (action C1). The buffer zone will ensure that the edges of Kis-Jusztus marsh will no longer be ploughed in and it will efficiently prevent the infiltration of chemicals from the remaining 4.6 ha of LRN 0187/12a to the highly diverse Kis-Jusztus marsh.

In the Bőgő marsh area, six parcels (LRNs 0191/1 and 3 to 7) were planned for purchase in the modified target. LRN 0191/2 (6.52 ha) had been owned by HNPD before the project and 0191/3, 4, 5, 6 and 7 (total 8.1 ha) were purchased in the project (**Map 4** in **Annex 3**). LRN 0191/7 was shared by three owners (proportions: 1/4, 1/4, 1/2) and we could buy the land from two of them, resulting in the purchase of 1/2 of the parcel. The third "owner" (Mátyás RADICS) did not have proper legal documentation of ownership and we could not sign the otherwise fully prepared contract with him (he would have been willing to sell), and instead, we prepared a long-term maintenance agreement with him. There was no willingness to sell LRN 0191/1 (4.1 ha). Thus, the total land area purchased was 6.7 ha (corrected for the shared ownership), and the total area available for grassland restoration was 14.6 ha (= 6.5 + 8.1 ha). This area was more than foreseen here due to the lands already in HNPD ownership. In addition, a previously owned parcel (0193/1a, 8.4 ha) E of the lands purchased was available for grassland restoration after afforestation here (action C2) was abandoned, making the formation of an efficient buffer zone possible around the arable lands neighbouring the marsh. HNPD also purchased a LRN on the western side of the arable lands (0187/7) outside of this project as potential swapland (see below).

In the Csattag area (Egyek village), we targeted 67.77 ha for purchase in the modified application in an area of 86 ha (area marked by red line on **Map 2** in **Annex 3**). This target included the entire LRN 0820 (38.9 ha) and those parts of LRN 0818 which were necessary to establish a 50-m buffer zone between Csattag marsh and the arable lands. In the project modification of 2006, we requested to purchase not only the minimum area in LRN 0818 (50-m wide zone), but entire land parcels,

because this way we could save considerable time and money by avoiding having to divide all land parcels running perpendicular to the marsh.

In the Csattag area, HNPD has purchased 43.87 ha non-protected arable land or 65% of 67.77 ha targeted in the modified application (**Map 5a** and **5b** in **Annex 3**, **Table 2**, please see **Financial Report** for a detailed list of the parcels purchased with information on parcel numbers, price, previous owner, as requested in EC letter 10/05/2007; for costs land parcel divisions, please see EA sheets, rows starting with "land parcel division"). Within LRN 0818, HNPD has purchased 25 parcels with 100% ownership and 2 parcels under shared ownership, where HNPD's share is 75% and 91%, respectively. Within LRN 0820, HNPD has purchased 31 parcels with 100% ownership and 8 parcels under shared ownership. In the latter group, HNPD's share is more than 50% in 1 parcel, between 25-50% in 5 parcels and under 25% in 2 parcels. In total, 56 parcels are owned entirely (100%) by HNPD and 10 is under shared ownership (**Map 5a,b**; **Table 2**).

Table 2. A summary of land purchases in the Csattag area (Egyek village) until 12/31/2008.

	Total area (ha)	**Targeted area (ha)**	**Purchased area (ha)***	**Purchased parcels (No.)**	**Shared ownership, No. (ha)**	**Offered to NLF (ha)**	**No willingness to sell (ha)**
0818	108.1	29.1	24.03	25	2 (4.02)	2.14	8.59
0820	38.9	38.9	19.84	31	8 (7.73)	4.13	1.95
Total:	147.0	**67.77**	**43.87**	56	10 (11.75)	6.27	10.54

* for lands under shared ownership, only the fraction of area corresponding to HNPD property is counted

Shared ownership

The status of the 10 parcels under shared ownership is as follows:

- As per lands under shared ownership, Hungarian law requires that for dividing land parcels, each of the resulting parcels has to be over 0.6 ha. This condition can be fulfilled in only one of the shared Csattag ownership of HNPD (LRN 0818/85, total are 3.15 ha, owner of ¼ is András HEGYI). HNPD has completed the division of this parcel (basic geodetic map) until 12/31/2008. The division awaits LR recording, which will be possible if/when HNPD is designated by HSH as manager of state-owned lands.
- For other shared ownerships (1 in 0818, 2 in 0820), HNPD has prepared long-term nature conservation maintenance agreements with the owners to ensure the feasibility of grassland restoration (**Table 3**).
- In the case of 5 parcels, where the other owners deceased, were unknown or where no legally competent owner could be identified (**Table 3**), such agreements could not be made. Instead, HNPD has initiated the process of appropriation after which the lands will be legally owned by the state.
- Finally, one parcel is shared with the HSH (formerly National Land Fund), and this land was included in HNPD's request to HSH to allocate managing rights of former NLF lands to HNPD.

Table 3. List of shared ownerships in the Csattag area.

LRN	Share of owner	Landowner	Status *
0818/85	1/4	Hegyi András	Divided, awaits recording in LR
0818/132	27/292	Seres Lászlóné	Long-term agreement
0820/5	222/419	Sallai Béláné	Long-term agreement
0820/9	341/364	Kovács Krisztina	Long-term agreement
0820/10	44/59	Nat. Land Fund	Request to NLF by HNPD ongoing**
0820/13	341/560	Szegedi István	Deceased, no agreement
0820/24	1/3	Vincze Imre	Deceased, no agreement
0820/24	1/3	Tóth Lászlóné	Unknown (deceased?), no agreement
0820/54	298/819	Szegedi Miklós	Deceased, no agreement
0820/67	73/609	Székely Bálint	Deceased, no agreement
0820/67	59/203	Szanyi Imre	Unknown (deceased?), no agreement
0820/67	109/803	Szincsák Demeter	Deceased, no agreement
0820/68	43/60	Szincsák Demeter	Deceased, no agreement

* "Deceased" status was confirmed by the Local Government of Egyek. ** see „Solutions" below

Problems experienced in land purchases in the Csattag area

- The main reason that prevented HNPD from further land purchases in the Csattag area was that the ownership of many parcels, especially in 0820, was problematic. The legal purchase of these lands, therefore, was not possible for one of the following reasons:
    - Some owners have deceased (some as far back as 1890, some as far as Australia) and their descendants did not start the legal process of inheritance to claim their land. The cost of the legal process of inheritance (lawyer's fees etc.) often exceeds the price descendants would get for the land. In such cases, there is no legal owner as the descendants could not legally document ownership and thus could not legally enter into a land purchase contract with HNPD.
    - In other cases (e.g. 0818/133, 134, 0820/18, 19), the owners have moved to unknown addresses, and despite our very intensive efforts, neither Egyek township nor other local landowners could provide us with information that could have been helpful in finding these owners.
    - In the case of 0818/159-163, parcels were owned by an agricultural cooperative that went bankrupt and terminated operations without a legal successor in the 1990s and the parcels have not been claimed by anyone.
- Eight parcels (5 full parcels: 0818/78, 81, 0820/26, 73, 75; three shared ownerships: 0818/188, 0820/10, 11; total area 6.27 ha) have been offered by their previous owners to the former National Land Fund of Hungary (today, HSH). In one of these parcels (0820/10), HNPD shares ownership with HSH.
- Finally, there was no willingness to sell on 5 full parcels in 2 locations (01818/2 and 137 in the N, and 0818/90, 165 and 176 in the S), and 2 shared ownership parcels in which HNPD purchased ownership in this project (0820/5, 9) or a total of 10.5 ha.

Solutions

- First, HNPD has initiated the legal process of appropriation for the lands for which no legal owner is known in the summer of 2009. As a result of this process, we estimate that HNPD can become an owner in two years (time required by law).
- Second, HNPD has applied several times to the Hungarian State Holding to designate HNPD as owner and manager of the already state-owned lands. HNPD has already written three letters to HSH, without any action. The entire management of HSH has just been fired (July 2009) by the government. The latest news is that that HSH is getting ready to step up operations in the fall, and they have requested HNPD and other national parks in July 2009 to submit a list of parcels

they have purchased recently and for which they request management rights. The Head of the Department of Asset Management of HNPD, Mr. László POLONKAI will make sure that all lands purchased in this and other LIFE-projects plus land purchased outside of this LIFE-project plus former NLF land parcels will be on the list to be sent to HSH in August 2009.

- One landowner (János HABUCZKI) had already sold HNPD all his land except for two parcels (0818/197, 200), and a third one on which his farm stands (0818/193). In the case of the former two parcels, he agreed to the division of the land by HNPD and sold a 70-m-wide area bordering the marsh and necessary for the bufferzone grassland restoration.

Purchase of lands outside of the LIFE-project

HNPD has purchased 22 land parcels (17 100%, 5 shared ownerships, total area 16.12 ha) outside the PA for potential swap agreements. The costs of these purchases are not declared in the Financial Report (rows with 0 cost in LP sheet) as they were considered ineligible by the EC letter of 12/06/2009 and previous correspondence. Even though these costs are ineligible and not reported here, it turns out HNPD made the right decision to purchase these lands as the parcels have served as a basis for several land-swapping agreements made in late 2008 and early 2009 (**Table 4**). These agreements were put together by Pál FEKETE of the Department of Asset Management of HNPD with the knowledge of Gergő NAGY, PC between 01/07/2008 and 31/12/2008. Unfortunately, as Gergő NAGY or employees from that department were not present at the mission on 07/05/2009, László LONTAY, the previous PC could not inform the monitoring team of these agreements.

Table 4. Agreements on long-term swapping of land use rights (without change in ownership) outside of this LIFE project. All swaps will be made official if/when HSH prepares the resolution to designate HNPD as manager of the newly purchased state-owned lands.

Swap No.	LRN	Area (ha)	Land owner	Land user
1	0818/97, 98, 101, 102	2.97 total	HNPD	Major Péter
1	0818/35	0.56	HNPD *	Major Péter
1	0187/12	3.80	Major Péter	HNPD
2	0820/14, 64, 65, 66	2.84 total	Kovács Imre	HNPD
2	0818/17, 19, 21, 22, 23	2.74 total	HNPD	Kovács Imre
3	0820/32	0.53	Molnár Imre	HNP
3	0818/183	0.95	HNPD	Molnár Imre
4	0818/75, 76	0.49	Trungel János	HNPD
4	0818/26	0.62	HNPD	Trungel János

In Swap 1, HNPD could obtain land use rights to restore the eastern buffer zone of Kis-Jusztus marsh on 0187/12 (see also above, LP in Kis-Jusztus area, see **Map 3**). In Swap 2 and 3, the continuity of the buffer zone in 0820 was made possible. Swap 4 was made too late to include the parcels in restoration in 2008, but they will be restored in fall 2009.

Land prices for arable lands in the Kis-Jusztus, Bőgő and Csattag areas have not been markedly different from the estimates foreseen in the revised application. Land price estimates at the time of recent (2006-2008) purchases are attached in **Annex 5** (please see previous ones in IR and PR2) The indicators to test performance are (i) the number of contracts prepared (70 for LP in the PA, 83 total), (ii) the number of land parcels purchased: 5 parcels near Bőgő-marsh, 1 parcel near Kis-Jusztus, and 56 parcels near Csattag (plus 16 parcels outside the PA), and (iii) area purchased: 6.7 ha near Bőgő, 4.6 ha near Kis-Jusztus, and 43.9 ha near Csattag or a total of 55.2 ha in 62 parcels (total of 71.3 ha in 84 parcels if swaplands are included).

The time and effort required to secure the purchase of these tiny parcels (average for B1 parcels: 0.75 ha) was extraordinary in this project. It was not without worth, however, because very

important buffer zones have been established along the edges of Csattag and Kis-Jusztus marshes and an ecological corridor was opened between the two marshes. The costs of this action mostly include the price paid for the lands (55 990 € LP). Most of the preparatory and land registry work necessary for B1 and B2 actually occurred in B1 due to the reasons discussed above, therefore, we present the combined costs in this action. Land purchase preparation and land registry work (22 868 € EA for A1,B1,B2) and extra legal assistance (1220 € EA for the numerous Csattag contracts) were subcontracted to the land purchase coordinator and the lawyer providing such services. No costs are declared for the purchase of swaplands. Travel to negotiate and arrange land purchases in A1, B1 and B2 amounted to 2905 €.

B.2: Purchasing lands surrounding farms to eliminate goose-farming

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Contracting with first group of owners in Villongó area	174.9 ha land purchased	Completed 10/09/2004	L. Megyery, PC
2	Contracting with second group of owners in Villongó area	76.4 ha land purchased	Completed 28/02/2005	L. Megyery, PC
3	Contracting with third group of owners in Villongó area	54.0 ha land purchased	Completed 31/07/2005	L. Megyery, PC

In this action, we expected that "Two goose farms will be purchased and transformed for sheep farming. Almost 500 ha of seriously degraded grasslands also will be purchased and a slow regeneration after the heavy impact by domestic geese will be started by sheep grazing."

The objective of action B.2 was to eliminate goose-farming that seriously degrades grasslands from the Villongó area. This objective has been fulfilled by the summer of 2005, when goose-farming disappeared from the Villongó area as a result of intensive land purchase activity by HNPD (see also action D1). A total of 305.68 ha land was purchased within the project in this action. In addition, 74.8 ha was already managed by HNPD at the project start date, increasing the total area managed by HNPD to 380.48 ha. The elimination of goose farms has been reached by purchasing all lands around the farms, although the goose farms originally planned for purchase were not purchased. This change was part of the project modification approved in 2006. HNPD now owns all lands neighbouring the farms (**Map 6** in **Annex 3**). In the larger (northern) farm, the owner has agreed to the new conditions and keeps sheep in the farm, and takes care of grazing the degraded grasslands by sheep (see action D1). The smaller farm has been purchased by a farmer from Tiszafüred in the summer of 2005, who cleaned and renovated the farm and brought 80 Hungarian speckled cattle in spring 2006. In 2007, he has built up his stock to c. 100 cattle and took care of grazing the grasslands near the southern farm. However, in 2008, he sold many of his cattle and kept the remaining ones in another farm, and there were no cattle in the smaller Villongó farm.

LRN 0219/5 purchased in the second round of the Villongó LP had 3 goose barns, 3 drilled wells and a rudimentary shepherds' shelter belonging to it. Each piece of infrastructure is in a very bad condition, had been unused for years before the purchase, and would need significant investment to renovate. However, the purchase of lands was not possible without these items. Therefore, these costs are reported separately under Durable goods. The price paid for the infrastructure was not over the usual average price for such infrastructure in the region (please see evaluation document in **Annex 5.4**, especially the pictures of the "buildings" in the paper copy of this report).

The Villongó grasslands could be purchased at higher prices than foreseen (158 556 € LP). This was especially so in the first round, when HNPD had to participate in a bidding negotiation due to the banktrupcy of the owner Hajdú-Bét Rt. (please see details in Progress Report 1). In the second and third rounds, more reasonable prices could be negotiated. Official valuation documents of the lands involved in land purchase activities were attached in **Annex 2.1** to the Interim Report.

Because the aims of action B.2 have been achieved, in the project modification HNPD requested and got approval to deem the purchase of additional lands dependent on cost savings in other land purchases. Indicators to test performance are (i) the number of contracts prepared (8 contracts completed), (ii) land parcels purchased (288 parcels), and area purchased (306 ha).

6.3. "C" NON-RECURRING BIOTOPE MANAGEMENT

C.1: Transformation of arable lands into grasslands

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Seed harvest for 2005 restoration	4.05 t seeds harvested on 26 ha in 4 sites	Completed 30/06/2005	PC, I. Kapocsi, subcontractors
2	Cleaning (flailing) of seeds	1.6 t *F. pseudovina*, 409 kg *rupicola* seeds	Completed 31/08/2005	PC, I. Kapocsi, subcontractor
3	Purchase of seeds from commercial sources	1.6 t *Poa angustifolia*, 500 kg *Bromus inermis*	Completed 31/08/2005	PC
4	Preparation of seed mixtures	2.4 t alkali and 1.02 t loess seed mixture	Completed 09/23/2005	PC, volunteers
5	Soil preparation (min. 5 rounds per site)	178 ha land prepared for sowing	Completed 09/23/2005	PC, subcontractor
6	Sowing with appropriate seed mixture	51 ha loess, 127 ha alkali restoration	Completed 05/10/2005	PC, subcontractor
7	Mechanical weed control by mowing	161 ha restored land mowed (rest is flooded)	Completed 30/06/2006	PC, subcontractor
8	Seed harvest for 2006 restoration	3.1 t seeds harvested on 53.5 ha in 3 sites	Completed 30/06/2006	PC, I. Kapocsi, subcontractors
9	Cleaning (flailing) of seeds	2.07 t *F. pseudovina*, 200 kg *rupicola* seeds	Completed 31/08/2006	PC, I. Kapocsi, subcontractor
10	Purchase of seeds from commercial sources	2.3 t *Poa angustifolia*, 2.2 t *F. pseudovina*, 100 kg *Bromus inermis*	Completed 15/09/2006	PC
11	Preparation of seed mixtures	5.9 t alkali and 560 kg loess seed mixture	Completed 15/09/2006	PC, volunteers
12	Soil preparation (min. 5 rounds per site)	225 ha land prepared for sowing	Completed 30/09/2006	PC, subcontractors
13	Sowing with appropriate seed mixture	19 ha loess, 206 ha alkali restoration	Completed 06/10/2006	PC, subcontractors
14	Mechanical weed control by mowing	225 ha restored land mowed	Completed 30/06/2007	PC, subcontractor
15	Seed harvest for 2007 restoration	0.3 t seeds harvested on 19 ha in 2 sites	Completed 30/06/2007	PC, subcontractors
16	Cleaning (flailing) of seeds	230 kg *F. pseudovina* seeds	Completed 31/08/2007	PC, subcontractor

17	Purchase of seeds from commercial sources	1245 kg *F. pseudovina* seeds	Completed 31/08/2007	PC
18	Preparation of seed mixtures	2.1 t alkali seed mixture	Completed 15/09/2007	PC, volunteers
19	Soil preparation (min. 5 rounds per site)	80 ha land prepared for sowing	Completed 09/23/2007	PC, subcontractor
20	Sowing with appropriate seed mixture	80 ha alkali restoration	Completed 05/10/2007	PC, subcontractor
21	Mechanical weed control by mowing	80 ha restored land mowed	30/06/2008	PC, subcontractor
22	Seed harvest for 2008 restoration	11 t *F. pseudovina* seeds	Completed 30/06/2008	PC, subcontractors
23	Cleaning (flailing) of seeds	9 t *F. pseudovina* seeds	Completed 31/08/2008	PC, subcontractor
25	Preparation of seed mixtures	7.3 t alkali, 750 kg loess seed mixture	Completed 15/09/2008	PC, volunteers
26	Soil preparation (min. 5 rounds per site)	265 ha land prepared for sowing	Completed 09/23/2008	PC, subcontractor
27	Sowing with appropriate seed mixture	25 ha loess, 240 ha alkali restoration	Completed 05/10/2008	PC, subcontractor

In this action, we expected that "A total of 668 ha of grasslands will be restored on current arable lands, of which 85 ha will be pannonic loess steppic grasslands and 583 ha will be pannonic salt steppes. Runoff and infiltration of chemicals to marshes will be reduced and the natural zonation of plant associations will be restored on the edges of marshes". The original objective of the action was increased in the project modification of 2006 to 680 ha land, of which 51 to 95 ha are loess grasslands (depending on the availability of *F. rupicola* seeds) on a potential 156 ha loess soils and the rest (629 to 585 ha) are alkali grasslands. In their letter of 07/02/2008, the EC has accepted our proposal that on lands where afforestation failed, grassland restoration is carried out, therefore, the modified target increased further to 760 ha. The EC also proposed in their letter of 18/04/2007 that where natural revegetation has progressed to an advanced stage (e.g. land across highway 33 from Kócsújfalu), restoration by ploughing and sowing could be avoided.

In the four years of the project (2005 to 2008), grassland restoration was carried out on 747 ha or on 98% of the total planned (760 ha). It is an even more important result that the restoration of loess steppic grasslands (Natura 2000 code 6250) has been started on a total of 93 ha or 98% of the most ideal case foreseen in the modified application. On the rest of the area (665 ha), alkali grasslands (salt steppic grasslands, Natura 2000 code 1530) were restored (please see **Map 7** in **Annex 3** for an overview and **Maps 8a-e** for LRNs where restoration took place).

The discrepancy between the target (760 ha) and the achieved restoration (747 ha) was because we could not restore 8 ha target land that could not be purchased in the Csattag area and because 4 parcels purchased (5 ha) were left out of a contract due to an administrative error (see below). The official LRN-based area restored was 726 ha (**Table 1** in **Annex 6**). The discrepancy between the real-world restoration (747 ha) and LRN-based restoration (726 ha) is 21 ha (2.9%). This is because actual areas restored were often a few hectares larger than the area within LRN boundariesbecause farmers often ploughed lands beyond these boundaries, especially when the neighbouring area was grassland or marsh. The original calculations of areas to be restored were based on digitising arable lands from space imagery at the time (2004-05) when no digital LRN maps were available. Digitised lands, therefore, showed the real-world situation. The total restored area (747 ha) thus also includes fringe areas (21 ha) that had been illegally ploughed for years/decades before the project.

The establishment of the elements of the target vegetation was spectacularly fast in most areas. The germination of *Festuca* plants was very successful in years when precipitation fell to the area soon after sowing (2005, 2006, 2008). When weeds were mowed in next June, swards, sometimes closed stands, were found dominated by *Festuca* and the other species sown. Detailed studies suggested a faster-than-expected success of restoration (please see F.2 Biological monitoring).

The change in land use category (arable land to grassland) for all land parcels where restorations had been carried out between 2005 and 2007 has been made official by the appropriate Land Registries (Egyek and Tiszafüred townships) upon the annual requests from HNPD between 2006 and 2008. For restorations carried out in 2008, HNPD will initiate the same process in the summer of 2009. This activity is very important to ensure the long-term maintenance and management of these lands as grasslands.

As per EC' suggestion in their letter of 18/04/2007 that where secondary succession on abandoned lands reached to some level, we should not plough the lands, several areas were not ploughed but brushcutting where necessary was carried out (LRNs in Egyek 0820) and the areas were oversown with seed mixtures. In the area where this was proposed for (LRN 0207/1f, opposite the road from Kócsújfalu), we restored the eastern half with oversowing the old alfalfa with the alkali mixture and left the other half as control without any treatment.

The ownership problems in the Csattag area did not significantly affect the restoration of the grassland buffer zone. We have started the restoration on the entire LRN 0820 (subtotal: 38.5 ha) and all relevant parcels in 0818 (subtotal: 21.2 ha) except for the "no willingness to sell" lands. The total area restored in the Csattag area was 59.7 ha. The continuous buffer zone between the marsh and arable lands on the E edge of Csattag marsh is now c. 1.7 km long and at least 70 m wide (but much wider in most places, see **Map 8d, e**). On 19 parcels (total area 11.4 ha), natural revegetation has already progressed to the stage where no ploughing was desirable. In 10 parcels (0818/130, 131, 156-163, total area 2.6 ha), mowing by stem-cutter was carried out followed by oversowing with alkali seed mixture. In the 9 remaining continuous parcels (0820/18, 19, 57, 58, 64-68, total area 8.8 ha), a botanically interesting, spontaneously revegetating reed-sedge marsh had developed by natural secondary succession and this area was not disturbed. The continuous buffer zone is broken up at in the N part of the area, where the owners of two parcels (LRN 1818/2, 137, total area 6.5 ha) were not willing to sell their land. On the lands that were divided (former owner J. HABUCZKI, LRN 0818/198, 199, 201, 202), the buffer zone is c. 70 m wide. In all other locations, the entire land parcels have been restored. As a result, grassland restoration was carried out on 59.7 ha or 88% of the area planned in the modified application (67.77 ha) (**Map 3d, e**).

As per the findings of the mission of May 7, 2009, seven parcels were found not to be restored (0818/85, 86, 91, 175 in the southern, corridor-part of the buffer zone and 0818/132, 135, 136 in the north). This has been a result of both an administrative error on HNPD's part and the chaotic land use customs of private farmers in the Csattag area. First, the four parcels in the southern part were unfortunately left out of the list of LRNs to be restored in fall 2008 due to an administrative error from our project management team. The list of LRNs containing more than 80 LRNs to be restored was annexed to the contract with Csarnok 98 Bt., the farming company carrying out the restoration. Because these four parcels were not listed in the 80+ parcels, nothing happened to these lands and three of them (86, 91, 175) were ploughed and sown with wheat by farmers of neighbouring parcels in the spring. The larger parcel of 0818/85, which was being divided by HNPD as it had been purchased under shared ownership, was ploughed by one farmer but was not sown. After the mission of May 7, 2009, we met with the farmers involved. The farmers confessed to the illegal use of land and agreed to destroy the crops. The winter wheat was mown and the parcels ploughed up between 21-23 May, 2009, i.e., more than a month before harvest (please see **Annex 7**). In the

meeting, the farmers also agreed that grassland restoration in these four parcels will be carried out in fall 2009 using seed and funding provided by HNPD. Second, in the northern part, grassland restoration took place on five parcels (0818/130, 131, 132, 135, 136) in fall 2008. However, parcels 0818/132, 135 and 136 were ploughed up in March 2009. It took quite some time and effort from HNPD to find out who did this, but in the end it turned out that two local farmers, Zoltán SZABÓ ploughed up the grassland restoration in 0818/132 and Ignác MOLNÁR (owner of neighbouring 0818/137) ploughed up the restoration in 0818/135 and 136. HNPD has found and met with both farmers and prepared a record which was signed by both farmers. In the record, the farmers have taken up responsibility for their actions and committed themselves to restore the parcels to their previous status by preparing soil and sowing alkali seed mixture in the fall of 2009. The record also contained a clause by which the farmers learned that if the restoration does not happen in fall 2009, HNPD will initiate legal court action against them on terms of illegal use of property.

Awkwardly, this threat is the most HNPD could do up to now. For all lands purchased in the project, the LR-recorded owner is the State of Hungary. HNPD will obtain full rights to these lands when the HSH designates HNPD as the holding manager for the parcels and LR offices record this fact. This has been initiated by HNPD once during the project and twice in the spring/summer of 2009, but to date (late July, 2009), there is still no resolution. Until this resolution at HSH is made, HNPD cannot take any concrete legal actions as it is currently not the designated manager of the state-owned lands purchased in the project.

The costs of this action are almost the same as that foreseen. Although significant costs were saved in 2005 and 2008, when seed production was exceptionally high and the large majority of the seeds necessary for restoration could be harvested on HNPD lands, in 2006 and 2007, the majority of the seeds used in restorations had to be purchased from commercial sources. In 2007, a general shortage in *Festuca pseudovina* seeds occurred in Hungary due to the extreme dry weather. HNPD could harvest only 230 kg cleaned *F. pseudovina* seeds and could purchase only 1245 kg in addition. Because there was not enough seeds available, restorations in 2007 were carried out by sowing c. 18.5 kg/ha instead of c. 25 kg/ha in 2005 and 2006. In 2008, seed production was again very high, and more than 8 t of seeds could be obtained, and sowing was carried out using c. 30 kg/ha. The per-hectare costs of the field actions necessary to restore grasslands was similar throughout the project. The selection of subcontractors was always based on the best value for money ratio. We also attempted to use local subcontractors as much as possible not only for socio-economic reasons but also because they are the ones who can be alerted to intervene if there are sudden needs (e.g. specific weed control is necessary on a restored land, as occurred in Sept-Oct 2006 on some lands or in spring/summer 2009 – no cost is reported for the latter, of course).

As for the problematic seven parcels (4.8% of the 146 parcels restored and 7.8 ha or 1% of 726 ha restored in the project), we report the costs of land purchase for each in the Financial Report as in the fall of 2009 eventually each will be restored to grasslands. The costs of restoration in the northern parcels are also included as the work was carried out and was paid for and the status established in the project will be reinstated in fall 2009 without additional funds. There are no costs of restoration reported for the southern parcels as these parcels were not included in the contract for restoration. In considering whether these costs are eligible or not, please consider also that HNPD did its best to implement what was foreseen in the revised project in 2003-04 but is not currently in a position to fully guarantee the results until the resolution at HSH to designate HNPD as manager of the lands is made. As HNPD cannot take any concrete legal actions as it is currently not the designated manager of the lands, it may be unfortunate to hold HNPD responsible for negative developments beyond its control.

C.2: Creation of wooded areas as woodland mosaics, buffer zones and nesting sites

No.	Activity	Output	Status with date of start/completion	Responsible person
1.	2 meetings with stakeholders	Afforestation plans agreed by stakeholders	Completed 15/05/2005	PC, I. Mihalik
2.	Field survey of lands planned for afforestation, 2 meetings on technology	Habitat evaluation study conducted for all six sites	Completed 31/07/2005	PC, I. Mihalik
3.	Purchase of acorns	6.6 t of acorns available for planting	Completed 15/11/2005	PC, I. Mihalik
4.	Soil preparation for acorn planting	22 ha land prepared for planting	Completed 30/11/2005	PC, I. Mihalik
5.	Acorn planting	Plantation on 22 ha	Completed 10/12/2005	PC, I. Mihalik
6.	Weed control by mowing	22 ha afforested area mowed and cleared	Completed 30/06/2006	PC
7.	Sapling germination and raising from acorns	c. 30 000 saplings available for planting in fall 2006	Completed 31/08/2006	PC, I. Mihalik
8.	Purchase of saplings	c. 30 000 saplings available for planting	Completed 21/12/2006	PC, I. Mihalik
9.	Soil preparation for sapling planting	24 ha land prepared for planting	Completed 31/10/2006	
10.	Sapling planting	Plantation on 24 ha	Completed 31/10/2006	PC, I. Mihalik, NAC
11.	Purchase of acorns	7 t acorns for planting	Completed 12/12/2005	PC, I. Mihalik
12.	Soil preparation for acorn planting	18 + 16 ha land prepared for planting	Completed 16/12/2006	
13.	Acorn planting	Plantation on 34 ha	Completed 31/12/2006	
14.	Repeated attempt at afforestation (0211/3 a)	Soil preparation and acorn sowing on 16 ha	Completed 20/02/2007	
15.	Sapling replacement	Replacement on 24 ha	Completed 30/04/2007	PC, I. Mihalik

In this action, we expected that "70 ha of wooded areas will be created in two sites. The wooded areas will increase the diversity of habitats in the project area and it is very likely that more Annex I bird species will use the area and that their populations will increase." The target area has increased to six sites (8 LRNs) and 80 ha in the project modification of 2006 (**Map 9**).

We started the action by developing the necessary technical implementation and management plans as part of action A3. Beyond the FIMP developed in action A.3, a firm plan for afforestation in each target area was formulated during the discussions. In November 2005, we started the field actions one year earlier than foreseen in the revised application. The reason for this was that both the implementation planning and experience from nearby afforestations suggested that the success rate of afforestation varies greatly by the soils involved and by the general region. Starting earlier in some sites may have thus enabled HNPD to detect problems early and to compensate for potential problems.

In November 2005, soil preparation and acorn sowing were carried out on 22 ha. Next spring, we experienced that c. 90% of the acorns did not germinate or the seedlings were damaged. The low germination success could probably be explained by the increased salinity of the soil and extremely high soil water levels in fall 2005. For example, the two plots could not be approached by machinery throughout most of 2005 and 2006 (including at the time of the project visit, when we could not show these plots to the visiting team due to inaccessibility). The remaining 10% of the seedlings dried out during the extremely dry spring and summer of 2007. In October 2006, soil preparation and the planting of saplings was carried out on 24 ha (0166/4a). The extreme drought between fall 2006 and spring of 2007 caused great damage on this 24-ha plot, where 80% of the saplings died. In November-December 2006, soil preparation and acorn-sowing were carried out on 34 ha. In January of 2007, wild boars (*Sus scrofa*) destroyed the acorn plantations on the whole 34 ha in three different parcels. We attempted afforestation in a repeated effort by soil preparation and acorn planting on 0211/3a (16 ha) in February and by the replacement of saplings on 0166/4a in March-April (24 ha). However, the replacements were also unsucessful as most acorns were dug up by wild boars and most seedlings and saplings died in the drought of spring-summer 2007.

Following several exchanges with the monitoring team and with EC, we outlined two different scenarios to continue and one scenario to terminate our efforts at afforestation in a letter 24.01.2008. As the first two options that included fencing were not possible due to prohibitively high additional costs, we proposed the scenario that the plots originally designated for afforestation should be restored to grasslands. The original conservation function of forests would have been to act as filters between arable lands and grasslands/marshes and to prevent agricultural chemicals to reach the more valuable habitat types. This function can also be guaranteed by the grasslands established on the former arable lands. The new solution would lead to the reduction of the negative effects of fragmentation and agricultural cultivation on grasslands and marshes, and to an increased diversity of wetland and grassland habitats. By these measures, it was expected that more habitats will become more suitable for more BD Annex I and HD Annex II species that are more characteristic to the Hortobágy region.

In a letter 07.02.2008., the EC declared that the above change is not a substantial modification and therefore the EC in principle agreed with our proposal of scenario 3. As the work could be financed by the available budget categories and the total costs of the alternative measure did not exceed that foreseen in the letter (17.769 €), we present the technical and financial aspects of grassland restoration on these 8 parcels together with other grassland restorations under action C.1

The costs of this action included the price of acorns for fall 2005 afforestation (8583 € CM), the price of saplings (7213 € CM), handling the saplings (48 €) and subcontracting soil preparation (12 625 € EA) and planting of acorns (5432 € EA) or both (15 981 € EA) and sapling replacement (4952 € EA) to local stakeholders. Travel exclusively in this action was 948 €.

C.3: Purchasing livestock to ensure long-term maintenance of grasslands

No.	Activity	Output	Status with date of start/completion	Responsible person
1.	Preparation of public tender for cattle purchase	4 meetings, list of specifications discussed	Completed 30/04/2006	PC, PM
2.	Public tender (simplified procurement procedure) opens	Letters sent to potential participants	Completed 03/05/2006	PC
3.	Tender closes, opening of offers	Three offers submitted, selection of best price	Completed 03/07/2006	PC, PM, HNPD directors

		offer, notification of participants		
4.	Preparation of contract between company and HNPD	Contract signed by company and HNPD directors	Completed 25/07/2006	PC, PM, HNPD directors and lawyer
5.	Delivery-receiving of cattle	50 grey cattle inventoried by HNPD	Completed 11/30/2006	PC, PM, I. Sándor

In this action, we expected that "50 Hungarian grey cattle will be purchased and will be available to concentrate grazing effort into areas where needs are highest. The livestock will be used to graze previously ungrazed areas (c. 220 ha), edges and peninsulas of marshes (see Action D2), and some transformed grasslands should they become suitable for grazing during the project period."

This action was carried out according to the plans. A slight delay in the signing of the contract (original date foreseen: 30/06/2006) was caused by a longer time necessary to assemble detailed specifications regarding the cattle and the public tender. Several specifications had to be considered due to animal health regulations, national husbandry requirements, grey cattle husbandry rules and requirements set by PBC as the winter keeper of the cattle, such as Hortobágy breed type, bio-qualified oxen, free from IBR and other infections etc. The lowest price of cattle offered (800 € without VAT per animal) was slightly below that foreseen in the revised application (900 €). There are no specific indicators for this action.

C.4: Construction of a fold for livestock

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Planning of grazing infrastructure	3 meetings with PBC on arrangements	Completed 31/01/2006	PC, PM, I. Sándor, PBC
2	Public tender (simplified procurement procedure) for shepherds' home	Collecting price offers for containerhouse of specific design	Completed 22/02/2006	PC, PM
3	Field visits to designate location of fold, well, shepherds' home	2 on-site meetings with PBC	Completed 31/03/2006	PC, PM, PBC
4	Construction, transport and installation of shepherds' home	2.5x7 m containerhouse ready and installed	Completed 10/04/2006	PC, subcontractor1
5	Public tender (simplified procurement procedure) for fold	Two procedures (one for wooden poles, one for electric fence)	Completed 10/04/2006	PC, PM, PBC
6	Construction of fold (wood poles, electric fence)	2-ha fold ready	Completed 25/04/2006	PC, subcontractor2
7	Instalment of accessories to containerhouse	Gas and electric system (solar panels), roof, toilet etc.	Completed 30/04/2006 (roof: 31/08/2006)	PC, subcontractors 3-5
8	Applying for grazing permit to Szolnok co. office of MEW	Permit granted for grazing	Completed 05/05/2006	PC
9	Construction of ground-water well	Drilling and instalment of well	Completed 30/04/2006	PC, subcontractor6

10	Construction of drinking trough and foundation	Drinking trough ready and installed in place	Completed 15/05/2006	PC, subcontractor7
11	Applying for water rights permit to Szolnok co. office of MEW	Water rights permit to establish well and drinking trough	Completed 31/05/2006 (started 06/04/06)	PC, subcontractor6
12	Overview of progress, negotiation on adjustments	2 on-site meetings with PBC	Completed 30/06/2006	PC, PM, I. Sándor, PBC
13	Amendment of the solar electric system	Purchase of two new storage batteries	Completed 30/06/2007	PC
14	Development of the safety system of containerhouse	Lightning-arrester system	Completed 31/07/2007	PC

The expected result in this action was that "The fold and associated structures will provide housing for 100 grey cattle and accommodation for shepherds tending them."

Although this action took more work and time than foreseen, it was completed on time because all important infrastructure had been installed by the time cattle were brought to the area (27/04/2006, action D.1). Infrastructure installed included a 2-ha fold (enough to hold 200 grey cattle), a well and drinking troughs, shepherds' home (containerhouse with thatched roof) and some other structures (e.g. toilet). This infrastructure (fold, shepherds' home) was foreseen in the revised application, although the entire system consisted of more components (e.g. shepherds' home also included a separate electric system using solar panels, a separate natural gas system for heating and cooking etc.), which were not specifically detailed in the revised application. In response to EC letter of 18/04/2007 regarding the need for solar panels, solar panels were the cheapest and most environmentally friendly way to provide electricity for the shepherds' home (the other option would have been to lay ground cables through 2 km of 12-yr old abandoned old field that had already undergone considerable secondary succession and has served as the central site for grazing in D1-D2). Electricity was necessary as we held it important that the shepherds have access to food appropriately stored in a refridgerator and some kind of information about the outside world (by a small TV set) during carrying out the actions as planned in the project and as directed by the PC on site. Besides the existence of various infrastructure constructed, there are no specific indicators to test performance in this action. There were no problems or drawbacks in this action.

This action cost more money than foreseen. Most of the costs was the construction of grazing infrastructure (5186 € EA for fold, 4896 € for containerhouse, 2352 € for well, 1152 € for drinking troughs or a total 13 586 €), whereas the instalment of structures and preparation of other systems containerhouse (e.g. gas system, electric system, solar panels into containerhouse) amounted to 3635 € (EA). The electric fence system cost less than foreseen (3442 € DG) because there is no need to move it. Travel specific to this action was 362 €, whereas this action was one of the several purposes of travels that amounted to 122 €. The higher costs in this action are offset by the savings in D1, where similar costs were foreseen in the revised application. Because the solar electric system had been struck by lightning in autumn 2006, two new storage batteries had to be purchased in the spring 2007. Furthermore, a lightning-arrester had to be built in the containerhouse to avoid further problems. Transportation of the whole containerhouse happened in the same way every year. It was taken to the site by the last week of every April at the latest and was transported for winter to a safe place (PBC farm at Ohat) by the beginning of every December.

6.4. "D" RECURRING BIOTOPE MANAGEMENT

D.1: Management of native grasslands by grazing

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Two meetings with local farmers	Rental contracts in NW Csattag renegotiated with cattle farmers	Completed 31/03/2005	PC, S. Szabó
2	Meeting with farmer owning large farm on rental conditions	Sheep-grazing near larger Villongó farm started	Completed 01/05/2005	PC, S. Szabó
3	All lands purchased around Villongó farms	No geese present in smaller Villongó farm	01/05/2005	PC, S. Szabó
4	On-site meeting with farmers about boundaries	Cattle grazing NW of Csattag marsh started	01/05/2005	PC, PM
5	Meeting with farmers renting lands in S Villongó	Sheep-grazing in S Villongó area started	01/05/2006	PC, S. Szabó
6	Meeting with local farmer grazing cattle NW Csattag	Rental contract renegotiated	30/09/2006	PC, S. Szabó
7	Meetings with interested farmers	Numerous phone calls and on-site meetings	31/03/2007	PC
8	Meeting with local farmer grazing cattle at smaller Villongó farm	Rental contract, grazing with 100 cattle starts	30/04/2007	PC

The Expected results of this action were that "The proportion of extensively grazed grasslands will greatly increase in the project area by the inclusion of c. 700 ha new land in grazing. On c. two-thirds of these lands sheep grazing will start a slow restoration process after degradation by goose farming and on one-third cattle grazing will create new kinds of grassland habitats."

The aim of this action was to extend grazing as the optimal way of management of Hortobágy grasslands to areas previously undergrazed or non-grazed (**Map 10** in **Annex 3**). This aim was part of a more general effort to establish a grazing system that combines grazing activities planned in actions D1 and D2, and which would be self-sustaining on the long-term in maintaining grazing as the optimal way of grassland management, both for native grasslands and for restored grasslands. This action has been implemented in close cooperation with action E.1 sub-action 6, which aimed to incorporate farmers in the area into the D1-D2 grazing system. We had numerous on-site meetings with local farmers, provided them with information on the project and its long-term goals and the possible ways of participating. We also encouraged them to apply for funding to agri-environmental schemes and/or to establish or extend their rental contracts. We offered to renegotiate and extend the rented areas with the Department of Asset Management of HNPD, the department overseeing rentals in HNP, to several farmers if they increased the number of grazing livestock.

The D1-D2 grazing system was established by the participation of 18 farmers or farming companies and is illustrated on **Map 10** and in **Table 5** below. In our cooperation with farmers, we aimed to cover all grasslands, both native and restored, with grazing activity.

Table 5. Participants and areas in the grazing system established during the project.

Farmer/Farming company	General area	Surface area (ha)
Mihaly TOTH	Csattag	99.1925
Karoly SZABO	Csattag	294.5306
Lajos SZABO	Csattag	129.4841
Jozsef HABUCZKI	Csattag	19.9037
Csarnok 96 Bt.	Csattag	68.5318
Egyek farmers	Csattag	259.9968
Robert KISS	Fekete-rét	29.3093
HNPD	Fekete-rét	67.5252
Csarnok 96 Bt.	Fekete-rét	331.7975
Beata B. FALUDINE	Fekete-rét	153.5475
MAGOR-DAK Llc.	János-állás	111.6708
Peter TAMAS	Kilátó-tanya	149.1374
NAGYIVAN Agricultural Llc.	Meggyes-lapos	361.5188
Istvan JORDAN	Vígh-tanya	55.3766
Janos EMODI	Villongó	5.3497
Ilona LANGHOFFER	Villongó	32.7072
Gyorgy BESENYEI	Villongó	243.7793
Ferenc ELEK	Villongó	117.4826
Ferenc VARGA, Bela NAGY	Villongó	50.5641
Total:		2581.4055

The original aim in action D1 was to involve farmers into a grazing system on 220 ha non-grazed grasslands N and W of Csattag marsh and on c. 500 ha grasslands in the Villongó area. Following several meetings, five private farmers and one group of farmers now rents areas for grazing in the Csattag area targeted by this action (c. 220 ha NW of Csattag). The Csattag grazing area is divided into six parts.

(i) One local farmer (K. Szabó) keeping cattle and sheep in Szabó-tanya near the Salt Road grazes c. 200 ha grasslands and 100 ha marsh (the latter as part of action D2).
(ii) J. Tóth, a farmer from Egyek-Félhalom rents 100 ha for cattle-grazing.
(iii) A group of Egyek farmers rents the area directly bordering the village of Egyek for cattle-grazing (260 ha).
(iv) A local farmer (L. Szabó) rents 130 ha for sheep-grazing on the W edge of the Csattag grasslands.
(v) Another local farmer (J. Habuczki) uses 20 ha in the NE corner of Csattag marsh for cattle-grazing.
(vi) Finally, one farming company (Csarnok 96 Bt.) rents areas E of Csattag marsh (70 ha), and also rents grasslands W and S of Fekete-rét marsh (330 ha).

Altogether, the regularly grazed areas around Csattag marsh now total c. 900 ha. Out of this number, grazing rental agreements are direct results of this project on c. 370 ha. New rentals include those by Mr. Tóth (100 ha), Mr. Habuczki (20 ha), and extensions of previously existing rentals include those by Mr. K. Szabó (+100 ha), the Egyek farmers (+100 ha), and Csarnok 96 Bt. (+50 ha).

In the Villongó area, five farmers now rent c. 450 ha for grazing (**Map 10**). The owner of the larger farm (Gy. Besenyei) now keeps only sheep (c. 700 of them, instead of geese), south of Main Road 33, which graze on c. 240 ha. The renter of the smaller farm (F. Elek), south of Main Road 33,

started cattle-husbandry in spring 2007 in the Villongó region with 100 cattle on 120 ha. North of Main Road 33, three farmers graze c. 90 ha grassland (F. Varga: cattle and sheep; Ilona Langhoffer: sheep; J. Emődi: cattle and sheep).

Other important components of the D1-D2 grazing system S of the Salt Road are the following:

(i) An extended rental by P. Tamás in the W part, with sheep-grazing on native grasslands (124 ha) and on the Hagymás plateau restored grasslands (26 ha).

(ii) A new rental (start date June 2006) by NAC near Meggyes-marsh. This company did not have an interest in animal husbandry at all before the project and did not have any livestock. Our cooperation convinced them to buy Nagy-Jusztus-tanya, a large farm near Meggyes-marsh, renovate it, purchase livestock and start sheep- and cattle-grazing. Since then, they have also successfully applied for agri-environmental support (c. € 320,000) to further renovate and develop the farm by the construction of several structures. This company now rents c. 360 ha grasslands for grazing, of which 74 ha are restored grasslands.

(iii) An Egyek company (Csarnok 96 Bt.) has greatly increased the number of their livestock and has rented c. 130 ha grasslands and c. 200 ha marshland (D.2 activity) for grazing near Fekete-rét marsh.

(iv) Three farmers from Kócsújfalu (B. Faludiné, R. Kiss, I. Jordán) have extended their rental to also include restored grasslands (48, 15 and 20 ha, respectively).

(v) A farming company (Magor-DAK Rt.) in János-állás (SW corner of project area) has continued sheep-grazing on c. 125 ha.

In the rental contracts, all farmers have agreed to conduct grazing according to the requirements of the project, HNPD and Natura 2000 priorities, regardless of whether the grazing activity occurs on lands managed by HNPD or on privately owned lands. There have been no problems in this action. The grazing system established in the project is of central importance in sustaining the optimal management for native and restored grasslands well beyond the current LIFE project.

As per the question of the EC in their letter of 18/04/2007, we did not pay for farmers for grazing services in the areas they rent. We paid three companies for grazing services. First, we paid Hortobágyi Faluvéghalma Kft. for keeping the 50 cattle purchased in the project until cattle could be taken over by HNPD (i.e., from the date of purchase 13/10/2006 until cattle were transferred to PBC for winter keeping on 11/13/2006). Second, we also paid the PBC for winter keeping between 11/13/2006 and 30/04/2007. The original agreement with PBC was that the crops harvested in action D4 would pay for the winter keeping. Because most of the extensive, chemical-free lands were very weedy (please see Photo documentation), not much crops could be harvested on them in late 2006, therefore, after careful joint evaluation of the income from the crops and the costs of keeping cattle, HNPD agreed to pay the balance for winter keeping in 2006/07. Crops were enough to cover the costs of winter keeping and HNPD did not pay in the winter 2007/08. Finally, we paid Csarnok 96 Bt., renter of areas in SW-Fekete-rét marsh to maintain the 50 project cattle in the northern part of Fekete-rét marsh throughout the summer in 2007 and 2008. There was no spatial overlap between the two grazing activities (**Map 10**), and the subcontract was for the comprehensive logistic provisioning of cattle (water, salt, veterinary check-ups etc.). We separately subcontracted veterinary services (i) after cattle were taken over by HNP (05/12/2006), (ii) after a cow died to unknown reasons (12/06/2007) and (iii) when cattle were screened in several tests (parasites, diseases) before they were transferred to the site in early 2008 (22/04/2008).

The costs in this action were lower than expected because much of the External Assistance foreseen was not used. External Assistance was largely unnecessary because farmers showed an unforeseen interest in being involved in the D1-D2 grazing system. As per the request by EC letter 18/04/2007 regarding reporting income from the project, income from the rentals have not been reported

because no rental contracts were made for the lands purchased in the project. According to the original agreement between HNPD and PBC, the income generated from sales of crops cultivated on the extensive lands by PBC was used for the winter keeping of the cattle purchased in the project by HNPD. However, this income was quite low in many years, as chemical-free lands were often taken over by weeds (please see Photo documentation) and only half of the crops were harvested anyway (please see D4). The income generated on the wildlife lands did not even cover the costs of cattle wintering (and associated logistics) in some years (that is why small amounts were paid for this activity by PBC in EA under D1). For these reasons, we cannot report any income generated in the project.

D.2: Using grazing and fire to increase habitat diversity in marshes

The expected results in this action were as follows: "By opening up homogenised reedbeds it will be possible for other wetland species to take foot in the gaps created by grazing and/or burning. Grazing also will cause heavy trampling, which is likely to make the soil less suitable for plant growth, and the area more suitable for wading birds. Burning, besides creating physical space for plant growth, also will be likely to release chemical elements and ions the availability of which will further boost plant growth. Both of the effects are likely to lead to new physical characters and plant associations, which will increase the diversity of marsh habitats." The action has two sub-actions.

Sub-action D.2/1: Grazing to increase habitat diversity in marshes

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Four meetings with stakeholders (PBC, farmers, reed-cutters)	Rental contracts renegotiated, areas redistributed	Completed 31/03/2005	PC, S. Szabó
2	Signing of minutes and new rental contracts (i.e. implementation and scheduling plan)	Stakeholders agree on forming a contiguous grazing area of c. 300 ha near/in Fekete-rét	Completed 30/06/2005	PC, S. Szabó
3	Sheep-grazing near Meggyes marsh	300 sheep graze lands E and S from the marsh	Completed 30/09/2005	PC, S. Szabó
4	Two on-site meetings with PBC on determining areas and grazing pressure	Spatial extent and technology of grazing agreed by HNPD, PBC	Completed 30/04/2006	PC, PM, I. Sándor, PBC
5	Transfer of cattle to site by PBC	183 grey cattle start grazing on 300 ha near Fekete-rét marsh	Completed 27/04/2006	PC, PBC
6	Negotiations with NAC on grazing around Meggyes marsh	Grazing system near Meggyes marsh agreed by NAC and HNPD	Completed 31/05/2006	PC, S. Szabó
7	NAC purchases Nagy-Jusztus farm	Grazing near Meggyes marsh starts, 83 cattle	Completed 01/06/2006	PC, S. Szabó
8	Spring grazing period over	Grey cattle taken away from Fekete-rét area	Completed 15/06/2006	PC, PBC
9	Summer grazing schedule with fewer cattle	80 mixed cattle grazing in smaller area	Completed 15/08/2006	PC, private farmer
10	Autumn grazing schedule	Band increasing to 170 cattle, back to 300 ha	Completed 30/11/2006	PC, private farmer

11	Spring/summer grazing period begins	Grey cattle taken to the Fekete-rét area	Completed 01/05/2007	PC
12	Spring/summer grazing period begins	150 mixed cattle grazing near Fekete-rét	Completed 01/05/2007	PC, private farmer
13	Spring/summer grazing period begins	80 mixed cattle grazing around Meggyes-marsh	Completed 01/05/2007	PC, private farmer
14	Autumn grazing begins	Cattle-grazing at lower intensity	Completed 01/09/2007	PC, private farmers
15	Grazing scheme ends	Cattle from marsh-edges taken away	Completed 10/12/2007	PC, private farmers
16	Spring/summer grazing period begins	180 mixed cattle grazing near Fekete-rét	Completed 04/30/2008	PC, private farmers
17	Spring/summer grazing period begins	90 mixed cattle grazing near Meggyes-marsh	Completed 04/30/2008	PC, private farmers
18	Autumn grazing begins	Cattle-grazing at lower intensity	Completed 01/09/2008	PC, private farmers
19	Grazing scheme ends	Cattle from marsh-edges taken away	Completed 10/20/2008	PC, private farmers

This subaction aimed to introduce grazing by Hungarian grey cattle to marshes and marsh edges in W edge of Csattag marsh, around Meggyes marsh and around Fekete-rét marsh (**Map 10**). The areal extent of D.2 was difficult to determine accurately as cattle were free to roam in large areas. In most cases, it was also difficult to separate grazing under action D.1 (grasslands) and grazing under D.2 (marsh edges) as the two habitat types interchange dynamically between years. The hectare values reported here, therefore, are minimum estimates for the areas of marsh edges that have been regularly grazed and trampled by cattle.

(i) On the W side of Csattag marsh, grasslands bordering marshes have been rented to a local farmer (K. Szabó) keeping livestock within the project area, who takes care of grazing of c. 100 ha marsh edges W and N of Csattag marsh (see also D.1). This farmer has also rented lands for grazing between on the NE side of Meggyes-marsh and between the northern part of Meggyes marsh and the southern part of Csattag marsh. Of the total c. 60 ha grassland, c. 40 ha has been restored in 2005-06.

(ii) The areas around Meggyes marsh were grazed by either sheep and cattle owned by two private farmers and one company (NAC) from 2006. The centre of grazing near Meggyes marsh is Nagy-Jusztus farm which has been purchased by NAC in June 2006. A new rental contract was prepared in which NAC agreed to grazing the edges of Meggyes marsh (c. 25 ha) with 80 cattle and the surrounding areas by 500 sheep, as well as some native and the newly restored grasslands near the marsh on a total of c. 360 ha.

(iii)The areas W and S of Fekete-rét marsh were the main focus of this sub-action. In a series of meetings with stakeholders on redistributing rented areas, an agreement was reached in which a contiguous grazing area of c. 350 ha grasslands and marsh edges was formed mostly on the SW shore of Fekete-rét marsh but also involving marsh edges on three-quarters of the total edge length of the marsh (**Map 10**). The edges and inner parts of Fekete-rét marsh (total c. 200 ha) were grazed by a large band of cattle from PBC (180 animals) in spring/summer 2006. From late June, 2006 a local farming company (Csarnok 96 Bt.) has rented the area for 150 cattle (mixed band of grey cattle and the type Hungarian mixed breed) to the area. Those cattle, fluctuating between 150 and 180 animals between years, have been using the entire southern half of Fekete-rét for grazing since autumn 2006.

(iv) Grazing by the 50 project cattle (purchased in C.4) was conducted in the N part of Fekete-rét (c. 50 ha) in 2007 and 2008. This additional, unforeseen benefit, made possible by

the interest of local farmers in the grazing system, was not foreseen in the modified application.

(v) As an additional, unforeseen benefit, a local farmer (P. Tamás) has started grazing on c. 150 ha grassland and marsh edges (c. 25 ha) with 500 sheep on and near Hagymás plateau in 2007. The rented area includes a grassland restored in 2005 (26 ha).

The best indicator for testing performance of this system is the surface of marsh area where grazing on marsh edges was present. By involving local farmers near Csattag, Meggyes and the unforeseen Hagymás marshes, HNPD was able to concentrate all grazing efforts to the Fekete-rét marsh area, which itself was c. 350 ha (marsh area c. 200 ha). The total area of marsh edges regularly grazed and trampled by cattle is estimated at c. 400 ha, or 14% more than that planned in action D.2. There have been no problems with this action.

The costs in this action were mostly as foreseen. The 50 Hungarian grey cattle of HNPD has grazed 50 ha of marsh edges in the northern part of Fekete-rét marsh since autumn 2006. This area needed to be encircled by an electric fence to keep cattle inside the site. The area had already been grazed by water buffalos between 2002-2004, and the electric fence system installed in 2002 became dysfunctional by 2006. Therefore, the fence system powered by solar panels had to be repaired and partly replaced. In addition, the wooden nature trail ("Donga út") stretching across the site had to be saved from being damaged by cattle, therefore, an additional electric fence system had to be installed.

In summary of all grazing activities, we can conclude that the combined achievements and impacts of actions D.1 and D.2 have resulted both in the increase of ecological values (please see more details in F.2 Biological monitoring) and the establishment of a socio-economically sustainable grazing system based on the participation of private farmers. At the project's end date, 19 different farming units (4 companies, 14 private farmers and HNPD) are running animal husbandry programs and grazing in the project area on a total of 2510 ha of grassland and marsh edges. The total number of cattle grazing in the PA has increased from c. 500 before the project to c. 700 (40% increase). The number of grazing sheep has doubled during the project, and goose-farming has disappeared as a result of the project (please see **Figure 1**).

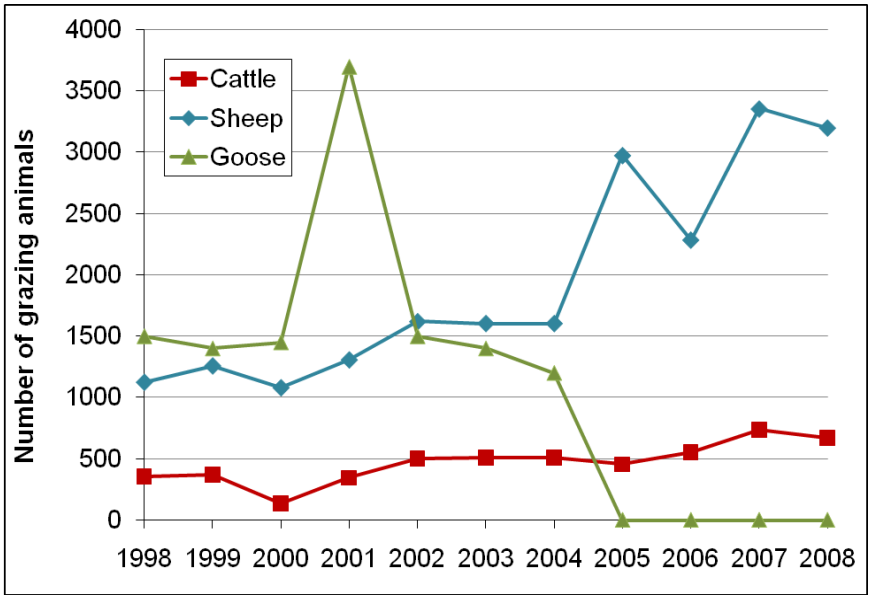

Figure 1. Annual changes in the number of grazing livestock present in the PA.

Sub-action D.2/2: Fire management to increase habitat diversity in marshes

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Two meetings with stakeholders on fire management	Reed-cutters near Csattag and Fekete-rét marshes agree to plans	Completed 30/04/2005	PC, PM
2	Application for permits for fire management	Environmental permits for burning obtained	Completed 30/07/2005	PC
3	On-site negotiation with reed-cutters, firefighters	Plan for burning agreed, signed	Completed 25/08/2005	PC, PM
4	Cutting reed around plots to be burned	8 plots of 2 sizes (1 ha, 0.25 ha) cut in two sites	Completed 03/09/2005	PC, subcontractor
5	Attempts at setting controlled fire	Failure due to high water levels and humidity of vegetation	Completed 10/09/2005	PC, PM, subcontractors
6	Two meetings with stakeholders on fire management	Reed-cutters agree on repeating attempt	Completed 30/07/2006	PC, PM
7	Application for permits for for fire management	Environmental permits for burning obtained	Completed 31/08/2006	PC
8	Cutting reed around plots to be burned	8 plots of 2 sizes (1 ha, 0.25 ha) cut in two sites	Completed 10/09/06	PC, subcontractors
9	Application for permits for fire management	Environmental permits for burning obtained	Completed 30/07/2007	PC
10	On-site negotiation with reed-cutters, firefighters	Plan for burning agreed, signed	Completed 01/08/2007	PC
11	Cutting reed around plot to be burned	50-m safety zone cut around 1 plot (6.5 ha)	Completed 20/08/2007	PC, subcontractor
12	Controlled burning of plot	Successful attempt, 4.5 ha burned	Completed 03/09/2007	PC, subcontractors
13	Uncontrolled fire in Fekete-rét marsh	110 ha burning for 5 days	Ended 10/09/2007	-
14	One on-site meeting with stakeholders on fire management	Reed-cutters agree on future utilization of burnt reed stands	Completed 30/09/2007	PC

In sub-action D.2/2 (fire management of reedbeds), HNPD has agreed with stakeholders (two companies in the reed-cutting business and firefighters from Tiszafüred and Egyek) on the method, location and protective measures of burning planned for September of every year between 2005 and 2007. Official permits for the fire management from the Jász-Nagykun-Szolnok and Hajdú-Bihar County Inspectorates for Environment and Water were also obtained in each of the three years. To set up plots for the burning treatment and to control the spread of fire in the marsh, 50-m-wide safety zones were cut around 6 plots of two different sizes (4 ha and 1 ha) in 2005 and 2006. In 2007, reed was cut in a 50-m-wide stripe around one big plot (6.5 ha) in Fekete-rét marsh.

Attempts to set green reed on fire were unsuccessful in 2005 and 2006 due to high water levels and high water content of the marsh vegetation. After the first two unsuccessful attempts, HNPD decided to play a sure game in 2007 and selected only one big plot in Fekete-rét marsh and cut a 50-m-wide safety zone around it. Because 2007 was an extremely dry year with a general drought from

March to September, we had to prepare the whole action very carefully. Furthermore, because the chances of the fire spreading to other areas of the marsh were high, we also established 50-m-wide safety zones around every wooden structure (one nature trail and two watchtowers) and the northern grazing site of the 50 Hungarian grey cattle. As an additional pre-cautionary measure, HNPD had partly filled up Fekete-rét marsh with water before the fire management to prevent the devastation of the fish fauna due to insufficient oxygen conditions and/or high temperatures in the water. When all preparations had been made, we set fire on 03/09/2007 by matches, paper and pre-ignited old stacks of reeds in the homogenous reedstands. The green, fully blooming reed set on fire relatively easily, with the wind speed and direction being optimal.

The experiment was quite successful since 4.5 ha out of the 6.5 ha was burnt and by 18:00 firefighters judged the fire as being controlled. However, at the end of the day, westerly winds have resurged to c. 90 km/h, and the fire got strong again and broke through the safety zone despite of the strict surveillance. The marsh had been on fire for five days with a fluctuating intensity. In the end, approximately 120 ha reed stands have been burnt out of the 250 ha in the southern part of Fekete-rét marsh (**Map 9b** in **Annex 3**). No infrastructure was burned in the uncontrolled part of the fire.

The costs in this action have been as planned. Although fire management was originally planned in two years, weather conditions allowed the implementation of burning in only one, the driest, year (2007). However, full preparations for the burning were implemented in both years before the successful attempt. For example, the plots to be burned have been cut around by Seiga machinery in both unsuccessful years (702 € EA) and safety zones were cut around all major infrastructure of value/use in the marsh in 2007 (3176 € EA). The organisation also included some travel (492 € specific, 1240 € partial) to negotiations and on-site discussions with reed-cutters and firefighters.

D.3: Management of wooded areas

This action aimed to maintain the wooded areas established in action C2. Because that action was not successful due to various conditions (please see description there), this planned action was not implemented. Although some maintenance and replacement efforts were carried out regarding the wooded areas, for the sake of simplicity, these activities are presented under action C2.

D.4: Extensive cultivation of arable lands to produce food for small mammals

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Four meetings with stakeholders (PBC, NAC, two private farmers)	Strategic plans for cultivation of wildlife lands	Completed 31/03/2005	PC, I. Csirmaz, S. Szabó
2	Further negotiations with stakeholders	General agreements signed	Completed 31/05/2005	PC
3	Soil preparation and sowing winter crops for 2005/2006	Cultivation of wildlife lands started on 33 ha, then 117 ha	Completed 05/12/2005 KK000393/05 KK000802/05 KK000803/05 KK000804/05 KK001043	PC
4	Two meetings with PBC on technical issues of cultivation for 2006	Agreement on spatial arrangement of plots and technology of	Completed 31/08/2005	PC, PM, I. Sándor

		cultivation		
5	Soil preparation and sowing winter/spring crops for 2006/2007	Cultivation of wildlife lands on 33 + 117 ha	Completed 31/10/2006 KK000323/06 KK000324/06 KK000325/06 KK000326/06 KK000505/06 0744052	PC, PM, PBC
6	One meeting with PBC on technical issues for 2007	Agreement on spatial arrangement and technology	Completed 31/08/2007	PC, PM, PBC
7	Soil preparation and sowing winter/spring crops for 2007/2008	Cultivation of wildlife lands on 36 + 81 ha	Completed 28/12/2007	PC, PBC
8	One meeting with PBC on technical issues for 2008	Agreement on spatial arrangement and technology	Completed 31/08/2008	PC, PBC
9	Soil preparation and sowing winter/spring crops for 2008/2009	Cultivation of wildlife lands on 117 ha	Completed 22/09/2008 KK000225/08 KK000406/08 KK000728/08 851719	PC, PBC, subcontractor

In this action, we aimed to extensively cultivate 148 ha arable lands (target in modified application) and expected that "populations of target birds of prey will increase in the short-term and that tree-nesting waterbirds will use the area for roosting and nesting on the longer term. Increasing populations of small mammals will also attract overwintering raptors".

Extensive cultivation for wildlife was carried out in 22 plots on a total area of 150 ha in four full growing seasons during the project (**Table 6**, **Map 11**). The spatial arrangement, crop structure and technology of cultivation were agreed in negotiations in August of each year between 2005 and 2008. To clarify the use of agro-chemicals as raised in EC letter 11/04/2008, it is important to emphasise that no chemicals were used on any of the 150 ha land cultivated under this action. This could easily be verified only by looking at the lands, most of which have been taken over by weeds.

Table 6. Plots with extensive wildlife cultivation (D4). All parcels belong to Tiszafüred township.

LRN	Plot ID	Area (ha)	Crop 2005/06	Crop 2006/07	Crop 2007/08
0156/6 h	1	11.2935	alfalfa	alfalfa	alfalfa
0166/4 a	2	3.7271	maize	winter wheat	alfalfa
0187/14 c	3	5.1344	winter barley	fallow	fallow
0187/14 a	4	9.3313	sunflower	winter wheat	alfalfa
0187/14 a	5	5.2679	sorghum	winter wheat	alfalfa
0202/1 l	6	8.1558	millet	winter wheat	maize
0202/1 l	7	7.3764	winter pea	maize	sorghum
0202/1 l	8	7.6406	maize	sorghum	winter pea
0202/1 l	9	6.5675	sorghum	winter wheat	maize
0202/1 l	10	6.9046	winter wheat	maize	sorghum
0202/1 l	11	7.3398	maize	spring barley	winter pea

0204 a	12	3.5382	alfalfa	alfalfa	alfalfa
0204 a	13	5.1275	perennial rye	perennial rye	millet
0204 a	14	5.4809	maize	spring barley	sorghum
0211/3 a	15	6.5523	maize	millet	maize
0211/3 a	16	7.5116	winter wheat	maize	millet
0211/3 a	17	8.7189	maize	sorghum	winter wheat
0211/3	18	8.5013	sorghum	maize	millet
0211/3 a	19	6.0137	millet	winter wheat	maize
0211/3 a	20	6.5130	maize	millet	winter pea
0211/3 a	21	6.1612	winter wheat	maize	millet
0211/3 a	22	6.7666	alfalfa	alfalfa	alfalfa
Total:		149.6241			

On large fields, lands were cultivated in 100-m-wide stripes because experience from 2004-2005 on 15 ha near Górés-tanya suggested that narrow stripes (20-25 m wide) are not very efficient in maintaining stable levels of quail, partridges and rabbits. To provide feeding and hiding places for large numbers of the target species during the winter period, half of the crops were left standing throughout the winter of 2005/2006, including all of the sorghum (3 plots) and alfalfa (3 plots unmowed), more than half of the maize (4 of 7 plots), half of the millet (1 plot). In winter 2007/2008, also approximately half of the crops were left standing including all of the sorghum (2 plots) and alfalfa (3 plots), half of the maize (3 of 6 plots), half of the millet (1 plot). Finally, in 2007/2008, the crops left standing were all sorghum (3 plots), all alfalfa (4 plots), half the maize (3 plots) and half the millet (1 plot). The high number of target species was indicated by an exceptionally high density of raptors throughout the winter and spring (please see F2 Biological monitoring).

This action has progressed according to plans. The indicator for performance is the total surface area under extensive cultivation for wildlife (150 ha or 100% of that foreseen in the modified application). There have been no problems in the implementation of this action. On all plots, the cultivation has been carried out according to the strict regulations of bio-qualification (no chemical use was one of them), which further enhanced benefits to target prey and predator populations. The extensive cultivation of arable lands will end in spring 2008 since the budget of further cultivation was not included in the project budget. However, PBC has agreed to continue using the plots, crop structure and methods of cultivation for at least five years after the project from agri-environmental support, e.g. through the ESA program.

6.5. "E" PUBLIC AWARENESS AND DISSEMINATION OF INFORMATION

E.1: Raising public awareness to the Egyek-Pusztakócs grasslands and grassland conservation

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Contacting and informing local stakeholders about the project	Personal meetings with farmers, landowners, officials etc.	Completed 01/09/2004 to 30/06/2005	PC, HNPD rangers
2	Organizing open days for interested local stakeholders	Open days 1 Open days 2 Open days 3 Open days 4	18-19/04/2005 18-19/10/2005 07-08/06/2007 04-05/12/2008	PC, PM, I. Sándor (Director), rangers
3	Disseminating project	Project website online	Completed	PM, PC

	information on the Web	in English, Hungarian	31/03/2005	
4	Project information on-site	4 information boards prepared and installed	31/05/2005	PC, PM
5	Preparing and printing project brossure	3000 copies in Hungarian and English, in German and French	Completed, 31/10/2005 07/06/2007	PC, PM
6	Meetings with local farmers on grazing system	Five joint meetings, several personal ones	Completed 31/07/2006	PC
7	Organizing of scientific conference on grasslands and Natura 2000	Conference with 115 participants and invited talks	Completed 29-31/03/2007	PM
8	Refreshing project website	Website reconstructed, updated	Completed 31/08/2007	PC
9	Presentation of project results	Workshop at 5th Hung. Cons. Biol. Conf.	Completed 6-9/11/2008	PM, PC
10	Summarising the project activities and results	Layman's report prepared and printed in Hungarian and English	Completed 20/12/2008	PM, PC, subcontractors
11	Summarising the project activities and results	Project booklet prepared and printed in Hungarian and English	Completed 20/12/2008	PM, PC, subcontractors

The Expected results in this action involved the following. "There will be one website, two brochures, three information boards, and two workshops dedicated to the theme of the current project, the summary of which will be available in the form of a layman's report. The project will also benefit from voluntary work by interested people or organisations. Local stakeholders will have a greater affinity to nature conservation, habitat rehabilitation and the possibilities for nature conservation that open up with the accession of Hungary to the EU."

In all respects, the action has progressed as planned, except for the preparation of the booklet, which was completed only in December 2008 and for the farmer project, which progressed somewhat differently than that foreseen. In details (following the order in the revised application:

1. The website (http://life2004.hnp.hu) has been up and running since the first year of the project. The website is both in English and Hungarian, is part of and linked to HNPD's official site and several other links point to it. It has been updated twice during the project duration. The website was visited by an average of 36 users and was downloaded 65 times per month in 2009. If we assume a similar rate for the 45 months the website has been operating, the website may have been visited by 1620 people.
2.
   a. We have produced a project brochure, which is a colourful 2-page A4 format leaflet in 3000 copies in four languages each (Hungarian, English, German, French, please note, only three languages were foreseen). The project brochures have been widely distributed in Hungary (national and international conferences, workshops, meetings, MEW, HNPD, UD etc.) and internationally (at conferences, seminars, other project meetings e.g. in Germany, Greece, Lithuania, Romania, Slovakia, South Africa, United States). The Hungarian and English brochure was annexed in the IR. Please see the brochures in German and French attached to the paper copy of the FR. We estimate that we have distributed c. 1500 Hungarian brochures and c. 2000 brochures in other languages.
   b. We have also produced an B5-format booklet of 32 pages in both English and Hungarian (total copies 500) on the Egyek-Pusztakócs long-term rehabilitation programme, grassland

conservation including our LIFE-Nature project and its main results, and the Natura2000 network and the LIFE programme in general in December 2008. The booklet is aimed to a more expert, conservation-oriented audience but has also been disseminated among local stakeholders (please note that the both the format and length is more than foreseen than the A5, 25-30 pages foreseen). Please see **Annex 8** for the booklet in Hungarian and English. We have distributed c. 150 booklets to Hungarian addresses and to partners in other projects in spring/summer 2009.

3. We have designed, produced and installed 4 3-m^2 information boards (please note that only 4 were foreseen). Three were installed where foreseen, i.e., at three main entry points to the project area, and one was installed at Nyugati Fogadó, the westernmost hotel/inn/demonstration exhibit in Hortobágy. The layout and a picture of one of the boards was attached to the IR.
4. We have organised one full scientific conference with three workshops in 2007, a workshop/village forum for local stakeholders in 2005 and an additional workshop at a scientific conference in 2008. For details, please see Report on workshops attached in **Annex 9**.
5. We held three open days events for local stakeholders, and one open day event for conservation experts from other national park directorates. Open days 1 (18-19/04/2005) and 2 (18-19/10/2005) were targeted for interested people from Nagyiván as the southwestern part of the PA was the first in the restoration/management plans. Open days 3 (07-08/06/2007) were organized for conservation experts from HNPD and other national park directorates. Finally, open days 4 (04-05/12/2008) were organized for interested people from Egyek. Participation by local stakeholders was low, only 17 people showed up for open days 1, 21 for open days 2, and 10 people for open days 4. The low attendance for the last open days may be related that we had already contacted and informed many of the local stakeholders from Egyek in the village forum and during the preparation of the land purchases. A total of 40 people, including 16 non-project people from HNPD and 24 people from other national parks have participated in open days 3. We hope this information also clarifies concerns raised in EC letter of 18/04/2007.
6. The local farmer project progressed somewhat differently than foreseen. All local farmers were contacted early (2004-2005) in the project and we established a fruitful and friendly relationships with them. Since then, we met c. 50 farmers in person on a regular basis (at least once in 6 months), during scheduled meetings, field visits, restoration and management activities etc. During these meetings, we offered them information on the project and on the possible ways of cooperation in field activities. We also informed several farmers of agri-environmental support schemes and the Environmentally Sensitive Areas subprogram extended in the Hortobágy region in 2007, for which we used both personal expertise from HNPD employees, books and miscellaneous information collected e.g. during the conferences/workshops organized. For some of these activities, we used a subcontract with Rotkiv Bt., who had widespread experience in directly communicating with farmers and who had provided valuable information on agricultural support schemes, land use regulations etc. throughout the project. We assisted all farmers interested in renting areas for grazing or mowing to establish or renegotiate rental contracts with the Department of Asset Management of HNPD. We, however, experienced very low interest for any study trip from the farmers. We also found that personal contacts and discussions were a much more direct and more productive way of communicating with the farmers than through rather "impersonal" information materials sent to their addresses. As a result, these last two activities were not pursued in the project and were replaced by the more efficient ways of communication described above. We hope this information also clarifies concerns raised in EC letter of 18/04/2007.
7. The project was designed to be open to interested laypeople (volunteers, NGOs, university students etc.). Between 2005 and 2008, 6, 7, 3 and 7 volunteers, respectively, helped in various field activities (grass seed handling and mixing, grassland restoration, electric fence construction/repair, wood exclosure construction/repair, monitoring etc.).

The project has produced the following deliverable dissemination materials (all except those indicated were attached in **Annex 3** to the **Interim Report**):

- Project website, available at http://life2004.hnp.hu/index_eng.html in English and at http://life2004.hnp.hu in Hungarian (not attached)
- Project brochure (A4 format) in Hungarian
- Four information boards on the project (picture attached)
- A general poster on habitat restoration in the EPMS
- A scientific poster on the results of A.2 species and community inventory
- Three oral presentations at scientific or nature conservation conferences; one example attached in **Annex 3** (also in Photo documentation, **A.4**) as per request by the Commission in their letter of 28/02/2006)
- A paper entitled "Conservation biology in practice: nature conservation management and landscape rehabilitation in the Egyek-Pusztakócs LIFE-Nature programme", published in the journal Természetvédelmi Közlemények (Nature Conservation Communications)
- A project logo to be used in dissemination materials (attached on the cover of this report and in Photo documentation in IR)

A general poster was prepared on the background history and habitat restoration in the EPMS was prepared in summer 2007 to highlight the importance of the LIFE-project and the processes leading to it (please see in **Annex 10**). The topic required the detailed digitisation and subsequent processing of several habitat maps (from the late 1500s, 1856-66, 1969, 2001), which subsequently were used in many dissemination materials (booklet and layman's report). The journal article referred to in EC letter 11/04/2008 is attached in **Annex 18**. The results of the restoration, management and monitoring activities carried out in the project were found interesting to be published in 30 publications (9 scientific papers, 2 of which are in international refereed journals, 14 oral presentations and 7 poster presentations). A full list is given in **Annex 11** – please inform us which one you are interested in and we will be happy to send you those. Support from the LIFE-programme of the EU is always acknowledged in these publications, with the mention of the project's identification number.

Other public awareness activities

- The project has been invited to be presented at the following events:
  - "Natura2000 and Sustainability", Trainers' Workshop, Ecological Institute for Sustainable Development in Gömörszőlős, Hungary, 13-17/03/2005, presenter: L. LONTAY
  - "Restoration of grasslands and protection of marshes in Egyek-Pusztakócs (Hortobágy National Park)". Nature Conservation Seminars 2: Experiences of habitat protection and management activities aiming the conservation of nature. Nimfea Nature Conservation Association, Túrkeve, Hungary, 16/04/2005, presenter: S. LENGYEL
  - "Grassland restoration and habitat management in marshes in Egyek-Pusztakócs." Nature Conservation Seminars 3: Interventions for plant species and associations in Hungary. Nimfea Nature Conservation Society, Túrkeve, 24/11/2006, presenter: S. LENGYEL
  - "Nature conservation in practice: habitat reconstruction and species protection." Winter School of Scientific Student Group of Eötvös Loránd University, 03-04/03/2007, presenter: S. LENGYEL
- We hosted a visit from the "Satchinez" LIFE-Nature project (Timisoara, Romania, 19/03/2005, 7 participants) and a visit from the regular fall tour of Hungarian botanists involved in habitat monitoring in Hungary (MÉTA-programme; 21/10/2006, 43 participants)
- The extended project area was one of 12 case studies in the EU FP6 research programme "GemConBio", which investigated the interrelationships between governance models and biodiversity conservation. We provided basic data and information on the project area, the local

stakeholder groups and HNPD operations to conserve biodiversity at no cost to this or to the GemConBio project.

- The habitat monitoring system developed in the project has been entered into the database of European programmes of biodiversity monitoring in the "EuMon" EU FP6 project (http://eumon.ckff.si) and thus was the basis of several publications based on EuMon database.

The costs in this action mostly included subcontracting the development, preparation, translation and printing of dissemination materials (website, information boards, brochure, LIFE-sticker, conference booklet, project booklet, layman's report 10 078 € total). Additional EA costs were the organization of the conference and the professional workshop (2009 €), of the open days (774 €). Consultations and assistance in the information campaign for farmers was 1356 €. The latter two costs were invoiced by Rotkiv Bt. towards the end of the project for continuous services throughout the project. Film development cost 130 € (EA). The digitisation of old habitat maps was a tedious work and it was subcontracted to Antal NAGY (2240 €). The website was simplified once (to become faster) and upgraded twice (1567 € EA). The preparation of information boards cost 957 € DG. Travel primarily for dissemination activities amounted to 2078 €. These travels also included several visits to/with farmers targeted by the local farmer sub-action. CM included protective gear for volunteers as foreseen in the revised application (175 €) beyond miscellanous smaller costs (38 €). OC included participation fees in conferences where the project was presented (122 €) and room rental (21 €) and restaurant services (683 €) were used for meeting stakeholders during open days and for project personnel during project missions.

The indicators to test performance are the number of deliverable products related to dissemination (items: website, brochures in 4 languages, 4 information boards, 4 invited presentations, 9 journal papers, 14 talks, 7 posters, project logo). We estimate that the dissemination activities reached a minimum of 6670 people (1620 on the web, 1500 by the Hung. brochure, 2000 by other brochures, 150 by booklet, 115 by the conference, 64 by the local forum, c. 500 by conferences in Hungary (see list in **Annex 10**), 500 by international conferences (see list in **Annex 10**), 60 by the workshop, 88 by the open days, 50 by the farmer-campaign, 23 volunteers), and an unknown number of readers of various publications.

E.2: Development of guidelines for the restoration and management of pannonic steppes

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Networking with the two other Hortobágy grassland projects	Regular meetings, site visits and experience-sharing	01/10/2006 to 30/09/2008	PC
2	Collection of professional literature and information from other projects	Numerous articles, relevant books and reports collected	01/10/2006 to 30/09/2008	PC
3	Development and commenting of guidelines	Several drafts of the Guidelines	01/09/2008 to 30/11/2008	PC
4	Revision and final writing of guidelines	Final version of Guidelines	Completed 20/12/2008	PC, PM

By this action, we expected that "there will be high demand for the guidelines from other national parks in Hungary and possibly other countries where grasslands are planned for restoration. We also expect that soon after the end of the project the guidelines will be routinely used in evaluation of applications to the national agri-environmental funding schemes."

This was good anticipation because the project attracted great interest wherever it was presented (please see some examples in the Report on workshops in **Annex 9**). Our project has been continuously in contact with the other two Hortobágy grassland LIFE projects, and we regularly informed each other of progress and main results. We have also been in close working contact with the Great Bustard, the Red-footed Falcon and GrassHabit LIFE-projects in Hungary. Each of the "grassland" LIFE-Nature projects were represented at the Tokaj conference organised in this project, which thus offered an excellent platform to exchange ideas and experiences about grassland restoration and management. The collection of general literature and information materials from the other projects has started in the winter of 2006/07. We developed the guidelines in fall 2008 by the synthesis of previous knowledge from the other projects and by a detailed description of our methods and experiences with grassland restoration. To speed up the writing of the document, part of the work was subcontracted to Rotkiv Bt., who had widespread experience in grassland management and restoration and had contributed to the project since the start. The document is supplemented section on things to watch out for/decide on for future grassland restorations. The document is attached in **Annex 12** with an English summary.

6.6. "F" OVERALL PROJECT OPERATION, MANAGEMENT AND MONITORING

F.1: Project operation and management

No.	Activity	Output	Status with date of start/completion	Responsible person
1	PC nominated	L. LONTAY hired as PC	Starting from 01/09/2004	Cs. Aradi (Director)
2	PM nominated	dr. S. LENGYEL contracted as PM	Starting from 01/01/2005	Cs. Aradi (Director)
3	Official decree on task division in LIFE projects	Decree by director of HNPD	16/06/2005	Cs. Aradi, I. Sándor
4	Smaller teams organised to implement specific actions	Forming of Project Implementation Team (PIT)	Completed 14/09/2004	PC
5	Involving directors and external experts in project implementation	First meeting of Project Advisory Board	Completed 14/09/2004	PM
6	Negotiations between UD and HNPD on form of partnership	Formulation and signing of the Partnership Agreement	Completed 04/05/2005	PM
7	Actual project implementation	Over 100 internal meetings within PIT, everyday contact between PM and PC	Continuous during project implementation	PM, PC

In this action, we expected that "the implementation of all other actions will benefit from this general action. The progress of the project will be demonstrated by three progress reports at the end of year 1, 2 and 3, respectively, 1 interim report and 1 layman's report."

This action started at the project start date. Mr. László LONTAY was hired as Project Coordinator on 01/12/2004. It had soon become obvious that the workload associated with project management was greater than foreseen and exceeded what can be expected from one project coordinator. Therefore, the project advisory board and the directors of HNPD have decided to appoint dr. Szabolcs LENGYEL, who had previously prepared the LIFE application, as a half-time equivalent

Project Manager beginning from 01/01/2005 via subcontracting part of the project management. This was laid down in an official form through a decree by the Director of HNPD on 16/05/2005, and involved a specific division of tasks (please see in **Annex 2.2** in the IR). Following the project mission on 23 June, 2006, the Commission in their latter of August 21, 2006 have asked for further explanation of the roles of the PM and PC. The decree provides some information on the sharing of the tasks, whereas the table below adds further information on the roles of the PM and PC.

Category in project	**Tasks**
Project Coordinator	coordination of the project on an everyday basis, organisation of and preparation for meetings and negotiations, preparations for decision-making by the PM, overseeing/checking field actions, taking care of contacts, working with local stakeholders and entrepreneurs, official record-keeping
Project Manager	overall planning and calculations, scheduling, negotiating strategic decisions, preparations for decision-making by the Director, evaluation of progress, checking records, financial record-keeping, writing reports and presentations, contact with Partner

The Project Implementation Team was officially formed on 14/09/2004 with 11 members, including the Deputy Director of HNPD, the PM and PC. The Project Advisory Committee was also formed with four members on 14/09/2004, including the Director and the Deputy Director of Finances of the National Park. Various members of the Project Implementation Team have held over 200 formal meetings (major ones with minutes) since the project start date. The Project Advisory Board held seven formal meetings, c. bimonthly during the first full year and less frequently afterwards.

The Partner was solely responsible for action F.2 (Biological monitoring) and all associated activities (please see F.2 for Technical Report from UD). Furthermore, the Partner has been involved in several activities in general project management (planning, negotiations, travel to sites and meetings on implementation of actions other than F.2 etc.). In preparation for the IR and FR, the Partner has reported costs to the Beneficiary by preparing a complete package of accounting documents in relation to the costs to be attached to the internal technical correspondence regarding the reporting. These costs were analyzed and verified by the Beneficiary before payments were made to the Partner.

From 01/09/2004 to 31/10/2006, the PM has been employed full time by a third party (the Hungarian Academy of Sciences, please see **Annex 2.3.4** in Annex to IR) and was charged as contact person by UD in the Partnership Agreement (**Annex 2.5** in Annex to IR) without a formal employment at UD. All project management activities by the PM in this period are thus compensated as External Assistance in the form of a 12-month contract for 2005, a 6-month contract for the first part of 2006 and a 4-month contract for the second part of 2006. Such involvement of a PM beyond the PC foreseen in the revised application has become necessary due to the great variety of tasks and to achieve an efficient division of all tasks (please see tables above and decree by HNPD director in **Annex 2.2** in Annex to IR). In the reporting period, the PM was paid by UD as researcher through one subcontract in 2005 under F2 (please see **Annex 2.4.2** in Annex to IR). Beginning from 01/11/2006, the PM has been employed by UD as Assistant Professor, and the PM was not paid by EA after this time. He worked on the project until 31/08/2007 and his services are included in Personnel. Beginning from 01/09/2007, the former PM left the country for a fellowship in the Unites States until 28/02/2009. Although he kept contact with the project personnel and was informed of major project developments, he was not working directly on the project in this period and was not paid by the project.

Ms. Eszter DÉRI worked as Project Coordinator on the part of the Partner between 01/01/2006 and 15/10/2008. After this time, she left the UD to take up a permanent position at an umbrella NGO

organisation in Budapest but kept on working for the project (assembling and processing data, development of monitoring report etc.). Her services were paid through External Assistance via a subcontract from 16/10/2008 and 20/11/2008. This was necessary to coordinate/close monitoring activities and to prepare for the mission of 30/10/2008.

Mr. László LONTAY, PC, has left the project on 30/06/2008 to take up a permanent position at Aggtelek National Park Directorate. Although he continued to work for the project in c. 20% of his time, he was not paid for this. To replace him, HNPD hired Gergő Gábor NAGY, who had studied the area since 2004 and completed his thesis work (defended in May 2008) on grassland biodiversity. Mr. NAGY's main task was to manage the project on a day-to-basis, oversee project developments, to organize the paperwork and financial aspects of the project in preparation for the FR and to make progress on delayed actions (mostly in E1).

Office space and equipment (computers) for project management were provided both by UD and by HNPD. The project organigram is attached in **Annex 2**.

Project operation and management involved much more work than foreseen in the revised application. This is due to the variety of activities that required specific expertise in several cases and to the complexity of some actions that required significant background work necessary to implement the actions as planned. Preparation of the request for project modification resulting from unforeseen calamities and the active involvement of local stakeholders also required much extra work. The most important indicator to test performance in this action is that all actions have been completed by the project's end date (31/12/2008). Other indicators used to test performance can be the number of documents prepared during the project (e.g. requests for price offers, orders for products/services, contracts, invoice validation sheets, travel slips, internal payment orders, verification of bank transfer or cash payment etc.).

F.2: Biological monitoring of grasslands, marshes and wooded areas

No.	Activity	Output	Status with date of start/completion	Responsible person
1	Planning of monitoring system	Monitoring plan developed for target activities	Completed 04/05/2005	PM, E. Déri
2	Biological monitoring of arable lands	Zoological study of lands for restoration in 2005	Completed 30/09/2005	PM, E. Déri, researchers
3	Preparation of map of potential habitats in EPMS	Potential habitat map digitised, commented, completed	Completed 30/11/2005	PM
4	Assembling information from all sources on habitat rehabilitation in EPMS	EPMS rehabilitation Master Plan (MP) drafted, commented, revised, completed	Completed 30/11/2005	PM, E. Déri
6	Monitoring of restored lands	Botanical, zoological study of lands restored in 2005	Completed 30/09/2006	PM, E. Déri, researchers
7	Biological monitoring of arable lands	Botanical, zoological study of lands for restoration in 2006	Completed 30/09/2006	PM, E. Déri, researchers
8	Monitoring of effects of	Botanical study of	Completed	PM, researchers

	grazing on grasslands, meadows and marshes	grazed and control quadrats and transects	31/07/2006	
9	Habitat status monitoring in project area	Photo documentation of actions, general monitoring results	Completed 31/10/2006	PM, E. Déri, researchers
10	Monitoring of restored lands	Botanical, zoological study of lands restored in 2005 and 2006	Completed 30/09/2007	PM, B. Deák, E. Déri, researchers
11	Biological monitoring of arable lands	Botanical, zoological study of lands for restoration in 2007	Completed 30/09/2007	PM, E. Déri, researchers
12	Monitoring of effects of grazing on grasslands, meadows and marshes	Botanical study of grazed and control quadrats and transects	Completed 30/09/2007	PM, B. Deák, researchers
13	Monitoring of the effects of fire management on marshes	Botanical study of quadrats to be burned	Completed 31/08/2007	PM, B. Deák, E. Déri, researchers
14	Small mammal monitoring of extensively cultivated arable lands	Small mammals study of wildlife lands	Completed 7/8/2007	PM, researchers
15	Habitat status monitoring in project area	General monitoring results	Completed 31/12/2007	PM, E. Déri, researchers
16	Monitoring of restored lands	Botanical, zoological study of lands restored in 2005, 2006, 2007	Completed 30/09/2008	PM, B. Deák, E. Déri, researchers
17	Monitoring of the effects of fire management on marshes	Botanical study of burned quadrats	Completed 31/08/2008	PM, B. Deák, E. Déri, researchers
18	Data compilation and processing	All data from 2004-2008 ready for analysis	Completed 30/11/2008	E. Déri
19	Writing of monitoring report	Monitoring report	Completed 21/12/2008	E. Déri

The Expected results in this action were as follows. "By conducting a properly designed and conducted biological monitoring scheme, detailed information will be available for evaluating the effectiveness of the different management actions implemented in this project. This way it will be possible to judge the progress of the project and to make modifications in the plans if it becomes necessary (*sensu* adaptive management)."

The F.2 action, which covers all biological monitoring activities in the project is the sole responsibility of the Partner in this project. The materials described but not attached in PR2 (GPS coordinates, abundance-dominance tables) are now attached in **Annex 19** as per the request by the EC in their letter of 11/04/2008. The full Technical Activity Report submitted by UD as Partner to HNPD as Beneficiary according to the Partnership Agreement is attached in **Annex 13**. The following part summarizes the activities by the Partner and the main results of the project.

We designated permanent sampling sites and two plots (exclosures) at each site to monitor the results of grassland restoration. Exclosures served as controls where no grazing or mowing occurred to provide a reference to grazed or mowed sites. In botanical studies, we conducted phytosociological surveys and phytomass-sampling inside and outside the permanent plots. In

zoological studies, we surveyed the most important arthropod groups (herbivores: orthopterans, leafhoppers and heteropterans; predators: spiders, carabid beetles) using sweep-netting (left) and pitfall traps (right) six times per year. The zoological study also included the standardised counting of birds at permanent counting points twice every year.

To observe the changes following fire management carried out to reduce the homogenisation of marshes, we conducted phytosociological surveys in 2x2-m plots before and one year after the controlled burning on randomly selected points in Fekete-rét marsh. Finally, the effect of extensive cultivation of arable lands was studied by surveying and comparing the small mammal fauna of extensively cultivated lands and nearby intensively cultivated lands (outside the project area but bordering the extensive lands).

As a result of the second phase of the landscape-level habitat rehabilitation programme, most of the natural or semi-natural terrestrial habitat types reached a better conservation status, i.e., their status, quality, spatial connectivity and chances for long-term persistence have been greatly improved. The results suggested that grassland restoration was successful beyond our expectations. Monitoring results showed that the species composition of restored grasslands progressed towards that of the restoration targets (natural loess and alkali grasslands), and in the case of alkali restorations, it even reached the targets in only three years.

The fragmentation of grasslands has been substantially reduced, the chemical load from agricultural cultivation of arable lands has decreased considerably and continuous human disturbance has terminated in most areas. Directly deleterious effects on grasslands such as goose-farming has been eliminated, and grazing as the optimal way of grassland management has been extended to a large part of the terrestrial habitat types. The methods used for the opening up of homogeneous reedbeds (grazing, fire management) were successful, and the diversity of habitat types in Fekete-rét marsh has increased.

As a result of the project, the mosaic nature of the landscape complex has increased since 2001, spatial connections between marshes and grasslands have been established and human disturbance has been greatly reduced. The areal proportions of habitat types better match those estimated for prehistoric times. The favourable changes in habitats will also be beneficial for populations of numerous protected or strictly protected species and Natura 2000 species found in the marsh system.

To enable the further favourable development of restored grasslands, it will become essential in the future to ensure the removal of the dead plant matter (litter) that is accumulating in great quantities and to enhance the colonisation of rare dicotyledonous plant species. Restored grasslands thus need to be managed primarily by grazing or by mowing where grazing is not feasible. Grazing is the preferred option because, besides removing dead litter, grazing livestock can also efficiently enhance the colonisation of rare dicotyledonous plants by bringing in plant propagula (seeds) on their body or by their feces. Grazing can also leas to a further increase in the diversity of the insect fauna and can lead to the colonisation of rare alkali nesting birds. In the rental contracts with farmers, therefore, Hortobágy National Park gives detailed instructions on the arrangements required from farmers regarding grazing and mowing activities. The monitoring of the effect of grassland restoration and the effects of grazing and mowing using field experiments will be continued from other sources (please see Monitoring report in **Annex 13** for more details).

F.3: External audit of the project

In this action, we expected that "the accounting and financial management of the project will be exact, thorough, controlled and will adhere to the rules and regulations concerning such projects." This action was scheduled after the end date of the project, in the summer 2009. The auditor company charged with the external audit was Big Audit Llc., a company familiar with LIFE-Nature regulations, which also has prepared the audit for the Final Report of the project LIFE02NAT/H/8638 in which HNPD was Beneficiary. During the implementation of the project, the full documentation of all cost items (total 769 items) were prepared (photocopied from original invoices, contracts etc.). During the detailed audit, all costs occurring in the project have been verified by the independent auditor.

6.7. STATUS OF PROJECT DELIVERABLES AND MILESTONES

Deliverable (D) / Milestone (M) *(as in revised application)*	**Action**	**Deadline**	**Status**	**Description / Evidence**	**Reference**
(M) Nomination of PC and assistant [PM and PC]	F1	15/09/2004	Completed 01/09/2005	Job description and contracts	IR Annex 2.2
(D,M) Report on inventory of plant species and communities	A2	31/03/2005	Completed 31/03/2005	Report in Hung. with English summary	Add. Info to PR 1
(D,M) Project web site available	E1	31/03/2005	Completed 31/03/2005	http://Life2004.hnp.hu	PR 1
(D,M) Information boards installed	E1	31/05/2005	Completed 31/05/2005	Info boards at 3 entry points, 1 exhibit	PR 1, IR Annex 3.3
(D,M) Management plan for restored grasslands [TIMPGR]	A3	30/06/2005	Completed 30/06/2005	Plan in Hung. with English summary	Add. Info to PR 1; Annex 5.2
(D,M) Management plan for newly created wooded areas [FIMP]	A3	30/06/2005	Completed 31/07/2006	Plan in Hung. with English summary	IR Annex 5.3
(M) First round of grass restoration	C1	30/09/2005	Completed 05/10/2005	Minutes, orders, contracts,invoices	IR Map 5., Photo documentation
(M) First round of fire management	D2	30/09/2005	Completed 10/09/2007	Minutes, orders, contracts,invoices	IR Map 8., Photo documentation
(D) Information brochure	E1	31/10/2005	Completed 31/10/2005	Brochure printed in Hungarian, English	IR Annex 3.2, Photo documentation
(M) First year of cultivating wildlife lands ending	D4	30/11/2005	Completed 31/01/2006	Minutes, orders, contracts,invoices	IR Map 9., Photo documentation
(M) First year of grassland monitoring completed	F2	30/11/2005	Completed 30/09/2005	Plans, data, photo documentation	IR Action F.2, Photo documentation
(M) Monitoring of first round of fire management completed	F2	30/11/2005	Completed 10/08/2008	Plans, data, photo documentation	FR Photo documentation on CD
(M) Goose farm lands purchased	B2	31/03/2006	Completed 31/08/2005	Purchase contracts, land registry records	IR Map 4.
(M) Construction of cattle-fold & grazing infrastructure completed	C4	31/03/2006	Completed 25/04/2006	Orders, contracts, invoices for fold etc.	IR Photo documentation
(M) 50 grey cattle purchased	C3	30/06/2006	Completed 25/04/2006	Cattle purchase contract signed	IR Photo documentation
(M) Second round of grass restoration completed	C1	30/09/2006	Completed 06/10/2006	Minutes, orders, contracts,invoices	IR Map 5., Photo documentation

(M) First year of introducing grazing to ungrazed areas ending	D1	30/09/2006	Completed 30/09/2006	Minutes, orders, contracts,invoices	IR Map 7., Photo documentation
(M) Second round of fire management completed	D2	30/09/2006	Not done	First success only in 2007, no time left	N/A
(M) Creation of wooded areas completed	C2	30/11/2006	Completed 31/05/2007	Attempt unsuccessful	FR Photo documentation on CD
(M) Monitoring of second round of fire management completed	F2	30/11/2006	Not done	First success only in 2007, no time left	N/A
(M) Lands purchased	B1	31/12/2007	Completed 31/12/2008	Purchase contracts, land registry records	FR Maps
(D,M) Information booklet	E1	31/01/2007	Completed 31/12/2008	Booklet in electronic and paper format	FR Annex 8
(D) Report on workshops	E1	31/01/2007	Completed 31/12/2008	Report in electronic format	FR Annex 9
(M) Third round of grassl. rest.	C1	30/09/2007	Completed 30/09/2007	Minutes, orders, contracts,invoices	FR Maps, Photo documentation
(M) First year of wooded area management ending	D3	30/11/2007	Not done.	No success in establ. wooded areas	N/A
(M) Final round of grassl. rest.	C1	30/09/2008	Completed 30/09/2007	Minutes, orders, contracts,invoices	FR Maps, Photo documentation
(M) Second year of wooded area management ending	D3	30/11/2008	Not done.	No success in establ. wooded areas	N/A
Report on workshops	E1	31/12/2007	Completed 31/12/2008	Programme/abstract book, Powerpoint presentations	FR Annex 9
Layman's report	E1	31/12/2008	Completed 31/12/2008	Pdf file, printed report	FR
Independent audit of project	F3	31/12/2008	Completed 31/07/2009	Printed audit report	FR

7. EVALUATION AND CONCLUSIONS

7.1. THE PROCESS OF PROJECT IMPLEMENTATION

Soon after the project start date, the PC and the PM have designed a Gantt-chart which clearly shows the main activities per action and the deadlines/milestones during the entire project. Because the PC dealt with the project on an everyday basis, usually he drew attention to the upcoming tasks to the PM and other members of the Project Implementation Team (PIT). In the next step, the PM and PC jointly designed the actual activities, their scheduling and checking points. The PM then took care of planning the details (e.g. calculations), and initiated and prepared for meetings with PIT or Advisory Board (AB) members. The PC took care of establishing the contacts, requesting and gathering price offers from subcontractors, oversaw tendering and field activities by working with the respective member(s) of the PIT or AB.

7.2. PROJECT MANAGEMENT, PROBLEMS ENCOUNTERED, THE PARTNERSHIPS AND THEIR ADDED VALUE

Many different activities have been going on in the project and project management required much more work than foreseen in the revised application. Project management was done mainly by the PM, whereas everyday project operation/coordination was by the PC. In busy times, when activities had to progress in several actions, the actual workload was pretty much fulltime for both PC and PM, which have caused some problems relating to time management, because both had other duties

as well. Other problems were with those members of the PIT who did not show the activity foreseen in the revised application. In such cases, the AB has been helpful in making sure the original timeline is adhered to.

New partnerships have been established both inside and outside the project. New partnerships formed between the Beneficiary and Partner, e.g. between HNPD employees and UD researchers, and now some of these contacts have served as basis for other conservation and research projects. The most valuable partnerships, however, are those with local farmers/farming companies. Such new partnerships were sparked by the sincere intent of the project to involve local stakeholders in project implementation and decision-making. This initiative has considerably changed the attitude of farmers and other stakeholders toward nature conservation. Instead of conflicts that had been typical in such relationships, the project now offers an example how local stakeholders can be involved in habitat management (*sensu* "collaborative management").

7.3. SUCCESS AND FAILURES OF THE METHODOLOGY APPLIED, RESULTS OF ACTIONS, COST-EFFICIENCY

Unforeseen external calamities and the involvement of local stakeholders have induced several changes in the plans compared to the revised application. This has in turn caused HNPD to file a request for project modification, increasing the administrative burdens on both project management and the European Commission. Even though such a development would generally indicate failures in project implementation, in the case of this project, most changes resulted in increased conservation benefits. For example, all changes in habitat restoration or management meant that activities would be conducted in a larger area than foreseen in the revised application, whilst costs would not increase. Furthermore, the added value of partnerships with local stakeholders was that cooperation during the project provided a foundation for the continued operation of the habitat management system after the end of project. Therefore, HNPD believes that the project modification was instrumental to the success of the project. The results of the actions at the end of the project are promising as all actions except for afforestation were relatively successful.

Cost-efficiency in general is remarkably high in this project. For a less-than-average budget (by LIFE-Nature standards, little over 1 million Euro), the habitat restoration and management actions will benefit a very high number of Natura 2000 species (mostly birds) and a large surface area of two priority Natura 2000 habitat types (pannonic loess steppes and pannonic salt steppes and marshes). Furthermore, the results and recommendations from this project (e.g. E.2, F.2) can be directly used in the management and monitoring of Natura 2000 sites, especially freshwater marshes and grasslands. Cost-efficiency of specific actions is relatively high, as shown by minor or no differences between costs budgeted and actually incurred. The only exception from cost-efficiency was land purchase in B.2 (Villongó area), where external circumstances (bidding negotiation due to banktrupcy of landowner) forced HNPD to spend more than the price foreseen on grasslands.

7.4. COMPARISON AGAINST THE PROJECT OBJECTIVES

7.4.1. General objectives

Objective (as in revised application)	Assessment of implementation
Decrease the negative effects of fragmentation on grasslands and the impacts of agriculture on grasslands and rehabilitated marshes	Fragmentation is greatly reduced, the western ecological corridor has been implemented, buffer zones around remaining arable lands have been established
Eliminate goose farms, that seriously degrade grasslands, and restore grasslands on arable lands	Goose farming has been eliminated, grasslands have been restored on 100% of arable lands planned
Develop grazing capability to balance spatial inequalities in grassland management	18 local farmers are now part of the grazing system which optimally manages grasslands and is sustainable on the long-term
Increase the diversity of marsh habitats by grazing and fire management	Grazing and fire management have greatly increased the biodiversity of Fekete-rét marsh
Protect and improve the habitats of Annex I waterbirds and birds of prey	Wildlife lands near marshes and near existing forest offered feeding areas for raptors, which have used these areas in large numbers

7.4.2. Specific objectives

Objective (as in modified application)	Assessment of implementation
Purchasing 86 ha arable land to establish ecological corridors to connect grassland fragments and create buffer zones to reduce infiltration of agricultural chemicals into marshes and grasslands	65 ha land purchased in three areas; one of the two ecological corridors planned has been established; buffer zones around remaining arable land have been formed
Transformation of 85 ha arable land into pannonic loess steppic grasslands (Natura 2000 code 6250) and 583 ha arable land into pannonic salt steppes (code 1530)	Loess steppic grassland restoration was carried out on 95 ha and salt steppe grassland restoration was carried out on 665 ha
Purchasing 306 ha grassland degraded by goose-farming and converting them to sheep-farming.	306 ha grasslands purchased, sheep-farming has been established on 240 ha, cattle-grazing on 120 ha
Creation and management of two wooded areas on 80 ha arable land to restore steppe woodlands, to prevent infiltration of agricultural chemicals into marshes and to provide nesting sites for Annex I birds	Afforestation was attempted in 2005 and 2006 on 80 ha, and was repeated at 2 plots, but was unsuccessful due to external conditions (wild boars, drought, soil)
Purchasing 50 Hungarian grey cattle to direct grazing to ungrazed native grasslands	50 grey cattle have been purchased by HNPD; they grazed 50 ha in N part of Fekete-rét marsh in 2007 and 2008
Create semi-natural disturbances in homogeneous reedbeds by grazing and burning (fire management).	Reedbed openings were established by grey cattle scattered on 200 ha; fire management reduced reed cover on 120 ha
Cultivate 148 ha HNPD land extensively to enhance populations of small mammals that Annex I birds of prey feed on	Extensive cultivation of 148 ha land implemented; large numbers of small mammals and of raptors indicate success
Biological monitoring of target habitats,	Monitoring of grassland restoration, grazing,

development and implementation of management plan for restored grasslands and reconstructed wooded areas	fire management and wildlife land cultivation implemented along with general master plan for rehabilitation, soil study and general habitat monitoring
Raising public awareness to grassland and marsh conservation and the Natura 2000 network	1 website, 4 information boards, 3000 project brochures distributed, project results presented in 9 papers, 14 talks, 7 posters, farmers involved in grazing system and other actions

In summary, most of the actions have been started and are being implemented successfully. One exception is afforestation on arable lands (C2), which has been unsuccessful. The reasons are external; acorn predation by wild boars, general drought and increased salinity. The project requested and got approval to restore grasslands on these plots, which has been carried out without problems. Land purchase has been progressing slower than foreseen in the revised application, but in a steady pace. Although the surface area purchased in Csattag area was only 65% of that foreseen, grassland restoration could be implemented in 88% of the area foreseen.

7.5. ENVIRONMENTAL BENEFITS, POLICY AND LEGISLATION IMPLICATIONS

Several actions directly benefitted two Natura 2000 priority habitat types (6250, 1530). Immediate conservation benefits are that the area of arable lands decreased from 32% to 14% in the protected area and thus both the direct and indirect impact of arable lands on the target habitats is reduced. If the long-term restoration process is successful (we try to make sure it will be...), the surface area covered by the two Natura 2000 priority habitat types in good conservation status will increase. The fragmentation and susceptibility to pollution of these habitats have greatly decreased. Human disturbance related to regular cultivation of arable lands has also decreased considerably.

Goose-farming is now gone from the area, making it possible that a slow rehabilitation of the impacted grasslands (mostly alkali grasslands especially rich in microforms) will begin. This process is assisted by sheep-grazing, which can contribute e.g. by enabling the transfer of recolonising native plant species to the degraded areas.

The diversity of alkali marsh habitats (that also belong to priority habitats as part of pannonic salt steppes and marshes, code 1530) has started to increase considerably by grazing and fire management. These two activities had a beneficial complementary effect as grazing created open areas and fire changed the structure of the vegetation.

During the project, we gained significant knowledge on the conservation status, restoration and subsequent management on the two target priority habitat types. Especially of interest in this project is the combination of restoration and management type. We are now able to answer questions on what management (no management, mowing, grazing in general, grazing by sheep, by cattle) is the most appropriate for restoration success. Furthermore, the project also provides knowledge on the combined effect of some management types (e.g. mowing in summer and grazing in fall).

Beyond two Natura 2000 priority habitat types, numerous Habitat Directive Annex II species are likely to benefit from the project. Mammals that will benefit are *Lutra lutra*, *Spermophilus citellus*, *Mustela eversmanni*. The conditions have now been established for a souslik repatriation programme. The reptiles that benefited were *Emys orbicularis*, *Natrix natrix*; amd amphibians: *Bombina bombina*, *Bufo viridis*, *Rana arvalis* and *Hyla arborea*. Many Bird Directive Annex I species will directly benefit from the habitat restoration and management actions in the project, among them priority species as well.

Benefit by	Bird species benefitting
the higher availability of nesting/feeding opportunities in increased wet meadow zones and/or more open marshes	*Ixobrychus minutus, Nycticorax nycticorax, Ardeola ralloides, Botaurus stellaris* (priority species), *Anser anser, Podiceps cristatus, Tachybaptus ruficollis, Podiceps griseigena, Anas querquedula, Aythya nyroca* (priority species), *Haliaeetus albicilla, Circus aeroginosus, Porzana porzana, Porzana parva, Rallus aquaticus, Himantopus himantopus, Sterna hirundo, Chlidonias hybridus, Chlidonias niger*
increased availability of feeding/nesting sites on grasslands/wet meadows	*Egretta garzetta, Egretta alba, Ardea purpurea, Ciconia nigra, Ciconia ciconia, Plegadis falcinellus, Platalea leucorodia, Circus pygargus, Philomachus pugnax, Asio flammeus, Anthus campestris, Lanius minor, Vanellus vanellus, Limosa limosa, Tringa totanus, Gallinago gallinago*
increased availability of feeding/nesting sites on wildlife lands	*Aquila heliaca* (priority species), *Falco vespertinus, Falco tinnunculus, Falco cherrug, Grus grus, Coturnix coturnix, Perdix perdix, Emberiza citrinella*

The most important policy implication of the project is that is may help strategic thinking in the frame of landscapes. Landscapes are rarely used as bases for policy development. This project draws attention to the importance of considering geographically and biologically intertwined habitats and the specific need to address the role of the diversity of these habitats in maintaining landscape-level biodiversity at the policy level. This project may provide an example for the need for one-on-one consideration of landscapes or landscape types, which cannot be addressed by national or regional policy measures, e.g. agri-environmental schemes. This project shows the need to go down one more level on the geographic scale. A landscape-approach to policy development requires an integrative approach, including e.g. water framework directive and other acts related to natural resources.

7.6. INNOVATION, DEMONSTRATION VALUE

At the current stage, this project is characterised by one significant innovation that has not been implemented before in European restoration, i.e., large-scale grassland restoration using two seed mixtures to further enhance habitat diversity among the plots. The other actions being implemented (e.g. grazing, afforestation etc.) do not involve substantially innovative methods or processes. However, their combined application in order to enhance the diversity of habitats at the landscape-level to maximise species biodiversity is an innovation of its kind, which is worthy of application in other areas as well. Areas where a potential for such conservation planning exists are those where adequately large areas are available to allocate different habitat restoration and management methods in an effort to maximise general (landscape-level) biological diversity, i.e., not just one or a few species or taxa.

7.7. SOCIO-ECONOMIC EFFECTS

The most important socio-economic effect of this project is that a generally positive attitude to nature conservation has formed among local stakeholders. They no longer see nature conservation as an inhibitor of their progress, rather, as a contributor to making their life easier. Two concrete examples are the cooperation with farmers participating in the grazing system and the activities subcontracted to local stakeholders. Three farmers have made considerable investment in livestock infrastructure and now 18 farmers/farming companies take care of the optimal habitat management of grasslands as envisioned in the project. Positive effects on employment are not directly measurable, but are important, e.g. NAC have started their livestock business from having no livestock at all after learning and participating in the implementation of grassland restoration. Direct payments to local stakeholders via subcontracts contributed to the improvement of the financial situation of many local farmers. Many other farmers are making adjustments to their operations, which will definitely lead to the creation of new jobs in the area. Such a return of grazing as the

primary activity of farmers may also lead to a revival of pastoral culture. This effect, coupled with the increased diversity of habitats and better conservation status of the area leads to growth in the eco-tourism business, may result in an increased interest in the area from tourists. Some positive effects on tourism could be observed in 2006-2008, when few pensions in Kócsújfalu had better years because many birdwatchers and ecotourists came to see the area and its birds (especially the three terns, the great number of herons, spoonbills, egrets, shorebirds and raptors). Such developments may also lead to the creation of jobs in the area.

7.8. THE FUTURE: SUSTAINABILITY AND CONTINUATION OF THE PROJECT, REMAINING THREATS

The project was more efficient in creating the possibilities for sustainability than foreseen. This was because local farmers or farming companies have become financially interested in keeping the grazing system as established by the project, because they can apply for agri-environment funding after the livestock they graze on HNP grasslands. There is even some competition expected among farmers when the newly restored grasslands become available for grazing. Such interests in the area now appear to provide a guarantee for the long-term sustainability of grazing as the preferred way of management of Hortobágy grasslands. With a little mediation between reed-cutters and livestock farmers, the different interests regarding the management of marsh edges by grazing can also be solved. The larger marshes were regularly used for grazing in the past, indicated by old descriptions and e.g. by three out-of-function wells deep inside Fekete-rét marsh.

One threat remaining is the infiltration of chemicals into Bőgő marsh from arable lands to the E of the marsh. This effect does not directly threaten the rest of the marsh or Fekete-rét marsh as it mostly affects the northern part, which is hydrologically separated from the southern part by a dyke.

7.9. LONG TERM INDICATORS OF THE PROJECT SUCCESS

The ultimate indicator of project success is the landscape-level biodiversity (direct measure) or the naturalness of the area (indirect measure). For the direct measure, it is necessary to demonstrate the link between the biodiversity increase and the increase of habitat diversity due to the project activities. The monitoring activities going on in the project will provide the basic data for the calculation of the direct measure of landscape-level biodiversity. The naturalness of the area can be quantified by relating the habitat diversity patterns resulting from the project to the habitat patterns suggested by the map of potential habitats devised in the Master Plan. An alternative is to compare the disturbance regimes potentially operating in prehistoric times and those actually operating today (frequency, intensity and scope of disturbance factors, e.g. grazing, fire, floods etc.). As these factors are primarily responsible for maintaining habitat diversity and thus, biodiversity, the compatibility between disturbance regimes may characterise the naturalness of the area. Other indicators are the population sizes of species of high indicator value (e.g. predators such as red-footed falcons; highly vulnerable species such as bitterns; or typical species such as souslik etc.

8. PLANNED PROJECT PROGRESS

The preliminary actions of the LIFE-project have provided a firm foundation for the long-term landscape rehabilitation programme. The project deliverables (management plans, master plan for rehabilitation) will be extensively used in determining further management activities and will greatly aid the design of the potential third phase of the long-term rehabilitation of the EPMS.

Grassland restoration has been highly successful. The official land use category has been changed from arable land to grassland for each parcel where grassland restoration has been carried out (in progress for lands restored in 2008). Because these lands are all located within either Natura 2000

areas or nationally protected areas, these changes are now irreversible. Grassland restoration on the seven problematic parcels (6.5 ha) in the Csattag area will be carried out from HNPD's own funds in the fall of 2009. Because first-year mowing for grasslands restored in 2008 could not by financed by the LIFE-project, this activity and all future mowing will be funded by the renting farmers' own budget or from HNPD's own budget, if necessary.

The surface area goals of land purchase activities have been met in B2 and HNPD will continue land purchases in the Csattag area (B1) from its own budget. For problematic lands, the activities outlined in Chapter 6.2 "Solutions" will be followed until a final resolution as to the status of each land parcel is reached. This activity is coordinated by the Department of Asset Management of HNPD.

Most of the grazing management planned in the project has been conducted by farmers as early as 2007. The project livestock will continue to graze marsh edges in the northern part of Fekete-rét as an extra, unforeseen additional conservation benefit. The farmers participating in the grazing system established in the project will continue grazing activities for the long-term future, as can be seen by their financial investments including agri-environmental support and by their long-term commitments in the form of rental contracts with HNPD. One of the most significant achievements by the project is that grazing on marsh edges, native and restored grasslands will be continued from the participating 18 farmers' own financial interests.

In an agreement between the directors of HNPD and the PBC, PBC agreed to continue cultivating wildlife lands as established in the project for at least five years from its own funds and potentially by drawing funding from agri-environmental support schemes.

In summary, the longer-term adequate management of the site is now fully assured.

Further plans as to the management of the site involve a strong focus on wooded areas. In some locations, the removal of non-native species (especially black locust *Robinia pseudo-acacia*) has become necessary to further increase the connectivity of restored grasslands. In some other locations, the replacement of non-native trees with native ones is planned. Discussions are also ongoing about the possibility of leaving no-management edge areas in some locations, where the natural re-growth of wooded vegetation can be expected (e.g. Bőgő-lapos marsh, northern part of Csattag-marsh, near Meggyes-forest etc.). Discussions have also been started about the possible third phase of restoration, which aims to increase the connectivity of the EPMS to the core area of Hortobágy National Park to the northeast and southeast.

Monitoring will be continued and considerably extended as the project partner (University of Debrecen, principal investigator: dr. Szabolcs Lengyel) has received a research grant from the Hungarian Scientific Research Fund and the Norway Financing Mechanism (€100,000 for 2009-2011) for such activities. The project partner is also participating in the SCALES project ("Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales"), a Seventh Framework Programme Large-scale Integration Project (Contract No. 226852) developing scaling methods to efficiently address the conservation of European biodiversity. The project site and its surroundings will be one of the case studies in the FP7 project, because the large scale of habitat restoration and management in the LIFE-project is very unique in the whole of Europe.

Dissemination activities will be pursued well into the future. The LIFE-project as the successful second phase of the long-term landscape rehabilitation programme will always be indicated and acknowledged in all future national and international output from the larger Egyek-Pusztakócs project.

9. COMMENTS ON FINANCIAL REPORT

General

The project start date was 01/09/2004 and we received the advance payment on 30/09/2004, whereas the interim payment arrived on 20/04/2007. HNPD's account is with the Hungarian State Treasury and HNPD cannot realise interest on any incoming payments. Therefore, we do not report interest. Furthermore, there were no profits related to the project.

The incurred costs were allocated to the budget categories in accordance with the SAP. All reported expenditures in all project lines are within the limit of +/- 10% or 10 000 €. All expenditures were incurred before the end date of the project (31/12/2008). Due to the highly fluctuating HUF/EUR exchange rate, we calculated all expenses by using the HUF/EUR exchange rate published officially by the European Central Bank for the first day of each month. Because costs are registered in HNPD's books on the date of payment, for each invoice/bill we used the exhange rate of the month in which the invoice/bill was paid for by HNPD. The monthly rates are on a separate sheet in the Financial Report.

Travel and land purchase are net of VAT. Until 31/12/2007 HNPD could recover VAT from payments from EU funding, with the exception of representation and travel (gas) costs, therefore, we attempted to recover VAT for all potential invoices via a subcontract to L. NAGY, tax expert in late 2007. Please see a copy of the official letter from the tax authority regarding whether our request to recover VAT on invoices submitted was granted or not in **Annex 14**. We have subtracted the value of VAT from all invoices after which HNPD could recover it (invoice numbers listed in letter from tax authority) and present net costs for these items. From 01/01/2008, national park directorates could not recover VAT from any funding, therefore, we present costs with VAT for 2008. The Partner (UD) could not recover VAT during the entire project period (please see letter from Director of Finances in **Annex 15**.

The following table gives an overview of the costs used and their division in the main categories of expenditure, separately for the Beneficiary and Partner as well as for the entire project.

Category of expenditure	Budget foreseen in revised application	Current spending (HNPD)	Current spending (UD)	Total spending	% usage
Personnel	68 222	62 482	13 023	75 504.68	110.7
Travel	18 895	16 213	6507	22 720.73	120.2
External assistance	440 387	379 943	43 416	423 359.03	96.1
Durable goods	51 460	23 599	26 248	49 848.02	96.9
- Infrastructure	0	18 629	0	18 629.49	
- Equipment	51 460	4970	26 248	31 218.53	
Land purchase / Lease	253 700	214 545	0	214 545.40	84.6
Consumables	167 348	137 131	1066	138 196.80	82.6
Other costs	11 975	2861	1728	4588.34	38.3
Overheads	28 013	28 341	4249	32 590.16	116.3
TOTAL	1 040 000	865 116	96 237	961 353.16	92.4

A total of 961 353.16 € or 92.4% of total costs foreseen has been spent on the project activities. This was lower than foreseen mainly for two reasons. First, action D3, with a budget of 41 784 € was not carried out because afforestation in C2 failed. Second, we could buy less land than foreseen due to problematic land ownerships and no willingness to sell. This proportion agrees well with the number of months passed (24 or 46% of 52 months total), and shows that the spending rate is in accordance with the project time passed. The individual budget posts show a slight variation in the

rate of usage. The implementation of the project took much more effort than planned, and overspending (within the limits allowed, considering the 10 000 € or 10% rule) occurred in Personnel, Travel and Overheads. External Assistance and Durable goods were slightly underspent (96-97%), whereas spending rate was less in Land purchase and Consumables (83-85%), and very low in Other costs. The contribution of the Commission received (490 211.40 € or 40% of 700 302 € total EU contribution) made up half (51%) of the total expenses, whereas prefinancing by HNPD (434 493.45 €) made up 45% and by UD (36 589.18 € or 4%) made up the rest (49%). The rate of matching funds for the entire project was foreseen to be 32.7% of the total project expenses, thus these numbers show that HNPD has invested proportionately more matching funds into the project than foreseen.

Personnel

Personnel costs (111% of that foreseen) add up from a total of 27 people at HNPD plus UD who have contributed to the project. All personnel costs were charged to persons employed either by HNPD or UD. Although many of these people contributed only a small number of days, a few people spent significant amounts of time on the project. Working time of project personnel was recorded in regular monthly timesheets signed by the PC or PM. The total number of productive days in a given month was calculated for every employee as the total number of days in that month minus the sum of non-productive days (number of weekend days, public holidays and days of annual leave). The daily rate was determined by total gross salary (including social costs) divided by the number of productive days in a given period. For 2004, salaries and productive days were counted only for the 4 months between 01/09/2004 (project start date) and 12/31/2004. For other years, the entire 12-month period was used. The employment of some persons at HNPD ceased in the project duration (C. Faludi, L. Megyery, S. Szabó), whereas that of others started in the reporting period (S. Tóth, L. Polonkai, K. Pompola). Salary slips for Mrs. Zsuzsanna Sz. PERGÉNÉ and I. SÁNDOR for 2004 and 2006, as requested in EC letter 18/04/2007 are provided in **Annex 17**.

Travel

Spending in Travel was higher than foreseen due to the frequent need to visit the PA to meet stakeholders or subcontractors for negotiations, discussions, field guidance and checking and assisting in field activities, monitoring, contracting etc. Many landowners also needed to be contacted in person, which added further costs to Travel. For all travel in HNPD, the PC used his own car and was reimbursed based on the relevant external and internal rules of HNPD. A depreciation was paid for the PC as required by the relevant laws in 2006. For travel in UD, the car purchased in the project was used (except for a small number of train trips). This budget category does not contain any VAT or other taxes. Conference registration fees are included in Travel for UD because internal rules direct such fees under this category.

External assistance

This category contains various major project activities that were implemented via subcontracts. Funds spent in External assistance are close (96%) to that foreseen. For the explanation/justification of major expenditures, please see the action descriptions. As per EC letter of 18/04/2007 regarding charging the costs of cultivation and if the value of harvested crops were considered, the answer is yes, we have carefully evaluated the documents provided to us by PBC regarding both the income from the extensive lands (which was generally low for reasons detailed in D1). This income was enough to cover the costs of winter keeping of the project cattle in all years except for the winter of 2006/2007 (please see D1).

Durable goods

Spending on Durable goods progressed as foreseen (97%). In accordance with SAP, no depreciation was calculated for durable goods purchased in the project as both participants are public bodies

financed by the central budget of Hungary. For the justification of unforeseen durable goods, please see the relevant action descriptions.

Land purchase
In all, 92% of Land purchase targets have been met (**Table 1** in A1), and the spending rate was lower (85%), because the anticipated increase in the price of land was smaller than expected. The prices paid for the lands were not outside the average values estimated in professional valuations at the time of purchase (please see evaluations attached to IR and in **Annex 5**). All land purchases were paid for and recorded in the Land Registry by the end of the project. All contracts include a reference to the project and contain the nature protection clause.

Consumables
The largest part (c. 110 000 €) of Consumables are made up of the costs of cattle (purchased at the price foreseen in the revised application) and the cost of seeds from commercial sources for grassland restoration. Cattle were considered Consumables since the conception of the project because Hungarian law requires that only animals used for breeding should be kept under the durable good category. The cattle purchased were not used for breeding and did not have to be inventoried, therefore, they are included in this category. The price of the grass seeds has increased from 8 €/kg in 2003 (time of writing application) to c. 12 €/kg in 2006. This increase presented unforeseen extra costs in years of low seed production (2006, 2007), when not enough seeds could be harvested in the area. The extra cost will not cause problems as a similar amount of money was saved in 2005 and 2008, when relatively more seeds could be harvested for sowing.

Other costs
Other costs, which included all costs charged to the project but which could not be allocated to any other budget category, were much lower than foreseen. The low spending rate for Other costs can be explained by the fact that we greatly overestimated the costs of printing dissemination materials. The costs in this budget category include the cost of meals for open days and for project missions, costs of land registry work (registry sheets, administrative fees etc.).

Overheads
Overheads costs are slightly higher than foreseen due to the slightly higher costs in Personnel. For HNPD, overheads were calculated using a cost centre method. Using the annual final balance sheets of HNPD, we calculated the ratio of LIFE expenses without overheads to total expenses of HNPD without overheads for each year. The result was a different percentage for each year, depending on the spending intensity of the project. The percentages are as follow:

Year	Percentage
2004	2.10
2005	3.20
2006	5.05
2007	1.39
2008	2.07

We then used these percentages to determine the cost of overheads charged to the project as the proportion of the total overheads expenses of HNPD. To these general overheads, we added the monthly costs os using one mobile phone purchased in the project between 01/05/2005 and 31/07/2008 and miscellaneous post office costs. The categories of overheads were general office supplies, communication services (land lines), heating, electricity, water and sewage services. We did not use fuel to calculate overheads because travel in HNPD was by the PC's own car.

For UD, the overheads were calculated as a flat rate of 5% of direct costs and was charged to the project twice (once in 2005, when these costs were estimated based on the provisional budget and

once in 2008, when the costs were realised). Please see the letter regarding this method from the Director of Finances of UD.

The ratio of overheads in the project is 3.39%. Since we are using monthly exchange rates we calculated the average of overheads for each month using the relevant exchange rate of the month. In the Financial Report, column C contains these monthly averages of total HNPD overhead costs. Column D contains the amounts supplemented with non-recoverable VAT.

11. LAYMAN'S REPORT

The layman's report in Hungarian and English is attached as a separate document (pdf format).

12. ANNEXES

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Annex 7	Meeting with farmers
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