LIFE11 NAT/LU/858

Final Report

Covering the project activities from 1/09/2012 to 31/08/2017

Reporting Date: 01/12/2017

Restoration of wetlands and associated endangered species in the Eislek Region (LIFE Eislek)

natur&ëmwelt

cnds comité national de défense sociale

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère du Développement durable
et des Infrastructures
Département de l'environnement

LIFE11 NAT/LU/858

FINAL Report
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LIFE+ PROJECT NAME or Acronym

LIFE Eislek

Project Data

Project location	Grand-Duché de Luxembourg, zones Natura 2000 : 1. Vallée de la Woltz et affluents de la source à Troisvierges »(LU0002001) 2. Vallée de la Tretterbaach et affluents de la frontière à Asselborn » (LU0002002) 3. Vallée de l'Our de Ouren a Wallendorf Pont (LU0001002) 4. Vallée de la Tretterbaach (LU0001003) 5. Weicherdange - Breichen (LU0001004) 6. Vallée supérieure de la Wiltz / Derenbach - Weischent (LU0001005) 7. Vallée supérieure de la Sûre / Lac du barrage (LU0001007) 8. Wilwerdange - Conzefenn (LU0001033) 9. Troisvierges - Cornelysmillen (LU0001038) 10. Hoffelt - Kaleburn (LU0001042) 11. Troine / Hoffelt – Sporbaach (LU0001043)
Project start date:	01/09/2012
Project end date:	31/08/2017
Total Project duration (in months)	60 months
Total budget	1,766,775€
Total eligible budget	1,766,775€
EU contribution:	883,387€
(%) of total costs	50 %
(%) of eligible costs	50 %

Beneficiary Data

Name Beneficiary	natur&ëmwelt – Fondation Hëllef fir d´Natur
Contact person	Mme Michelle Clemens, project coordinator
Postal address	Antenne nord: 2, Kierchestrooss, L- 9753 Heinerscheid
Visit address	Antenne nord: 2, Kierchestrooss, L- 9753 Heinerscheid
Telephone	00352 26 90 81 27-38
Fax:	00352 26 90 81 27-33
E-mail	m.clemens@naturemwelt.lu
Project Website	www.life-eislek.lu

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2 Executive summary

This document and its annexes represent the final report of the LIFE project Restoration of wetlands and associated endangered species in the Eislek Region LIFE11 NAT/LU/000858. For additional information on the evolution of the different aspects of the project, the progress reports can be consulted on the project's website: www.life-eislek.eu.

The LIFE Eislek project was a LIFE+ Nature project with the aim of restoring a traditional mosaic of habitats composed of fallow wetlands with structural elements, extensively used pastures and hay meadows with delayed cutting regimes. Its area of action was the Upper North Region of Luxembourg called Eislek, characterised by a habitat of high plateau at 560m altitude intersected by a network of rivers and streams. The project worked in 11 Natura 2000 sites of the Eislek region (9 SACs and 2 SPAs).

Three emblematic species typical for the wet grasslands of the Ardennes region have been targeted by this project. The violet copper (*Lycaena helle*), the whinchat (*Saxicola rubetra*) and the red-backed shrike (*Lanius collurio*) are threatened due to a decrease in available habitats. The consequence of the intensification of agriculture and urbanisation is a depleted and banal landscape unable to provide proper habitats to the target species. The violet copper and red-backed shrike depend on a structure-rich environment that does not conform to the modern day utilisation of the land, the whinchat disappeared with the early cutting regimes enabled by the use of fertilisers.

With the shift in traditional land use, the diversified semi-natural habitats have been abandoned or transformed. The project's aim was to reverse the trend in the core areas designated during the mapping of the project area (action A1). The measures were shrub clearance and restorative mowing by hand or Pistenbully to open up abandoned sites (C1). The remeandration of the Trëtterbaach and the plugging of drainage trenches targeted the rewetting of alluvial ecosystems (C2), the reconversion of spruce trees into open wetlands increased available habitats (C3). The restoration of bistort meadows through transfer of rhizomes primarily served the violet copper (C4) while hedge planting focused on the red-backed shrike also (C5). A cattle shelter, fences, a solar pump among others facilitate the work of famers leasing land of HfN (C6). The consultation of farmers on the extensification of agriculture and the signing of biodiversity contracts was of high importance as extensification measure for the whinchat (C7).

In addition to the concrete conservation measures, the project improved the coordination of the management or the land owned by the coordinating beneficiary n&ë HfN (A4, D2). This was achieved through collaboration with other nature protection agencies in Natura 2000 sites and local actors (F3). The practical implementation was carried out by the associated beneficiary CNDS working on the social level through the integration of socially less favoured workers. Additionally monitoring of the targeted species (D1) as well as the implementation of the concrete conservation measures (D2) was carried out to control the outcomes and impacts of the project.

- Administrative part

The project team was nominated and the tasks assigned to its members at the beginning of the project. However, due to sickness leaves and personnel reasons, several changes were made during the project's duration. A management and accounting system was set-up and led by the secretary-accountant and project coordinator. Regular meetings guaranteed the well-functioning within and between beneficiaries. Meetings with the piloting committee and monitoring team were held yearly to discuss the progresses of the project and potential difficulties. No major problems occurred with the project's management and accounting.

- Technical progress

Action	Results
A Actions	
Action A1: Action programme	Action A1 was finalised in the end of 2014 with a delay of one year due to adverse weather conditions delaying the mapping of the project area. The result is an action programme in form of a GIS document.
Action A2: Planning of concrete actions	A careful planning of the measures included regular contact with concerned authorities and landowners. Planning ensured best practice and cost efficiency for the practical implementations. The action furthermore involved preliminary site visits with contractors guaranteeing the proper execution of the works in accordance with the project goals. The chapter provides a detailed description for the planning of each C action.
Action A3: Elaboration of Natura 2000 management plans	The LIFE Eislek staff contributed to the elaboration of the management plans of 10 N2000 areas. The expert knowledge provided valuable information for the management of N2000 areas in the next 10 years.
Action A4: Elaboration of grazing/ mowing plan	n&ë HfN owns 315 ha of land in the project area that is leased to several partners and tenants. The management of the sites was analysed to assure its compatibility with the restoration goals of our target species. The grazing plan was finalised in the end of the grazing season 2012/13, it was/is updated on a yearly basis according to the latest findings and most up-to-date level of experience.
Action A5: Preliminary planning of target species monitoring	The monitoring plan was set up after the consultation of historical data and coordination with other organisations carrying out similar monitoring programmes. For *L. helle* we switched from a general monitoring of the species' distribution to transect counts in 2016.
B Action	
Action B1: Land purchase	32.56 ha of clear-cuttings, wet meadows, drained wetlands, wooded structures and agriculturally used land were acquired through the project.

Action	Results
C Actions	
Action C1: Restoration of abandoned wetlands	(1) The purchase of specialised equipment allows the associated beneficiary CNDS to work more efficiently in wetlands. (2) Restoration was through shrub clearance (8.0 ha) and mowing (41.4 ha), either manually or by using a Pistenbully. (3) Due to shifted budget, accesses to nature reserves were created.
Action C2: Hydrological restoration	(1) 3 streams were restored to their natural state with different methods: deflectors, remeandration and the removal of drainage pipes (709 m), (2) a site was rewetted by clogging drains (587 m), (3) additionally 7 ponds were dug.
Action C3: Conversion of spruce plantations	(1) 4.0 ha of conifers were felled in alluvial plains, (2) a total of 14.6 ha were cleared by milling, swaths, removal of topsoil and export of logging residue. Additionally, 1.2 ha forests were thinned.
Action C4: Restoration of bistort meadows	(1) The transfer of rhizomes is a successful method for bistort propagation. 3.7 ha were restored with the aid of CNDS. (2) Trials for seeding as propagation method were not successful. (3) 1.33 ha of acre were restored with hay transfer.
Action C5: Plantations	7,626 hedges and trees were planted in the project area. As the budget was insufficient additional finances were mobilised.
Action C6: Grazing infrastructures	Grazing infrastructures facilitate the work of farmers leasing land of HfN. In this context, (1) 12.5 km of fences were installed as well as 1 solar pump and 2 cattle bridges, (2) a cattle truck was purchased and (3) a cattle shelter was built.
Action C7: Consulting land users in Natura 2000 areas	Leasing contracts with tenants were renegotiated or contracts signed for new parcels. On 70.58 ha, biodiversity contracts were signed.
D Actions	
Action D1: Monitoring of target species	The scientific monitoring of the target species started in 2013 and has been carried out on a yearly basis. Numerous new populations of *L. helle* were discovered, no breeding pairs of *S. rubetra* were found but wetlands were important stopover sites during migration, the project area continues to be one of the major strongholds of *L. collurio* at a national level.
Action D2: Monitoring of grazed/mown sites	To follow the maintenance of our sites more closely, meetings were held every two weeks between the concerned actors (HfN, CNDS, the Weber family), several observations were made during the project and allowed to better manage timings of management.

Action	Results
Monitoring of hydrological restorations	An extensive monitoring was carried out before the remeandration project. The after LIFE monitoring will be carried out 5 years after implementation.
Monitoring of bistort propagation	The method for rhizome transplantation was refined through monitoring of the experimental set-up.
Action D3: Evaluation of socio-economic impact	An in-depth study of ecosystem services and socio-economic impact was carried out by LIST using InVEST and TEV respectively.
E Actions	
Action E1: Dissemination	Dissemination of the LIFE project to the general public consisted in (1) the elaboration of a graphic identity presented amongst others on roll-ups and display boards (2) the organisation of and participation at events and (3) press releases.
Action E2: Website	The final website is online since December 2013 and is updated every two weeks: www.life-eislek.eu.
Action E3: Informing farmers	Information meetings and on-site visits were organised and 5 articles published in the specialised press. Additionally, we participated at 2 professional fairs.
Action E4: International seminar	The international seminar was on the 1st and 2nd of June and counted 88 international participants.
Action E5: Layman report	The Layman report was printed on time for the international seminar with 500 copies (400 DE, 100 EN)
F Actions	
Action F1: Project Management	see administrative part
Action F2: Evaluation of the project	169.30 ha were restored by the LIFE EISLEK project.
Action F3: Networking	An extensive networking with experts and other land managers in Luxembourg as well as neighbouring countries was part of the preparations for the implementation of the concrete actions and monitoring.
Action F4: After LIFE conservation plan	The After LIFE conservation plan defines the management in the LIFE Eislek area in the next five years.

3 Introduction

→ Description of background, problems and objectives

- Overall objectives

According to the "Rapport de l'Observatoire de l'environnement naturel 2007-2009" of the MDDI, wetland areas have gone through a dramatic decline in Luxembourg, between 1962 and 1999, 82 % of the wetlands in Luxembourg were destroyed. Furthermore the development of the road network has led to an alarming fragmentation of the landscape and 25.5 % of hedges and lines of trees as well as 55 % of solitary trees have been removed. This development has drastic consequences on biodiversity, especially in this specific habitat that used to be abundant in the valleys of the Eislek region. HfN is owner of 135 ha of land in this area and aims at increasing this surface through the project as well as working out new management methods for the restoration of a mosaic habitat of fallow lands, extensively used pastures and lately mown hay meadows.

- Project area

Natura 2000	Code	Name
SAC	LU0001002	Vallée de l'Our de Ouren à Wallendorf Pont
	LU0001003	Vallée de la Tretterbaach
	LU0001004	Weicherdange- Breichen
	LU0001005	Vallée supérieure de la Wiltz
	LU0001007	Vallée supérieure de la Sûre/ Lac du barrage
	LU0001033	Conzefenn
	LU0001038	Troisvierges- Cornelysmillen
	LU0001042	Hoffelt- Kaleburn
	LU0001043	Hoffelt- Sporbaach
SPA	LU0002001	Vallée de la Woltz et affluents de la source à Trosvierges
	LU0002002	Vallée de la Tretterbaach et affluents de la frontière à Asselborn

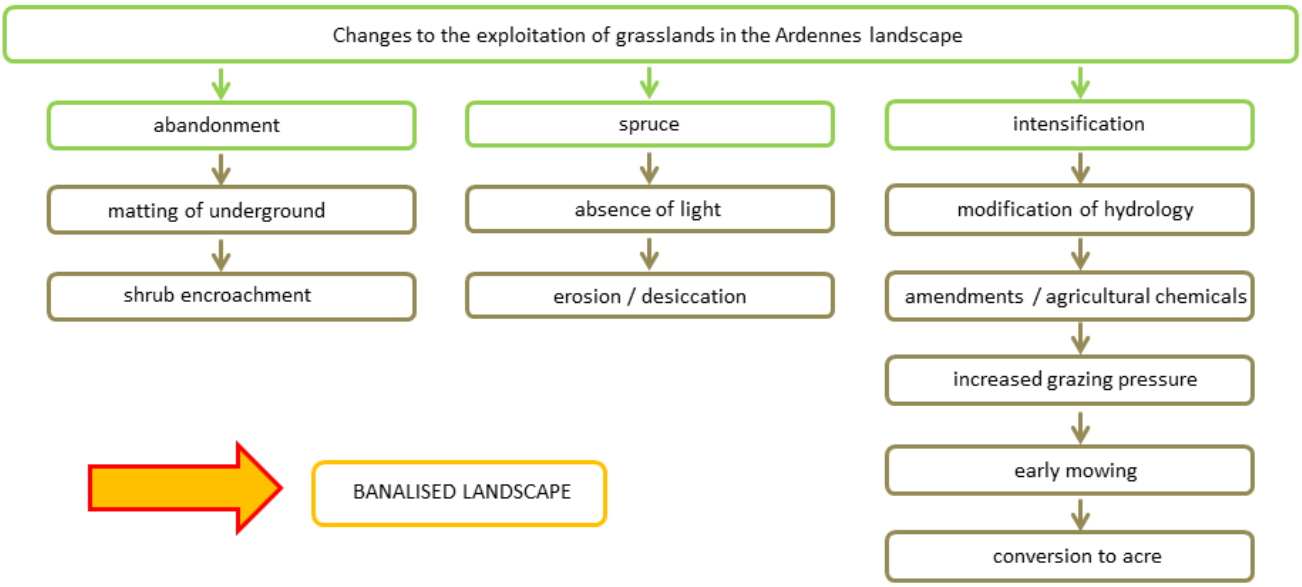
- Targeted species

Lycaena helle

Lanius collurio © Mario Cordella

Saxicola rubetra © Gilles Biver

- Main conservation issues: habitat degradation, destruction, and fragmentation



One of the reasons for the decline in habitats is the abandonment of wetlands. The LIFE Eislek project tried to counteract this problem by buying or leasing unused land and start restoration through the removal of shrubs and intensive mowing before setting up a long term management plan through grazing or late mowing. For each site, only a third of the area is managed each year to keep refuges for our target species.

In order to be able to use wetlands in agriculture, many sites were drained through drainage pipes or trenches and streams were straightened to increase flow velocity and thus drain the surrounding fields. Rewetting measures included the removal of pipes, filling of trenches and restoration of alluvial plains by remeandration projects.

Land that could not be used otherwise was often planted with conifers, including wetlands in the valleys of the Eislek region. Several projects have already tackled this problem. The LIFE Eislek project reconverted spruce plantations and clear-cuttings into wet meadows.

To support the development of bistort meadows, the habitat of *L. helle*, the bistort plant was reintroduced on the sites restored using the aforementioned measures. Solitary tree and hedge planting increased the number of structural elements in the landscape.

The problem of the intensification of agricultural practices was tackled by raising awareness of land users and individual consultations. Biodiversity contracts subsidise farmers that practice extensive management.

- Socio-economic context

Land use is high in Luxembourg due to a constant increase in population size. In the project area, the upper North of Luxembourg, agriculture is the main actor concerning land use. In the 11 concerned Natura 2000 sites, 4,877 ha are in agricultural use. Therefore the socio-economic impact was most important for land users. The project initiated an increased

cooperation of NGO's, administrations and local actors. Farmers that commit themselves in the project will be compensated for losses due to extensification of their practices. The resulting diversity in the landscape provides an increased quality of life for the inhabitants. Public awareness increased thanks to dissemination actions. Furthermore, the restorative works benefitted the local economy. The involvement of the associated beneficiary CNDS as a social structure helped socially disadvantaged people to find a way back into the working life.

Traditional management of grasslands in the Ardennes

→ Expected longer term results

An improvement of the status of the three target species was the main goal of the LIFE Eislek project. We tried to achieve this goal through an appropriate management of the land owned by HfN as well as the quantifiable goals set by each practical conservation action (C1 – C7). The actions planned for the three target species furthermore had positive impacts on biodiversity in general. The restoration methods elaborated within the project framework will be used in the future by HfN and will be shared with other environmental actors to improve management methods on a larger scale. A more detailed description of long-term results is available in section 5.4 below.

4 Administrative part

Description of the management system

→ Description and schematic presentation of working method

1) Project office and team

The project is based in Heinerscheid, 2 Kiirchestrooss on the first floor of the building of the community Clervaux. The project team is composed as follows:

Project coordinator n&ë HfN:

- scientific coordinator/ scientific N.1:
    - Mireille Molitor, coordinator at the beginning of the project, took a sabbatical year from Sept. 2014 – '15 and a second year off from June 2017 – '18.
    - Claude Schiltz took a half-time paternity leave from April 2015 – April '16 and from January 2017 – January '18.
    - Michelle Clemens is full-time employed since 14.05.14 and replaced Mireille Molitor and Claude Schiltz during their absences. (The three above mentioned people share the scientific coordinator and the scientific N.1 posts.)
- secretary- accountant: Patricia Heinen
- punctuated help:
    - Gilles Weber, director of n&ë HfN: management and contact to "Conseil d'administration"
    - Mikka Mootz and Richard Dahlem: monitoring of *L. helle* (season 2014)
    - Kevin Jans employed since 15.04.17 to replace Mireille Molitor at her second leave (Kevin Jans was employed to cover also activities outside LIFE and only helps out in the LIFE Eislek project as needed.
    - Marie Kayser and Robin Kreus: student apprentices

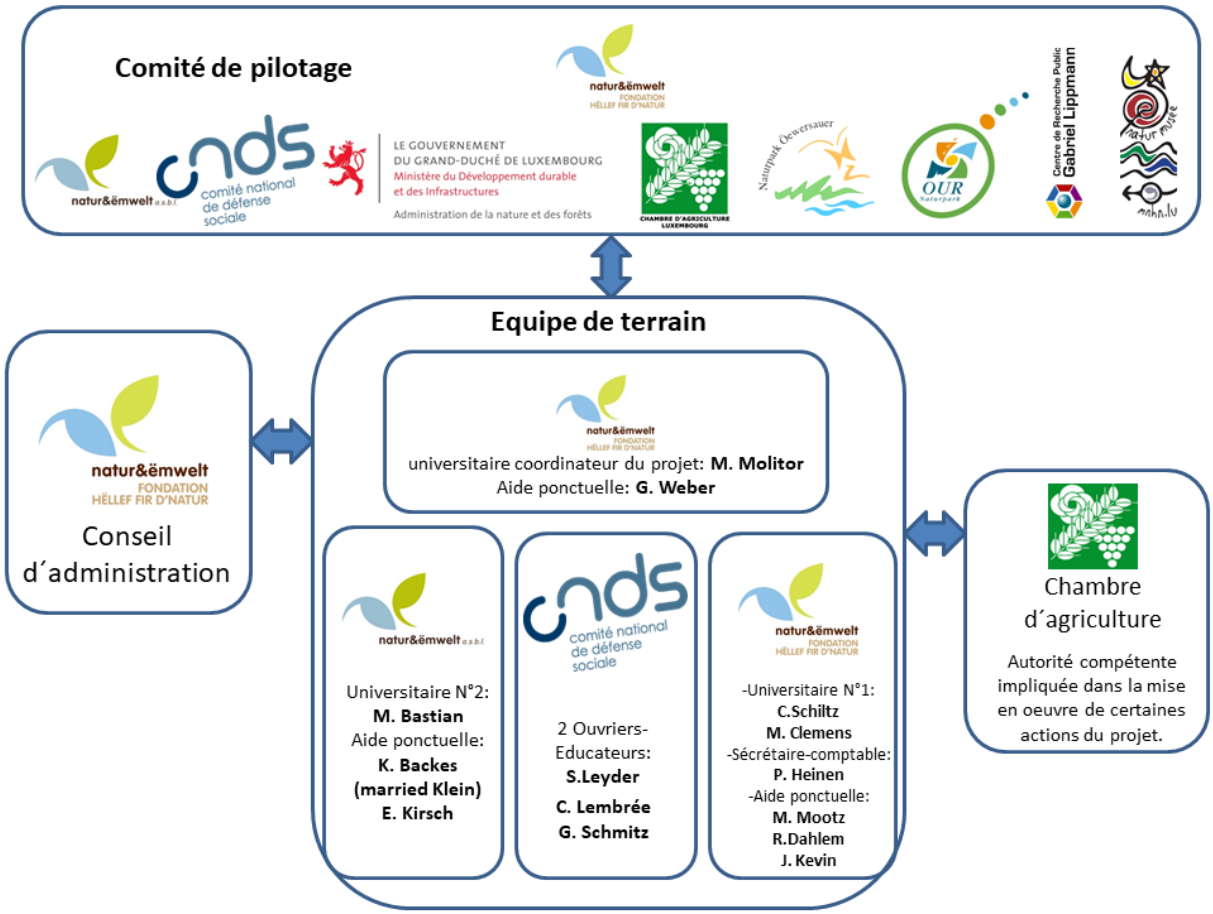
Associated beneficiary n&ë asbl:

- Mikis Bastian: scientific N.2
- punctuated help:
    - Katharina Backes (married Klein): monitoring (seasons 2013, 14, 15)
    - Elisabeth Kirsch: monitoring (seasons 2015, 16, 17) and planning of international seminar

Associated beneficiary CNDS:

- Serge Leyder
- Cédric Lembrée: resigned in September 16
- Gilles Schmitz employed since February 2017 to replace Cédric Lembrée
- Gilles Rod: director of CNDS (no personnel costs occurred)

Organigramme:



2) Project management and accounting

The project coordinator and secretary-accountant were primarily responsible for the well-functioning of the administrative part of the project.

The coordinator was responsible for the follow-up on the inputs and outputs and the coordination with the European Commission and associated beneficiaries. Furthermore, the coordinator was responsible for the adherence to the time schedule and the execution of the actions in accordance with the project's objectives. The coordinator kept in regular contact with the associated beneficiaries to coordinate the implementation and assure a well-functioning working environment. Furthermore, the coordinator was in regular contact with Gilles Weber, the director of HfN, who is responsible for the contact with the administrative council and acts as an advisory in several matters.

The secretary-accountant was responsible for the daily financial and administrative works. An accounting system was set-up (8EUEISLECK) and coordinated with the central accounting system of HfN and the systems of our project partners.

The VAT statements were submitted with the inception report (appendix 1). The VAT statutes of HfN and n&ë asbl have not changed since the beginning of the project. The

modifications on the VAT status of CNDS were submitted with the Midterm Report (appendix 2).

The procedure for tendering has changed during project. The threshold values proposed in the "*protocole guidant l´appel d´offre pour n&ë-Fondation Hellef fir d´Natur*" submitted at the beginning of the project were much lower than required both by national law and by the common provisions of the LIFE programme. The low limits impeded the progress of the LIFE project as 3 offers were required even for small implementations. A circular informed the staff of HfN of the new procedures to adhere to (appendix 3).

3) Piloting committee

The members of the piloting committee were assigned at the beginning of the project, the list was in the appendix of the inception report (appendix 4). Yearly meetings with the piloting committee were hosted by the LIFE Eislek project: 17.09.12, 17.07.13, 01.10.14, 09.12.15, 14.12.16.

→ Project organisation

- Weekly team meetings: every Monday morning to discuss the plans for the coming week.
- Monthly team meetings: division of tasks for the following months.
- Monthly meetings with the organisation's director (Gilles Weber): discussion of progress, problems encountered etc. → Written reports.
- Monthly meetings between director (Gilles Weber) and administrative council, validation of budget spent outside LIFE (e.g. land purchase) or other important decisions.
- Meetings with CNDS at least 4 times a year for each season to discuss the implementation of the measures. Regular contact in addition to the meetings.
- Meetings with other concerned parties contributing to the project are mentioned with the concerned actions.

→ Amendments to the Grant Agreement.

- The Fondation Hëllef fir d'Natur changed its name to natur&ëmwelt Fondation Hëllef fir d'Natur, the statutes have not changed.
- Since the 1st of March 2015, HfN has a new president: Patrick Losch.
- The former LNVL has changed its name to natur&ëmwelt asbl: their new statutes were submitted with the Inception Report (appendix 5).

→ Partnership agreements (submitted with inception report)

- Convention LIFE Eislek-MDDI (11.12.12) (appendix 6).
- Convention LIFE Eislek-n&ë asbl (19.12.12) (appendix 7), amendment (appendix 8).
- Convention LIFE Eislek-CNDS (26.03.13) (appendix 7).
- A letter on the long term collaboration of n&ë HfN and CNDS, as asked in the letter of the 14.01.13, was provided with the inception report (appendix 9).

Evaluation of the management system

→ Evaluation of project management process

The project management and cooperation with the associated beneficiaries has not provided any important problems:

- The project coordination was influenced by several changes of staff due to absences caused by sabbatical years, parental leaves and prolonged sickness leaves. Thus, new personal was hired during the project: Michelle Clemens (May 2014) (appendix 10) and Kevin Jans (May 2017). The communication between the different co-workers and the handovers were efficient so that the project continued without major difficulties.
- The collaboration with CNDS worked well with regular contact between the foremen and the coordinators about every month or according to necessity. The notice of one of the foreman necessitated a change of staff in the last year of the project.
- There was a problem of unexploited hours by n&ë asbl. This was due to the change in personnel at n&ë asbl and the employee charged with the project received a lower salary due to a lesser length of service. Furthermore, he was not able to work the hours as foreseen in the application, due to other professional obligations. During the monitoring season, he was reinforced by his co-workers. Nevertheless it was agreed between the partners to transfer part of the personnel budget between n&ë asbl and HfN (appendix 8).

→ Communication with the Commission and Monitoring team

The project coordinator was in regular contact with the monitoring team (Mr Tom Andries / Mr Thomas Wouters) and the representative of the EC (Mr Simon Goss, Ms Muriel Drukmann) concerning any problems or desired changes. In general we received quick and clear answers to our questions and can consider this to have been a well-functioning supporting system. Contact and submission of information was by several means:

- Participation at kick-off meeting in Paris 25.10.12
- Welcoming of external team (Mr Tom Andries / Mr Thomas Wouters): 14.12.12, 19.11.13, 04.11.14, 02.09.15, 27.10.16, 12.10.17
- Welcoming of Mr Simon Goss 02.09.15
- Regular contact with external team by mail or phone
- Submission of progress reports

5 Technical part

Technical progress per task

Action A1 : Etablissement d'un programme d'actions de restauration des habitats des espèces cibles

→ Expected results:

- La réalisation d'un inventaire systématique des composants de l'habitat naturel des espèces cibles, vis-à-vis de leurs exigences écologiques dans le périmètre du projet :
- L'intégration des données récoltées dans un système d'information géographique;
- Elaboration d´un programme d´actions reprenant:
    - les zones de travail prioritaires
    - les menaces qui pèsent sur ces zones prioritaires
    - les actions prioritaires à y mettre en œuvre afin de contrecarrer ces menaces

→ Budget:

Budget according to Grant Agreement	54,000.00 €
Budget spent	57,430.06 €

→ Activities and Outputs

As a first step, literature on the target species as well as on the actions previously carried out in the project area was gathered and analysed in electronic and paper form for consultation throughout the project. Data on historical and recent distribution of the target species was provided by different instances: MNHN, n&ë asbl, LIST, MDDI and DEMNA (appendix 12).

During the first half of the project, the complete area was mapped with regards to land use, distribution and state of target species' habitats and priority action sites. A Geographical Information System (GIS) was established to gather all the relevant data of the project. Maps and shapefiles were applied for at several administrations. The historical monitoring data, the shapefiles received from the administrations as well as our own mapping data were gathered into a GIS.

Mireille Molitor was responsible for the planning of this action, mapping was carried out by the academic staff. Claude Schiltz and Michelle Clemens were responsible to keep the GIS up to date.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x																	
Planning revised	x	x	x	x	x	x	x	x	x	x												
Planning realised	x	x	x	x	x	x	x	x	x	x												

→ Indicators used to test the performance of the action

Milestones	Deadlines	Progress
Personnel Nomination	01.09.12	Personnel gathered in the organogram → administrative part. Not all the personnel was nominated on the deadline and several changes were necessary during the project.
Action Programme	~~01.09.13~~ 31.12.14	The concrete actions are planned based on the monitoring of the project area, main areas of action were designated.

→ Major problems/ drawbacks/ delays

1) Delay of project area mapping due to bad weather conditions. The European Commission approved an extension for the mapping of the project area (letter EC 06.06.13).
2) MAE shapefile: We were not able to receive the shapefile of the current MAEs, neither through the ASTA, nor MA, CA or MDDI. This is contrary to the law of the 25th November 2005 concerning "*l'accès du public à l'information en matière d'environnement*". The letter exchange concerning this subject is provided in the appendix 13.

→ Perspectives

The action A1 is not part of the After LIFE Conservation plan. However, the data gathered for the LIFE Eislek project will guide the implementation of measures in the After LIFE Conservation plan.

Action A2: Planification technique des actions de restauration des habitats des espèces cibles

→ Expected results:

Planification technique détaillée de toutes les actions de conservation concrètes.

→ Budget:

Budget according to Grant Agreement	38,310.00 €
Budget spent	41,311.72 €

→ Activities and Outputs

The first part of this action was the identification of landowners in order to establish contact for land purchase or the implementation of restorations on their land. Other stakeholders like hunters, fishermen, abutting owners etc. were consulted as well. Their position was analysed accurately to find the solution offering satisfaction to the majority.

To plan concrete actions, contact with the concerned authorities, such as municipalities, the water management administration (AGE) and the nature and forest administration (ANF), was necessary throughout the project. Many actions required authorisations that were applied for at the responsible administrations and municipalities.

For each restoration type, best practice examples in Luxembourg and the border regions were visited and the results discussed with the responsible entity/person of the implementation. The LIFE team discussed the different technical options and chose the best solution for the site to be restored.

Regular meetings with the head of CNDS-Naturaarbechten took place at least every 2-3 weeks in order to discuss the planning and the advancement of the work as well as potential problems / bottlenecks encountered. Restoration sites were shown to the foremen of CNDS, employed through the project and / or the contractor(s) to discuss best practice for each site.

For each purchase and service, we looked for the best price-service-ratio. The concrete measures were guided and controlled by the academic team of the project.

The overview of the detailed planning of each action is provided in the appendix 14. In this document, the links to the appropriate annexes (appendix 15 - 35) are given as well.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Milestones	Deadlines	Progress
Planning of restoration techniques	~~01.02.16~~ 31.08.17	The planning of concrete measures has continued until the end of the project. Implementation of actions in the line of the project will continue after the end of the project.

→ Technical and/or financial modifications and justification

- C2: Several problems were encountered during the planning of the remeandration project. These are explained in detail in the overview (appendix 14).
- The planning of restoration techniques was extended to the end of the project. Especially the planning for an additional remeandration project that will be implemented in the After LIFE.

→ Perspectives

The action A2 is not part of the After LIFE Conservation plan. However the concrete actions (C actions) will be continued and are described in the After LIFE document.

As preparation of the remeandration project at *Léresmillen*, the engineer from SRC marks the placement of the new meanders and explains the schedule to the contractor.

Site-visit at *Breitwies* with representatives of ANF and AGE.

Action A3 : Contribution à l'élaboration de plans de gestion des sites Natura 2000 du périmètre de projet

→ Expected results:

Un plan de gestion des sites Natura 2000 de la zone de projet permet une approche programmatique pour assurer de manière durable le maintien et la restauration de l'habitat de nos espèces cibles.

→ Budget:

Budget according to Grant Agreement	21,000.00 €
Budget spent	21,574.51 €

→ Activities and Outputs

At the beginning of the project, it was planned to contribute only to the elaboration of the N2000 plans related to the municipality of Wincrange: "Vallée de la Tretterbaach et affluents de la frontier à Asselborn" (LU0002002), "Vallée de la Tretterbaach" (LU0001003), "Hoffelt-Kaleburn" (LU000102) and "Troine / Hoffelt- Sporbaach" (LU0001043). The engineering office TR-Engineering was commissioned with the elaboration of the plans. The specification sheet foresaw the analysis and interpretation of data and a panel discussion, to which the LIFE Eislek project should contribute (specification sheet in appendix 36). Intermediate results and a provisional versions of the management plan were presented by the planning office in August 2014 (appendix 37 & 38).

Due to several warnings from the European Union to the severe delays on the delivery of the management plans concerning most N2000 sites by the Luxembourgish Government, it was forced to reconsider its elaboration strategy. A standardised structure with an abbreviated form (plans de gestion abrégés) should be used for all the designated sites until the end of 2016. A special task force was created inside the ANF in order to speed-up the work. Some of the management plans were directly elaborated by them, some plans were elaborated by NGO's or planning offices. We appreciated the new mode of functioning and actively supported the new task force. The LIFE team had a very active exchange with the ANF and several meetings were organised. The abbreviated form means that panel discussions did not take place and that the foreseen measures are not planned down to parcel level, nevertheless the objectives are clearly formulated and attributed to different areas of implementation. Therefore, the N2000 management plans will greatly benefit the coordinated management of the N2000 areas in Luxembourg.

As requested by Mr Simon Goss (EC) and Mr Tom Andries (External Monitoring Team - Neemo EEIG) during their project visit in September 2015, we enlarged our contribution to the management plans of all 10 N2000 sites in the project area (the plan for "Conzefenn" was already completed). The N2000 plans are provided in the appendix 39.1-39.6.

In answer to the question in the letter from 29.6.16: both LIFE projects, LIFE Unio and LIFE Eislek contributed to the N2000 management plans of the Our and Sauer. Both LIFE projects provided expert knowledge on their field of expertise. For the LIFE Eislek project, the data was associated primarily to wetlands, its biotopes and species. While n&ë asbl provided data on the bird species (*L. collurio, S. rubetra*) as well as other birds through their role as "Centrale ornithologique", HfN provided its expertise on the habitats of *L. helle* as well as on the management of the land belonging to the foundation. The involvement of LIFE Unio focussed more on the aquatic habitats and the goals associated with mussel protection.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				

→ Indicators used to test the performance of the action

Products	**Deadlines**	**Progress**
Management plan Natura 2000	~~1.09.16~~ 31.12.16	The management plans of the project area have been finished the latest in December 2016.
Milestones	**Deadlines**	**Progress**
Adoption of the management plan N2000	~~31.08.2017~~ in progress	The plans were not adopted before the hand-in of the final report (see appendix 39.7).

→ Major problems/ drawbacks/ delays

A prolongation of the elaboration period of the Natura 2000 management plans was accepted in the letter of the 29.06.16. The prolongation was necessary due to the change of strategy. The management plans were not yet adopted at the hand-in of this report. They will be legally decreed at the end of the year 2017 (appendix 39.7).

→ Complementary actions outside LIFE

Two additional meetings took place on the 12.01.16 & 24.03.16 to contribute to the elaboration on the designation dossier of the national nature reserves "Hautbellain-Fooschtbaach" and "Troisvierges-Cornelysmillen".

→ Perspectives

The Natura 2000 management plans will guide the restoration works in Luxembourg for the next 10 years. The measures proposed in the management plans were coordinated with the objectives of the LIFE project. The plans will help to get the necessary funding for the implementation of these measures in the After LIFE Conservation plan.

Action A4 : Etablissement de plans de pâturages et/ou de fauche des réserves naturelles

→ Expected results:

Le plan de pâturage permettra:

- de mettre en place une gestion adaptée et durable de 135 ha de terrains à haute valeur biologique
- de répondre aux exigences écologiques des espèces cibles
- de soutenir les exploitants dans l´exécution d´une gestion conservatrice optimale des sites
- d´apporter un bénéfice important envers les espèces cibles et leurs habitats.

→ Budget:

Budget according to Grant Agreement	25,360.00 €
Budget spent	27,213.82 €

→ Activities and Outputs

In the project area, HfN is the owner of 315 ha land of which 130 ha are grazed by cattle of 28 tenants and partners. The four main actors are Weber (60 ha), Mathieu (1.7 ha), Ovis (1.4 ha) and CNDS (18.7 ha). An analysis of the leasing contracts by Claude Schiltz has shown which ones are compatible with the requirements of the target species of the LIFE Eislek project (appendix 40). The procedure was as follows:

- Analysis of existing lease agreements and their compatibility with restoration goals for target species.
- Elaboration of a list of modifications that need to be done prior to the agreements.
- Resolution of contracts not compatible with the target species and signing of new contracts → Neser, Zeimes, Theis, Weber, Meyers, Hosinger.
- Elaboration of a first grazing plan in 2013: meeting Weber & CNDS (08.04.13).
- Each year adaptation of the plan to the results of the monitoring and weather.
- Meeting with Weber and CNDS twice a month during the high season.
- Consulting ANF for management on sites belonging to the state.
- 18.01.2016: Letter to ASTA for attributing "P"-Numbers (“P” = eligible for premiums) to HfN land grazed by our main partners (appendix 41.1 & 41.2). Following the answer from ASTA (18.02.2016 appendix 41.3.), our main partners wrote a letter on their own and consequently the FLIK Numbers of most of the land concerned was changed to a "P"-Number, as shown in the table in appendix 41.4. For all the parcels grazed by Weber and Naturhaff, the attribution was changed, only some parcels grazed by CNDS were not accepted. An overall positive result of 25.73 hectares from 38.01 hectares are now benefiting from the landscape conservation payments.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x				x				x				x			
Planning realised	x	x	x	x	x	x	x				x				x				x			

→ Indicators used to test the performance of the action

Products	Deadlines	Progress
grazing plan	31.12.13	The plan has been finished on time.

Monitoring of the pastured sites (D2) to control their evolution and appropriateness for the target species.

→ Perspectives

The grazing plan will be kept up to date and newly acquired land will be included in it. It will be adapted to the monitoring results and meteorological conditions. Meetings with CNDS Naturaarbechten and the itinerant shepherd will continue after the project.

A close collaboration with one of the main tenants of HfN (Weber) assures a well-functioning grazing schedule.

Grazing by the Galloway herd of CNDS was re-evaluated with the requirements of the target species in mind.

The mowing schedule was adapted to meet the requirement of our target species.

Action A5 : Travaux préparatoires au monitoring des espèces cibles dans le périmètre du projet

→ Expected results:

Une méthodologie de monitoring élaborée sur base des données disponibles et en concertation avec les responsables du programme de biomonitoring national.

→ Budget:

Budget according to Grant Agreement	21,140.00 €
Budget spent	20,736.41 €

→ Activities and Outputs

A close coordination with the organisations involved in the national biomonitoring schemes and with the "Centrale ornithologique" was essential. Regular contacts with every person involved in the monitoring was kept up both during the preparatory phase and after the field season. All members of the monitoring team were provided with the essential information and maps required to carry out the field work. Throughout the season, regular updates were exchanged between every experts involved. This facilitated the coordination of monitoring efforts and allowed the exchange of results, thus preventing double efforts and loss of information.

Prior to the field season, all data from previous field seasons were digitally recorded and existing shapefiles were updated and exchanged with national partner organisations in the neighbouring regions (Wallonie, Nordrhein-Westfalen).

1) Butterfly monitoring

In 2017, qualitative monitoring (presence / absence) was kept to a minimum, as most sites of *L. helle* are known after the efforts of the past years. As a consequence only few sites were selected in the last year of the project.

Quantitative monitoring or transect counts in appropriate sites (started in 2016) were continued in 2017, giving the possibility to evaluate population trends in the long term (appendix 43). Some minor adaptations were made to several transects, in order to accommodate for some aspects which had proven difficult in previous years. The data was recorded via the European Butterfly Monitoring Scheme (eBMS), as well as in the national monitoring database administered by the MNHN. LIST is in charge of integrating the data to the national biodiversity indicators and help us to assess the data in the framework of our LIFE project.

2) Bird monitoring

The bird monitoring scheme in Luxembourg is in place since many years and the methodology is well established since the beginning of the project. Given the fact that in

2017, *L. collurio* was monitored on a national level, special attention was given to ensuring that the monitoring as part of LIFE Eislek concurred with the remaining monitoring efforts. No special adaptations were needed, nor did problems occur.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x																		
Planning realised	x	x	x	x											x							

→ Major problems/ drawbacks/ delays

The preparation of the qualitative monitoring (presence / absence) of *L. helle* was finalised within the planned time frame, early in the project. In 2016, a quantitative monitoring was installed and preparations for this methodology and subsequent adaptations were made.

→ Complementary actions outside LIFE

Part of the preparatory work as well as some of the findings of the LIFE Eislek project (observation data, restoration results, habitat descriptions, etc.) will contribute to the planned national butterfly atlas (MNHN, MDDI and LIST). Given the considerable expertise in practical butterfly habitat restoration gathered throughout the project, the LIFE Eislek team is likely to contribute input mostly on this topic.

In order to maximise the effectiveness of the monitoring work and extend it to additional taxa beside the Rhopalocera, a basic field guide to the most common and easily identified diurnal moths (Heterocera) was compiled by one of the student apprentices. The complete "Guide hétérocères" is attached in appendix 44.

In collaboration with various national partners (MNHN, LIST, SNL, LIFE Orchis) the LIFE Eislek team organised a vocational training course about butterflies. This introduction into the biology and ecology of butterflies also contained a considerable section on species identification and scientific monitoring, aiming to train new volunteers for future monitoring activities. The volunteers will enter their data into the national monitoring database where it is validated by experts to guarantee data quality. Given the success of this course, additional activities of a similar nature may be planned in the future (see also action E1).

→ Perspectives

The action is not part of the After LIFE but the planning of the monitoring and elaboration of best practice will serve future monitoring of butterfly and bird species.

Action B1: Maîtrise foncière

→ Expected results:

L'objectif principal de l'action est la reconstruction d'un maillage de biotopes au départ de sites sur lesquels nous avons déjà la maîtrise foncière.

En fonction des disponibilités estimées dans les 11 sites NATURA 2000, le projet assurera la maîtrise foncière de 30 hectares.

→ Budget:

Budget according to Grant Agreement	463,600.00 €
Budget spent	481,271.45 €
Outside LIFE	219,030.10 €

→ Activities and Outputs

With the acquisition of land, the persistence of restoration measures and the appropriate management thereafter can be assured.

A procedure for the acquisition of land was established with the acquisition committee of HfN. For each acquisition:

- a folder is prepared for the committee,
- validation of the acquisition by the committee,
- the offer is presented to the landowner,
- when the landowner agrees to the offer, the notary is contacted,
- the acquired land is protected as a reserve of natur&ëmwelt Fondation Hëllef fir d'Natur. There is no RNA status, as this status is not included in the new law on the protection of nature.

The landowners in the project area were identified (ACT). Regular meetings with volunteers involved in acquisitions were held every 6 to 8 weeks.

A total of 32.56 hectares formed by 126 land-register-parcels were bought in 48 notary acts for a total amount of 635,231.40 € (of which 219,030.10 € Outside LIFE → see section "Complementary actions outside LIFE"). According to indications in the letter from the EC in answer to the second progress report (dated to the 29.6.16), the acre at *Léresmillen* is not counted in the total as it was financed as a compensation measure, it is nevertheless listed in table 1.

The acquisitions will complement the land owned by HfN and will be managed to benefit the environment. Maps with the location of the purchased parcels are available in the appendix 45.4-45.4.

The notary acts are kept in paper form at the office and electronic format on the server of HfN. The electronic form is provided in the appendix 46.1-46.48.

Table 1. Detailed table of acquisitions

appendix 47.1 & 47.2

Table 2. Overview of the results of action B1

Habitat type	Objective (ha)	Results (ha)	Outside LIFE (ha)	%of objective
clear-cuttings	~5.00	4.11		82.3
fallow wetlands	~10.00	5.45	1.54	96.9
wet meadows	~2.00	4.97	1.20	308.3
drained wetlands	~5.00	2.97		59.4
wooded structures	~3.00	1.65		54.8
intensively used lands	~3.00	4.27		142.5
acres	~2.00	1.32	(4.20)	66.1
others	/	5.08		/
TOTAL	**30.00ha**	**29.82 ha**	**2.74 ha**	**108.5 %**

Table 3. Type of habitat purchased for each Natura 2000 area (ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange	
6510	0.21											
BK10 (national habitat code: Calthion meadows)		2.63										
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		3.76	0.64	0.54	0.63		0.35					
none	0.12	10.63	0.70	0.87	1.22	1.63	1.89			0.99	3.01	
TOTAL	**0.33**	**17.02**	**1.34**	**1.41**	**1.85**	**1.63**	**2.24**	**0**	**0**	**0.99**	**3.01**	
												29.82 ha

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Milestones	Deadlines	Progress
Acquisition of 30 ha	~~31.12.16~~ 31.08.17	The purchase of land has continued until the end of the project and is still continuing beyond the project's end date on own budget.

- **→ Major problems/ drawbacks/ delays**

The total budget of action B1 has been surpassed. This is due to the fact that land pressure is extremely high in Luxembourg, parcels are generally very small and prices are increasing drastically. Nonetheless, the LIFE Eislek was able to secure a parcel of maize acre in the buffer zone of the nature reserve *Ramescher* (number 43 in table 1), which has been bought at a price of 380 €/are. The land use of this parcel will change to a late-used meadow in the following agricultural season 2017-2018, as the farmer is cooperating through a new farmer leasing contract, signed in November 2017. The parcel is of a very high importance to reduce the agricultural impact on the nature reserve *Ramescher*, a site which hosts all 3 target species.

Another parcel bought in 2017 is a very extensively used wet meadow along the *Tretterbaach* (number 47 in table 1), at the price of 250 €/are. These parcels, located at *Kuobittchamp* were in negotiation during the season 2016-2017 and the notary act was concluded too late in the season to be included in the restoration mowing schedule, but is included in the After LIFE mowing plan. They are highly important for the target species as a stepping stone between sites on both sides of the village Troine, i.e. the nature reserve *Ramescher* and *Borby*.

→ Complementary actions outside LIFE

- 154.28 are with long-term lease within the project area: the costs are not eligible for the project because the contract is with a community, the surface area is included in the results.
- As we have surpassed the available budget and the total budget of the LIFE Eislek project was surpassed, two notary acts were financed outside the LIFE Eislek budget, the surface is nonetheless included in the action B1. By excluding these parcels from the LIFE Eislek budget, we will be able to apply for national co-financing.
- *Léresmillen*:
    - the costs of the building are not eligible for LIFE, it was bought on budget of HfN. The building has been resold with 2 hectares of the surrounding land. Therefore the total surface of the acquisition number 11, the "intensively used land" value and the total surface of acres bought Outside LIFE are less than mentioned in the progress report (appendix 48).
    - an acre of 420.45 are was bought with special funding from MDDI for compensation measures. Neither the costs, nor the surface are counted in the overall results of action B1, the parcel is mentioned in table 1.

→ Perspectives

The purchase of land is the main objective of HfN, our mission is to buy land and manage it accordingly to protect nature and biodiversity. HfN is provided with a yearly budget by the MDDI for the acquisition and management of land. The land acquired through the LIFE Eislek will be managed accordingly to the measures worked out by the project after the project's duration.

Very extensive wet meadow at *Kuobittchamp.*

Intensive acre in the buffer zone of the nature reserve *Ramescher.*

Removed spruce plantation along the Wiltz river at the site *In Doirel,* near Schimpach.

Wet meadows and removed conifers along the *Tretterbaach* river at the site *Unter dem Boxerberg.*

Action C1: Restauration de zones humides à l'abandon et/ou embroussaillées

→ Expected results:

L'action C1 réalisera la restauration de 10 ha de prairies humides à l'abandon et/ou embroussaillées.

→ Budget:

Budget according to Grant Agreement	145,080.00 €
Budget spent	193,197.41 €
Outside LIFE	74,346.15 €

→ Activities and Outputs

Equipment

Vehicle: Ford transit	11.12.12	28,098.00 €
~~Mobile phones~~ Laptop	14.07.14	842.29 €
Tedder	18.07.13	4,260.87 €
Cutter bar	26.07.13	7,217.39 €
Disc mower	03.14.14	9,599.99 €

Restoration actions

Table 4. Overview of results of action C1

Action	Objective	Results	outside LIFE	Total	% of objective
Removing shrubs	10 ha	5.5 ha	2.5 ha	49.4 ha	494 %
Restorative mowing		10.6 ha	30.8 ha		

Restoration actions are being carried out in the areas designated after the mapping of action A1. The work is carried out by the associated beneficiary CNDS and is planned and controlled by the coordinating beneficiary. The goals set in the application form have been largely surpassed.

The location of all the implementations are detailed on the maps in the appendix 49.1 – 49.4.

The shrub clearance on abandoned land was assured via three different methods:

- On a smaller scale, willows were cut back and initial scrub encroachment controlled by CNDS Naturaarbechten with chainsaws and brushcutters. After initial treatment, the shoots have to be recut in the consecutive years.
- To reduce the necessary maintenance works, willow roots were pulled out by cable winch at accessible sites. A by-product are depressions filling up with water, which are highly beneficial to biodiversity.
- Large fallows in a succession stage, where they can no longer be mown, were milled with appropriate low pressure machines. After initial treatment, most of the sites are grazed yearly and mown in a rotation of 5 years to limit the reoccurrence of shrubs.

Mowing as an initial treatment of abandoned wetlands, invaded by dominant species, has been implemented via two different means:

- On a small scale, difficultly accessible sites were mown with brushcutters by CNDS Naturaarbechten with subsequent exportation of the cuttings. Only a third of each site was mown per year to leave refuges for biodiversity.
- Large sites, in this project often sites that have been grazed by sheep in the past, were mown either with the adapted equipment of CNDS or, when too wet, with appropriate low pressure machines (Pistenbully). These sites will remain in the grazing rotation but will additionally be mown every 5 years to limit shrub encroachment.

The disposure of the cuttings was / is a problem that is difficult to solve. The mulch resulting from mowing with Pistenbully is delivered to farmers, who then compost it and incorporate it into the soil in order to improve the humus content. Momentarily, a collaboration with two farmers is set up, the price of transportation is paid by us. For the future, we would like to expand this method to the cuttings from other areas and find a solution where we can compost the cuttings on our own sites and provide it to the farmers as a finished product that they can collect when needed.

A letter was addressed to the MDDI concerning the side *Hellekessel* located in proximity to the national drinking water reserve (appendix 50). Never having received an answer from the competent authority, the 25.60 are concerned are being grazed despite the current law regulating grazing in proximity to drinking water reserves.

Improving accessibility to nature reserves

Many nature reserves are only difficultly accessible impeding management to the extent that some areas cannot be accessed with machines in wet years. Funds for the construction of cattle bridges have been relocated to finance the improvement of access routes to restoration sites (C6),. This was granted by the EC in the letter dated from the 17.12.15. Thus, the accessibility of two important nature reserves has been improved: *Déifeburen* (3.11 ha) and *Sauerwisen*: (4.8 ha). The access route to *Déifeburen*, a site entertained by CNDS, has been fixed in three locations. The large complex *Sauerwisen*, the last occupied habitat of *Lycaena helle* on the Our has received two new drives to allow efficient working. The access at *Sauerwisen* has been created on a private property, the convention is in the appendix 51.

Table 5. Restoration of neglected wetlands for each Natura 2000 site (in ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange
BK04 (national habitat code: Magnocaricion)					0.04						
BK08 (national habitat code: standing water bodies)							0.02				
BK10 (national habitat code: Calthion meadows)	0.08	1.99					4.64				
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)	0.16	8.17	0.11	0.42	0.31	0.02	15.8	0.11	0.07	4.27	0.12
none		1.24		0.11	0.59	0.84	4.02			0.05	0.04
TOTAL	**0.24**	**11.4**	**0.11**	**0.53**	**0.89**	**0.86**	**24.5**	**0.11**	**0.07**	**4.32**	**0.16**
											43.19 ha

The sum of the areas is less than in the overview in table 4 because here parcels are only counted once, even if they were treated twice.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled					x	x	x		x	x	x		x	x	x		x	x	x		x	
Planning realised		x	x		x	x	x		x	x	x		x	x	x		x	x	x		x	

→ Indicators used to test the performance of the action

During the monitoring of the restored sites, the improvement of the sites as habitat for the target species was controlled → D2.

→ Technical and/or financial modifications and justification

- The 4x4 vehicle was replaced by a 5 seat pick-up with a tipper body. This modification was approved by the EC in the letter dated from the 06.06.13 (appendix 52).

- The two mobile phones were replaced by a laptop. The request was approved in the letter dated from the 06.06.13.
- The purchase of additional material (brushcutters, chainsaw) was possible as budget was left over from the cattle truck that was less expensive than foreseen (letter 17.03.14 → C6)
- Fuel for the tractor of CNDS was forgotten in the application, the need for an additional 7,500 € were indicated in the inception report (authorisation in the letter from 06.06.13). In the end about 7,200 € more than foreseen in the application were spent on fuel.

→ Complementary actions outside LIFE

Several sites were mown or cleared of shrubs with converted Pistenbullys. As the budget of the LIFE project was not sufficient, the costs were taken over by the land management budget of HfN (→ maps in the appendix 49).

The coordinating beneficiary was in regular contact with the ANF concerning land management of parcels owned by the state within the perimeter of the project. The aim was to insert these parcels into the network of land managed accordingly to our target species. Furthermore, we are in contact with Natagora considering *L. helle* populations on the Belgian border.

→ Perspectives

During the LIFE project, action C1 consisted of a first management of sites no longer suitable to our target species because they are overgrown by shrubs or disturbance species. To keep the sites open and in a favourable condition, they will be included into the rotational management plan for the land owned by HfN. Additionally, new fallows purchased will undergo a restorative mowing if necessary.

Mowing of the *Conzefenn* with converted Pistenbully.

The removal of willow stumps by cable winch leaves depressions that fill with water and form valuable microhabitats.

Action C2: Restauration hydrique de zones humides asséchées

→ Expected results:

L'action C2 réalisera l'enlèvement et le remblayage de 500 mètres de drainages et la restauration de cours d'eau à hauteur d'un minimum de 1,5 kilomètre sur une surface de la plaine alluviale de 15 hectares (site CORNELYSMILLEN).

→ Budget:

Budget according to Grant Agreement	96,675.00 €
Budget spent	89,721.60 €
Outside LIFE	110,883.96 €

→ Activities and Outputs

Table 6. Overview of results of action C2

Type of restoration	Objective	Results	% of objective
Removing drains	500m	587 m	117.4 %
Restoration of water course	1,5 km	709 m	47.3 %
	15 ha	3.5 ha	23.3 %

The areas of implementation are provided with the maps in the appendix 53.

1) Restoration of a water course

The restoration of the alluvial plain modified through depth erosion at *Cornelysmillen* was not carried out as initially described in the project application. During the planning phase, many difficulties were encountered, some of which could not be overcome (appendix 14). The results are:

Trëtterbaach Léresmillen: The project coordinator relied on the engineering office SRC to plan a remeandration project on about 300 m on the *Trëtterbaach* at *Léresmillen*. Instead of relying on soft techniques, a firm with experience on hydraulic engineering was hired to dig a new water course by excavator. Additional funding was mobilised (see section "Technical and/or financial modifications and justification") and the implementation took place from the 1st to the 13th of September 2016. This is a project of high innovative importance applying a technique never used in Luxembourg before. In this case, the new riverbed was completely excavated to accelerate the restoration by about 10 years.

Fennbaach: Thanks to a land exchange, we were able to restore a small side-stream of the *Trëtterbaach* on about 50 m in 2017. The implementation was taken over by the water management administration and did not incur any expenses. Several pipes were removed, ditches closed and the stream was redirected into its thalweg without profiling of a river bed.

Trëtterbaach Breitwies: In 2013, 3 deflectors in form of conifer trunks were installed in the *Trëtterbaach* thanks to an opportunity that arose during the clear-cutting of the site. After the first winter floods, 2 deflectors were washed away. Consequently, the fixation of the remaining trunk was reinforced and was in place until the winter of 2016 when it was washed away also. On the same site, a remeandration project of the same tenor as *Léresmillen* is already planned and will be implemented in 2018 (After LIFE).

2) Removing drains

Léresmillen: After consultation of old maps, we were convinced that drainage pipes would be present on the site at *Léresmillen*. A dredge operator was hired and a large trench dug out. However, no pipes were present onsite. We believe that the site has not been drained but that soil was dumped to elevate the level.

Kiirchermillen: The works on the 587 m draining trenches at a clear-felling from an Interreg project (2007) at *Kiirchermillen* were carried out at the end of October 2015. Besides, we decided to dig two ponds in order to gain enough soil to fill at least the deepest parts that posed a danger for the cattle that kept the clear-felling open. Consequently, the water can no longer be evacuated into the stream, the site will become wetter with time and the remaining trenches will no longer be active.

Table 7. Hydrological restorations for each Natura 2000 site (in ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange	
BK08 (national habitat code: standing water bodies)								0.01				
BK10 (national habitat code: Calthion meadows)		1.5										
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		1.53					0.01					
none		0.5					1.02					
TOTAL	**0**	**3.53**	**0**	**0**	**0**	**0**	**1.03**	**0.01**	**0**	**0**	**0**	
												4.57 ha

The ponds were calculated as 0.01 ha as otherwise they were too small to show up in the table.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled				x	x			x	x			x	x			x	x			x	x	
Planning revised								x	x			x	x			x	x			x	x	
Planning realised					x				x		x			x			x			x		

→ Indicators used to test the performance of the action

The remeandration sites has been monitored before implementing the restoration work and will be monitored again five years after implementation. This will also be done for the additional remeandration project planned in *Trëtterbaach Breitwies* → action D2.

→ Technical and/or financial modifications and justification

The restoration of a water course was not carried out as initially planned (the change in location was approved in the letter from 17.03.14). The consequence is a remeandration project of smaller expanse and with a higher budget. The methodology used, however, is far more sophisticated. The initially foreseen soft techniques would not have led to the desired outcome as the depth erosion was too pronounced to be counteracted through the simple introduction of deflectors and stones. Accordingly, additional finances were needed. An application was made to the Fonds pour la Gestion de l'Eau (FGE) concerning the remeandration project at *Léresmillen*. A table with the cost breakdown is provided in the appendix 54. The restoration of the *Fennbaach* and the installation of tree trunks as deflectors at the *Trëtterbaach* did not result in additional costs.

→ Major problems/ drawbacks/ delays

Due to the underestimated planning effort, the project coordinator applied for a revised planning schedule. The European Commission allowed a delay of 12 months in the letter from the 06.06.13.

The problems encountered are described in detail in appendix 14:

- water quality of the streams → change in location
- depth erosion too pronounced to use deflectors → need for an adapted methodology
- additional finances needed → application FGE
- FGE can only reimburse public bodies by 100% → consulting the community of Wincrange
- sceptical college of alderman → promise to install walking trail → financed by RBC
- offers for implementation of remeandration too high → change in strategy, use of dumper instead of construction road
- ANF not convinced of project → site visit with SRC to convince ANF and get authorisation for project
- wastewater of adjacent farm discharged into river → solution not yet found, owner will have to install his own wastewater disposal during restoration of the farm.

→ Complementary actions outside LIFE

Due to different opportunities that came up in the course of the project, 7 ponds were dug out in the project area (maps in appendix 53):

- *Emeschbaach*: we benefitted from the opportunity of the digger onsite for the construction of the shelter to create a new pond → Outside LIFE.
- *Kaleburn*: restoration of a *T. cristatus* pond with the aid of a dredger operator working for the community → no additional costs.
- *Kiirchermillen:* 2 new ponds to gain soil for the filling of the drenches → LIFE budget.
- *Cornelysmillen*: a pond was dug out to gain soil for the levelling of the cattle bridge → LIFE budget.
- *Léresmillen*: two ponds were restored next to the walking board → additional budget mobilised through RBC (1,638 €).

→ Perspectives

The planning for a second remeandration project on the *Trëtterbaach - Breitwies* has already started. The implementation is foreseen for 2018. We expect to implement a further remeandration project in the After LIFE. The site remains to be defined.

A construction sign informs the public of the on-going project at Léresmillen.

A dumper on chains reduces compaction of the soil without having to set up a construction road.

Tree stumps were introduced into the riverbank to diversify available habitats in the new course of the stream.

The last step of the remeandration project was the dredging of the plug separating old and new riverbed.

Several drainage pipes were removed at *Fennbaach*.

The stream *Fennbaach* was relocated into its thalweg.

Action C3: Restauration de zones humides enrésinées

→ Expected results:

Les résultats attendus de cette action sont la conversion d'au moins 5 ha de plantations en résineux vers des milieux favorables à nos espèces cibles.

Un ensemble de 15 hectares d'anciennes coupes à blancs seront nettoyés en vue de la restauration des prairies à bistorte (action C4).

L´objectif de l´action « restauration de zones humides enrésinées » est donc de 20 ha.

→ Budget:

Budget according to Grant Agreement	106,550.00 €
Budget spent	106,587.15 €

→ Activities and Outputs

Table 8. Overview of results of action C3

Type of restoration	Method	Objective	Results	Hors LIFE	% of objective
Felling	Felling of conifers	5 ha	3.3 ha	0.66 ha	103 %
	Thinning		1.2 ha		
Clearing	Milling	15 ha	11 ha		97 %
	Swaths		1.1 ha		
	Removal of topsoil		1.4 ha		
	Export logging residue		1.1 ha		
TOTAL		**20 ha**	**19.7 ha**		**98 %**

Conversions of conifer plantations in wet areas are carried out in the areas chosen after mapping (A1). The works are carried out by forestry companies or by CNDS and are planned and controlled by the coordinator. The location of the measures are provided with the maps in the appendix 55.1 – 55.4.

1) Felling of conifers

Due to previous projects with the goal of removing spruce from wet stations, the ambitions were set low with a mere 5 ha deforestations. Nevertheless, the goal was not reached. The sites that remained provided difficulties, mostly linked to access, entailing a time intense planning phase. Instead, two parcels were deforested on private land (0.66 ha outside LIFE). The spruce were older than 50 years, so no subsidies were paid and no costs occurred for

LIFE. The role of the LIFE project in this case was to inform the owners of the negative impact of spruce on biodiversity.

Additionally, two parcels acquired during the LIFE Eislek project were thinned to restore field shrubs for *L. collurio*.

2) Clearing in order to restore bistort meadows

Clearing of felled areas was carried out in several steps and with different methods depending on the future use of the site. After felling, the logging residues were exported and / or branches were laid in swaths. The stumps were milled to allow mowing in consecutive years. On several sites, the mulch was removed with part of the topsoil to reduce the influence of the nutriments leached with the mulch. Except for the heavy forestry milling, the works were carried out by CNDS Naturaarbechten.

Table 9. Reconversion of conifer plantations into grassland for each Natura 2000 site (in ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange
none		2.98		0.80	0.22	0.57	5.66	0.41	1.06	3.74	
TOTAL											**15.44 ha**

The sum of the areas is less than in the overview in table 8 because parcels are only counted once, even if more actions (felling and clearing) have taken place onsite.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x			x	x			x	x			x	x			x	x			x	x	
Planning realised	x	x	x	x	x			x	x				x				x				x	

→ Indicators used to test the performance of the action

Monitoring of the development of the sites is carried out to follow the reestablishment of meadows suitable to our three target species. The species targeted for each site depends on the situation.

→ Technical and/or financial modifications and justification

The target of 5 ha set for the felling of conifers could not be reached due to difficulties with site accessibility. Instead private land owners were convinced to fell spruce in wet stations (0.66 ha) and thinning measures were carried out on 1.2 ha. As discussed per e-mail with Mr

Wouters (21.11.16) no contracts were signed as no money was invested in the deforestations.

→ Major problems/ drawbacks/ delays

A trial with ray-grass to delay establishment of rural species was not authorised by ANF and we were strongly advised against this method.

A clear-felling could not be done at *Cornelysmillen* as the adjacent farmer did not agree to let us pass over his pasture. An offer from a form working with cable winch was too high.

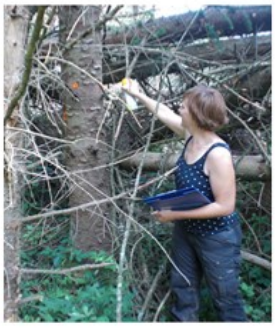
→ Perspectives

The treated sites will be added to the management schedule of HfN for grazing or mowing to ensure the development into the desired ecosystems.

A contract was set up for a clear-cutting, that was milled (and mown) on privately owned land to oblige the land owner to manage the land for 30 years according to the guidelines set up by the coordinators (appendix 56).

Through another LIFE project "LIFE Patches and Corridors" (http://www.bs-aachen.de/de/projekte/auenkorridor/) , we were made aware of the possibility to manage alluvial forests as alternative habitats for *L. helle*. Therefore, first trials on thinning measures in alder plantations are planned in the After LIFE.

The different phases on clear-felling sites:



measurement

logging

clearing and transporting timber

evacuation

A clear-felling *Schucklay* was milled in 2016. The site will be mown in 2018 to prevent shrub encroachment.

Removal of spruce at *Moulin de Bigonville*.

Action C4: Restauration de prairies à bistorte et de mégaphorbaies

→ Expected results:

Les résultats attendus de cette action sont la restauration d'un minimum de 10 hectares de prairies à bistorte à travers les méthodes décrites ci-dessus.

→ Budget:

Budget according to Grant Agreement	42,600.00 €
Budget spent	41,887.19 €
Outside LIFE	1,560.00 €

→ Activities and Outputs

Table 10. Overview of results of action C4

Type of restoration	Objective	Results (ha)	% of objective
Rhizome transplantation	10 ha	3.7 ha	
Seeding		6.2 ha	
Hay transfer		1.3 ha	
Total	**10 ha**	**11.2 ha**	**112 %**

The location of the measures are provided with the maps in the appendix 57.1-57.3. A summary of the experiments and results on rhizome transfer and seeding is in the appendix 26.

1) Repiquage

The elaboration of the methodology for the transfer of rhizomes is explained in the appendix 14. An experimental set-up introduced in the beginning of the project was the main method used to gain knowledge on the success of transplanting rhizomes. The project coordinator planned and supervised the works implemented by CNDS Naturaarbechten. The method is quite simple to carry out and is successful when the conditions of the receiving sites are appropriate.

The disadvantage of rhizome transplantations is the labour intensity when the action is carried out on a large scale. That is why we experimented on the elaboration of a complementary less labour intensive method using the seeds of *P. bistorta*.

2) Seeding

After seeding directly on clear-cuttings was not successful, several studies were carried out to elaborate a successful and cost-efficient method. These included different ways of vernalisation and germination tests. A collaboration with MNHN was set up and experiments on pollination biology as well as studies on the population genetic structure carried out. In the end, a successful method could not be found.

3) Hay transfer

Hay transfer was carried out only once in the project duration in 2013 in the alluvial plain of the *Trëtterbaach*. The donor parcel was mown in 2013 and the hay transferred to the receptor area at only 300 m of distance. Thus, an acre of 1.33 ha was retransformed into grassland. Rhizomes of bistort were transferred additionally to assure the colonisation by the host plant of *L. helle*.

Table 11. Bistort meadow restoration for each Natura 2000 site (in ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange
BK10 (national habitat code: Calthion meadows)		0.51									
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		0.11					1.43			0.27	
none		2.84				0.21	4.14				
TOTAL	**0**	**3.46**	**0**	**0**	**0**	**0.21**	**5.57**	**0**	**0**	**0.27**	**0**
											9.51 ha

The sum of the areas is less than in the overview in table 10 because parcels are only counted once, even if more actions (rhizomes & hay transfer/seeding) have taken place onsite.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled				x	x			x	x			x	x			x	x			x	x	
Planning realised				x				x	x			x	x			x				x		

→ Indicators used to test the performance of the action

The sites were monitored (D2) to control whether the bistort was able to colonise the habitats chosen by the coordinating beneficiary and to draw conclusions on the effectiveness of the different methodologies applied, the results are described in this section.

→ Complementary actions outside LIFE

Eriophorum angustifolium seeds were collection in Helzen *Am Dall* where we found a large population in 2013 (08.07.13). Seeding was at 5 sites: *Conzefenn* 2x (01.08.13), *Sporbech* (12.04.14), *Bungerefermillen* (23.07.14) and *Haardbaach* (30.07.14). Monitoring in the consecutive years showed that seeding was not successful.

SICONA has reared the endangered plant *Sanguisorba officinalis* from the few remaining sites in Luxembourg to reintroduce it to its former range of distribution. As the success of breeding was greater than expected, we were asked whether we wanted 750 plants to reintroduce on land of HfN. The nature park Our financed the plants, HfN did the practical implementation of the planting in collaboration with CNDS. The reared plants were planted in 2014 at 6 different sites in 22 groups of 30-48 plants per group.

The MNHN was consulted in order to get a more scientific background for the questions asked on behalf of bistort propagation. The budget for the work carried out by the institution was covered by their own finances.

→ Perspectives

The LIFE project allowed us to work out best practice methods that we will be able to use in the future. Through dissemination actions we want to provide help to other projects working on *L. helle* or *P. bistorta*.

Action C5: Plantation de structures ligneuses

→ Expected results:

L'action permettra de planter 7.000 plants d'espèces indigènes de haies et d'arbres isolés.

→ Budget:

Budget according to Grant Agreement	40,490.00 €
Budget spent	42,754.93 €
Outside LIFE	2,232.95 €

→ Activities and Outputs

The location of the measures are provided with the maps in the appendix 58.1 – 58.4. The plantings were planned by the coordinating beneficiary and the implementation was executed by CNDS. The idea was to work with plants from an initiative called "Heck vun Hei" (http://www.environnement.public.lu/conserv_nature/dossiers/heck_vun_hei/index.html). However, the plants were more expensive than the budget foreseen in the LIFE Eislek project, so that we proceeded with other plants in the following seasons. As the budget was decimated, we looked for additional funding from other sources.

Table 12. Overview of results of action C5

Action	Objective	Results	Outside LIFE	Total	% of objective
Hedges	7.000 plants	4895	2627	7522	
Trees		76	28	104	
TOTAL	**7000**	**4971**	**2655**	**7626**	**109 %**

→ Time Schedule

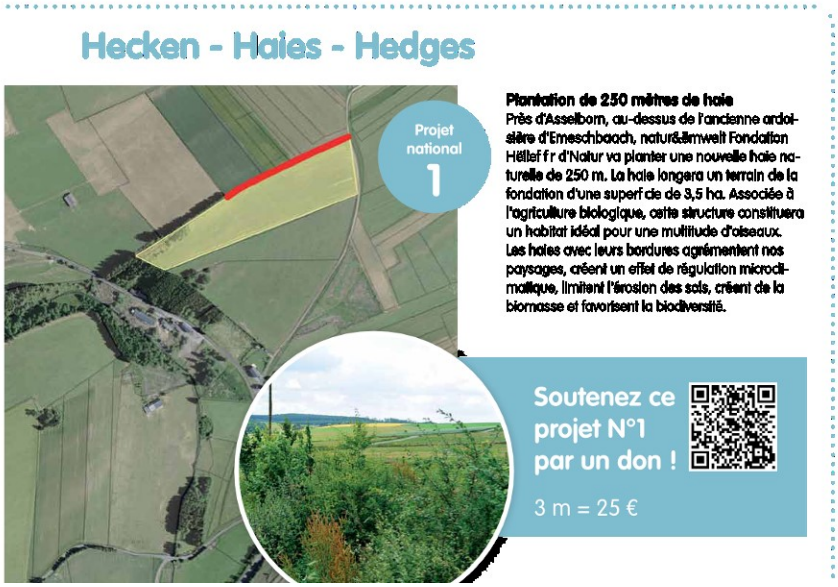
Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled						x	x			x	x			x	x			x	x			
Planning realised				x		x	x			x	x			x	x			x	x			

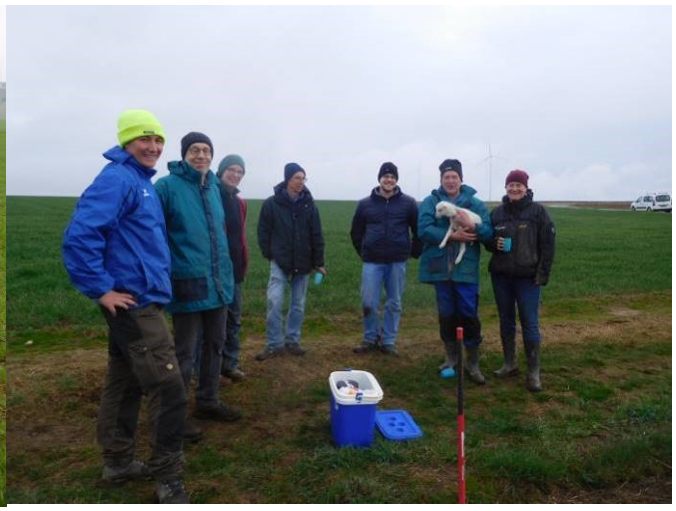
→ Complementary actions outside LIFE

The budget for this action was set too low, therefore several plantations were financed via other projects: "Journée nationale de l'arbre" (brochure in appendix 98: publications), a yearly national campaign collecting funds to plant trees and hedges (750 plants). Another part was financed through a compensation project (502 plants), the rest was financed over the management budget of HfN (1,800 plants).

→ Perspectives

The maintenance of the planted structures will be ensured by HfN in collaboration with CNDS.





Planting activity in the context of the *Journée nationale de l'arbre*, a yearly campaign with a call for donations to plant trees and hedges throughout the country. In 2016, hedges were planted at *Emeschbaach*.

Action C6: Acquisition et installation d'infrastructures relatives au pâturage

→ Expected results:

L'action aboutira à:

- Construction d'un abri pour bétail.
- Mise en place de 5 passages à bétail.
- Aménagement de 5 abreuvoirs.
- Aménagement de 12.500 mètres de clôtures.
- Achat de 500 mètres de clôtures amovibles.

→ Budget:

Budget according to Grant Agreement	221,550.00 €
Budget spent	237,099.41 €
Outside LIFE	17,324.39 €

→ Activities and Outputs

Table 13. Overview of results of action C6

Type of action	Objective	Results	outside LIFE	Total	% of objective
drill	1	1	/	1	100 %
cattle shelter	1	1	/	1	100 %
fences	12.5 km	9.7 km	2.8 km	12.5 km	100 %
removable fences	500 m	0	/	0	0 %
energiser	5	2	/	4	40 %
trough	5	1	/	1	20 % (solar pump)
metallic doors	10	10	/	10	100 %
cattle bridge	5	2 (4)	/	2	40 % (→ C1 access)
cattle truck	1	1	/		100%

The location of the measures is provided with the maps in the appendix 59.1 & 59.2.

1) Fences

Equipment:

fences	/	21,677.11 €
~~5~~ 2 energisers	01.04.15 / 27.07.15	874.61 €
10 metal doors	17.11.16 / 17.05.17	3,012.46 €
~~5 troughs~~ 1 solar pump	22.09.16	6,853.86
professional drill	30.04.13	273.70 €

As described in the application, the installation of fences, troughs and cattle bridges facilitates the day to day work of farmers working in collaboration with HfN while improving the quality of the pastures in ecological terms. Most fences were set up by CNDS Naturaarbechten, for some we referred to external assistance.

Instead of five troughs, one solar pump was installed on the property of HfN, leased to a farmer active in the area. As the farmer agreed to fence out the *Trëtterbaach* on his pasture (280 m), we installed a solar pump on our adjacent parcel to provide access to the water.

Two cattle bridges were set up on large complexes of wetlands grazed by the itinerant sheep. They are supposed to increase mobility on the sites to ameliorate grazing on both sides of the river bank.

2) Cattle transport

The cattle truck was purchased at the beginning of the project and has ever since been used to transport Galloways of CNDS Naturaarbechten to and from the cattle shelter and between the nature reserves during the season.

3) Cattle shelter

The construction of the cattle shelter took place between October and December 2013. It has now been in use for two seasons. It is built of Douglas fir wood and measures 18x6 metres. It is linked to the road by a 80m path made of regional stones. As there was a considerable run-off at high rain, the path has been completed with gutters in winter 2014. A more precise description of the shelter was provided with the progress report. The total price of the shelter was at 54,216.52 € which is 24,216.52 € over the planned budget. The cattle shelter and cattle truck will facilitate the work with the Galloways that graze 28.5 ha nature reserves belonging to n&ë HfN within the project area. Furthermore, bay hales of 4.9 ha mown by CNDS are stocked in the infrastructure.

Table 14. Fences set for each Natura 2000 area (in m)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange
6510							88				
BK08 (national habitat code: standing water bodies)								42			
BK10 (national habitat code: Calthion meadows)		1627		510							111
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		1107		2118			909				
none		4229			1067		581			90	
TOTAL	**0**	**6963**	**0**	**2628**	**1067**	**0**	**1578**	**42**	**0**	**90**	**111**
											12,479 m

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled				x	x			x	x			x	x			x	x			x	x	
Planning realised				x				x				x					x			x	x	

→ Indicators used to test the performance of the action

Milestones	Deadlines	Progress
Construction of cattle shelter	1.11.13	The cattle shelter has been in use since the winter 2013/14.

→ Technical and/or financial modifications and justification

1) Fences

The installation of fences was supposed to be carried out by CNDS. However, one of the two foremen employed by the LIFE Eislek project has had an injury making him unavailable during most of the winter 14/15. Therefore the installation of fences was delayed. One of our sites was supposed to be grazed from spring 2015 so that it was necessary to install the fences beforehand. For this reason we had to fall back on external assistance. This financial modification was discussed with Tom Andries and Simon Goss (appendix 60) and approved in the letter from 29.06.16.

Due to the break-up of the sheep flock for which the removable fences and energisers were budgeted, the finances were liberated to cover the already surpassed budget (letter 16.12.16).

Instead of 5 troughs, we installed 1 solar pump. A lot of energy was spent on a project of fencing of brooks and installation of troughs that was not carried out due to numerous difficulties (appendix 14). A farmer working on adjacent parcels to our own on the *Trëtterbaach* agreed to fence the brooks (280 m) if he retains some access to water. A gravity-fed trough was not possible due to a limited slope and the farmer was not convinced that pasture pumps would work when the cattle is not used to it. Therefore we agreed to install a solar pump.

Only two cattle bridges, rather than the 5 foreseen in the application were necessary in the project area. However, we realised a deficit in the accessibility of sites managed in the context of the project (C1). In the letter from the 17th December 2015, the relocation of funds was granted by the EC.

2) Cattle transport

The cattle truck was cheaper than expected, the coordinating beneficiary decided to use the additional money for the purchase of brushcutters and a chainsaw (C1) for CNDS. The financial modification was accorded by the EC (letter 17.03.14).

3) Cattle shelter

The price for the cattle shelter has been miscalculated due to two reasons, (1) the bid file did not include the costs of an access route and (2) the MDDI obliged us to exclusively use Douglas fir wood that is more expansive than spruce wood. The project coordinator proposed a change in the placement of the cattle shelter to save money on the access route. This way the budget overdraft on the category “infrastructure” is less than 10 % / 30,000 €. In total, 30,000 € were foreseen for infrastructure costs, the actual costs were 54,216.52 €, the overdraft is therefore 24,216.52 €.

→ Major problems/ drawbacks/ delays

There were difficulties concerning the authorisation from the water administration for the installation of troughs fed by streams (details in appendix 33).

→ Complementary actions outside LIFE

2.8 km fences set up in the project area were financed outside LIFE on own budget.

→ Perspectives

Conventions were signed for fences that were set up on private property (appendix 61.1 – 61.3).

Most of the fences were set-up by the associated beneficiary CNDS.

At the grazing project *Schleef*, the metal doors will be used to herd the cattle to the next bloc.

A solar trough was set-up to provide the cattle with access to water as the brooks are fenced in.

The cattle bridge *am Dall* will increase the mobility of the sheep flock in the nature reserve.

Cattle truck

The cattle shelter was built as winter refuge to the Galloways of CNDS Naturaarbechten

Action C7: Suivi et conseil d'exploitants agricoles travaillant au sein de zones Natura 2000

→ Expected results:

La plateforme d'échange encourageant la communication intense entre les deux secteurs aboutira à la consultation de 50 exploitations agricoles travaillant des terres au sein de la zone de projet et la conclusion de 50 ha de contrats d´extensification supplémentaires.

→ Budget:

Budget according to Grant Agreement	13,080.00 €
Budget spent	14,540.28 €

→ Activities and Outputs

Table 15. Overview of results of action C7

Type of action	Objective	Results	% of objective
consultation of agriculturists	50 agriculturists	17	34 %
extensification programmes	50 ha	70.58 ha	141 %

The mapping of the project area (A1) allowed to define areas of interest for an extensification of agricultural practices, especially concerning *S. rubetra* habitats (maps in the appendix 62.1-62.2).

The payment of aids concerning rural development is fixed by law and incorporates two parts (1) biodiversity contracts and (2) MAEs.

The proposal of the "Plan du développement rural 2014-2020" has been approved only in 2017, and it has been officially published on September 11th 2017 in the official Journal of the Grand-Duchy of Luxembourg (Règlement grand-ducal du 11 septembre 2017 instituant un ensemble de régimes d'aides pour la sauvegarde de la diversité biologique en milieu rural: http://data.legilux.public.lu/file/eli-etat-leg-rgd-2017-09-11-a863-jo-fr-pdf.pdf).

Due to this important delay, the LIFE Eislek project has only been able to conclude biodiversity-contracts between the start of the project and January 2015.

For all contracts starting on January 2016, 2017 and 2018, farmers have signed a declaration of intent, the definitive contracts will be signed within the next weeks.

In table 1, a list of the contracts initiated by the LIFE Project are listed:

- Between 2013 and 2015, 7 contracts for a total of 9.42 hectares were signed,
- between 2016 and 2017, 14 contracts were engaged for a total of 52.22 hectares.

The contract concluded with SCHAUL Johny in the N2000 area TRETTERBAACH / O-WINCRANGE is crucially important for both target species *L. helle* and *S. rubetra*. The contract incorporates 2 larger sites, one is located along the *Tretterbaach* between the site *Borby* and the village of Troine, one of the regular observation sites of *S. rubetra* in migration periods. The farmer works now in the 3rd year on this site, and his management transformed this former intensive pasture in a strip of very extensively used fallow land of circa 1.5 hectares and a late mowing meadow of circa 2.5 ha, recreating favourable conditions for both species.

The contract concluded with BERTEMES Pit concerns the site *Schleef* in the N2000 site WILTZ and converts circa 15.6 hectares former intensive pastures and fallow land into extensive pastures, where the pasture intensity is for some parts specifically reduced to 0.1 GVE / ha/ year and adapted to *L. helle*'s habitat. Monitoring observations in 2017 confirmed the best management practice engaged on the site.

At *Cornelysmillen*, a biodiversity contract (18.48 ha) was changed from a grazing with sheep contract to a fallow management contract to adapt management to the target species *L. helle*.

The problem of conversion of permanent grasslands was discussed with Mr Simon Goss during his visit. Further explanations for the current situation were provided by e-mail (appendix 63).

Table 16. Extensification programs for each Natura 2000 area (in ha)

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange
6410	0.95										
6510		0.61									
BK10 (national habitat code: Calthion meadows)		4.60		1.20			4.83				0.60
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		10.52		7.62			11.77		1.23		
none	0.28	14.41		5.76			4.16		1.14		0.90
TOTAL	**1.23**	**30.14**	**0**	**14.58**	**0**	**0**	**20.76**	**0**	**2.37**	**0**	**1.50**
											70.58 ha

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning revised									x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised									x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Major problems/ drawbacks/ delays

The delays were due to the difficulties that occurred concerning the approval of the "Plan du développement rural 2014-2020" by the EC and the final transcription in official regulation in Luxembourg. It has finally been approved after the project's end date. Many contracts have already been prepared and will be signed before end of January 2018. Unfortunately we were not able to have them signed before the hand-in of the report.

→ Perspectives

The aim is to build up a good connection to local land users that will be kept up after the end of the project. HfN will visit the concerned sites regularly to make sure that the conditions are applied. Biodiversity contracts will be extended by the competent authorities, the contact may be initiated by HfN.

Action D1: Monitoring des populations des espèces cibles

→ Expected results:

Le suivi des espèces cibles en début de projet permettra de déterminer les effectifs des populations et de localiser précisément les habitats de ceux-ci.

Le suivi de l'impact du projet sur les espèces ciblées permettra à l'équipe de terrain de confirmer la validité des moyens employés pour traiter les menaces définies dans les formulaires B2d ou au contraire de remettre ces moyens en question et d'en développer de nouveaux.

À la fin du projet, les scientifiques de l´équipe de terrain seront en mesure de quantifier les progrès accomplis, en termes d'effet sur les espèces ciblées.

→ Budget:

Budget according to Grant Agreement	34,800.00 €
Budget spent	35,892.63 €

→ Activities and Outputs

For a list of all equipment purchased as part of this action, please refer to appendix 64.

The scientific monitoring of all three target species started in 2013 and has since been carried out on a yearly basis throughout the entire project area by the academic staff. In addition, the project team was supported by a number of volunteers, who participated in both the bird and butterfly monitoring activities. The results contributed to the national monitoring schemes for all 3 target species and provided valuable information on the population statuses, both nationally and in the north of Luxembourg (i.e. the project area of LIFE Eislek). Detailed monitoring reports and maps highlighting the findings of the LIFE Eislek project are given in appendixes 65.1 - 65.4.

Initially (2013-15), the monitoring of *L. helle* was focused on a qualitative study in order to determine the distribution of the species and verify previously known sites within the project area. As a result, numerous new populations of *L. helle* were discovered, which led to the extension of several Natura2000 zones on the demand of the coordinating beneficiary (appendix 66). With the main distribution established, monitoring efforts switched to a quantitative study with transect walks from 2016 onwards. This will allow to determine the successfulness of the project actions and monitor population trends of *L. helle* in the long term. Due to the relatively short sampling time of the quantitative monitoring effort, it is not possible to provide any meaningful results at this point.

The populations of the Whinchat *Saxicola rubetra* were known to be steeply declining and its population status in the area was uncertain but probably extinct (as a breeding bird) at the start of the project. Despite considerable monitoring efforts in the project area (2013-2017) and nationally (2013), as well as considerable habitat restoration efforts, no breeding pairs were found or have established since then (for a mail exchange regarding the status of *S.*

rubetra in Luxembourg, refer to appendix 67). The results of the monitoring, however, show that the wetlands in the north of Luxembourg continue to be of considerable importance for the species as a stopover site during migration. Especially the habitats that have been restored as part of the LIFE Eislek project are among the most important and thus frequently used sites during both spring and autumn migration (see appendix 65.4). These sites will be continually monitored in the future in order to determine, whether or not *S. rubetra* will re-establish itself as a breeding bird in the region.

Monitoring of the Red-backed Shrike *Lanius collurio* clearly showed, that the project area continues to be one of the major strongholds of the species on a national level. Despite considerable environmental changes (weather, food availability, etc.), the local population remained relatively stable throughout the entire project period, especially when compared with other areas in Luxembourg. The results of the monitoring, however also very clearly showed, that most territories of *L. collurio* were restricted to the river valleys, wetlands, and other extensively used areas, often on land which is owned by HfN. Surrounding areas, where intensive agriculture is predominant, tend to be devoid of *L. collurio* and are much poorer in terms of species and habitat diversity, overall. On several occasions, habitat restoration efforts carried out as part of LIFE Eislek, were rewarded almost immediately with increased densities of *L. collurio* (f. ex. *Rittefenn*, *Cornelysmillen*, etc).

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled				x				x				x				x				x		
Planning realised				x				x				x				x				x		

→ Major problems/ drawbacks/ delays

As monitoring is always subject to the weather conditions, some problems were experienced in the field season of 2013, 2015 and 2016 which were very poor butterfly years. Similarly, the prolonged wet and cold period of spring 2013 resulted in a very poor breeding season for most bird species, making comparisons between individual years very difficult.

Given that both bird species are long-distance migrants, they are likely to be affected by a number of other environmental factors (including those acting along the migration routes) that are impossible to assess. Some of these factors are likely to have affected bird numbers in 2017, which was characterised by substantially lower numbers of breeding pairs across the country (please also refer to appendix 65.4 for more details).

Overall, the relatively short timeframe of LIFE projects and the related monitoring, tends to be insufficient to determine the successfulness of restoration measures, which may take several years to become fully effective.

A letter addressing some of the other issues that arose during the monitoring, including questions related to the construction of wind turbines along the edge of two SPAs, is provided in appendix 68.

→ Complementary actions outside LIFE

In 2013 a Master's thesis on the population connectivity of *L. helle* in the North of Luxembourg was carried out in close collaboration with the University of Leeds (Kayser, 2013). This work not only provided valuable insights into the population dynamics of *L. helle* but also allowed monitoring outside the Natura 2000 network. The project proposal of Marie Kayser at the University of Leeds (UK) and results are given in appendix 69 and appendix 70 respectively.

Ever since, the LIFE Eislek project has been able to rely on a number of volunteers, who contribute to the scientific monitoring both inside and outside the Natura 2000 network. Thanks to the work of these volunteers, new populations of *L. helle* and several sites that were previously unknown have been discovered outside the Natura 2000 network. Similarly, the LIFE Eislek project has benefitted from the contribution of numerous volunteers of the Centrale ornithologique's field ornithology group, which have been helping with surveys both inside and outside the Natura 2000 network.

→ Perspectives

The results of the monitoring will lead to a better knowledge of current distributions and also, in the case of *L. helle*, a better understanding of population dynamics and metapopulation interconnectivity. This, in turn, will lead to a much better management and more targeted application of direct measures and hopefully lead to a successful long-term conservation. The LIFE project has already contributed to a vastly improved data and knowledge exchange with other conservation bodies in surrounding countries (Gerhard Reuter, aves-ostkantone; Bernhard Theißen, Biologische StationStädteRegion Aachen e.V. - LIFE Rur und Kall; Alexander Rauw, Natagora - LIFE Papillons; Philippe Goffart, *L. helle* expert) and should continue to do so in the future. This provides an excellent basis for an improved coordination between the regions and allow for a more effective conservation effort.

During the monitoring of *L. helle*, other butterfly species are recorded as well. Species that are more difficult to determine are captured and placed in a magnifying cup. Pictures allow the re-evaluation of correct determination

Photographing birds from the distance can be a way to determine the species, as here *L. excubitor*, discovered during butterfly monitoring.

Action D2: Monitoring des parcelles fauchée/ pâturées et vérification de la bonne exécution du plan de pâturage

→ Expected results:

Monitoring de 135 ha de terrains pâturés et/ou fauchés.

Adaptations éventuelles de plan de pâturage/fauche élaboré dans le cadre de l'action A4. Management du pâturage/de la fauche orienté vers l'attente des objectifs de conservation des sites.

→ Budget:

Budget according to Grant Agreement	26,600.00 €
Budget spent	26,947.61 €

→ Activities and Outputs

The monitoring of the sheep and Galloway grazing (April - October) took place throughout the project duration through regular meetings every two weeks between Claude Schiltz, CNDS and the shepherd Weber. The grazed sites were visited regularly with or without the parties.

The results of the monitoring for the last three seasons of the project concerning grazing are in the document "Bilan du pasturage 2015-16-17" in the appendix 71.2.

A plan for the grazing sites was established at the beginning of the project and was adapted throughout the duration of the project and the different seasons. Observations, adaptations, and changes operated through the 5 years were used to adapt the grazing plan, establishing a routine itinerary, as documented in the appendix 71.1 & 71.2.

The observations showed that sheep exert a selective pressure on the bistort, therefore sensitive sites are grazed only from August after the main reproductive period of *L. helle* is over.

In general, all the sites grazed by sheep were grazed on 2/3 of the total area of the site, to ensure a resting space that is untouched. For some very sensible sites, as *Cornelysmillen* for the shepherd Weber, special measures and biodiversity contracts were engaged to ensure a 50% resting area of the site.

Additional mowing by Pistenbully was found to be a complementary measure, as the sheep, due to late season grazing, were often not eating enough biomass on those parts that were grazed, but were often only trampling the vegetation. These measures of additional mowing were always executed in respect to the rule of 1/3 of the surface being a resting site.

The impact of the high density of sheep on the sites was substantially reduced since 2015 as the shepherd Weber has built a new stable allowing him to separate his flock into smaller individual flocks better adapted to the patch sizes.

The sites subjected to restorative mowing are monitored the following summer. The analysis has led to the conclusion that the time of mowing needs to start earlier in order to reach better results. Especially *Epilobium* is a plant that colonises clear-cuttings and sites left to succession.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled				x	x			x	x			x	x			x	x					
Planning realised	x	x		x	x			x	x			x	x			x	x			x	x	

→ Indicators used to test the performance of the action

This action is used to test the performance of action A4 and C1.

→ Complementary actions outside LIFE

Ms Kayser has published an article "*How to manage habitats of the endangered lycaenid butterfly Lycaena helle (Denis & Schiffermüller, 1775) (Insecta, Lepidoptera)*" after she worked on her Master thesis in collaboration with the LIFE project. Available online at: http://www.snl.lu/publications/bulletin/SNL_2014_115_241_249.pdf

→ Perspectives

The monitoring and revision of site management during the LIFE project will lead to a better planned management of the sites of HfN after the project.

***L. helle* Site *Klengelbaach* was not managed during two season to give the parcel a resting period, due to the often unadapted grazing before the LIFE project.**

***In Lamischbaach,* along a tributary of the *Tretterbaach,* was grazed only partially this season, giving to the remaining part a prolonged resting period.**

Restorative mowing spaced out in time and seasons along the *Stauwelsbaach*, the last third of the parcel has been mowed by CNDS manually in 2017.

Site *Cornelysmillen* in 2013.

Site *Cornelysmillen* in 2017

Site *Fooschtbaach* in 2016

Site *Fooschtbaach* in 2017

Monitoring des actions de restauration hydrologique (action hors LIFE)

→ Activities and Outputs

1) Restoration of a water course

Trëtterbaach Léresmillen: Monitoring of the state before the remeandration project was conducted by SRC with the support of the LIFE Eislek team and co-workers especially for the electrofishing. The second monitoring will be carried out 5 years after the project. The monitoring includes:

- higher plants (terrestrial on the brooks and water plants of the riverbed)
- macroinvertebrates (IBGN)
- fishes (BIP)
- sediments (Wolman)
- ornithology

The complete protocol is in the appendix 72.1 & 72.2. A conclusion on the monitoring can only be drawn in comparison to the final monitoring.

Trëtterbaach Breitwies: Even though the deflectors were carefully fixed at the brooks, two deflectors were washed away during winter 2013. The trunks were blocked approx. 100 m downriver where dead trees were already stuck in the river bed. This site provides shelter for young fish. The results of the deflector that remained after the first flooding event were impressive. The results in form of a remeandration were clearly visible during flooding events in winter. The last deflector was finally washed away in 2016.

2) Removing drains

The development of the site *Kiirchermillen* consequently to the closing of the ditches was followed the months after execution by the academic team. Some areas of the site have become considerably wetter. The water gathers primarily where the ditches were before. The stream does not flow in the thalweg, meaning that the deepest point is probably where the ditches were.

→ Indicators used to test the performance of the action

This action is used to test the performance of action C2.

→ Perspectives

Trëtterbaach Breitwies: an additional remeandration project is planned in the After LIFE for 2018. Monitoring will be carried out before the implementation in spring 2018 and 5 years after. The method will be adapted following the guidelines of AGE to make the results compatible with national monitoring programmes. Monitoring will be carried out by HfN.

The deflector (in brown) at *Breitwies* successfully deviated the *Tretterbaach* (in blue). Unfortunately it was washed away during the winter 2016.

Remeandration project at *Léresmillen*, orthophoto 2017.

Monitoring of the higher plants and sediments was provided as external assistance by Stream and River Consult.

Electro-fishing was done to make an inventory of the species present in the *Tretterbaach*. However it was also necessary to save the fish before the water is deviated from the old to the new riverbed.

Monitoring des actions de restauration des prairies à bistorte et des mégaphorbiaies (action hors LIFE)

→ Activities and Outputs

1) Rhizome transplantation

At the experimental set-up, first leaves were observed only 3 weeks after rhizome transplantation at the end of April, after 2 months the majority of the plants were in blossom, at the end of July seeds had been produced. Monitoring of the experimental set-up focussed on the counting of stems, number of leaves per stem and number of blossoms per stem (appendix 73). Additionally the different sites were visited yearly to observe the propagation of the bistort.

The following observations were made:

- Rhizome density: squares with 50 rhizomes show proportionally less stems compared to those with 10 or 30 rhizomes.
- Humidity gradient: drier patches had more stems and more leaves and blossoms per stem than patches saturated with water.
- Past management: the past exploitation of a site is important for a successful rhizome transplantation. Competition, rather than soil characteristics, seems to be a main factor. Before introducing *P. bistorta* at a new site, ruderal species need to be controlled through repetitive mowing.

2) Seeding

No successful methodology for seeding could be established (appendix 26).

3) Hay transfer

Almost all plants present at the donor parcel were found in the reconverted acre. They are still in low numbers but this is normal as meadows need more time to be restored.

4) Outside LIFE:

Sanguisorba officinalis: In the year after introduction, monitoring of *S. officinalis* showed very good results, largely over 50% of the plants were found again. Three years after introduction, however, only about a fourth of the *Sanguisorba* planted were discovered. On several sites, they had disappeared altogether (appendix 74). This could also be related to the very dry summer or an unfavourable timing of monitoring.

Eriophorum angustifolium: None of the seeds of *Eriophorum* blossomed.

→ Indicators used to test the performance of the action

This action is used to test the performance of action C4.

Action D3: Evaluation de la restauration des fonctions écosystématiques et de l'impact socioéconomique des actions du projet

→ Expected results:

Une étude relative à l'impact socio-économique des actions du projet sur la population et sur l'économie locale, ainsi que ses effets sur la restauration des fonctions écosystémiques présenté sous forme de rapport remis avec le rapport final.

→ Budget:

Budget according to Grant Agreement	8,900.00 €
Budget spent	7,247.01 €

→ Activities and Outputs

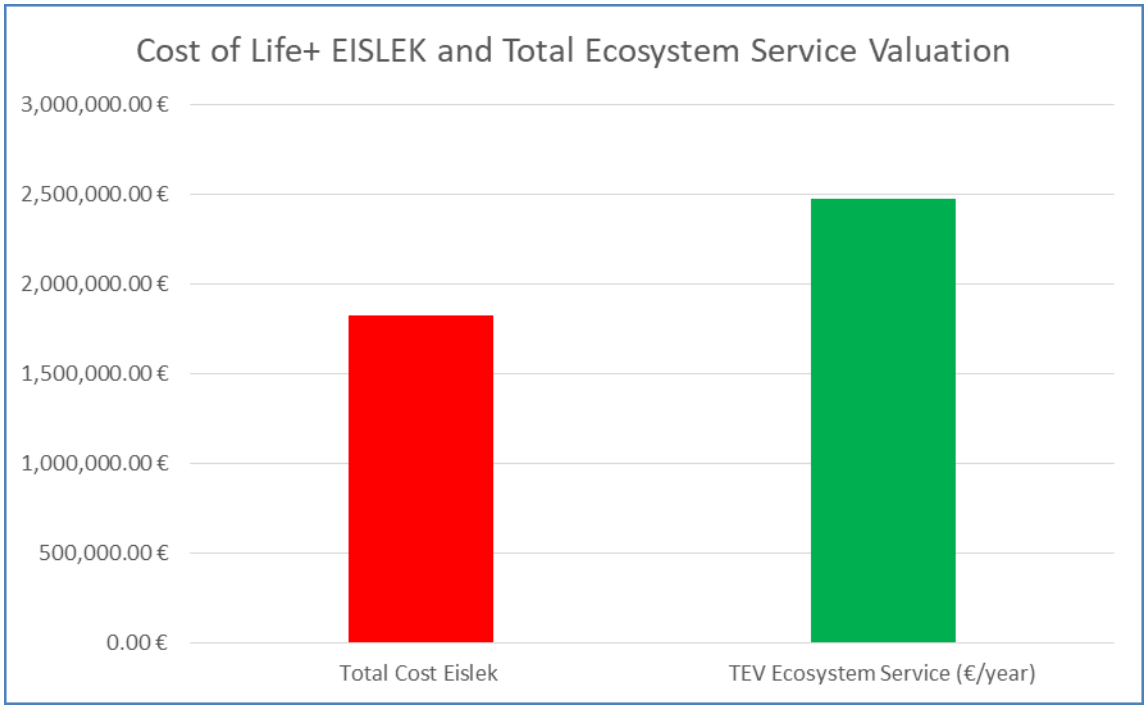
A study, focussing primarily on ecosystem services was carried out with external assistance. Due to the limited budget foreseen in the LIFE Eislek project, the study was conducted with the aid of a trainee-student supervised by LIST (appendix 75).

Two different analysis were made:

1) Qualitative profile of the potential impact of ecosystem supply associated with the restoration activities promoted in LIFE Eislek. Use of InVEST to assess, value and explore the spatial distribution of the relevant ecosystem services (change from land cover 2007 to 2030):

   - sediment delivery ratio: estimated reduction of 3,487 tons of sediment per year due to removal of spruce and reinstatement of wetland.
   - water yield: reduction of 12.520 m^3.
   - carbon sequestration: loss of 1,119.56 Mg following removal of spruce forest.
   - pollination service: no quantitative change due to limitations of methodology and date used as input.
   - cultural ecosystem services and socio-economic benefits: education, recreation, economic benefits such as employment, implication of local contractors, gain in knowledge, livestock rearing.

2) Final quantitative analysis of the socio-economic benefits and costs of the LIFE Eislek project on the overall supply of the ecosystem services: The final reported cost of LIFE Eislek is 1,869,975.58 € (LIST did not have the last numbers) compared to a Total Economic Value of ecosystem services of 2.479.723,76 € per year.



→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled																			x	x	x	
Planning realised															x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Products	Deadlines	Progress
Study on socio-economic and ecosystem impacts	31.08.17	The study has been finalised by LIST. A publication of the results in a scientific paper is foreseen.

Action E1: Actions d'information et de sensibilisation du grand public

→ Expected results:

L'action E1 créera et permettra d'organiser:

- 1 identité graphique du projet
- 1.500 dépliants de présentation du projet
- 4 panneaux explicatifs, 4 panneaux roll-up
- au moins 20 panneaux de chantiers
- au moins 10 visites guidées de sites à l'occasion des journées mondiales de l'eau, des journées mondiales des zones humides, et de la campagne de sensibilisation "En Daag an der Natur"
- 6 chantiers nature
- 1 caillebottis
- 2 événements
- au moins 15 articles de presse.

→ Budget:

Budget according to Grant Agreement	61,050.00 €
Budget spent	74,656.37 €
Outside LIFE	15,160.72 €

→ Activities and Outputs

Table 17. Overview of results of action E1

Type of action	Objective	Results	% of objective
Graphic identity	1	1	100 %
Flyer	1.500 ex.	1500 ex.	100 %
Roll-ups	4	4	100 %
Provisional signs	> 20	>20	100 %
Display boards	4	5	125 %
Guided tours	10	14	150 %
Chantiers nature	6	6	83 %
Walking board	1	1 (+trail)	100 %
Articles	15	78	>100%
Press conference	/	1	/
Radio/Television	/	4	/
Fair, markets,…	/	15	/
Introductory event	1	2	200%
Closing event	1	1	100 %

1) Materials

The first step was the creation of a graphic identity to give the project an identification and better visibility. Atelier Kurth was charged with the design of the logo (appendix 86) as well as the other dissemination materials, such as a PPT template (appendix 87). Additionally, 2,000 sheets of stationary (appendix 88) were printed with the graphic identity of the project. 1,500 flyers (appendix 89) were designed and printed within the first year of the project. The 4 roll-ups (appendix 90) were set up at every event that the LIFE Eislek organised or participated at. In the areas of action, provisional signs (appendix 91.1) were set up to inform passers-by of the works carried out and their backgrounds. The signs that we used at first (laminated paper) were not very durable, therefore we had a corrugated PVC sign designed and printed 20 times. Additionally a sign was printed for the stable (appendix 91.2) and for the remeandration project (appendix 91.3). The display boards (appendix 92.1 – 92.10) and walking boards were set up along a an additional loop to the leading quality trail Escapardenne, inaugurated by the LIFE Eislek project.

2) Events

The introductory event included a press conference on the 20.11.12 (appendix 93) and two presentations to the public in Munshausen (12.12.12) and Boulaide (20.02.13) (appendix 94). An important part of the dissemination actions were the guided tours through nature reserves managed by the project. The guided tours were announced in "En Dag an der Natur", a yearly brochure published by n&ë. The "Chantiers nature" were organised in the project area by the coordinating beneficiary as part of the "Fit by Nature" programme of n&ë. The closure event was at the same time the inauguration of the walking trail (14.05.17) (appendix 95). A determination course on butterflies with compilation of a handout for participants (appendix 96) was organised in mars to july 2017. Furthermore, LIFE Eislek has participated at several fairs, markets and other events.

The complete list with events that were organised is in the appendix 97.

3) Press releases

Numerous articles on the LIFE Eislek project were published (appendix 98.5), some in the organisation's magazine "Regulus", others in local magazines such as "Cliärrwer Kanton" or national newspapers like "Wort". Additionally, we were in three radio shows and had one presence on TV. The LIFE Eislek also participated at the Natura 2000 awards 2015. A film was made about the remeandration project:

https://www.youtube.com/watch?v=YIJvWHrQonQ (appendix 99).

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Milestones	Deadlines	Progress
Introductory event	31.05.13	Press conference : 20.11.12 Event: Munshausen (12.12.12), Boulaide (20.02.13)
Flyer, Roll-up's	30.04.13	The flyer and roll-up's have been in use since the first year of the project.
Display boards	~~30.04.16~~ May 2017	The display boards were installed with delay.
Walking boards	~~30.04.16~~ May 2017	The walking boards were installed with delay.
Closing event	30.06.17	The closing event was on the 14.05.17.

→ Technical and/or financial modifications and justification

A walking board of 250 m was planned in the technical application form. The walking board installed at *Léresmillen* has a length of only 200 m. Even though it was not foreseen in the application, we decided to work out a concept for a walking trail of about 3 km incorporating the walking board as well as the foreseen display boards. This way we will be able to reach a higher visibility than with individual infrastructures distributed throughout the project area. We did not receive an authorisation for the trail as initially planned, so that we had to revise the course of the trail and walking board (appendix 100).

→ Major problems/ drawbacks/ delays

There was a slight delay in setting up the walking board and display boards as they were linked to the remeandration project at *Léresmillen*.

→ Complementary actions outside LIFE

Part of the additional budget applied for at RBC (appendix 21) was used for the installation of infrastructures along the trail. A total of 12,808.83 € provided us with a parking area, observation platform, bench and the relocation of the historical sluice (renovated by the community of Wincrange).

The "Naturpark Our" financed an additional information board along the LIFE Eislek trail (appendix 91.10).

Alan Johnston, an independent artist based in Luxembourg has written and illustrated a book on the wetlands in the Eislek region. As an illustrator of flora and fauna, he has already published several books on nature and conservation. In his new book, HfN, the LIFE Eislek project and its three target species are presented with texts and drawings (appendix 101).

→ Perspectives

The experiences made during the project and the methods worked out for the different actions will be published to allow other conservationists to gain from these data. The display boards will inform the public of the main results aimed for and achieved throughout the project's duration. The dissemination will be continued (see more info in the After LIFE document).

An information board informs the public about the remeandration project and historic watering techniques.

With the walking boards, the feet will remain dry on a stroll through the wetlands of the Eislek region.

The LIFE Eislek trail was inaugurated in the presence of the community officials.

Joint venture: LIFE Orchis and LIFE Eislek organised a workshop at the Food for your Senses Festival.

The Grand Duke of Luxembourg walked the LIFE Eislek trail on his yearly visit to HfN © Cour grand-ducale Claude Piscitelli

A determination course for butterflies was organised with the aim of gaining volunteers for monitoring.

The sheep walks are a great success with the general public as well as at the visit with the Grand Duke and the international seminar.

Action E2: Mise en ligne d'un site internet

→ Expected results:

A travers le site web, un nombre important d'utilisateurs pourra être sensibilisé. Le site web pourra mettre en relation les bénéficiaires du projet avec des scientifiques et des projets similaires dans la grande région et dans le monde entier.

→ Budget:

Budget according to Grant Agreement	24,735.00 €
Budget spent	25,053.33 €

→ Activities and Outputs

A provisional website was online since November 2011. A print screen was provided with the inception report (appendix 102). The definite version is online since 14.12.13 at www.life-eislek.eu. It works with opensource wordpress and the basic site was set up by Atelier Kurth. The software is easy to handle and was updated regularly by the project team. The site is visually attractive and set up with the same concept as the flyers, roll-ups and information signs. The site is online in German and French. An English summary is also available. The site was updated about every two weeks with news. The news were then automatically posted on the project's Facebook wall. The email address info@life-eislek.lu is functional as well and will remain available at least for the next 5 years.

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Number of visitors:

- homepage: 6,239 sessions in total.
- homepage: 14,223 page views of which 11,383 unique page views (appendix 103).
- Facebook: 328 likes of the LIFE Eislek page.

Milestones	Deadlines	Progress
Website	31.12.12	The website was online on time.

→ Perspectives

The website will remain functional for five years after the end of the project.

Action E3: Actions d'information et de sensibilisation du monde agricole

→ Expected results:

L'action E3 réalisera :

- l'organisation d'au moins 4 soirées d'information ou conférences sur l'ensemble de la zone du projet
- la publication d'au moins 5 articles dans la presse spécialisée
- l'organisation d'au moins 4 visites de terrain sur l'ensemble de la zone du projet.

→ Budget:

Budget according to Grant Agreement	16,315.00 €
Budget spent	15,799.03 €

→ Activities and Outputs

Table 18. Overview of results of action E3

Type of action	Objective	Results	% of l´objective
Information meetings	4	4	100 %
Articles	5	5	100 %
On-site visits	4	3 (+ 1 planned → no interest)	75 %
Professional fairs	/	2	/

In order to guarantee nature protection at a larger scale, cooperation with local farmers is mandatory. Therefore the project organised information events and on-site visits:

- In the project area, three sites were classified as nature reserves by the Luxembourgish Government. The LIFE Eislek team contributed to dissemination of the classification:
  - 09.07.13 Two information meetings and two site visits with concerned farmers (~50 participants)
  - 24.09.13 On-site visit with agents of the administrations (ANF) and seven individual meetings with farmers particularly concerned by the reserves.
- Organisation of an information meeting on the subject pesticides "Einsatz von Spritzmitteln - wie können ihre negativen Auswirkungen reduziert werden?" in collaboration with the LIFE Unio project (appendix 104).
  - 04.03.15 Information meeting in Heinerscheid: about 30 farmers visited the lectures. After a short introduction of the two LIFE projects, Jacques Engel (ASTA) presented the laws concerning the use of pesticides, Alain Majerus (CA) presented a talk on how to reduce the negative impacts of pesticides and Gerber van Vliet (IBLA) presented alternative agriculture without the use of chemically synthesised sprays. The power point presentations can be

downloaded from the LIFE Eislek homepage. The event was announced in *De letzeburger Bauer* (appendix 98-41).

- Organisation of a site visit and information evening with the famous couple Bourguignon working on soil composition: the site-visit consisted of a comparison of a traditional and an organic acre, their soil quality and microorganisms in the soil, their work was elaborated more in depth in a speech the same evening (appendix 105). The event was announced in *De letzeburger Bauer* (appendix 98-47).
- A site visit was planned for the 28th July 2017, however, there was no interest for the event, so that it did not take place in the end.

In addition to direct contact with the land users, 5 articles in specialised press were foreseen:

- appendix 98-27: an article introducing the LIFE Eislek project and the Natura 2000 platform was published in *De Letzebuerger Bësch.*
- appendix 98-29&30: the LIFE Eislek was presented in the brochure of the *Internationale Grünlandtage*, that were part of the Foire agricole in 2014.
- appendix 98-50: an article explaining the concrete consequences and benefits of the Natura 2000 network for farmers in a question/answer style was published in the *Allianz* in collaboration with the CA and private forest owners.
- appendix 98-75: the results of the LIFE Eislek were presented and a site-visit announced in *De letzeburger Bauer.*
- appendix 98-77: the results of the LIFE Eislek were presented and a site-visit announced in the *Allianz.*

The project was also represented at the foire agricole, the largest agricultural fair in Luxembourg, in 2013 and 2014. In 2013 a poster was printed for the public with an agricultural background. In 2014, the "Internationale Grünlandtage" were based at the agricultural fair and the coordinating beneficiary participated at the planning events concerning the "Grünlandtage" (29.01.14, 11.02.14, 24.04.14). During the fair we organised a workshop for children concerning biodiversity and conservation while also answering questions of the land users concerning our organisation and project.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning revised						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Perspectives

The connections build up with the land users during the duration of the project will be kept up after termination of the project to improve the state of the agricultural land surrounding the managed nature reserves. This action will for the most part be taken over by the CA in the After LIFE.

Action E4: Organisation d'un séminaire international

→ Expected results:

Un séminaire international est un événement primordial pour diffuser les résultats d´un projet et rassembler les experts relatif aux espèces cibles sur lesquelles on a travaillées.

→ Budget:

Budget according to Grant Agreement	13,870.00 €
Budget spent	19,393.91 €

→ Activities and Outputs

The international seminar took place on the 1st and 2nd of June 2017 at the castle of Clervaux to present the results of the LIFE project and put them into a national and international context. The programme of the first day consisted of 11 presentations, for the second day we planned an excursion (appendix 106). The seminar started with a talk on biotope networks to set the context, followed by an overview of the results of the LIFE project, and then followed by international speakers on the target species, always setting up the context for speeches on the monitoring results of the LIFE project. The afternoon was about partners / collaborators of the project: agriculture, solidarity economy, ecosystem services and restoration of the *Trëtterbaach* (presentations appendix 107).

For the site visit, we walked on the new walking trail with the walking boards and information boards followed by a tasting of the products of the itinerant shepherd and a sheep walk. A total of 88 international participants were welcomed for both days.

→ Time Schedule

Yaer	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled																				x		
Planning realised																				x		

→ Indicators used to test the performance of the action

Milestone	**Deadlines**	**Progress**
International seminar	31.05.17	The seminar took place on the 1st and 2nd of June 2017.

The international seminar at the end of the LIFE Eislek project counted 88 participants.

The results of the LIFE project were presented by Mireille Molitor on the first day of the seminar.

SRC explained the remeandration project to the participants at the second day of the seminar.

The practical implementations were explained on the LIFE Eislek trail, here on the walking boards.

Lunch was a tasting of products by the itinerant shepherd served beside the cattle shelter.

A sheep walked terminated the seminar. The feedback from the participants was very positive.

Action E5: Rapport de vulgarisation

→ Expected results:

L´action E5 mènera à un rapport de vulgarisation faisant une dizaine de pages richement illustrées. Il sera publié en français et anglais et imprimé en 500 exemplaires.

→ Budget:

Budget according to Grant Agreement	16,075.00 €
Budget spent	15,677.56 €

→ Activities and Outputs

The text of the Layman report was compiled by the LIFE team, the design was taken over by Atelier Kurth. It includes the following sections:

- Cultural history of the Eislek region
- Reasons for a LIFE project
- Target species
- Implementation of restorative management
    - initial care on fallow land
    - hydrological restoration of drained areas
    - restoration of valleys planted with coniferous woods
    - restoration of bistort and other species-rich meadows
    - construction of infrastructure and supervision of grazing management
    - sensibilisation of farmers and general public
- LIFE Eislek in Numbers
- Monitoring
- Partners

The report was printed 400x in German (appendix 85.1) and 100x in English (appendix 85.2) and distributed at the seminar.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled																				x		
Planning realised																				x		

→ Indicators used to test the performance of the action$

Products	**Deadlines**	**Progress**
Rapport de vulgarisation	30.06.17	The report was printed on the 30 mai 2017.

Action F1: Gestion administrative et financière du projet

→ Expected results:

Le résultat attendu est un bon déroulement du projet exécuté par l´équipe du projet, grâce à l'encadrement et l'appui du comité de pilotage.

→ Budget:

Budget according to Grant Agreement	151,990.00 €
Budget spent	155,056.61 €

→ Activities and Outputs

T-shirts and Hoodies	15.05.13	1836.09€
Laptop	24.01.14	1495.00€

1. Project management: cf. section 4

The LIFE Eislek team was almost completely present at the visit by the Grand Duc

(from left to right): Weber couple with sheepdog, Kevin Jans (HfN), Mireille Molitor (HfN), Claude Schiltz (HfN), Michelle Clemens (HfN), Serge Leyder (CNDS), Mikis Bastian (n&ë asbl), Marc Jans (CNDS)

Divers

- participation at piloting committee LIFE Resto Unio 14.11.12, 18.11.13 & 01.10.14
- Visit Marco Schank, delegated Minister of MDDI at CNDS Natuaarbechten in Binsfeld 26.11.14

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

→ Indicators used to test the performance of the action

Product	Deadlines	Progress
Financial audit	30.09.17	The audit took place on the 8, 9, 10 November 2017 (appendix 115)

→ Major problems/ drawbacks/ delays

The project has been affected by numerous sick leaves. Claude Schiltz got an artificial hip in 2015 and was not able to work for 4 months (January-April). Serge Leyder had a work accident in 2014 and was absent for five and a half months (October ´14-April ´15). Cédric Lambrée had diverse health problems and accumulated a large number of sick leaves. We tried to manage these sick leaves with philosophy but we have to admit that sometimes the work planning got mixed up. We had to be very flexible and improvise last minute solutions.

Action F2 : Suivi du projet : évaluation de la mise en œuvre des actions

→ Expected results:

Mise en place d´un système de suivi du projet basé sur une série d'indicateurs de suivi permettant d'apprécier les résultats par rapport à des objectifs quantifiés préétablis. Les résultants attendus de cette action sont principalement une bonne exécution du projet, sans retard de délai. Cette action permettra également de mettre en évidence les difficultés particulières et d'y remédier au plus vite.

→ Budget:

Budget according to Grant Agreement	5,815.00 €
Budget spent	6,439.48 €

→ Activities and Outputs

Indicator	Target value	Result	Met objectives ?
Action A1: **- Programme d´action de restauration des habitats rédigé?**	1	1	✓
Action A2: **- Planification technique des chantiers aboutie ?**	1	1	✓
Action A3: **- Plans de gestion rédigés et approuvés juridiquement ?**	10	10	✓
Action A4: **- Plan de pâturage rédigé ?**	1	1	✓
Action A5: **- Méthodologie du monitoring élaborée?**	1	1	✓
Action B1: **- Nbre d´hectares acquis ?**	30	32.57	✓
Action C1: **- Nbre d´hectares débroussaillés** **- Nbre d´hectares où une première fauche a été réalisée**	10	8.0 41.4	✓
Action C2: **- Nbre d´hectares re-humidifiés** **- Nbre de mètres de cours d´eau avec rehaussement du lit**	15 1.500	3.5 709	(✓) (✓)

- Nbre de m de drains bouchés	500	587	✓
Action C3: **- Nbre d´hectares désenrésinés** **- Nbre d´hectares de rémanents de coupe nettoyés** **- Eclaircie**	 5 15 /	 4.0 14.6 1.2	 (✓) (✓)
Action C4: **- Hectares de prairies à bistorte/mégaphorbiaies restaurées**	10	11.2	✓
Action C5: **- Nbre de haies/arbres isolés plantées**	7.000	7626	✓
Action C6: **- Abri pour bétail installé?** **- Passes à bétail installées ?** **- Abreuvoirs installés ?** **- Nbre de mètres de clôtures installées ?** **- m de clôtures amovibles achetées ?**	 1 5 5 12.5 500	 1 2 1 12.5 /	 ✓ (✓) x ✓ x
Action C7 **- Nbre d´exploitants agricoles conseillés ?** **- Nbre d´hectares extensifiés ?**	 50 50	 17 70.58	 x ✓
Action D1: **- Nbre de sites N2000 monitorés ?**	11	11	✓
Action D2: **- Nbre de ha monitorés ?**	135	>135	✓
Action D3: **-Etude réalisée?**	1	1	✓
Action E1: **- identité graphique et logo de projet développés?** **- dépliant imprimé?** **- panneaux réalisés?** **- panneau Roll-up réalisés?** **- Nbre de panneaux de chantiers installés** **- Nbre de visites guidées organisées** **- Nbre de chantiers nature organisés** **- Caillebotis installé**	 1 1 4 4 20 10 6 1	 1 1 5 4 >20 14 6 1	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

- Nbre d´articles parus dans la presse écrite, audiophonique et télévisuelle	15	81	✓
- Événement de lancement organisé?	1	2	✓
- Évènement de clôture organisé?	1	1	✓
Action E2			
- Site internet mis en ligne	1	1	✓
- Mises à jour régulières?	1	1	✓
Action E3			
- Nbre de soirées d´information organisées ?	4	4	✓
- Nbre de publications dans la presse spécialisée ?	5	5	✓
- Nbre de visites de terrain organisées ?	4	3	x
Action E4			
- Séminaire international organisé ?	1	1	✓
Action E5			
- Rapport de vulgarisation publié?	1	1	✓
Action F1			
- Personnel engagé/désigné?		✓	✓
- Nbre de réunions du comité de pilotage	5	5	✓
Action F2	/	/	/
Action F3			
- Nbre de contacts avec conservateurs de réserves et experts	/	22	✓
- Nbre de projets visités	/	13	✓
- Nbre de colloques auxquels on a participés	/	22	✓
- Nbre de formations auxquelles on a participées	1	2	✓
Action F4			
- Après LIFE rédigé?	1	1	✓

Table 19. Area restored for each habitat type and Natura 2000 area (in ha). Each site is only counted once, even if more actions have taken place on the same site.

N2000 site / Habitat	Our	Tretterbaach	Breichen	Wiltz	Sure	Conzefenn	Cornelysmillen	Kaleburn	Sporbaach	O-Troisvierges	O-Wincrange	
6410	5.01											
6510	3.21						2.15					
BK04 (national habitat code: Magnocaricion)							2.88					
BK08 (national habitat code: standing water bodies)								0.60				
BK10 (national habitat code: Calthion meadows)		17.38									4.78	
BK11 (national habitat code: fallow wetlands, spring swamps, fens and small sedge fens)		28.60	1.32	15.08	2.99		27.71		2.73	16.54	0.21	
none	0.28	9.71		2.16	0.96	2.95	9.47		1.06	0.47	11.05	
TOTAL	**8.50**	**55.69**	**1.32**	**17.24**	**3.95**	**2.95**	**42.21**	**0.60**	**3.79**	**17.01**	**16.04**	
												169.30 ha

Total area restored for the LIFE project: **169.3 ha.**

Initial output indicators (appendix 109.1)

Final output indicators (appendix 109.2)

→ Time Schedule

Year	2012		2013				2014				2015				2016				2017			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x			x				x				x				x					x	
Planning realised	x			x				x				x				x					x	

Action F3: Networking avec d'autres projets et experts

→ Expected results:

Cette action vise à rassembler et élargir toutes les connaissances sur nos espèces cibles et le savoir-faire en matière de restauration de leur habitat dans l'objectif d'assurer leur protection à l'échelle de la Grande-Région et de l'Europe.

→ Budget:

Budget according to Grant Agreement	27,850.00 €
Budget spent	24,313.65 €

→ Activities and Outputs

During the project we had numerous exchanges with other LIFE projects, experts in different fields and created contacts with national and international actors. Furthermore we participated at 22 seminars. Through this action we had the opportunity to deepen our knowledge and get important contacts. The complete list of networking is provided in the appendix 76 with the according appendixes (77 – 83).

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Planning realised	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

CNDS: visit at Hof Imsbach, a bioland farm operated by *Naturschutzstiftung Saar* with rare animal breeds grazing in nature reserve.

Networking with *Biologische Station Städteregion Aachen*, that operates two LIFE projects: LIFE Rur&Kall and LIFE Patches & Corridors.

Action F4: Plan de conservation Après-LIFE

→ Expected results

L´action aboutira sur un "After-LIFE conservation plan" et un "After LIFE Communication plan".

→ Budget:

Budget according to Grant Agreement	0 €
Budget spent	0 €

→ Activities and Outputs

The After LIFE plan is presented as a separate document in appendix 84.

→ Time Schedule

Year	**2012**		**2013**				**2014**				**2015**				**2016**				**2017**			
Trimester	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Planning scheduled																			x	x	x	
Planning realised																			x	x	x	

→ Indicators used to test the performance of the action

Products	**Deadlines**	**Progress**
After LIFE conservation plan	31.08.17	The After LIFE plan is provided with the final report.

Timetable

Action		2012			2013				2014				2015				2016				2017			
Action number	Name of the action	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
A. Preparatory actions, elaboration of management plans and/or action plans																								
A.1	Etablissement d'un programme d'actions de restauration des habitats des espèces cibles		■	■	■	■	■	■	■	■	■	■												
A.2	Planification technique des actions de restauration des habitats des espèces cibles		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
A.3	Contribution à l'élaboration de plans de gestion des sites Natura 2000 du périmètre de projet		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
A.4	Etablissement de plans de pâturages et/ou de fauche des réserves naturelles		■	■	■	■	■	■	■				■				■				■			
A.5	Travaux préparatoires au monitoring des espèces cibles dans le périmètre du projet		■	■	■	■											■							
B. Purchase/Lease of land and/or rights:																								
B1	Maîtrise foncière		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
C. Concrete conservation actions:																								
C.1	Restauration de zones humides à l'abandon et/ou embroussaillées			■	■		■	■	■		■	■	■		■	■	■		■	■	■		■	
C.2	Restauration hydrique de zones humides asséchées						■				■		■			■			■			■		
C.3	Restauration de zones humides enrésinées		■	■	■	■	■			■	■				■				■				■	
C.4	Restauration de prairies à bistorte et de mégaphorbaies					■				■	■			■	■			■				■		
C.5	Plantation de structures ligneuses					■		■	■			■	■			■	■			■	■			
C.6	Acquisition et installation d'infrastructures relatives au pâturages					■				■				■					■			■	■	

C.7	Suivi et conseil d'exploitants agricoles travaillant au sein de zones Natura 2000										■	■	■	■	■	■	■	■	■	■	■	■	■	
D. Monitoring of the impact of the project actions:																								
D.1	Monitoring des populations des espèces cibles					■				■				■				■				■		
D.2	Monitoring des parcelles fauchée/ pâturées et vérification de la bonne exécution du plan de pâturage					■	■			■	■			■	■			■	■					
D.3	Evaluation de la restauration des fonctions écosystématiques et de l'impact socioéconomique des actions du projet																■	■	■	■	■	■	■	
E. Public awareness and dissemination of results																								
E.1	Actions d'information et de sensibilisation du grand public		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E.2	Mise en ligne d'un site internet			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E.3	Actions d'information et de sensibilisation du monde agricole							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
E.4	Organisation d'un séminaire international																					■		
E.5	Rapport de vulgarisation																					■		
F. Overall project operation and monitoring																								
F.1	Gestion administrative et financière du projet		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
F.2	Suivi du projet : évaluation de la mise en œuvre des actions					■				■				■				■					■	
F.3	Networking avec d'autres projets et experts		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
F.4	Plan de conservation Après-LIFE																				■	■	■	

Dissemination actions

Objectives

The LIFE Eislek project needs to raise public awareness in order to involve people in nature conservation. Sensitisation of the public leads to a better acceptance of the works we do at natur&ëmwelt in general and the LIFE Eislek project more specifically. By promoting the LIFE project, we give the public a better understanding of the Natura 2000 network, conservation at European, at national and at local level.

The project was present at all the larger markets and fairs in the Eislek region where we presented its goals and specific actions through the use of the dissemination material produced within the framework of the project. Different games and quizzes were supposed to teach the public in a playful way. Guided tours and “chantiers natures” allowed to more specifically show and explain very concrete works carried out by the project. The presence at agricultural fairs and specific information events planned for land users helped to build up a connection between the NGO and the agricultural world. A constant presence in the press through the publication of articles in a large variety of newspapers, magazines, scientific journals, the radio and TV increased the visibility of the project towards different social groups.

Flyers were printed for distribution primarily to people concerned with the project such as land owners, land users and contractors, but also as additional information material for people participating at activities organised by the NGO and/or the LIFE Eislek project.

The website and Facebook page allowed people interested in the project to follow the development of the project through regular updates in the news section. It was also supposed to serve other environmental managers as information source. It will be kept up for five years after the end of the project. The LIFE Eislek trail with its information signs will additionally inform the public of the works carried out in the project after the project has terminated. The Layman’s report presents a good overview of the goals reached by the project at the end of its five years.

The international seminar was a way to disseminate the methods elaborated and experiences made on a more scientific basis.

Dissemination: overview per activity

View technical part Actions E1 – E5

Evaluation of Project Implementation

→ Methodology applied

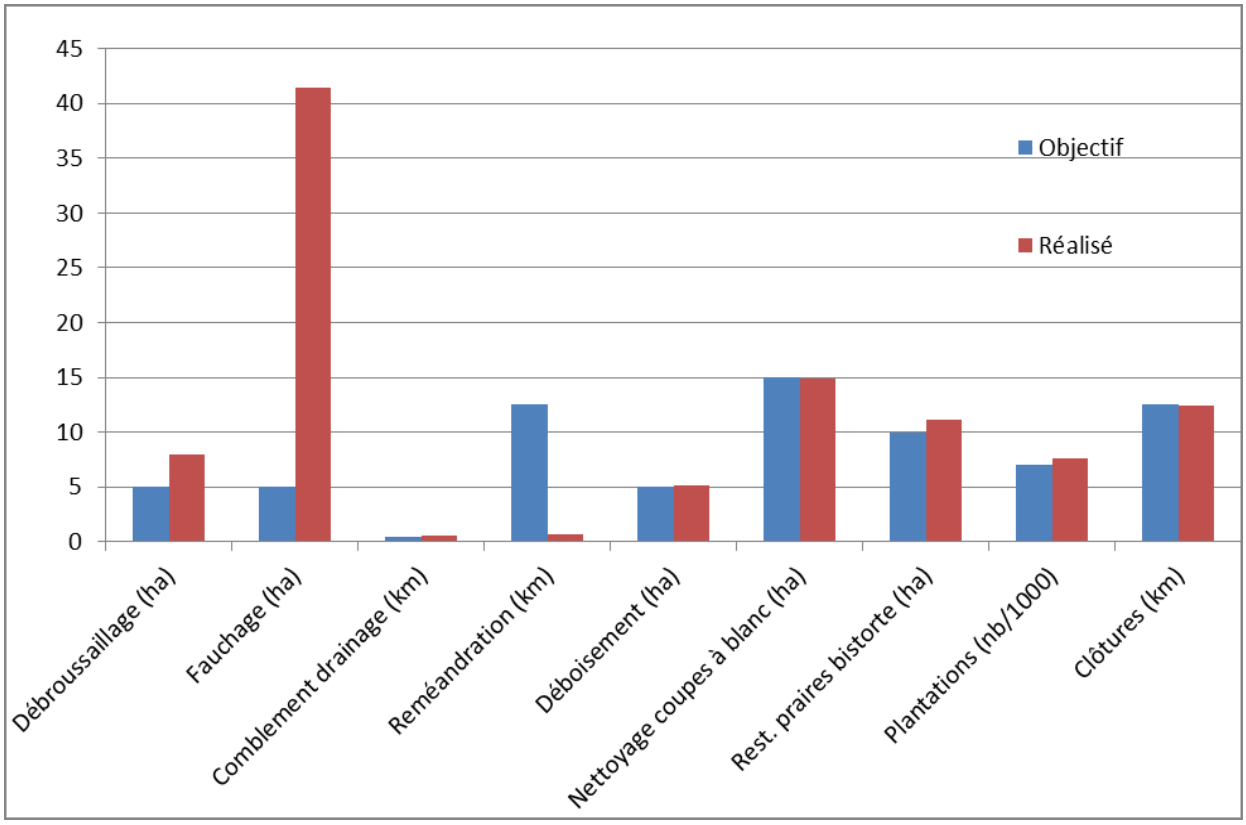
Action	Methodology	Success	Failure	Results	Cost-efficiency
C1- shrub clearance	chainsaw	- possibility to integrate social company - no access route needed - precision	- shoots need to be recut → not a long term solution - only on small scale	5.90 ha	LIFE: personnel costs of foreman Outside LIFE: 300 € / day → cost-effective on small scale
	cable winch	- no shoots - water-filled depressions	- access needed - costly	0.06 ha	526.50 € / 0.06 ha = 8,775 € / ha one site only, cheaper options plausible
	milling	- large scale	- access needed - nutrients liberated from mulch	1.90 ha	3,332 € / ha (TVA incl.) cost-effective only on large scale
C1- mowing of wetlands	manual	- possibility to integrate social company - no access route needed - available for small sites	- only on small scale - labour intense	11.02 ha	LIFE: personnel costs of foreman Outside LIFE: 300 € / day → cost-effective on small scale
	Pistenbully	- large sale - picks up cuttings	- access needed	31.33 ha	1,963.50 € / ha (TVA incl.) → cost-effective only on large scale
	access to nature reserves	- mechanical treatment possible - maintenance of abandoned grassland	/	7.9 ha	Costs for 2 sites: 11,188.58 € → expensive BUT long-term solution

C1- disposure of cuttings	compost and incorporate into the soil	- prospects - reuse	- storage space needed	2 recipients	only transport costs: 5 hrs = 351 €
C2- stream restoration	remeandration with pre-profiling	- innovative project - restoration accelerated by 10 years through profiling	- costly - complex planning procedure	294 m	+/- 130,000 € → costly measure
	deflectors	- seized opportunity at clear-felling - no cost	- deflectors washed away - only possible if limited depth erosion	73 m	0 €
	Removal pipes, blocking trenches	- involvement of water administration - no cost	- only possible for small streams with specific profile	341 m	0 €
C2- undo drainage	filling trenches	- easy to implement - low cost - ponds as by-product	/	587 m	4,464.72 € → low costs
C3	clear-felling	- removal of spruce	- erosion on short-term	4.0 ha	Income: 57,062.50 €
	clearance/ mulching	- reestablishment of species-rich meadows when soil properties good - best results after exportation & milling	- occurrence of ruderal species on old clear-fellings - follow-up treatment necessary	14.6 ha	3,332 € / ha (TVA incl.) → one-off treatment
C4	Rhizome transfer	- possibility to integrate social company - easy to implement - successful when soil properties good	- labour intense	3.7 ha	LIFE :personnel costs of foreman Outside LIFE: 300 € / day
	Seeding	/	- not successful	~~6.2 ha~~	/
	Hay transfer	- possibility to integrate social company - easy to implement	- donor parcel needed - bistort needs to be introduced separately	1.3 ha	LIFE :personnel costs of foreman Outside LIFE: 300 € / day

C5	Planting of linear structures	- possibility to integrate social company - easy to implement	- "Heck vun Hei" expensive	7626 plants	costs depend on planting material
C6- installation of grazing infrastructure	cattle shelter	- facilitates the work of tenants - winter refuge for Galloway	- costly	28.5 ha grazed by Galloway	54,516.52 €
	cattle truck	- mobility of Galloway	/	1 truck	15,400 €
	fences	- facilitates the work of tenants - relaunch management - improves acceptance of specifications → when we invest, we can specify management	- discussions with hunters	12.5 km fences	21,677.11 €
	cattle bridge	- increases mobility of cattle onsite	/	2 bridges	5,783 €
	trough	- brooks fenced out, trough allows access to water - creation of migration corridors and feeding habitat	- farmers do not want pasture pumps - not enough slope for stream fed water tank - difficulties concerning authorisations (see A2)	1 solar pump	6,853.86 € solar pump costliest solution but in this case only solution
C7	Biodiversity contracts	- extensification of agriculture	- not always in line with targets	70.58 ha	subsidies

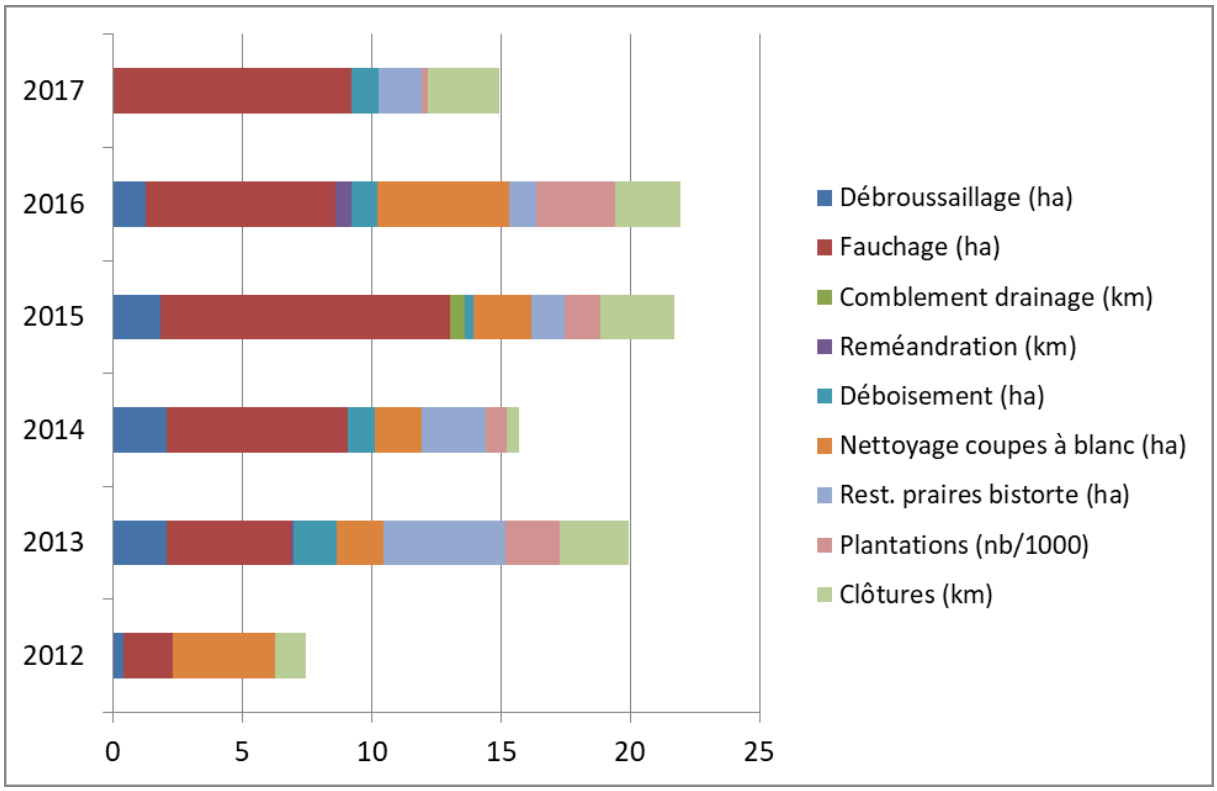
.

→ **Results achieved**



Task	Foreseen in the proposal	Achieved	Evaluation
Purchase of land	30 ha	32.57 ha	Land purchase being the main mission of n&ë HfN, we were able to fall back on a high level of experience in this domain and were able to reach the goals set in the application.
Restoration of abandoned wetlands	10 ha	49.4 ha	Thanks to contacts set up with firms working with low pressure mowing and milling machines, we were able to largely surpass the objectives. Parts of the costs, however, had to be financed via other means.
Removing drains	500 m	587m	This action was limited to one site. With the aid of a qualified contractor, we were able to fill more than the targeted length of trenches while creating two ponds.
Restoration of a water course	1500 m	709 m	The target was not reached. The action was considerably changed compared to the application due to various reasons (action A2). The result, not in numbers but in effect, is greater than with the originally planned method.

Restoration of conifer plantations	20 ha	19.7 ha	For the felling of conifers, the LIFE team profited from experiences made during previous projects. A new aspect was the clearing of the sites with conversion to grasslands. Several lessons were learned in the course of the project.
Restoration of bistort meadows	10 ha	11.2 ha	The objective was reached concerning the treated area, however, bistort did not establish on the total area, as seeding was not successful (6.2 ha). Rhizome is more labour intense but sufficient for reintroduction of bistort onto a site.
Planting of trees and hedges	7000	7626	Mobilisation of additional budget allowed to compensate the budget that was set to low for the use of autochthonous material "Heck vun Hei".
Infrastructures for grazing	1 shelter & purchase of 1 truck	1 shelter & purchase of 1 truck	The cattle shelter and cattle truck facilitate the work with the Galloways that graze 28.5 ha nature reserves belonging to n&ë HfN within the project area. Furthermore, bay hales of 4.9 ha mown by CNDS are stocked in the infrastructure.
	5 cattle bridges	2	Only 2 bridges, rather than the 5 foreseen, were needed. Their impact on the mobility of the sheep flock remains to be seen. The remaining budget was transferred to the creation of accesses to nature reserves.
	5 troughs	1	Instead of 5 pasture pumps or stream fed water tanks, 1 solar powered pump was installed. After initial problems with configuration, the farmer is happy with its functioning.
	12.5 km fences	12.5 km	The objective was reached. Several sick leaves delayed implementation. For some fences, we diverted to external assistance.
Extensification programs	50 ha	70.58 ha	The set target was surpassed, the implementation was delayed due to the revision of the subsidising programmes.



→ Monitoring of project results

Most of our actions are visible immediately after the implementation but do not show their full impact in the first year(s). The monitoring of the actions is explained in the technical part (D actions).

Restoration of abandoned wetlands: shrub removal and restorative mowing show immediate results, opening fallows and reducing thatching of the undergrowth. The impact depends on the initial state of the fallow, sites with a high cover of bushes are first milled and have then to be mown, preferably twice to supress the shoots and remove nutrients. Fallows invaded by ruderal plant species also have to be mown at least twice in consecutive years to have an impact. Most of the sites are then put into a 5 year rotation to improve the state of the sites on the long term.

Hydrological restoration: the landscape aspect is apparent immediately after implementation. For the remeandration project, the impact on ecological parameters will only be monitored 5 years after implementation when enough time passed to let nature re-establish itself.

Restoration of conifer plantations: clear-felling shows immediate results, the establishment of wet meadows after clearing is a more lengthy procedure. After exportation of the remnants and milling, the sites need a follow up treatment through mowing. The meadow will only be fully established after several years.

Restoration of bistort meadows: bistort will blossom in the same year as the rhizomes were transplanted. If the species will spread and become established on the site on the long-term will only be apparent after several years.

Planting of trees and hedges: the hedges reach a considerable size after only a few years.

Infrastructures for grazing: the infrastructure is installed and the grazing schedule has significantly improved during the LIFE project.

Extensification programmes: the results of the biodiversity programmes will only be visible after several years.

The improvement of the target species' status, which is the ultimate goal of the project, is a slow process that might not be visible immediately after the project. However, the presence of the species on restored sites or a wider distribution of the species implies a success of the measures carried out. On several occasions, *L. collurio* was very fast to react to habitat restoration actions (such as clearing of shrub encroachments, restorative mowing, hedge planting, etc.); either through increased densities of breeding territories or through the colonisation of new sites (or expansion of existing territories into previously unoccupied areas). Similarly, some restoration measures had immediate effects on a number of other non-target species, such as Lapwings *Vanellus vanellus* (breeding on freshly cleared wetlands for the first time in almost 20 years), Great Grey Shrikes *Lanius excubitor* (extensively using newly created feeding habitats), Common Snipes *Gallinago gallinago* (wintering along restored ponds, wetlands and rivers), Yellow Wagtails *Motacilla flava* (breeding along restored stretch of stream).

→ Effectiveness of the dissemination

In the LIFE Eislek project, dissemination had two main target groups:

1) Public:

Concerning dissemination activities, the goals set in the project application have been surpassed. Besides activities that have been implemented before the project such as guided tours and the "chantier nature", as well as the publication of press releases, of which we have made a many during the project (including the collaboration for a book by Alan Johnston), we tried several new and more innovative activities with good resonance:

Inspired by the Feld AG, a group of volunteers working with the Centrale ornithologique on the monitoring of bird species, we discussed the possibility of involving volunteers in the monitoring of butterflies. With this aim in mind, we decided to organise a butterfly determination course, consisting of 7 parts including 2 excursions. The demand was high considering that the course was fully booked after only 2 days. Therefore, more determination courses are planned in the following years (After LIFE). A questionnaire at the end of the course confirmed the concept as most participants were satisfied and interested in meeting regularly for field excursions.

The itinerant shepherd took the initiative to organise public sheep walks to make people aware of his disappearing profession. To highlight his services to nature conservation, he proposed to make it a joint venture between him and the LIFE Eislek project. 4 walks are now organised yearly with each walk being sold out. It is a special experience that people appreciate.

The problem with events organised by natur&ëmwelt is that the public is often similar with mainly motivated members participating. To reach a public beyond the loyal followers, we decided to put up workshops at music festivals. Here, mainly a young crowd, often open to new information, gathers. The two workshops organised at two popular festivals in Luxembourg were highly successful. We were able to reach people that had never heard of our NGO and our goals.

The innovative character of the remeandration project attracted the attention of the media. RTL, the main TV channel in Luxembourg interviewed the coordinating beneficiary and thus promoted the LIFE Eislek and its actions in the main news, watched by 100.000 (1/5 of the population) residents daily.

We installed a walking trail at *Léresmillen*, where most actions of the LIFE Eislek project are represented and available to the public. The trail has already been used for several public events, such as the international seminar, the closing event and a visit by the Grand Duke.

2) Stakeholders:

Apart from promoting the N2000 network, the LIFE and natur&ëmwelt to the public, we also tried to reach a more specific group, the farmers working on land within the N2000 network. We participated at information events concerning the classification of three nature reserves. Additionally an information meeting on the use of pesticides and a site visit with the famous couple Bourguignon were organised.

About 30 famers participated at the information evening on pesticides. The talks by representatives of ASTA, CA and IBLA were highly informative and covered different levels, from the safe use of pesticides to the laws on the use of pesticides to their negative impacts and alternative methods. The discussion following the presentations proved the farmer's interest in the subject and the necessity for more information evenings of this format.

The site visit with the Bourguignon unfortunately had a lower turn out. The comparison of the soil structure and microorganisms between conventional and organic farming was highly interesting though and filmed to make it available to the public (https://www.youtube.com/watch?time_continue=268&v=5tP3fnZmlic). The film was watched 20.952 times on youtube.

The LIFE Eislek team was also present two years at the "foire agricole", the largest showcase of Luxembourgish agriculture and also the largest open-air exhibition in Luxembourg with more than 37.000 visitors each year.

Analysis of long-term benefits

Environmental benefits

→ Direct / quantitative environmental benefits

The data and expert knowledge provided by the LIFE Eislek team for the elaboration of the 10 N2000 management plans has an impact on the management of these sites, especially considering the maintenance of the habitats of the three target species. The knowledge of the area, also in consideration with the large proportion of land owned by HfN in the core zones of the N2000 areas, was a real source of information for the authors of the plans.

The team was able to enforce extensions of the Natura 2000 ZPS Troisvierges Cornelysmillen (LU0001038) and Vallée de la Trëtterbaach (LU0001003) to contain the *L. helle* populations discovered during the monitoring implemented by the LIFE Eislek project. Furthermore, a long term monitoring strategy was implemented with the aid of LIST, responsible for the national biomonitoring scheme of butterflies. The monitoring strategy is in line with the common butterfly transects and contains 25 transects specific for *L. helle*. These include known habitats, historic habitats and areas not colonised but managed for *L. helle*. Additionally a cross-border collaboration was build up with German and Belgian institutions to assure sharing of best practice management but also to draw maps on connectivity across borders. The national species action plan for *L. helle* was written by the LIFE team to share the knowledge with Luxembourgish colleagues managing areas for this species (http://www.environnement.public.lu/conserv_nature/dossiers/Plans_d_actions/Plans_d_actions/PA_insectes_lycaena_helle.pdf).

For *S. rubetra*, a first international symposium took place and the Centrale ornithologique participated and provided information on the state of the species in Luxembourg. The COL will keep up its participation in the working group. Monitoring of *S. rubetra* in the project area will be continued as part of the national monitoring for this species on a regular basis. In addition, staff members of the COL are now in close contact with their Belgian colleagues, where one of the last sustainable populations of *S. rubetra* persists in the region, guaranteeing an extensive information and knowledge exchange.

L. collurio will continue to be monitored as part of the national monitoring scheme for this species, with the project area being among the priority areas.

The LIFE EISLEK project improved the condition of 169.30 ha land within the N2000 network. Most of these sites are owned by HfN (32.57 ha purchased during the project) and are now part of a long-term management plan. How the official state of the biotopes changes and their acceptance by the target species remains to be evaluated as the response time is longer than the few seasons after implementation of the measures within the 5 year timeframe.

For the remeandration, the LIFE team was working hand-in-hand with the AGE as it is a measure that is part of the implementation of the water framework directive. Other actions falling within the same category are the fencing of brooks which should improve water

quality by prohibiting the cattle's access to the stream. The reconversion of spruce forests bordering rivers and streams into meadows will also benefit water quality in the long term.

→ Relevance for environmentally significant issues or policy areas

The project's aim was the restoration of degraded ecosystems and its durable protection by land purchase. By rebuilding stepping stones and corridors, fragmentation is reduced. Regular contact with experts and monitoring teams of neighbouring countries ensures connectivity not only within but also between countries. European policy is based on the Natura 2000 network, the project is active within this network and protects species for which the sites were designated. Concerning *L. helle*, a highly endangered butterfly species, Luxembourg is part of a small population shared with Germany and Belgium, genetically distinct from other European populations. In general Luxembourg has a central location in Europe and is thus an important factor in genetic exchange and metapopulation dynamics. Furthermore, the three target species are umbrella species and the project's actions have a positive impact on other species of the wetlands as well. Therefore the project corresponds to priority objective 1 of the 7th environment action programme.

Another main theme of the LIFE project was raising awareness and education on nature conservation. The targets of the EAP can only be reached through the appreciation and collaboration of the general public. Through its presence in the media, at fairs and markets and through the organisation of events, the LIFE Eislek project reached a large audience. The organisation of a determination course motivated the public to participate in the national monitoring scheme for butterflies and thus take an active part in nature protection.

Another objective is the consultation of farmers concerning environmental issues. Land pressure is especially high in the North of Luxembourg, the project area. The high living standard in Luxembourg means that extensive agriculture is no longer lucrative. The number of farmers in Luxembourg is continuously decreasing while the average size of agricultural holdings is increasing and processing methods are more and more applied on a large scale. A good collaboration of land users and NGOs can have a large impact on soil and water quality and biodiversity in general. The project team made extensification contracts primarily in target areas. Furthermore, most of the land owned by HfN is leased to farmers. The aim of the purchase of land is not to remove it from agricultural use but to farm it in a more environmentally friendly way and secure it on the long term. Thus, the project contributes to the second pillar of the CAP by encouraging farmers to take a positive role in the conservation of landscape and the environment.

Long-term benefits and sustainability

→ Long-term / qualitative environmental benefits

Through the in-depth examination of the management of our land, especially considering the target species of the area, we were able to make many beneficial adaptations. The consultation of literature, not only on the three target species but also butterflies and other insects in general such as their larval plants etc. has increased our understanding of their requirements and made us more aware of what needs to be considered when planning the management of a site.

In this view, new management techniques were adopted and a long-term management plan introduced. The techniques adopted are the mowing and milling with Pistenbully, the pulling-out of willow roots and the river remeandration amongst others. The adaptation of the sheep management and improvement of Galloway grazing as well as the improvement of people's understanding of nature conservation are further benefits. Nevertheless, the collaboration with farmers, the use of cuttings, fragmentation and accessibility to nature reserves are problems that remain to be solved.

The priorities for the years that follow the LIFE Eislek project were formulated in the After LIFE plan (appendix 84). These include the implementation of the N2000 management plans, increasing the network of protected habitats by land purchase, improvement of habitat quality, analysis of potentiality of forested areas for *L. helle*, continuation of monitoring, dissemination activities and networking. Most of these activities will be coordinated by n&ë HfN, with the exception of the monitoring of the bird species (n&ë asbl) and the consultation of farmers (CA).

To finance the measures planned in the After LIFE, we will make an application at the "Fonds pour l'Environnement" (A4, C1, C3-6, D1, E1, F3) and the "Fonds pour la Gestion de l'Eau" (C2). Some actions will be financed on own budget, through donations or conventions. The details are provided in the After LIFE document.

→ Long-term / qualitative economic benefits

The economic benefits can be evaluated form two different viewpoints:

1) economic benefits to HfN due to improved management

One aim of the project was the elaboration of a long term management plan, that replaces the "watering-can principle" implementation before the LIFE Eislek project. Via the focussed working method during the LIFE project, the team was able to train professional skills and management has become more targeted and more efficient.

2) economic evaluation of ecosystems

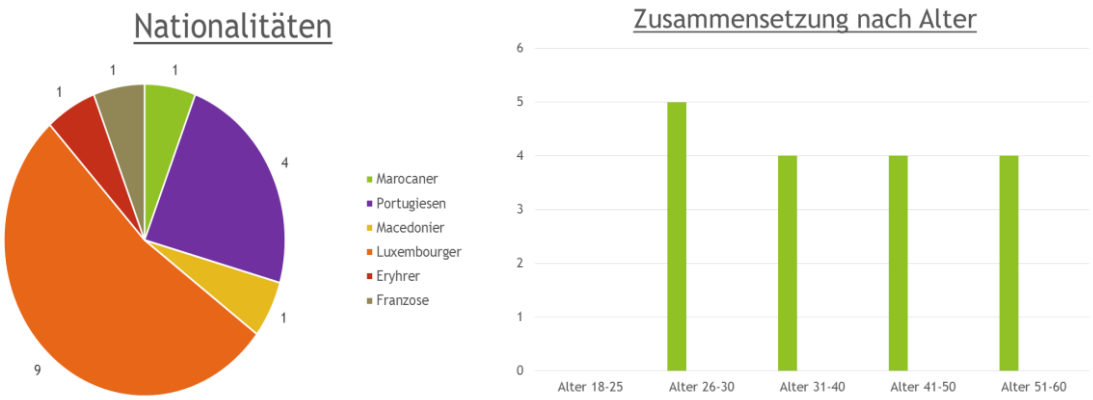
In the study conducted by LIST (appendix 75), a total valuation figure was calculated for the LIFE Eislek project by multiplying the area improved during the project by their given Total Economic Value. Based on this calculation, 2,479,723.76 € would be saved each year from 2030, when the wetlands are fully established, thanks to the reestablishment of ecosystem services.

→ Long-term / qualitative social benefits

One of the associated beneficiaries of the LIFE Eislek project was CNDS Naturaarbechten, a socially economic structure carrying out practical implementations in nature conservation. Their mission combines social, ecological and even economic benefits. The two foremen employed for the LIFE project supervised teams with unemployed people with placement problems and contributed to their social and professional development. CNDS Naturaarbechten provides an occupation that is beneficial to the target group in several

ways. Most tasks consist of manual labour in the green area and involve group activities. They have a moral context as the employees have a direct impact on biodiversity by conserving and improving nature and environment. The integration and esteem of each person is guaranteed.

During the 5 year LIFE project, 17 unemployed people were supervised by CNDS Naturaarbechten and were provided with the opportunity to take part in the labour market. They were of six different nationalities between the ages of 26 and 60 as illustrated in the figures below.



As part of the LIFE project, n&ë HfN intensified and improved its collaboration with the last remaining nomadic shepherd in Luxembourg. Shortly before the project, a generation change has taken place in the Weber family. With the requirements of the target species in mind, grazing was better organised and followed more closely. This meant an important change in the shepherd's routine work. The analysis showed that sheep grazing can be counterproductive in the protection of *L. helle*. The termination of lease agreements between n&ë HfN and the shepherd would have complicating the generation change further. Through intensive negotiations and a good collaboration we managed to find solutions that allowed not only species-appropriate management but also an increase in the number of sites owned by n&ë and managed by the shepherd. Thus we supported a traditional family operation that plays an important part in nature conservation in Luxembourg. In 2016, the shepherd inaugurated a new stable where lambing takes place. This allows a better separation of flocks and with it reduced stocking on sensible sites.

The initiative to contact farmers through manifestations or directly concerning specific parcels has born fruits. A large grazing project was set at *Schleef* up on privately owned land on the combined effort of the LIFE team and the owner. Other joint projects were the fencing of brooks and the conclusion of biodiversity contracts.

For the implementation of the concrete actions, we relied for the most part on local firms and supported the regional economy. Residents profit from the increased landscape value in a more diverse and biodiverse environment. They can also profit from an additional trail to discover what nature has to offer to us.

→ Continuation of the project actions by the beneficiary or by other stakeholders

As the coordinating beneficiary, n&ë HfN, was responsible for the implementation of most actions in the LIFE project, he will therefore be responsible for their continuation in the After LIFE plan. The purchase of land is the main mission of HfN and is as such a continuous process. The land is financed up to 75% by the government, the remaining costs are covered by donations to the foundation. The management of the land is the second mission and includes the actions of the LIFE project. An application will be made to the Fonds pour l'Environnement concerning actions for the protection of the N2000 target species. Additionally, the participation in the implementation of the N2000 management plans as well as monitoring of the butterfly species, monitoring of implementation sites and dissemination are missions of n&ë HfN.

n&ë asbl will continue the bird monitoring and specific action programmes after the end of the LIFE project as it is their responsibility as the Centrale Ornithologique. *Saxicola rubetra* and *Lanius collurio* will be monitored specifically every six years in the framework of the reporting of the birds directive article 12. The next monitoring will be in 2019 for *S. rubetra* and in 2023 for *L. collurio*. The Centrale Ornithologique will also take part in the implementation of the N2000 management plans and continue dissemination activities, especially concerning bird species.

CNDS will continue their mission supported by the equipment for land management acquired through the LIFE project. n&ë HfN will continue its collaboration with CNDS Naturaarbechten and will rely on their expertise in the follow-up treatment of the LIFE Eislek areas of action.

It is the CA's mission to sensitize and consult the farmers and their actions will continue after the end of the project. The collaboration between the CA and our structure will continue after the project where necessary.

Replicability, demonstration, transferability, cooperation

The methods worked out during the duration of the project will be put at the disposal of other environmental managers. Information of experiences gained throughout the project is provided on the website and has been / will be presented at numerous national and international seminars. An article will be published in a national scientific bulletin (SNL) in 2018 (foreseen in the After LIFE).

During the project duration, we put an emphasis on working in collaboration with local actors which increases visibility and might initiate similar projects. The prefinancing of the remeandration project was taken over by the community of Wincrange and refunded by the Fonds pour la Gestion de l'Eau. After presentation of the LIFE Eislek project and the remeandration at the community, we received the support of the community for this measure without difficulties. The good relationship will hopefully open up more doors in the future. The remeandration project was furthermore planned in close collaboration with the water administration and the measure has reached high visibility through media interest.

Throughout the project we were in constant exchange with the nature administration (ANF) about land management.

Furthermore we collaborated with the museum of natural history concerning the propagation of the bistort (MNHN). They provided us with tips concerning germination tests and made a genetic analysis of the plant on their own budget. A close collaboration between science (MNHN) and nature conservation (n&ë) would be worthwhile in the future.

A constant knowledge exchange was also kept up with other structures such as SICONA, Naturpark Our and Sauer, the LIFE projects LIFE Unio & LIFE Orchis among many.

Land managers of the LIFE Eislek project will be active in the steering committees that will be set up for the N2000 areas. On this platform, the experiences made in the LIFE project can be shared and applied in other areas.

Best Practice lessons

The methods implemented in the LIFE Eislek project followed recommendations by the IUCN, former LIFE projects and international experts. The beneficiaries had experience concerning land management before the project that was of great use in this context. Several methods were tried for the first time and lessons were drawn subsequently.

Instead of removing shrubs by chainsaw and passing regularly to suppress shoots and fight the spread, we pulled out willow roots by cable winch, a method presented by the LIFE Papillons project at an exchange visit. A beneficial by-product is the formation of depressions that fill with water and are often used by waders.

The reconversion of spruce plantations into open wetlands is most successful when the branches are evacuated followed by subsequent milling immediately after clear-felling. Removal of the remnants exports nutrients, as does mowing in the first two years.

Numerous positives developments followed the adaptation of the sheep management with a closer accompaniment of the shepherd and his herd. The same is true for the construction of a winter shelter for Galloways that graze on nature reserves.

Innovation and demonstration value

Several management techniques- new for our organisation, region or country- were tried and often promoted towards other projects or organisations. One example would be the restorative mowing with a converted Pistenbully with low ground pressure, a technique not previously used in Luxembourg. To prevent negative publicity and to promote the technique towards other land managers, we invited several representatives to the site of implementation and wrote a press release. In the following season, the machine was in action for the LIFE Orchis and the SICONA.

Much effort was put into propagation techniques for the bistort on restored sites. Unfortunately, despite numerous trials even with scientific background provided by the

museum for natural history, no positive results could be registered for methods concerning seeding of the bistort. The method, we relied on in the end was for the largest part based on experiences of the LIFE Papillon and the LIFE Plateau des Tailles projects.

For the remeandration project at Léresmillen, we hired a Belgian engineering firm working with a method, pre-profiling of the new riverbed that was not previously known in Luxembourg. In order to convince the water and nature administrations, we organised a site visit to previous projects of the engineering firm with representatives of both administrations. Following up on the first project at Léresmillen, two more remeandration projects are now foreseen in the After LIFE for the next five years.

Long term indicators of the project success

The project's success in the long term will be evaluated by the status of its three target species and a comparison of their distribution before and after restoration measures. The monitoring continues after the project according to the After LIFE conservation plan. The state of the wetlands in the Eislek region provides a second indicator for success concerning the LIFE Eislek project.

6 Financial report

Summary of Costs Incurred

Table 20: Summary of project costs incurred

Project Costs Incurred			
Cost Category	**Budget according to the grant agreement**	**Costs incurred within the project duration**	**% of total costs**
Personnel	€ 910,125.00	€ 906,773.59	99.63 %
Travel	€ 15,850.00	€ 21,591.49	136.02 %
External assistance	€ 139,675.00	€ 168,741.61	120.81 %
Durable goods - Infrastructure	€ 30,000.00	€ 54,516.52	181.72 %
Durable goods - Equipment	€ 127,150.00	€ 118,188.82	92.95 %
Land/rights purchase/lease	€ 405,000.00	€ 416,201.30	102.77 %
Consumable material	€ 17,050.00	€ 37,409.62	219.41 %
Other direct costs	€ 32,925.00	€ 58,387.18	177.33 %
Overheads	€ 89,000.00	€ 89,000.00	100.00 %
TOTAL	**€ 1,766,775.00**	**€ 1,870,783.13**	**105.84 %**
Direct income	**€ 66,654.26**		

Even though the budget has been surpassed by 104,008.13 €, the allowed flexibility of 30.000 € and 10 % has been considered in all the categories. Several unforeseen costs and non-substantial budget transfers have taken place and are explained at the appropriate action in the technical progress per task section. They did not compromise any of the project's objectives.

Personnel: the total budget for personnel costs is very close to the budget planned in the grant agreement. However, the distribution among the three beneficiaries is different from the proposal. While n&ë HfN has largely overspent the budget by 48,625.94 €, both associated beneficiaries are in an under-consumption of working hours (12,438.14 € for n&ë asbl and 39,540.21 € for CNDS Naturaarbechten). There are several explanations for these discrepancies. n&ë asbl has had a change in personnel just before the project, with a new collaborator with a lesser degree of seniority assigned to the LIFE project. Due to other obligations, the employee of n&ë asbl was not always able to spent as much hours as foreseen on the LIFE project. Many of these hours were taken over by employees of n&ë HfN, explaining part of their overconsumption of hours. Another reason for the important personnel costs at n&ë HfN is the fact that the objectives were exceeded for most actions and additional budget was mobilised for their implementation. CNDS has had difficulties to hire appropriate foremen, so that for several months, only one employee was financed over the LIFE project. Additionally, they were hindered by multiple sick leaves. Nevertheless, they managed to implement most of the actions as foreseen.

The personnel costs of some employees were higher than foreseen in the financial application:

- Gilles Weber: director of n&ë HfN was forgotten in the initial budget. His daily rate is higher than for the other employees due to seniority and his position as director. His hours on the LIFE project were for meetings with the LIFE team and the presentation of their requests to the Conseil d'administration.
- Richard Dahlem: punctual aid for the monitoring of *L. helle*. His daily rate is higher due to seniority.
- Claude Schiltz: due to higher seniority, the personnel costs for Claude Schiltz foreseen as scientific N.1 were higher than for Mireille Molitor, coordinator. In truth, the coordinator and scientific N.1 posts were shared among Claude Schiltz, Mireille Molitor and Michelle Clemens and the average daily rate is in accordance with the application.

Travel: The main part of this category goes towards fuel consumption of the coordinating beneficiary n&ë HfN and the associated beneficiary n&ë asbl for site visits and monitoring. The costs were underestimated at the elaboration of the project budget.

External assistance: the budget was overspent due to several reasons:

- C1: The budget, that became available from action C6 (cattle bridges) was used to improve accesses to nature reserves (modification granted in the EC letter dated from the 17.12.15). External assistance was also sought for the mowing of a milled clear-felling and for the removal of willow roots by cable winch. These costs were not

foreseen but have resulted from trial of new techniques and are in line with the project's objectives.

- C2: Part of the foreseen budget was available due to the additional finances mobilised via the FGE and the RBC.
- C3: The proportion of clearing sites to clear-felling spruces was different to the project application. This change does not affect the project's objectives, however, milling is more expensive than clear-felling (which generates income).
- C6: The overconsumption is due to the necessity to rely on external assistance for the setting-up of fences following successive sick leaves (approved in the letter from 29.06.16).
- E1: With the additional budget provided by RBC, parts of the walking trail were financed. The LIFE team decided that the additionally planned 4 simple didactic signs were not consistent with the infrastructures set up on the walking trail. The result is impressive but relied on a higher budget than the one foreseen in the application.

Durable goods/ Infrastructure: This category includes only one action, the building of a stable (action C6). Due to unforeseeable circumstances, the budget was overcharged (see action A2: financial modifications).

Durable goods/ Equipment: The under-consumption is due to the transfer of fence building to external assistance after several sick leaves at CNDS (see external assistance).

Land purchase: As the budget set in the application was too low, additional budget was applied for at the Fonds pour l'Environnement.

Consumables: This category is overcharged due to the costs of fuel for the tractor of CNDS that was not foreseen in the initial budget (adaptation accepted in the letter of the 06.06.13).

Other costs: The costs related to the reparation of equipment of CNDS were underestimated at the financial application. The well-functioning of the equipment was necessary for the execution of the missions of CNDS.

→ Additional funding

We had the opportunity to apply for additional funding and thus increase the objectives of the LIFE project. The main additional financers were:

- RBC: 34,313.01€. The Royal Bank of Canada finances over their Blue Water Project water-related projects. They helped financing the remeandration project including dissemination. Their funding was primarily used for the installation of the walking trail.
- Fonds pour la Gestion de l'Eau (102,633€)
  The Fonds financed the largest part of the remeandration project.
- State: the state helps financing land purchase and the management of nature reserves via two means:
  - a convention between n&ë HfN and the state
  - the Fonds pour l'Envrionnement.

Table 21. Additional funding mobilised

Action	Amount	What for	By whom
B1	263,846.33 €	- long-term lease community Wincrange - 2 notary acts (budget overspent) - acre at *Léresmillen* (comensation)	n&ë HfN land purchase budget (sponsoring, donations, state aid)
C1	74,346.15 €	- mowing (Pistenbully) - disposure of the cuttings	n&ë HfN land management budget (sponsoring, donations, state aid)
C2	110,883.96 €	remeandration project (app. 54)	FGE RBC n&ë HfN land management
C4	1,560.00 €	*Sanguisorba* plants	NP Our
C5	2,232.95 €	Hedges and trees	JNA, compensation
C6	17,324.39 €	Fence	n&ë HfN land management
E1	15,160.72 €	- didactic sign Postwee - infrastructures walking trail	- NP Our - RBC
TOTAL	**485,354.50 €**		

Accounting system

→ Accounting system

The central accountant department of n&ë HfN and n&ë asbl is located at the main office at 5 route de Luxembourg, Kockelscheuer in Luxembourg. They use an analytical accounting system (up to 2015: Ciel, from 2016: BOB), the invoices are paid at the Kockelscheuer and the originals archived. The invoices are labelled "8EUEISLECK" and numbered.

The accountant department of CNDS is at 136 route de Luxembourg, Helmdange. They use an analytical accounting system (BOB), the invoices are paid at the department and the originals archived. The invoices are labelled "LIFENAT/LIFE08" and numbered. A copy of each bill is sent to Heinerscheid.

n&ë HfN and n&ë asbl are not subjected to VAT since the beginning of the project. CNDS Naturaarbechten was subjected to VAT at the beginning of the project, their status changed to "not subjected" on the 31.12.13 (appendix 2).

→ Procedure of approving costs

Invoices concerning the LIFE Eislek project are addressed to the project's seat in Heinerscheid. The invoices are controlled by the secretary-accountant Patricia Heinen and the project coordinator Mireille Molitor/ Michelle Clemens concerning the presence of the LIFE code, correct amount of costs and eligibility. The project coordinator notes the action and cost category and signs the invoice before the secretary-accountant inserts the information into the accounting table in Excel. The original invoice is send to the main department at Kockelscheuer, a copy is kept at the office in Heinerscheid in the LIFE folders.

→ Time recording system

Team members record their time spent on the project in Excel-based timesheets (EC LIFE template) prepared by the secretary-accountant in the beginning of each year.

The timesheet of the project supervisor is signed by the director Gilles Weber, the timesheet of the director is signed by president Patrick Losch of HfN.

→ Invoices

For each purchase and service, we ask to put the LIFE reference on the invoice.

Partnership arrangements

After the submission of the funding application to the EC and/or MDDI, n&ë HfN receives the respective funds and redistributes the parts of the associated beneficiaries to n&ë asbl and CNDS respectively.

The financial office of CNDS regularly sends the invoices with the debit notes concerning the LIFE Eislek project to the project's office in Heinerscheid. The secretary-accountant introduces the numbers into the LIFE Eislek Excel folder. At the end of the year, a control takes place through the comparison of the general ledgers.

n&ë asbl only has travel expenses and personnel costs submitted on a regular basis.

Auditor's report/declaration

The auditor's name is Grant Thornton LUX Audit S.A. 89A, Pafebruch L-8308 Capellen. The auditor's report is a separate document provided in appendix 115. The report concludes that the financial report of the LIFE Eislek project gives a correct appreciation of the revenues and expenses of HfN, n&ë asbl and CNDS, are according to the project and have been issued in the delay of the project duration.

Summary of costs per action

The costs per action are largely in line with application. Several unforeseen costs and non-substantial budget transfers have taken place and are explained at the appropriate action in the technical progress per task section. They did not compromise any of the project's objectives.

Explanations to the cost changes for each action where substantial differences occur compared to the application:

Action C1:

- External assistance (see Summary of costs incurred).
- Equipment: underestimation of need of equipment (brush cutters, chainsaw).
- Consumables: forgotten costs of fuel for the tractor of CNDS and underestimation of the need for spare parts for the equipment.
- Other costs: costs related to the reparation of equipment of CNDS were underestimated at the financial application.

Action C6:

- Fences: budget was transferred from equipment costs to external assistance (approved in the letter from 29.06.16).
- The cattle truck was cheaper than expected (equipment), the funds were relocated to C1 and used for brushcutters &chainsaws (approved in the letter from 17.03.14).
- The infrastructure costs were higher than expected (see action A2: financial modifications).

Action E1:

- The didactic signs were more expensive than foreseen. More signs were designed and printed to match the LIFE Eislek trail.

Action E4:

- Other costs: the catering costs for the international seminar were higher than initially foreseen in the budget.

Table 22. Summary of costs per action

	Short name of action	1. Personnel	2. Travel	3. Ext Assistance	4. a. Infrastructure	4.b. Equipment	5. Purchase of land	6. Consumables	7. Other costs	Total
A1	Action programme	52,652.02 €	2,331.88 €	0.00 €	0.00 €	119.00 €	0.00 €	1,155.06 €	1,172.10 €	**57,430.06 €**
A2	Planning concrete actions	40,448.41 €	621.96 €	0.00 €	0.00 €	0.00 €	0.00 €	241.35 €	0.00 €	**41,311.72 €**
A3	Elaboration N2000 management plans	21,078.99 €	495.52 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	**21,547.51 €**
A4	Elaboration of grazing/ mowing plan	25,977.68 €	497.57 €	497.23 €	0.00 €	0.00 €	0.00 €	241.35 €	0.00 €	**27,213.82 €**
A5	Preparation of monitoring	19,090.64 €	495.52 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	1,150.24 €	**20,736.41 €€**
B1	Land purchase	63,627.03 €	1,243.92 €	0.00 €	0.00 €	0.00 €	416,201.30 €	199.20 €	0.00 €	**481,271.45 €**
C1	Restoration wetlands	67,126.39 €	348.30 €	17,296.86 €	0.00 €	56,012.59 €	0.00 €	10,820.21 €	41,593.07 €	**193,197.41 €**
C2	Hydrological restoration	64,612.55 €	435.37 €	20,352.70 €	0.00 €	0.00 €	0.00 €	4,320.98 €	0.00 €	**89,721.60 €**
C3	Conversion of spruce plantations	81,391.19 €	435.37 €	21,628.86 €	0.00 €	50.15 €	0.00 €	3,081.58 €	0.00 €	**106,587.15 €**
C4	Propagation bistort	40,280.56 €	373.18 €	97.00 €	0.00 €	0.00 €	0.00 €	1,136.45 €	0.00 €	**41,887.19 €**
C5	Plantations	33,569.11 €	373.18 €	590.19 €	0.00 €	0.00 €	0.00 €	8,222.45 €	0.00 €	**42,754.93 €**
C6	Grazing infrastructure	93,136.23 €	435.37 €	31,121.39 €	54,516.52 €	53,887.71 €	0.00 €	3,837.53 €	164.66 €	**237,099.41 €**
C7	Consulting land users	14,139.34 €	348.30 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	52.64 €	**14,540.28 €**
D1	Monitoring target species	25,454.19 €	4,372.28 €	0.00 €	0.00 €	5,233.04 €	0.00 €	833.13 €	0.00 €	**35,892.63 €**
D2	Monitoring sites	25,454.19 €	1,457.43 €	36.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	**26,947.61 €**
D3	Evaluation of socio-economic impact	4,197.62 €	124.39 €	2,925.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	**7,247.01 €**
E1	Dissemination	21,981.25 €	718.96 €	49,526.18 €	0.00 €	146.53 €	0.00 €	442.59 €	1,840.86 €	**74,656.37 €**
E2	Website	15,818.83 €	335.21 €	6,643.23 €	0.00 €	0.00 €	0.00 €	10.97 €	2,245.09 €	**25,053.33 €**
E3	Informing farmers	15,111.43 €	408.08 €	28.80 €	0.00 €	0.00 €	0.00 €	108.04 €	122.68 €	**15,779.03 €**
E4	International seminar	9,125.14 €	247.76 €	713.70 €	0.00 €	0.00 €	0.00 €	0.00 €	9,307.31 €	**19,393.91 €**
E5	Layman Report	10,891.31 €	197.63 €	4,511.82 €	0.00 €	0.00 €	0.00 €	76.79 €	0.00 €	**15,677.56 €**
F1	Project Management	142,654.37 €	1,123.24 €	5,557.55 €	0.00 €	2,739.80 €	0.00 €	2,243.12 €	738.53 €	**155,056.61 €**
F2	Evaluation of the project	6,296.42 €	143.05 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	**6,439.48 €**
F3	Networking	12,658.73 €	4,028.01 €	7,188.10 €	0.00 €	0.00 €	0.00 €	438.82 €	0.00 €	**24,313.65 €**
F4	After LIFE	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	**0.00 €**
Overheads										**89,000.00 €**
TOTAL		**906,773.59 €**	**21,591.49 €**	**168,714.61 €**	**54,516.52 €**	**118,188.82 €**	**416,201.30 €**	**37,409.62 €**	**58,387.18 €**	**1,870,783.13 €**

7 Annexes

Administrative annexes

Appendix 1: VAT statements submitted with the inception report (April 2013)

- 1.1 attestation VAT-HfN
- 1.2 attestation VAT-n&ë asbl

►Appendix 2: Modifications on VAT status of CNDS

- 2.1 submitted with the midterm report (April 2015)
- 2.2 additional documents

►Appendix 3: Circulaire interne relative aux marchés publics

Appendix 4: List of members of piloting committee submitted with the inception report (April 2013)

Appendix 5: Statutes of n&ë asbl submitted with the inception report (April 2013)

- 5.1 Statuts n&e 45565
- 5.2 rectificatif statuts n&e 124996

Appendix 6: Co-financing agreement submitted with the inception report (April 2013)

Appendix 7: Partnership agreements submitted with the inception report (April 2013)

- 7.2 Convention LIFE Eisleck HfN-n&e asbl
- 7.3 Conv Part LE HfN-CNDS

►Appendix 8: Amendment partnership agreement n&ë HfN and asbl.

Appendix 9: Letters submitted with the inception report (April 2013)

- 9.1 long term collaboration of n&ë HfN and CNDS and
- 9.2 accord de cooperation HfN-CNDS

Appendix 10: Documents concerning job offer for project coordinator submitted with the progress report (April 2014)

- 10.1 formulaire ADEM
- 10.2 Annonce LW
- 10.3 offer d'emploi natur&emwelt LIFE Eislek

7.2 Technical annexes

►Appendix 11: List of keywords and abbreviations

Action A1

Appendix 12: Convention with DEMNA submitted with the inception report (April 2013)

Appendix 13:

- 13.1 Letters concerning the MAE shapefiles submitted with the progress report (April 2014)
- 13.2 Letter to MDDI concerning MAE shapefiles submitted with the midterm report (April 2015)

Action A2

►Appendix 14: Chronological overview per action

Appendix 15: C2: Letters concerning the water course restoration submitted with the inception report (April 2013)

- 15.1 AGE
- 15.2 MDDI
- 15.3 MI
- 15.4 SIDEN

Appendix 16: C2: Letters/ emails/ phone contact with SIDEN, MDDI, AGE and MI submitted with the progress report (April 2014)

- 16.1 MDDI 25.3.14
- 16.2 SIDEN 16.4.13
- 16.3 réponse SIDEN 22.4.13
- 16.4 SIDEN 22.5. & 5.6.13
- 16.5 SIDEN 4.6.13
- 16.6 SIDEN 12.7.13
- 16.7 SIDEN 25.10.13
- 16.8 SIDEN 25.11.13
- 16.9 SIDEN 27.11.13

Appendix 17: C2: Results of the water analysis submitted with the midterm report (April 2015)

Appendix 18: C2: Results of the electric fishing submitted with the midterm report (April 2015)

Appendix 19: C2: Professional note on water course restoration by Stream&River Consult submitted with the midterm report (April 2015)

Appendix 20: C2: Documentation remeandration project submitted with the progress report (April 2016)

- 20.1 Ppt Wincrange 16.04.15
- 20.2 DEVIS Esquisse 14.7.15
- 20.3 SRC - Esquisse 11.15
- 20.4 DEVIS Eislek 18.12.15
- 20.5 DEVIS Eislek Monitoring 18.12.15
- 20.6 Délibération communale du 26.01.16
- 20.7 Demande fonds introduite 28.01.16
- 20.8 E-mail AGE (Mr Lutty) 2.03.16
- 20.9 DEVIS Eislek 18.12.15 V2 p4-1
- 20.10 Accusé de réception FGE 16.03.16
- 20.11 Bon de commande 24.03.16
- 20.12 Accord FGE 25.03.16

Appendix 21: C2: Application Preview submitted with the progress report (April 2016)

►Appendix 22: C2: Documentation remeandration project (Léresmillen)

- 22.1 SRC Note de calcul hydraulique Tretterbaach
- 22.2 SRC métré synth Tretterbach
- 22.3 SRC Profils - reméandration du Tretterbaach
- 22.4 SRC Vue en plan - reméandration du Tretterbaach
- 22.5 SRC Présentation Commune Wincrange
- 22.6 Délibération communale
- 22.7 FGE Demande
- 22.8 FGE Demande Travaux Note supplémentaire
- 22.9 FGE Demande Travaux Karte Besitzverhältnisse
- 22.10 appel d´offre Leresmillen vers. déf.
- 22.11 FGE Accord Travaux, suivi, monitoring
- 22.12 FGE letter
- 22.13 Etat des lieux
- 22.14 PV de réception

►Appendix 23: C2: Documentation remeandration project (Breitwies)

- 23.1 AGE mail waaaserrecht
- 23.2 SRC RDV
- 23.3 AGE mail Martine Bastian
- 23.4 FGE demande subside Wincrange
- 23.5 FGE Accusé de reception
- 23.6 FGE Demande_Breitwies

Appendix 24: C4: Description of subject for thesis on bistort transplantation submitted with the inception report (April 2013)

Appendix 25: C4: Results of soil analysis submitted with the midterm report (April 2015)

Appendix 26: C4: Summary of the studies on *P. bistorta*

Appendix 27: C4: Letter MNHN concerning collaboration on bistort meadow restoration submitted with the midterm report (April 2015)

Appendix 28: C4: Population genetic structure of Polygonum bistorta submitted with the progress report (April 2016)

Appendix 29: C6: Construction plan of stable submitted with the inception report (April 2013)

Appendix 30: C6: Authorisations to construct a stable submitted with the inception report (April 2013)

- 30.1 Authorisation commune
- 30.2 Authorisation MDDI

Appendix 31: C6: Tendering for the stable construction submitted with the inception report (April 2013)

- 31.1 CC Chemin d'accès-fondations de l'abri
- 31.2 CC abri-partie bois et toiture
- 31.3 Annexe 2 - Autorisations et plans
- 31.4 Annexe 3 - Photos abri Harlange
- 31.5 mail fondations
- 31.6 mail toiture

Appendix 32: C6: Project of installation of fences and troughs at *Sporbaach* submitted with the progress report (April 2014)

Appendix 33: C6: Lettre MDDI submitted with the progress report (April 2016)

Appendix 34: C7: Projet de loi concernant le soutien au développement durable des zones rurales submitted with the progress report (April 2016)

Appendix 35: C7:

- 35.1 Régime d'aides pour la sauvegarde de la diversité biologique submitted with the progress report (April 2016)
- 35.2 Leitfaden Kontrolle Bewertung Biodiversität submitted with the progress report (April 2016)

Action A3

Appendix 36: Specification sheet concerning the elaboration of a management plan in Luxembourg submitted with the inception report (April 2013)

Appendix 37: Presentation of intermediate results of management plan submitted with the progress report (April 2014)

- 37.1 démarche consultation PG
- 37.2 cahier de charges
- 37.3 Présentation PG 20.01.14

Appendix 38: Presentation of provisional version of management plan submitted with the midterm report (April 2015)

- 38.1 Planning of measures in three zones
- 38.2 Overview three zones
- 38.3 Planning areas

►Appendix 39: N2000 management plans

- 39.1 Our LU0001002
- 39.2 Tretterbaach LU0002002, LU0001003, LU0001042, LU0001043
- 39.3 Bréichen LU0001004
- 39.4 Wiltz LU0001005
- 39.5 Sure LU0001007
- 39.6 Troisvieregs LU0001038, LU0002001
- 39.7 Letter MDDI

Action A4

Appendix 40: Analysis of leased parcels submitted with the progress report (April 2014)

Appendix 41: submitted with the progress report (April 2016)

- 41.1 Lettre N° Flik Peschong
- 41.2 Liste lettre N° Flik Peschon
- 41.3 réponse N° Flik Peschong
- 41.4 Results

Appendix 42: Guidelines cross compliance submitted with the progress report (April 2016)

Action A5

►Appendix 43: Maps of transects for butterfly monitoring

►Appendix 44: Guide Hétérocères

Action B1

►Appendix 45:

- 45.1 Maps concerning the purchase of land April 2013- March 2014 submitted with the progress report (April 2014)
- 45.2 Maps concerning the purchase of land April 2014- March 2015 submitted with the midterm report (April 2015)
- 45.3 Maps concerning the purchase of land April 2015- March 2016 submitted with the progress report (April 2016)
- 45.4 Final maps concerning the purchase of land

►Appendix 46:

- 46.1 – 46.6 Notary acts concerning the purchase of land parcels 1-6 submitted with the progress report (April 2014)
- 46.7 – 46.18 Notary acts concerning the purchase of land parcels 7-18 submitted with the midterm report (April 2015)
- 46.19 – 46.31 Notary acts concerning the purchase of land parcels 19-31 submitted with the progress report (April 2016)
- 46.32 – 46. 48 Notary acts concerning the purchase of land parcels 32-48

►Appendix 47:

- 44.1 Tableau (submitted with Progress Report April 2014)
- 44.2 Detailed table of acquisitions

►Appendix 48: Table of acquisition at *Léresmillen*

Action C1

►Appendix 49:

- 49.1 Maps concerning the restoration of neglected wet meadows 2013-2014 submitted with the progress report (April 2014)
- 49.2 Maps concerning the restoration of neglected wet meadows 2014-2015 submitted with the midterm report (April 2015)
- 49.3 Maps concerning the restoration of neglected wet meadows 2015-2016 submitted with the progress report (April 2016)
- 49.4 Final maps concerning the restoration of neglected wet meadows

Appendix 50: Letter to MDDI concerning grazing at *Hellekessel* submitted with the midterm report (April 2015)

►Appendix 51: Convention Frieseisen

Appendix 52: Mail exchange concerning the purchase of the vehicle submitted with the inception report (April 2013)

Action C2

►Appendix 53: Final maps concerning hydrological measures

►Appendix 54: Cost distribution remeandration project *Léresmillen*

Action C3

►Appendix 55:

- 55.1 Maps concerning the restoration of conifer plantations 2013-2014 submitted with the progress report (April 2014)
- 55.2 Maps concerning the restoration of conifer plantations 2014-2015 submitted with the midterm report (April 2015)
- 55.3 Maps concerning the restoration of conifer plantations 2015-2016 submitted with the progress report (April 2016)
- 55.4 Final maps concerning the restoration of conifer plantations

►Appendix 56: Convention Thillens

Action C4

►Appendix 57:

- 57.1 Maps concerning the restoration of bistort meadows submitted with the midterm report (April 2015)
- 57.2 Maps concerning the restoration of bistort meadows 2015 submitted with the progress report (April 2016)
- 57.3 Final maps concerning the restoration of bistort meadows

Action C5

►Appendix 58:

- 58.1 Maps concerning the location of plantations 2013-2014 submitted with the progress report (April 2014)
- 58.2 Maps concerning the location of plantations 2014-2015 submitted with the midterm report (April 2015)
- 58.3 Maps concerning the location of plantations 2015-2016 submitted with the progress report (April 2016)
- 58.4 Final maps concerning the location of plantations

Action C6

►Appendix 59:

- 59.1 Maps concerning the location of grazing infrastructures submitted with the progress report (April 2016)
- 59.2 Final maps concerning the location of grazing infrastructures

Appendix 60: Mail exchange concerning the change in financing of the fences

►Appendix 61: Conventions

- 61.1 Bertemes
- 61.2 Weicherding
- 61.3 Hosinger

Action C7

Appendix 62:

- 62.1 Maps concerning the location of extensification parcels submitted with the progress report (April 2016)
- 62.2 Final maps concerning the location of extensification parcels

►Appendix 63: Grassland Habitats in Natura 2000 sites ploughed up and planted with cereals in full legality in Luxembourg submitted by mail on the 03.06.16

Action D1

Appendix 64: Liste des Achats de biens durables et consommables submitted with the progress report (April 2014)

►Appendix 65:

- 65.1 Monitoring report 2013 submitted with the progress report (April 2014)
- 65.2 Monitoring report 2014 submitted with the midterm report (April 2015)
- 65.3 Monitoring report 2015 submitted with the progress report (April 2016)
- 65.4 Final monitoring report

Appendix 66: Maps concerning the extension of the Natura 2000 network submitted with the midterm report (April 2015)

Appendix 67: Mail exchange concerning the status of *S. rubetra* submitted with the midterm report (April 2015)

►Appendix 68: Eoliennes submitted by letter on the 16.01.17

Appendix 69: Project proposal by Marie Kayser of the University of Leeds (UK) submitted with the inception report (April 2013)

Appendix 70: Determining the population connectivity of the endangered lycaenid butterfly *Lycaena helle* by Marie Kayser submitted with the progress report (April 2014)

Action D2

►Appendix 71:

- 71.1 Grazing booklet 2012-2013-2014 submitted with the progress report (April 2014)
- 71.2 Grazing booklet 2015-2016-2017

►Appendix 72: (outside LIFE): Monitoring of remeandration project

- 72.1 SRC Rapport, monitoring avant chantier sept.2016_Tretterbaack, reméandration LIFE Eislek
- 72.2 SRC peche elect Eislek Tretterbach

Appendix 73: (outside LIFE): Results of rhizome transplantation submitted with the progress report (April 2014)

►Appendix 74: (outside LIFE): Results planting *S. officinalis*

Action D3

►Appendix 75: Ecosystem services

- 75.1 Analysis ecosystem services
- 75.2 Facture List - avis débit - Research services offer

Action F3

►Appendix 76: Complete list of networking

Appendix 77: Invitation to InterLIFE in December 2014 submitted with the midterm report (April 2015)

►Appendix 78: PPT InterLIFE 2016

Appendix 79: 1st International Whinchat Symposium submitted with the progress report (April 2016)

- 79.1 Whinchat Luxembourg (ppt)
- 79.2 The Whinchat in Luxembourg- a lost cause (abstract)
- 79.3 Letter MDDI (29.07.15) Whinchat

Appendix 80: PPT Journée des collaborateurs MNHN submitted with the progress report (April 2016)

Appendix 81: Poster Future for Butterflies in Europe submitted with the progress report (April 2016)

►Appendix 82: PPT LE Useldange 25.3.17

►Appendix 83: PPT Seminar “Schmetterlinge”

Action F4

►Appendix 84: After LIFE

7.3 Dissemination annexes

7.3.1 Layman's report

►Appendix 85: Layman Report

- 85.1 DE
- 85.2 EN

7.3.3 Other dissemination annexes

Action E1

Appendix 86: Graphic identity submitted with the inception report (April 2013)

Appendix 87: identité graphique présentation ppt

Appendix 88: Project stationary submitted with the inception report (April 2013)

Appendix 89: Flyer submitted with the progress report (April 2014)

Appendix 90: Roll-ups submitted with the progress report (April 2014)

Appendix 91:

- 91.1 Provisional signs
- 91.2 Panneau étable
- 91.3 Panneau chantier Tretterbaach

►Appendix 92: Information boards

- 92.1 Balise
- 92.2 Mesures grand
- 92.3 Mesures petit
- 92.4 Panneau de depart 1
- 92.5 Panneau de depart 2
- 92.6 Panneau liaison
- 92.7 Panneau Renaturierung
- 92.8 Poteau 1
- 92.9 Poteau 2
- 92.10 Pateau 3

Appendix 93: Documents on the press conference form the 20.11.12 submitted with the inception report (April 2013)

Appendix 94: Documents on introductory event from the 12.12 and 20.02.13 submitted with the inception report (April 2013)

►Appendix 95: Invitation Evénement de clôture

►Appendix 96: Handout Formation Papillons

►Appendix 97: Complete list of events

►Appendix 98: Scan of press releases

- 98.1 1-15 submitted with the inception report (April 2013)
- 98.2 1-26 submitted with the progress report (April 2014)
- 98.3 27-43 submitted with the midterm report (April 2015)
- 98.4 44-60 submitted with the progress report (April 2016)
- 98.5Complete scan

►Appendix 99: Film: projet de reméandration

►Appendix 100: Authorisation Sentier

►Appendix 101: Book by Alan Johnston

Action E2

Appendix 102: Pictures of the website submitted with the inception report (April 2013)

►Appendix 103: Analytics All Web Site Data Channels

Action E3

Appendix 104: Invitation to information evening on pesticides submitted with the midterm report (April 2015)

Appendix 105: Flyer Workshop Bourgignon submitted with the progress report (April 2016)

Action E4

►Appendix 106: Einladung_Invitation_ColloqueLIFEEislek

►Appendix 107: Presentations of the seminar

►Appendix 108: in electronic format: all photographs

7.4 Final table of indicators

►Appendix 109:

- 109.1 Initial Output indicators submitted with the inception report (April 2013)
- 109.2 Output indicators submitted with the progress report (April 2014)

►Appendix 110: Final Output indicators

8. Financial report and annexes

►Appendix 111: Standard Payment Request and Beneficiary's certificate- signed

►Appendix 112: Beneficiary's Certificate for Nature Projects

- natur&ëmwelt Fondation Hëllef fir d'Natur- signed
- CNDS Naturaarbechten- signed

►Appendix 113: Consolidated Cost Statement for the Project- signed

►Appendix 114: Financial Statement of the Individual Beneficiary

- 114.1 natur&ëmwelt Fondation Hëllef fir d'Natur- signed
- 114.2 natur&ëmwelt asbl- signed
- 114.3 CNDS Naturaarbechten- signed

►Appendix 115: Auditor's report