Multi-stakeholder Landscape and Technical Innovation leading to Peatland Ecosystem Restoration

LIFE MULTI PEAT

LIFE20 CCM/DE/001802

Baseline socio-economic impact assessment Germany

December 2022

Introduction

LIFE Multi Peat is a five-year LIFE project that aims to contribute to the goals of the EU climate change mitigation policies through the restoration of peatlands in five EU-countries (Poland, Germany, Belgium, the Netherlands, and Ireland), as well as through the implementation of monitoring and communication measures.

The specific LIFE Multi Peat objectives are threefold:

1. The large-scale practical restoration of degraded peatlands leading to the cessation of significant CO2 emissions from the project sites. This restoration will eventually lead to the restoration of their carbon sink functions, as well as the improvement of knowledge on techniques and tools for measuring GHG emissions.
2. The development of a knowledge base and replicable techniques for halting further significant emissions from different classes of degraded peatlands and ultimately restoring their potential as carbon sinks.
3. The development of effective policy tools, such as a peatland policy toolkit that includes an EU-wide policy catalogue, data portal, and a policy development tool that brings together relevant information for policy makers, conservationists, other experts, and the public in one place.

In support of these objectives, the consortium partners will assess the climate impact of the restoration measures by quantifying the GHG emissions, calculating the current annual GHG budgets and potential savings in the future. This will be done by the implementation of the following measures:

- Collecting and summarising accumulated insight of past and present EU peatland projects and bringing them together under a common platform.
- Collecting peatland data and policy documents from all EU Member States.
- Developing a toolkit to catalogue selected EU peatland projects, policies, and data, including an EU-wide Peatland Policy Catalogue, Data Portal and Policy Development Tool.
- Raising awareness on the role of degraded peatlands in global warming and promoting engagement in CCM via peatland restoration and the replication of project techniques.
- Contributing to the Water Framework Directive (WFD) and the new Common Agricultural Policy (CAP) legislation by developing national reviews of WFD and CAP impact on peatlands and GHG emissions.
- Verifying the potential for the creation of carbon credits relating to carbon sequestration/carbon farming and its economic importance, and marketing potential, sustainable agronomic practices on organic soils and corresponding quantification methods.
- Contributing to mainstreaming CAP aims by developing a business case for paludiculture, as well as a concept in which paludiculture functions as a buffer zone of restored peatlands in sites in Germany and Belgium.
- Contributing to scaling up peatland restoration in project countries and beyond.

Methodology

The socio-economic impact assessment will focus on the direct and indirect impacts at site, regional and European level. Main project activities will be monitored against a series of indicators to assess the positive contribution of the project to society. A single project measure can contribute, directly or indirectly, to multiple ecosystem services and indicators. Greater weight will be given to the direct impact indicators.

Direct impact indicators

1. **Economic contribution:** the economic contribution of the project will be assessed by the number of individuals and companies hired and the amount spent by the beneficiary. The amount spent will be calculated by the sum of the following cost categories: external assistance, consumables, travels, and other costs.
2. **Ecosystem regulating services (GHG emissions):** the regulating services provided by peatland ecosystems that will be monitored are the project's direct contribution to GHG-emission reduction and the regulation of water flow (FAO[1]). The impact of the project to the first ecosystem regulating service will be assessed by monitoring emissions and calculating the global warming potential (GWP), measured in tons of GWP CO2-eq/ha/year.
   To further complement the evaluation of the project's impact to the climate, the Carbon Dioxide (CO2) and Methane (CH4) emissions will be monitored and measured in tons per year. Regulation of water flow will be based on improved resilience to flooding and assessed by hectares with increased water holding capacities. The baseflow, understood as the portion of the streamflow that is sustained between precipitation events, will be assessed by the variation levels of these flow.
3. **Awareness raising:** the impact of the project's communication measures will be assessed by the level of engagement with stakeholders, including the number of stakeholders directly or indirectly involved with the project partners and/or activities through meetings, participation in events organised by the beneficiaries, media coverage of the project (e.g., podcasts, news articles, press releases, etc.), the number of informational material produced and disseminated (in print and digitally), as well as the number of visits to the project website, including the webpage created by NABU and Eurosite. Also, the establishment of information boards on the project sites is expected to raise the awareness of peatlands among local stakeholders.

Indirect impact indicators

1. **Ecosystem supporting services:** the provision of living spaces for plants or animals and maintaining a diversity of plants and animals are supporting services and the basis

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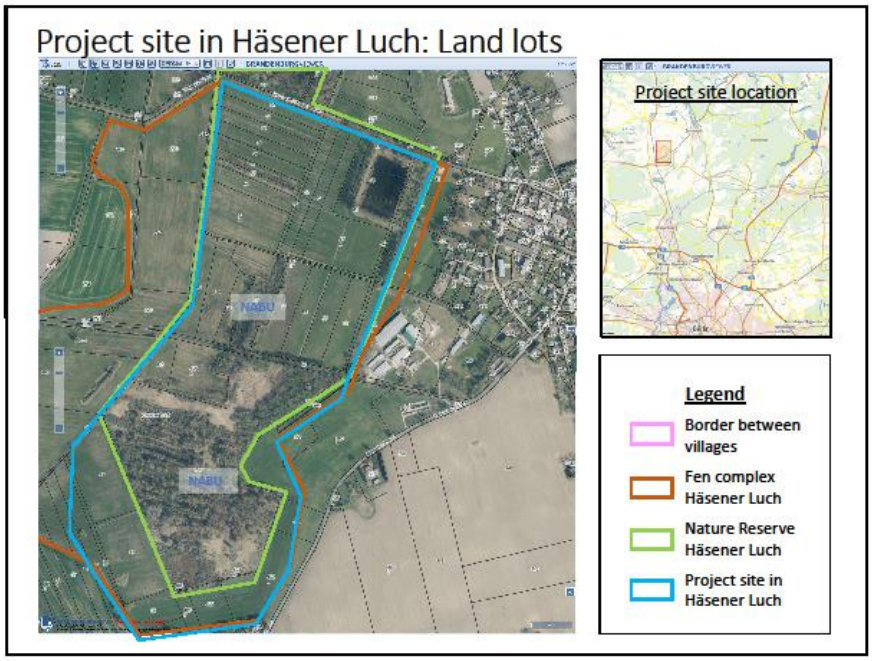
of all ecosystems and their services (FAO[2]). Thus, the project impact to biodiversity will be assessed by the number of hectares of the habitats positively affected by the project measures and the change in percentage cover of indicator species associated with their respective target habitat.

2. **Ecosystem provisioning services:** Water, food, wood, and other goods are some of the material benefits people obtain from ecosystems called ´provisioning services´ (FAO[3]). The impact of the project measures to ecosystem provisioning services, specifically the contribution to sustainable land use, agriculture, and forestry, will be measured by the number of hectares of agricultural land under sustainable management; in this case, under paludiculture practices.
3. **Ecosystem regulating services (fire/flood prevention):** the regulating services provided by peatland ecosystems which will be monitored are the project's indirect contribution to flood and fire control. This will be measured by the number of hectares under improved conditions after the project measures. It is well documented that restored peatlands increase the water holding capacity, reduced lag-time from precipitation events, improve flood resilience and decrease fire risks.
4. **Ecosystem cultural services (aesthetic inspiration, recreation):** the non-material benefits people obtain from ecosystems are called cultural services. They include aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment (FAO[4]). In this regard, the number of hectares restored, and the hectares of the habitats positively affected by the project measures will serve to assess the project's indirect contribution to the cultural services of aesthetic inspiration and recreation.

[2] Supporting services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[3] Provisioning services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[4] Cultural services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

Project site level



Site name	Häsener Luch
Location	District of Oberhavel, Brandenburg, Germany A part of the fen complex Häsener Luch was placed under nature protection by decree from 1953. The approximately 52 ha nature reserve with the same name extends west of the village Häsen, north of the village Klevesche Häuser and east of the village Gutengermendorf, all districts of the Löwenberger Land municipality. To the west of the area runs the B 96, and to the southwest extends the Moncapricesee nature reserve (also the next Natura 2000 site), which covers about 113.6 ha.
Project site size	20 ha
Conservation status	Nature Protected Area (IUCN-Kategorie IV – Habitat/Species Management Area)
Habitat type	Fen complex
Habitat status	Very degraded

Site level stakeholders

- Residents
- Land managers and land-users: mainly small to medium scale farmers
- landowners
- Public authorities: Häsen and Klevesche Häuser village councils, Löwenberger Land municipality (mayor, administration and municipal council), the district of Oberhavel (with administration, especially Lower Water and Lower Nature Conservation administration), Soil and Water association Uckermark-Havel
- Non-profit organisations: Farmer association Oberhavel (KBV Oberhavel e.V)., NABU Gransee e.V.
- Private companies: farmers' companies (4), a forestry company, a transportation and waste management company, a small-scale gardening and landscaping company and hospitality companies (accommodation, venues)
- Neighbouring settlements:
    - Häsen Village: located west of the fen complex and nature reserve Häsener Luch
        - Population: 253 residents
        - Main economic activities: farming, small scale companies, employment mostly outside of village (76 % of employees resident in the municipality of Löwenberger Land commute to outside)
    - Klevesche Häuser Village: located south of the fen complex and nature reserve Häsener Luch
        - Population: 50 residents
        - Main economic activities: farming, small scale companies, employment outside of village (see at Häsen)

Local impact assessment

Considering the project is only at the beginning, implementation actions (C.1-C.3), which are expected to impact socio-economic indicators, have not yet started. This initial stage has focussed on informing local stakeholders and obtaining consent to access certain areas to set up hydrological, greenhouse gas and vegetation monitoring plots.

Since the project start NABU has engaged with local stakeholders through one-on-one meetings (e.g., the Soil and Water association Uckermark-Havel), as well as the organisation of a kick-off event to present LIFE Multi Peat (Sept 14, 2022 – ~25 participants). For this first event, the participation of stakeholders at the site level focussed on landowners and land-users (~6, invited were 9, participated 4), farmer association Oberhavel ~1), and local and regional administration representatives (Häsen and Klevesche Häuser village councils, Löwenberger Land municipality and district of Oberhavel administration ~participated 3). During the event, the project aims, and main activities were discussed, as well as the importance of healthy peatlands and the existence of alternative sustainable use of peatlands, i.e., paludiculture. To

engage more effectively with stakeholders, NABU also enlisted the support of Succow Foundation.

The kick-off event organised on September 14, 2022, had a direct impact in raising awareness of the peatland importance as a climate mitigator as well as further ecosystem services. Residents of surrounding villages, including landowners and land-users neighbouring the project site, were also made aware of the opportunities associated with sustainable agricultural practices on peatlands, i.e., paludiculture. The success of the event is evidenced by the mutual agreement to host such an informational event annually, with the aim of keeping residents up to date on the project activities and plans. Generally, all participants welcomed our project and highlighted the importance and opportunities of the restoration of the Häsener Luch.

The NABU team expects to increase impact on all indicators as the project progresses, especially those associated with ecosystem services and economic contributions.

Furthermore, above mentioned local small-scale businesses will, or already do, economically benefit from project measures: hospitality companies (accommodation, venues) through project events and team members accommodated, contracts with service providers e.g., for transport, restoration, and later maintenance works.

Regional level stakeholders

- Research institutes: Eberswalde University for Sustainable Development (HNEE)
- Peatland experts: practitioners, land managers, scientists, environmentalists, land use policy, climate policy
- Non-profit organisations: NABU Brandenburg, Farmer association Brandenburg (LBV Brandenburg e.V), Deutscher Verband für Landschaftspflege Berlin-Brandenburg (DVL e.V.), Arge Klimamoor
- Private companies: pilot farms for paludiculture (e.g., Petri in Kremmen), Carbonauten Eberswalde
- Brandenburg government and administration: Ministry of Agriculture, Environment and Climate Protection of the State of Brandenburg (MLUK) with its State Office for the Environment (Landesamt für Umwelt, LfU, being the Higher Water and Higher Nature Conservation administration)
- Regional policymakers of the district of Oberhavel: district chief executive (Landrat) and district council
- Other villages (districts) being part of the Löwenberger Land municipality: Gutengermendorf, Liebenberg, Neulöwenberg, Neuhäsen

Regional impact assessment

The NABU team has engaged with regional stakeholders though one-on-one meetings, as well as the participation and networking in conferences. For example:

- On October 19th, 2022, project staff participated in an event on peatland restoration and paludiculture in Hohengüstrow / Uckermark with a Brandenburg focus and value chains for peatland biomass and presentations of peatland-adapted harvesting techniques.
- DAFA Strategisches Forum (Annual meeting of the German agricultural research alliance) (8-9th November, Berlin)

It is expected that impact to indicators such as economic contribution and ecosystem services – regulating, provisioning, and supporting – will significantly increase once the implementation of actions C.1, C.2 and C.3 start. As implementation on action E.3 progresses, awareness raising at the regional level is also expected to increase.

European level stakeholders

- Research institutes: Universities, Finish Meteorological Institution, SILAVA, LUKE, etc.
- Peatland projects (LIFE, Interreg, Horizon Europe): Care Peat, Waterlands, Alfawetland, etc.
- Non-profit organisations: Birdlife Europe, IUCN UK, EEB, Wetlands International, etc.
- EU policymakers and representatives: EU Commission, Members of the European Parliament

European impact assessment

During this initial stage, the project activities have a greater impact on raising awareness. The indicators associated with ecosystem services are expected to have significant impact once the implementation of actions C.1, C.2 and C.3 start. Moreover, it is expected that engagement with European stakeholders will only increase as implementation of communication actions progress, especially actions E.2 and E.4.

The NABU team has networked with European stakeholders mainly through ad hoc online meetings and participation in conferences. NABU experts have participated via oral and poster presentations in a total of 5 conferences, where a range of issues surrounding peatlands were discussed, from restoration and monitoring techniques to national and EU peatland policy:

- Care Peat Conference (28-29 April 2022): oral presentations (GHG expert) and panel discussion (project coordinator)
- European Peatlands Initiative Workshop (27 April 2022): participation (national coordinator, project coordinator and GHG expert)
- 5th Just Transition Platform meeting (12 May 2022): oral presentation and panel discussion (project coordinator)
- Care-Peat/Waterlands Workshop (26th October 2022, Brussels): For Peat's Sake – Strengthening Peatlands Targets in the Nature Restoration
- LIFE in Common Land Final Conference (6-9 November 2022, Lugo, Spain): oral presentation (project coordinator)

Moreover, during the project team meeting in Mechelen, Belgium (28th November – 1st December 2022) the NABU team, together with project partners, organized an open policy workshop. In total 7 representatives from LIFE, Horizon and Interreg funded projects participated in the workshop, providing short presentations and joining our discussions.

GERMANY							
	INDICATORS						
	DIRECT			INDIRECT			
Units	**Economic contribution**	**Ecosystem regulating services** (GHG emissions)	**Awareness raising**	**Ecosystem supporting services** (habitat for species)	**Ecosystem provisioning services** (raw materials, freshwater)	**Ecosystem regulating services** (Fire/flood prevention)	**Ecosystem cultural services** (recreation, aesthetic appreciation, and inspiration)
Stakeholder and Duty holder engagement			9				
Information boards/panels			0				
Employment (Individuals/companies hired by the project)	5						
Amount spent (€)[5]	38448,75 €						
Number of jobs (FTE and PTE)	9						
Number of events organised or participated	3		3				
Number of participants in events organised by the beneficiary			~25				
Number of hectares restored		0 ha		0 ha		0 ha	0 ha
GWP reduction[6] (tons of GWP CO_2-eq/ha/yr)		0 tons of GWP eq.					
Number of Print media			1				
Number of Publications/Reports, promotional material produced			1				

[5] The sum of costs from external assistance, consumables, travels, other costs from project start to December 31, 2022
[6] Reduction by tons CO2-eq/ha/yr

Media coverage (newspaper articles, press releases, radio, podcast) [7]			2				
Website – visits[8]			614				
Climate Performance (tons/year CO2)		0					
Climate Performance (tons/year CH4)		0					
Environmental Performance – resilience to flooding (ha)						0 ha	
Baseflow contribution of receiving water (m3/s) by percentage		0%				0 %	
Sustainable land use, agriculture, and forestry (hectares of agricultural land under sustainable management)					0 ha		
Habitats positively affected (ha) and change in percent cover of indicator species associated with their respective target habitat				0% 0 ha			0% 0 ha

[7] Press release World's Wetland Day 2022, interview in LIFE podcast 'LIFE in a warming climate' published on January 2023 https://open.spotify.com/episode/5YmRgysudtjWynGugPpTky?si=XwOJtFMOScWqqzUZ3yf9Pg

[8] Since the setup until 31 December 2022. The figure refers to the German and English webpages – https://www.nabu.de/natur-und-landschaft/moore/weltweit/life-multi-peat.html and https://en.nabu.de/topics/ecosystems/life-multi-peat.html

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LIFE20 CCM/DE/001802

Baseline socio-economic impact assessment Poland

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3. The development of effective policy tools, such as a peatland policy toolkit that includes an EU-wide policy catalogue, data portal, and a policy development tool that brings together relevant information for policy makers, conservationists, other experts, and the public in one place.

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- Verifying the potential for the creation of carbon credits relating to carbon sequestration/farming and its economic importance, and marketing sustainable agronomic practices on organic soils and corresponding quantification methods.
- Contributing to mainstreaming CAP aims by developing a business case for paludiculture, as well as a concept in which paludiculture functions as a buffer zone of restored peatlands in sites in Germany and Belgium.
- Contributing to scaling up peatland restoration in project countries and beyond.

Methodology

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Direct impact indicators

1. **Economic contribution:** the economic contribution of the project will be assessed by the number of individuals and companies hired and the amount spent by the beneficiary. The amount spent will be calculated by the sum of the following cost categories: external assistance, consumables, travels, and other costs.
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3. **Awareness raising:** the impact of the project's communication measures will be assessed by the level of engagement with stakeholders, including the number of stakeholders directly or indirectly involved with the project partners and/or activities through meetings, participation in events organised by the beneficiaries, media coverage of the project (e.g., podcasts, news articles, press releases, etc.), the number of informational material produced and disseminated (in print and digitally), as well as the number of visits to the project website, including the webpage created by NABU and Eurosite. Also, the establishment of information boards on the project sites is expected to raise the awareness of peatlands among local stakeholders.

Indirect impact indicators

1. **Ecosystem supporting services:** the provision of living spaces for plants or animals and maintaining a diversity of plants and animals are supporting services and the

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basis of all ecosystems and their services (FAO[2]). Thus, the project impact to biodiversity will be assessed by the number of hectares of the habitats positively affected by the project measures and the change in percentage cover of indicator species associated with their respective target habitat.

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3. **Ecosystem regulating services (fire/flood prevention):** the regulating services provided by peatland ecosystems which will be monitored are the project's indirect contribution to flood and fire control. This will be measured by the number of hectares under improved conditions after the project measures. It is well documented that restored peatlands increase the water holding capacity, reduced lag-time from precipitation events, improve flood resilience and decrease fire risks.
4. **Ecosystem cultural services (aesthetic inspiration, recreation):** the non-material benefits people obtain from ecosystems are called cultural services. They include aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment (FAO[4]). In this regard, the number of hectares restored, and the hectares of the habitats positively affected by the project measures will serve to assess the project's indirect contribution to the cultural services of aesthetic inspiration and recreation.

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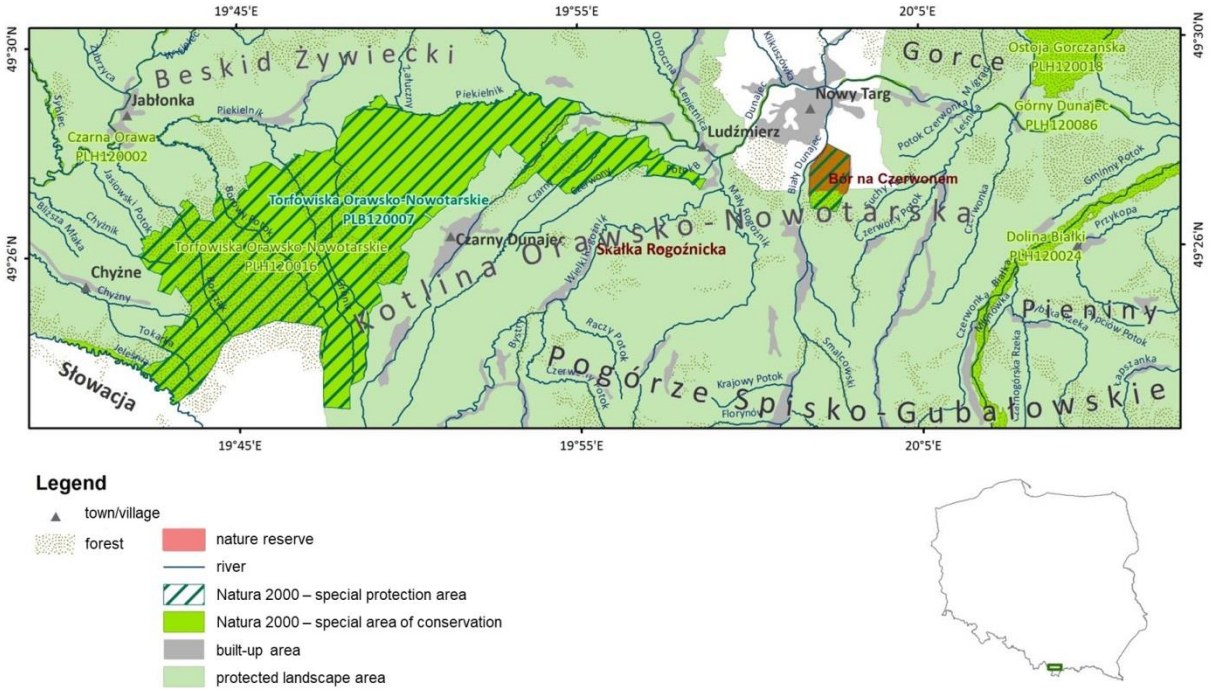
Project site level: Poland – Torfowiska Orawsko-Nowotarskie



Site name	Orawa-Nowy Targ Bogs [Torfowiska Orawsko-Nowotarskie]
Location	District of Czarny Dunajec, province Nowy Targ, Małopolska voivodeship, Poland Project areas are located within Torfowiska Orawsko-Nowotarskie PLC 120003 Natura 2000 site. The site is located in southern Poland, close to Slovakian border, between two mountain ranges – Tatry and Babia Góra. Total area of Natura 2000 site is 8266 ha. Part of the site is also preserved as Nature Reserve Bór na Czerwonem (114 ha). Main villages located close to the project areas are: Czarny Dunajec and Piekielnik. Sites where project activities will be implemented are mainly at selected domes of the raised bogs: Baligówka, possibly also Bór na Czerwonem, Bór za Lasem Kaczmarka, Puścizna Mała. Total area in which project action aim to restore peatland habitats is 252 ha.
Project site size	252 ha
Conservation status	Nature Protected Area (IUCN-Kategorie IV – Habitat/Species Management Area)
Habitat type	Raised bogs
Habitat status	Moderately degraded, in some part very degraded

Site level stakeholders

- Landowners:
  - main landowner is Czarny Dunajec commune – most of the project areas are located on its grounds
  - other important landowners are private owners of some other peatland areas (eg. Puścizna Mała) and also private owners of meadows bordering project sites;
- Land managers and land-users: mainly small to medium scale farmers of areas bordering raised bogs;
- Public authorities: Jabłonka, Nowy Targ, Czarny Dunajec municipalities (mayor, administration and municipal council), Nowy Targ county mayor, administration and municipal council);
- Water Supervision in Nowy Targ, State Water Holding Polish Waters;
- State Forest District – Nadleśnictwo Nowy Targ – managing the area of Bór na Czerwonem Nature Reserve;
- non-governmental organisation "UNEP-GRID Poland" and "Nature and Man" (Przyroda i Człowiek) which are implementing project on habitat restoration at Bór na Czerwonem Nature Reserve;
- Private, local companies active in the following topics: (i) forestry; (ii) agricultural practices – e.g. mowing, shrub removal; (iii) tourism (accommodation, venues);
- Neighbouring settlements:
  - Czarny Dunajec: located east of the main project site called Baligówka bog
    - small town with 3 771 residents
    - main economic activities: agriculture, small enterprises,
    - in the last years tourism is quite intensively developing, including eg. bike paths around raised bogs complexes
  - Piekielnik: located west of the main project site called Baligówka bog
    - village with 2 381 residents
    - main economic activities: farming, small scale companies
  - Nowy Targ: located norths of the Bór na Czerwonem Nature Reserve
    - town with 33 493 residents
    - Main economic activities: small scale companies, public sector, small scale indsustry

Local impact assessment

Considering the project is only at the beginning, implementation actions (C.1-C.3), which are expected to impact socio-economic indicators, have not yet started. This initial stage has focussed on informing local stakeholders and obtaining consent to access certain areas to set

up hydrological, greenhouse gas and vegetation monitoring plots. To do so, the following local meetings have been organized:

- meeting with Czarny Dunajec municipality (Czarny Dunajec town, 15.12.2021) – to discuss framework of collaboration and necessary agreements;
- meeting with representatives of Regional Directorate of Environmental Protection, Nowy Targ State Forestry District (Czarny Dunajec, Baligówka, 5.07.2022) – to discuss scope of active protection measures planned in the project site;
- meeting with representatives of Nature and Man NGO (Bór na Czerwonem Nature Reserve, 6.12.2022) – to discuss potential synergies for active protection measures planned in Bór na Czerwonem NR.
- meetings with private owners - discussions on renting grounds for monitoring activities (Piekielnik, 17.07.2022; 07.10.2022 r.)

As a result of those meetings and constant mail / phone contact with relevant local stakeholders, some important agreements and permissions have been obtained:

- agreement with Czarny Dunajec municipality (signed in August 2022) – for performing monitoring actions on their grounds;
- permit for exceptions from prohibitions applicable in the reserves – for monitoring activities in Bór na Czerwonem (issued 24.06.2022 by Regional Directorate for Environmental Protection);
- agreement with a private owner for the installation of a greenhouse gas measurement station (signed 07.10.2022).

The polish project partners – OTOP and KP – expect to increase impact on all indicators as the project progresses, especially those associated with ecosystem services and economic contributions.

Regional (national) level stakeholders

- Regional Directorate for Environment Protection in Kraków (RDOS), responsible for Natura 2000 site conservation and monitoring, implementing already some conservation measures);
- General Directorate for Environment Protection (GDOŚ, responsible for coordination supervision of Natura 2000 conservation, wetlands conservation, National Wetland Strategy, Ramsar Convention);
- Ministry of Climate and Environment (responsible for climatic issues);
- Ministry of Agriculture (responsible for agriculture and agricultural policy in national scale, including potential measures affecting wetlands in agricultural use);
- KOBIZE – National Centre for Emissions Balancing and Management (responsible for GHG emissions calculating and reporting, incl. emissions for degraded wetlands);
- The State Forests;
- CMoK – NGO working with wetlands; involved also in elaboration of National Wetland Strategy, working for development of Polish voluntary carbon credits scheme for peatlands;
- Research Institutes, in particular: Poznań University, Agricultural University in Poznań, Warsaw University;
- Peatland experts: practitioners, land managers, scientists, environmentalists, land use policy, climate policy;
- PGW Wody Polskie ("Polish Waters" Agency), responsible for the water management, water management planning, developing environmental objectives concerning waters, management and maintenance of surface waters and public drainage systems
- Farmers farming on peaty soils;
- Local communities (vulnerable on floods and droughts).

Regional impact assessment

The OTOP and Naturalists Club team closely cooperate with RDOŚ though information exchange via letters, email and phone, meetings joined field visits.

The project staff is represented in the Ramsar Committee, advisory board for wetlands conservation and wise use organised by GDOŚ.

The project staff prepared written comments of relevant organisations (OTOP and NC) for drafts of national documents:

- The CAP Strategic Plan
- The River Basin Management Plans

The comments were provided to relevant institution as input in public consultations.

On February 24th , 2022, project staff participated in LIFE webinar organized by National Fund for Environmental Protection and Water Management, presenting project.

On February 5-7th, 2023, project staff participated in national conference 'Pact for the Wetlands" organised in Warsaw by Warsaw University and CMoK.

On April, 2nd , 2022, information on LIFE MultiPeat has been presented to wide audience of nature conservation practitioners from Poland, on a yearly Klub Przyrodników conference (1-3.04.2022, Ląd nad Wartą).

Outreach of project to some regional-scale stakeholders has been also guaranteed by some press articles – e.g. two project stories in quarterly of OTOP "Birds" and one in "Bociek" – Klub Przyrodników magazine.

The project staff is a member of working group for development of voluntary carbon credits scheme, organised by CMoK.

It is expected that impact to indicators such as economic contribution and ecosystem services – regulating, provisioning, and supporting – in regional scale will significantly increase once the implementation of action E.4 will be more advanced.

European level stakeholders

- Peatland projects (LIFE, Interreg, Horizon Europe): Care Peat, Waterlands, Alfawetland, etc.
- Non-profit organisations: Birdlife Europe, IUCN UK, EEB, Wetlands International, etc.
- EU policymakers and representatives: EU Commission, Members of the European Parliament

European impact assessment

The Naturalists Club and OTOP team has networked with European stakeholders mainly through ad hoc online meetings and participation in conferences. The experts have participated in a Care Peat Conference (28-29 April 2022). The Naturalists Club expert participated in Waterlands project workshop in Arles (October 2022).

LIFE MULTI PEAT

LIFE20 CCM/DE/001802

POLAND							
	INDICATORS						
	DIRECT			**INDIRECT**			
Units	**Economic contribution**	**Ecosystem regulating services** (GHG emissions)	**Awareness raising**	**Ecosystem supporting services** (habitat for species)	**Ecosystem provisioning services** (raw materials, freshwater)	**Ecosystem regulating services** (Fire/flood prevention)	**Ecosystem cultural services** (recreation, aesthetic appreciation, and inspiration)
Stakeholder and Duty holder engagement			9				
Information boards/panels			0				
Employment (Individuals/companies hired by the project)	0						
Amount spent (€)[5]	0						
Number of jobs (FTE and PTE)	0						
Number of events organised or participated			5				
Number of participants in events organised by the beneficiary			0				
Number of hectares restored		0 ha		0 ha		0 ha	0 ha
GWP reduction[6] (tons of GWP CO_2-eq/ha/yr)		0 tons of GWP eq.					
Number of Print media			0				
Number of Publications/Reports, promotional material produced			0				
Media coverage (newspaper			3				

[5] The sum of costs from external assistance, consumables, travels, other costs

[6] Reduction by tons CO2-eq/ha/yr

articles, press releases, radio, podcast)							
Website – visits[7]			141				
Climate Performance (tons/year CO2)		0					
Climate Performance (tons/year CH4)		0					
Environmental Performance – resilience to flooding (ha)						0 ha	
Baseflow contribution of receiving water (m3/s) by percentage		0%				0 %	
Sustainable land use, agriculture, and forestry (hectares of agricultural land under sustainable management)					0 ha		
Habitats positively affected (ha) and change in percent cover of indicator species associated with their respective target habitat				0% 0 ha			0% 0 ha

[7] Visits are understood as unique page views of a polish project website: https://otop.org.pl/naszeprojekty/chronimy/life-multi-peat/ based on Google Analytics report. Due to the recent EU Data Protection Law (GDDR), which allows visitors the option to block statistical tracking of the website traffic; it is assumed the figures may be higher.

Multi-stakeholder Landscape and Technical Innovation leading to Peatland Ecosystem Restoration

LIFE MULTI PEAT

LIFE20 CCM/DE/001802

Baseline socio-economic impact assessment Belgium

December 2022

This assessment is made possible with EU-contribution through LIFE Multi Peat project.

Introduction

LIFE Multi Peat is a five-year LIFE project that aims to contribute to the goals of the EU climate change mitigation policies through the restoration of peatlands in five EU-countries (Poland, Germany, Belgium, the Netherlands, and Ireland), as well as through the implementation of monitoring and communication measures.

The specific LIFE Multi Peat objectives are threefold:

1. The large-scale practical restoration of degraded peatlands leading to the cessation of significant CO2 emissions from the project sites. This restoration will eventually lead to the restoration of their carbon sink functions, as well as the improvement of knowledge on techniques and tools for measuring GHG emissions.
2. The development of a knowledge base and replicable techniques for halting further significant emissions from different classes of degraded peatlands and ultimately restoring their potential as carbon sinks.
3. The development of effective policy tools, such as a peatland policy toolkit that includes an EU-wide policy catalogue, data portal, and a policy development tool that brings together relevant information for policy makers, conservationists, other experts, and the public in one place.

In support of these objectives, the consortium partners will assess the climate impact of the restoration measures by quantifying the GHG emissions, calculating the current annual GHG budgets and potential savings in the future. This will be done by the implementation of the following measures:

- Collecting and summarising accumulated insight of past and present EU peatland projects and bringing them together under a common platform.
- Collecting peatland data and policy documents from all EU Member States.
- Developing a toolkit to catalogue selected EU peatland projects, policies, and data, including an EU-wide Peatland Policy Catalogue, Data Portal and Policy Development Tool.
- Raising awareness on the role of degraded peatlands in global warming and promoting engagement in CCM via peatland restoration and the replication of project techniques.
- Contributing to the Water Framework Directive (WFD) and the new Common Agricultural Policy (CAP) legislation by developing national reviews of WFD and CAP impact on peatlands and GHG emissions.
- Verifying the potential for the creation of carbon credits relating to carbon sequestration/carbon farming and its economic importance, and marketing potential, sustainable agronomic practices on organic soils and corresponding quantification methods.
- Contributing to mainstreaming CAP aims by developing a business case for paludiculture, as well as a concept in which paludiculture functions as a buffer zone of restored peatlands in sites in Germany and Belgium.
- Contributing to scaling up peatland restoration in project countries and beyond.

Methodology

The socio-economic impact assessment will focus on the direct and indirect impacts at site, regional and European level. Main project activities will be monitored against a series of indicators to assess the positive contribution of the project to society. A single project measure can contribute, directly or indirectly, to multiple ecosystem services and indicators. Greater weight will be given to the direct impact indicators.

Direct impact indicators

1. **Economic contribution:** the economic contribution of the project will be assessed by the number of individuals and companies hired and the amount spent by the beneficiary. The amount spent will be calculated by the sum of the following cost categories: external assistance, consumables, travels, and other costs.
2. **Ecosystem regulating services (GHG emissions):** the regulating services provided by peatland ecosystems that will be monitored are the project's direct contribution to GHG-emission reduction the regulation of water flow (FAO[1]). The impact of the project to the first ecosystem regulating service will be assessed by monitoring the global warming potential (GWP), measured in tons of GWP CO2-eq/ha/year.
   To further complement the evaluation of the project's impact to the climate, the Carbon Dioxide (CO2) and Methane (CH4) emissions will be monitored and measured in tons per year. Regulation of water flow will be assessed by hectares with improved water holding capacities and the base flow by … needs to be written by someone who understands this...
3. **Awareness raising:** the impact of the project's communication measures will be assessed by the level of engagement with stakeholders, including the number of stakeholders directly or indirectly involved with the project partners and/or activities through meetings, participation in events organised by the beneficiaries, the number of informational material produced and disseminated (in print and digitally), as well as the number of visits to the project website, including the webpage created by NABU and Eurosite. Also, the establishment of information boards on the project sites is expected to raise the awareness of peatlands among local stakeholders.

Indirect impact indicators

1. **Ecosystem supporting services:** the provision of living spaces for plants or animals and maintaining a diversity of plants and animals are supporting services and the basis of all ecosystems and their services (FAO[2]). Thus, the project impact to biodiversity will be assessed by the number of hectares of the habitats positively affected by the project

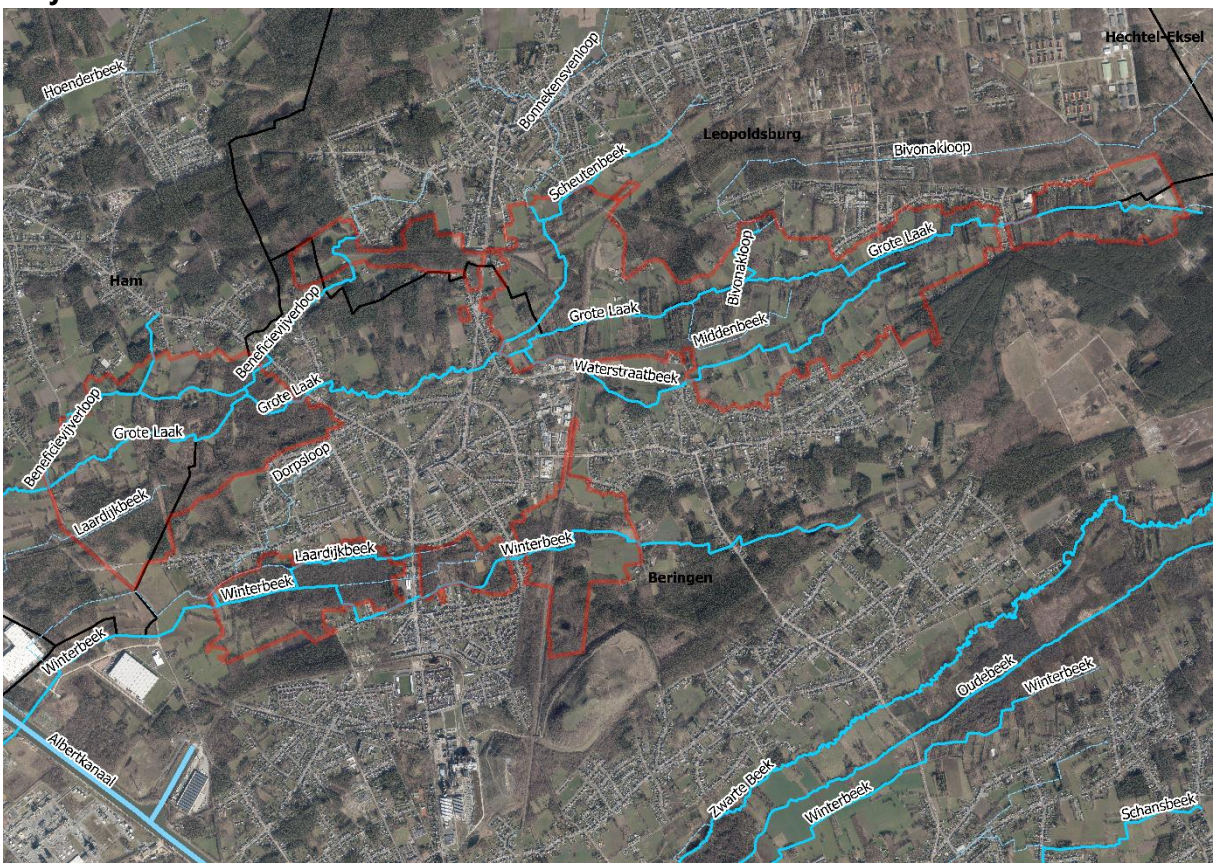
[1] Regulating services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[2] Supporting services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

measures and the change in percentage cover of indicator species associated with their respective target habitat.

2. **Ecosystem provisioning services:** Water, food, wood and other goods are some of the material benefits people obtain from ecosystems called ´provisioning services´ (FAO[3]). The impact of the project measures to ecosystem provisioning services, specifically the contribution to sustainable land use, agriculture, and forestry, will be measured by the number of hectares of agricultural land under sustainable management; in this case, under paludiculture practices.
3. **Ecosystem regulating services (fire/flood prevention):** the regulating services provided by peatland ecosystems which will be monitored are the project's indirect contribution to flood and fire control. This will be measured by the number of hectares under improved conditions after the project measures. It is well documented that restored peatlands increase the water holding capacity, reduced lag-time from precipitation events, improve flood resilience and decrease fire risks.
4. **Ecosystem cultural services (aesthetic inspiration, recreation):** the non-material benefits people obtain from ecosystems are called cultural services. They include aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment (FAO[4]). In this regard, the number of hectares restored, and the hectares of the habitats positively affected by the project measures will serve to assess the project's indirect contribution to the cultural services of aesthetic inspiration and recreation.

[3] Provisioning services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[4] Cultural services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

Project site level



Site name	Vallei van de Grote Beek
Location	Cities of Beringen, Ham and Leopoldsburg, Province Limburg, Belgium A small part of the peatland is placed under nature 2000 protection. The nature reserve itself is protected nature according to Belgian legislation (~230ha). The valley originates from the Military area "Kamp Beverlo" where the source of the Grote Beek and the Kleine Beek are found. These brooks run through a valley towards the Grote Laak (Grote Beek) and towards the Demer (Kleine Beek). The valley in which these 2 brooks run is seen as the Vallei van de Grote Beek
Project site size	130 ha
Conservation status	A small part: Natura 2000 area (habitat and bird directive All area: Protected nature reserve type 4 (Belgian protection level)
Habitat type	Alder swamp forest (91E0*) + lowland peat, transition mires (7140)
Habitat status	Very degraded

Site level stakeholders

- Residents
- Land managers, land-users, and landowners: mainly small to medium scale farmers
- Governments
    - VLM (Flemish Land Agency)
    - VMM (Flemish Environment Agency)
    - ANB (Agency for Nature and Forest)
    - Province of Limburg
    - Provinciaal Natuurcentrum
    - Department Water
    - Department Environment
    - DLV (Department of Agriculture and Fisheries)
    - City councils / local municipalities
        - Beringen
        - Ham
        - Leopoldsburg
- Organizations
    - Regionaal landschap
    - ABS (General Farmers Union)
    - Boerenbond (Farmers Union)
- Volunteers within Natuurpunt
    - Local branch Beringen
    - Local branch Ham
    - Local branch Leopoldsburg
    - Conservator of the nature reserves

Local impact assessment

Considering the project is only at the beginning, implementation actions (C.1-C.3), which are expected to impact socio-economic indicators, have not yet started. The initial stage has focussed on informing local and regional stakeholders and obtaining permits (for removal of anthropogenic structures and closing of ditches and small waterways) and site protection for new parcels (by means of drawing up a nature management plan to achieve type 4 nature protection in order to obtain financial support for reaching the nature targets and monitoring).

Natuurpunt has engaged with local stakeholders through one-on-one meetings, as well as the organisation of different stakeholder meetings to introduce and give updates on LIFE Multi Peat (~20 participants). At the very start of the project these meetings was rather difficult to organise due to the corona rules then in force. The involvement of stakeholders at the site level has focussed on Governments (including water managers) and organizations, During these meetings, the project aims, and main activities were discussed, as well as the importance of

healthy peatlands and the existence of alternative sustainable use of peatlands in the buffer zones, i.e., paludiculture. Also networking during events raises awareness on the project and will have a positive impact on the local mindset of peatland restoration and on finding synergies to strengthen our project deliverables.

These stakeholder meetings have a direct impact in raising awareness of the peatland importance as a climate mitigator as well as further ecosystem services. And thus are of great importance in obtaining permits to be able to carry out the restoration works. Residents of surrounding villages, including landowners and land-users neighbouring the project site, were also made aware of the project and its importance and farmers are made aware of the potential added-value paludiculture can bring in the buffer zones (as a result of rewetting in the core areas).

The project site is also of importance for hikers and local residents. Having nature areas nearby is proven to have positive impacts on health and well-being. The nature reserve is an important hiking/leisure area where people can get some mental rest. After the restoration of this nature reserve, this positive social impact should increase.

We expect to increase impact on all indicators as the project progresses, especially those associated with ecosystem services and economic contributions. The project can have an impact on some farmlands, or at least local farmers might expect that. This is something to keep in mind during the restoration. The hydrological study will give answers to this uncertainty and help motivate restoration to local farmers and residents. In order to have a positive socio-economic impact on local residents and farmers, raising awareness is very important. This project will have a positive socio-economic impact on a larger scale, where ecosystem services and water buffering in particular will benefit the broad region.

Regional level stakeholders

- Research institutes: not closely included in the project, only participating for some specific activities.
    - University of Leuven (making a regional peat map)
    - University of Antwerp (peat experts, doing GHG measurements and ecohydrological studies in nearby, similar systems
    - ILVO (paludiculture literature study)
    - INAGRO (research institute on biological and climate friendly farming)
- Governments
    - VLM (Flemish Land Agency, responsible for management agreements with farmers)
    - ANB (Agency for Nature and Forest, advices on permits)
    - DLV (Department of Agriculture and Fisheries, advices on permits)
    - Ministry of Nature and Environment (granting permits)
- Peatland experts (specific questions to practitioners, land managers, scientists, environmentalists, land use policy, climate policy, …)
- Flemish policymakers and representatives
    - Flemish parliament (Environmental Commission)
    - Ministry of Nature and Environment
    - Flemish Drought Commission

Regional impact assessment

We have engaged with regional stakeholders though one-on-one meetings, stakeholder meeting or meetings for tackling specific issues or concerns, as well as the participation and networking in conferences…

On a regional level, our project impact on ecosystem services will significantly increase once restoration measures are carried out. This will indirectly have a huge economical benefit for the region and help in protecting people along the complete stream basin (from the source of the Grote Beek and Kleine Beek, through the rivers Demer and Nete towards the sea) from flooding and droughts.

The E actions help in raising awareness to the broad public and will have positive social impacts. E5 actions will make sure people from all around Flanders (and further) will come visit the area and see the beauty and importance of the peatlands themselves.

This project area is one of our many peat areas facing the same problems of drainage and degradation. The system is similar to most of our Flemish peatlands. This project will thus serve as an example for other areas yet to be restored.

European level stakeholders

- Research institutes: Universities, Greifswald mire center, etc.
- Peatland projects (LIFE, Interreg, Horizon 2020): Care Peat, Canape, Carbon Connects, Waterlands, Alfawetland, etc.
- Non-profit organisations: Birdlife International, IUCN UK, EEB, Wetlands International, etc.
- EU policymakers and representatives: EU Commission, Members of the European Parliament

European impact assessment

During this initial stage, the project activities have a greater impact on raising awareness. The indicators associated with ecosystem services are expected to have significant impact once the implementation of actions C.1, C.2 and C.3 start. Moreover, it is expected that engagement with European stakeholders will only increase as implementation of communication actions progress, especially actions E.2 and E.4.

The NP team has networked with European stakeholders mainly through ad hoc online meetings and participation in conferences, also knowledge is shared internally across projects and information is passed on to the complete project team when someone participates in an international event. The Multi peat team in particular has participated in 2 international conferences/workshops already, where a range of issues surrounding peatlands were discussed, from restoration and monitoring techniques to national and EU peatland policy:

- Care Peat Conference (28-29 April 2022): oral presentations (GHG expert) and panel discussion (project coordinator)
- Peatland restoration workshop at the Bargerveen (Netherlands) 8 March 2022: oral presentations and field visit

BELGIUM							
	INDICATORS						
	DIRECT			INDIRECT			
Units	**Economic contribution**	**Ecosystem regulating services** (GHG emissions)	**Awareness raising**	**Ecosystem supporting services** (habitat for species)	**Ecosystem provisioning services** (raw materials, freshwater)	**Ecosystem regulating services** (Fire/flood prevention)	**Ecosystem cultural services** (recreation, aesthetic appreciation, and inspiration)
Stakeholder and Duty holder engagement	1		12				
Information boards/panels			3				
Employment (Individuals/companies hired by the project)	2						
Amount spent (€)[5]	146 924.38						
Number of jobs (FTE and PTE)	5 PTE[6]						
Number of events organised or participated	6		6				
Number of participants in events organised by the beneficiary			30 + 38				
Number of hectares restored		0 ha		0 ha	0 ha	0 ha	0 ha
GWP reduction[7] (tons of GWP CO_2-eq/ha/yr)		0 tons of GWP eq.					
Number of Print media			1 (leaflets)				
Number of Publications/Reports, promotional material produced			5100 (leaflets)				

[5] The sum of costs from external assistance, consumables, travels, other costs

[6] 5 persons, not all actually working part time. Officialy the work of these 5 persons is divided in the project over 1.8 FTE.

[7] Reduction by tons CO2-eq/ha/yr

Website – visits[8]			296				
Climate Performance (tons/year CO2)		Data is still being analysed					
Climate Performance (tons/year CH4)		Data is still being analysed					
Environmental Performance – resilience to flooding (ha)						0 ha	
Baseflow contribution of receiving water (m3/s by percentage)		Not applicable				Not applicable	
Average lowest groundwater level on the whole project site (cm below ground level)		Data is still being analysed					
Sustainable land use, agriculture, and forestry (hectares of agricultural land under sustainable management)					0 ha		
Habitats positively affected (ha) **and change in percent cover of indicator species associated with their respective target habitat**				0% 0 ha			0% 0 ha

[8] Visits are understood as ...
Due to the recent EU Data Protection Law (GDDR), which allows visitors the option to block statistical tracking of the website traffic; it is assumed the figures may be higher.

Multi-stakeholder Landscape and Technical Innovation leading to Peatland Ecosystem Restoration

LIFE MULTI PEAT

LIFE20 CCM/DE/001802

Baseline socio-economic impact assessment
The Netherlands

February 2023

Introduction

LIFE Multi Peat is a five-year LIFE project that aims to contribute to the goals of the EU climate change mitigation policies through the restoration of peatlands in five EU-countries (Poland, Germany, Belgium, Ireland and the Netherlands), as well as through the implementation of monitoring and communication measures.

The specific LIFE Multi Peat objectives are threefold:

1. The large-scale practical restoration of degraded peatlands leading to the cessation of significant CO2 emissions from the project sites. This restoration will lead to the restoration of carbon sink functions, as well as the improvement of knowledge on techniques and tools for measuring GHG emissions.
2. The development of a knowledge base and replicable techniques for halting further significant emissions from different classes of degraded peatlands and ultimately restoring their potential as carbon sinks.
3. The development of effective policy tools, such as a peatland policy toolkit that includes an EU-wide policy catalogue, data portal, and a policy development tool that brings together relevant information for policy makers, conservationists, other experts, and the public in one place.

In support of these objectives, the consortium partners will assess the climate impact of the restoration measures by quantifying the GHG emissions, calculating the current annual GHG budgets and potential savings in the future. This will be done by the implementation of the following measures:

- Collecting and summarising accumulated insight of past and present EU peatland projects and bringing them together under a common platform.
- Collecting peatland data and policy documents from all EU Member States.
- Developing a toolkit to catalogue selected EU peatland projects, policies, and data, including an EU-wide Peatland Policy Catalogue, Data Portal and Policy Development Tool.
- Raising awareness on the role of degraded peatlands in global warming and promoting engagement in CCM via peatland restoration and the replication of project techniques.
- Contributing to the Water Framework Directive (WFD) and the new Common Agricultural Policy (CAP) legislation by developing national reviews of WFD and CAP impact on peatlands and GHG emissions.
- Verifying the potential for the creation of carbon credits relating to carbon sequestration/carbon farming and its economic importance, and marketing potential, sustainable agronomic practices on organic soils and corresponding quantification methods.
- Contributing to scaling up peatland restoration in project countries and beyond.

Methodology

The socio-economic impact assessment will focus on the direct and indirect impacts at site, regional and European level. Main project activities will be monitored against a series of indicators to assess the positive contribution of the project to society. A single project measure can contribute, directly or indirectly, to multiple ecosystem services and indicators. Greater weight will be given to the direct impact indicators.

Direct impact indicators

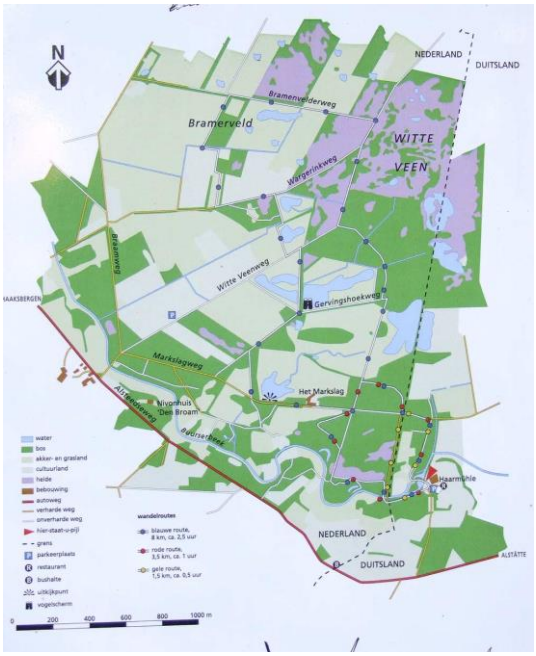
1. **Economic contribution:** the economic contribution of the project will be assessed by the number of individuals and companies hired and the amount spent by the beneficiary. The amount spent will be calculated by the sum of the following cost categories: external assistance, consumables, travels, and other costs.
2. **Ecosystem regulating services (GHG emissions):** the regulating service provided by peatland ecosystems that will be monitored are the project's direct contribution to GHG-emission reduction. The impact of the project to the first ecosystem regulating service will be assessed by monitoring emissions and calculating the global warming potential (GWP), measured in tons of GWP CO2-eq/ha/year.
   To further complement the evaluation of the project's impact to the climate, the Carbon Dioxide (CO2) and Methane (CH4) emissions will be monitored and measured in tons per year. Regulation of water flow will be based on improved resilience to flooding and assessed by hectares with increased water holding capacities. The baseflow, understood as the portion of the streamflow that is sustained between precipitation events, will be assessed by the variation levels of these flow.
3. **Awareness raising:** the impact of the project's communication measures will be assessed by the level of engagement with stakeholders, including the number of stakeholders directly or indirectly involved with the project partners and/or activities through meetings, participation in events organised by the beneficiaries, media coverage of the project (e.g., podcasts, news articles, press releases, etc.), the number of informational material produced and disseminated (in print and digitally), as well as the number of visits to the project website, including the webpage created by NABU and Eurosite. Also, the establishment of information boards on the project sites is expected to raise the awareness of peatlands among local stakeholders.

Indirect impact indicators

1. **Ecosystem supporting services:** the provision of living spaces for plants or animals and maintaining a diversity of plants and animals are supporting services and the basis of all ecosystems and their services (FAO[1]). Thus, the project impact to biodiversity will be assessed by the number of hectares of the vegetation habitats positively affected by the project measures and the change in percentage cover of indicator species associated with their respective target habitat.
2. **Ecosystem provisioning services:** Water, food, wood, and other goods are some of the material benefits people obtain from ecosystems called ´provisioning services´ (FAO[2]).
3. **Ecosystem regulating services:** the regulating services provided by peatland ecosystems are warmth regulation, fire prevention and storage from water and carbon dioxide. It is well documented that restored peatlands contribute in warmth regulation and increase the water holding capacity, this decreases fire risks.
4. **Ecosystem cultural services (aesthetic inspiration, recreation):** the non-material benefits people obtain from ecosystems are called cultural services. They include aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment (FAO[3]). In this regard, the number of hectares restored, and the hectares of the habitats positively affected by the project measures will serve to assess the project's indirect contribution to the cultural services of aesthetic inspiration and recreation.

[1] Supporting services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[2] Provisioning services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[3] Cultural services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

Project site level and region



Site name	Witte Veen
Location	Witte Veen is located in the East part of the Netherlands, next to the German border. Witte Veen is part of the province Overijssel.
Project site size	110 ha.
Conservation status	Nature Protected Area (Natura 2000)
Habitat type	Bog landscape
Habitat status	Very degraded

Site level stakeholders

- Residents: 9 local neighbours and their families.
- Public authorities: Province of Overijssel, Haaksbergen municipality, Governmental conservator Staatsbosbeheer
- Non-profit organisations:
- Private companies: 4 farmers' companies, a small-scale gardening and landscaping company and 8 hospitality companies (accommodation, camping sites, restaurants)
- Neighbouring settlements:
    - Buurse Village: located west of Witte Veen
        - Population: 1500 residents
        - Main economic activities: farming, small scale companies, employment mostly outside of village.

Local impact assessment

Considering the project is only at the beginning, implementation actions (C.1-C.3), which are expected to impact socio-economic indicators, have not yet started. This initial stage has focussed on informing local stakeholders and obtaining consent to access certain areas to set up hydrological, greenhouse gas and vegetation monitoring plots.

Since the project start Natuurmonumenten has engaged with local stakeholders through field visits in autumn 2022, around 40 stakeholders participated. Residents of surrounding villages, including landowners and land-users neighbouring the project site, were also made aware of the opportunities associated with sustainable agricultural practices on peatlands, i.e., paludiculture.

Invited press January 2023, had a direct impact in raising awareness of the peatland importance as a climate mitigator as well as further ecosystem services.

Furthermore, above mentioned local small-scale businesses will, or already do, economically benefit from project measures: hospitality companies (accommodation, venues) through project events and team members accommodated, contracts with service providers e.g., for transport, restoration, and later maintenance works.

Regional level stakeholders

- Research institutes: Radboud University, Wageningen university, B-Ware
- Non-profit organisations: Farmer association (Boer en natuur/ LTO), Natuur & Milieu (environment oragnisation), Stichting Nederlandse Koolstofmarkt (association for carbon Credits)
- Private companies: pilot farms for paludiculture
- Ministry of Agriculture, Environment and Food quality (LNV) Ministry of Economy and Climate (EZ)
- Regional policymakers of the Province of Overijssel

Regional impact assessment

Natuurmonumenten works together in a various networks for peat restoration. One of the most important cooperation is with the Association National Carbon Market (CNK). Together with one of Natuurmonumenten's tenants, Natuurmonumenten applied successfully for carbon credits for this tenant. CNK approved the application January 2023. This was the first time the CNK approved carbon credits in the province of Overijssel.

European level stakeholders

- Research institutes: Universities, Finish Meteorological Institution, SILAVA, LUKE, etc.
- Peatland projects (LIFE, Interreg, Horizon Europe): Care Peat, Waterlands, REWET, etc.
- Non-profit organisations: Birdlife Europe, IUCN UK, EEB, Wetlands International, etc.
- EU policymakers and representatives: EU Commission, Members of the European Parliament

European impact assessment

During this initial stage, the project activities have a greater impact on raising awareness. The indicators associated with ecosystem services are expected to have significant impact once the implementation of actions C.1, C.2 and C.3 start. Moreover, it is expected that engagement with European stakeholders will only increase as implementation of communication actions progress, especially actions E.2 and E.4.

The Natuurmonumenten team has networked with European stakeholders mainly through ad hoc online meetings and participation in conferences. Natuurmonumenten experts have participated via oral and poster presentations in a various of conferences, where a range of issues surrounding peatlands were discussed, from restoration and monitoring techniques to national and EU peatland policy:

- Care Peat Conference (28-29 April 2022): oral presentations (GHG expert) and panel discussion (project coordinator)
- European Peatlands Initiative Workshop (27 April 2022): participation (national coordinator, project coordinator and GHG expert)
- Celebrating 10 years of the Flow Country Research Hub 25 – 28 October 2022 Scotland: Participation en presenting Natuurmonumenten's Peat projects.

Moreover, during the project team meeting in Mechelen, Belgium (28th November – 1st December 2022) the Natuurmonumenten team, together with project partners, joined an open policy workshop organised by NABU. In total 7 representatives from LIFE, Horizon and Interreg funded projects participated in the workshop, providing short presentations and joining our discussions.

GERMANY							
	INDICATORS						
	DIRECT			INDIRECT			
Units	**Economic contribution**	**Ecosystem regulating services** (GHG emissions)	**Awareness raising**	**Ecosystem supporting services** (habitat for species)	**Ecosystem provisioning services** (raw materials, freshwater)	**Ecosystem regulating services** (Fire/flood prevention)	**Ecosystem cultural services** (recreation, aesthetic appreciation, and inspiration)
Stakeholder and Duty holder engagement	low	high	high	High	High	Medium	X
Information boards/panels	x	1	1	1	X	x	X
Employment (Individuals/companies hired by the project)	x	3	x	3	x	x	x
Amount spent (€)[4]	1.000.000	200.000	x	1.000.000	x	x	X
Number of jobs (FTE and PTE)	3 FTE/pj	x	x	3	x	X	X
Number of events organised or participated	2	x	2	2	x	X	2
Number of participants in events organised by the beneficiary	x	50	50	x	x	X	2
Number of hectares restored		**110 ha**		110 ha		110 ha	110 ha

[4] The sum of costs from external assistance, consumables, travels, other costs

GWP reduction[5] (tons of GWP CO_2-eq/ha/yr)	x	3600 tons of GWP eq.	x	x	x	3600 tons of GWP eq.	x
Number of Print media	x	2	2	2	x	x	x
Number of Publications/Reports, promotional material produced	x	x	25	x	x	x	x
Media coverage (newspaper articles, press releases, radio, podcast)	x	2	2	2	x	x	x
Website – visits[6]	x	x	1 website visits unknown	x	x	x	x
Climate Performance (tons/year CO2)	x	3600 tons of GWP eq.	x	x	x	x	x
Climate Performance (tons/year CH4)	x	x	x	x	x	x	x
Environmental Performance – resilience to flooding (ha)	x	x	x	x	x	0 ha	x
Baseflow contribution of receiving water (m3/s) by percentage	x	0%	x	x	x	0 %	x
Sustainable land use, agriculture, and forestry (hectares of agricultural land under sustainable management)	x	x	Stakeholders involvement	x	0 ha	x	x
Habitats positively affected (ha) and change in percent cover of indicator species associated with their respective target habitat	x	689	x	0% 0 ha	x	x	0% 0 ha

Multi-stakeholder Landscape and Technical Innovation leading to Peatland Ecosystem Restoration

LIFE MULTI PEAT

LIFE20 CCM/DE/001802

Baseline socio-economic impact assessment Ireland

November 2022

Introduction

LIFE Multi Peat is a five-year LIFE project that aims to contribute to the goals of the EU climate change mitigation policies through the restoration of peatlands in five EU-countries (Poland, Germany, Belgium, the Netherlands, and Ireland), as well as through the implementation of monitoring and communication measures.

The specific LIFE Multi Peat objectives are threefold:

1. The large-scale practical restoration of degraded peatlands leading to the cessation of significant CO_2 emissions from the project sites. This restoration will eventually lead to the restoration of their carbon sink functions, as well as the improvement of knowledge on techniques and tools for measuring GHG emissions.
2. The development of a knowledge base and replicable techniques for halting further significant emissions from different classes of degraded peatlands and ultimately restoring their potential as carbon sinks.
3. The development of effective policy tools, such as a peatland policy toolkit that includes an EU-wide policy catalogue, data portal, and a policy development tool that brings together relevant information for policy makers, conservationists, other experts, and the public in one place.

In support of these objectives, the consortium partners will assess the climate impact of the restoration measures by quantifying the GHG emissions, calculating the current annual GHG budgets and potential savings in the future. This will be done by the implementation of the following measures:

- Collecting and summarising accumulated insight of past and present EU peatland projects and bringing them together under a common platform.
- Collecting peatland data and policy documents from all EU Member States.
- Developing a toolkit to catalogue selected EU peatland projects, policies, and data, including an EU-wide Peatland Policy Catalogue, Data Portal and Policy Development Tool.
- Raising awareness on the role of degraded peatlands in global warming and promoting engagement in CCM via peatland restoration and the replication of project techniques.
- Contributing to the Water Framework Directive (WFD) and the new Common Agricultural Policy (CAP) legislation by developing national reviews of WFD and CAP impact on peatlands and GHG emissions.
- Verifying the potential for the creation of carbon credits relating to carbon sequestration/carbon farming and its economic importance, and marketing potential, sustainable agronomic practices on organic soils and corresponding quantification methods.
- Contributing to mainstreaming CAP aims by developing a business case for paludiculture, as well as a concept in which paludiculture functions as a buffer zone of restored peatlands in sites in Germany and Belgium.
- Contributing to scaling up peatland restoration in project countries and beyond.

Methodology

The socio-economic impact assessment will focus on the direct and indirect impacts at site, regional and European level. Main project activities will be monitored against a series of indicators to assess the positive contribution of the project to society. A single project measure can contribute, directly or indirectly, to multiple ecosystem services and indicators. Greater weight will be given to the direct impact indicators.

Direct impact indicators

1. **Economic contribution:** the economic contribution of the project will be assessed by the number of individuals and companies hired and the amount spent by the beneficiary. The amount spent will be calculated by the sum of the following cost categories: external assistance, consumables, travels, and other costs.
2. **Ecosystem regulating services (GHG emissions):** the regulating services provided by peatland ecosystems that will be monitored are the project's direct contribution to GHG-emission reduction and the regulation of water flow (FAO[1]). The impact of the project to the first ecosystem regulating service will be assessed by monitoring emissions and calculating the global warming potential (GWP), measured in tons of GWP CO_2-eq/ha/year.

   To further complement the evaluation of the project's impact to the climate, the Carbon Dioxide (CO_2) and Methane (CH_4) emissions will be monitored and measured in tons per year. Regulation of water flow will be based on improved resilience to flooding and assessed by hectares with increased water holding capacities. The baseflow, understood as the portion of the streamflow that is sustained between precipitation events, will be assessed by the variation levels of these flow.
3. **Awareness raising:** the impact of the project's communication measures will be assessed by the level of engagement with stakeholders, including the number of stakeholders directly or indirectly involved with the project partners and/or activities through meetings, participation in events organised by the beneficiaries, media coverage of the project (e.g., podcasts, news articles, press releases, etc.), the number of informational material produced and disseminated (in print and digitally), as well as the number of visits to the project website, including the webpage created by NABU and Eurosite. Also, the establishment of information boards on the project sites is expected to raise the awareness of peatlands among local stakeholders.

Indirect impact indicators

1. **Ecosystem supporting services:** the provision of living spaces for plants or animals and maintaining a diversity of plants and animals are supporting services and the basis

[1] Regulating services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

of all ecosystems and their services (FAO[2]). Thus, the project impact to biodiversity will be assessed by the number of hectares of the habitats positively affected by the project measures and the change in percentage cover of indicator species associated with their respective target habitat.

2. **Ecosystem provisioning services:** Water, food, wood, and other goods are some of the material benefits people obtain from ecosystems called ´provisioning services´ (FAO[3]). The impact of the project measures to ecosystem provisioning services, specifically the contribution to sustainable land use, agriculture, and forestry, will be measured by the number of hectares of agricultural land under sustainable management; in this case, under paludiculture practices.
3. **Ecosystem regulating services (fire/flood prevention):** the regulating services provided by peatland ecosystems which will be monitored are the project's indirect contribution to flood. This will be measured by the number of hectares under improved conditions after the project measures. It is well documented that restored peatlands increase the water holding capacity, reduced lag-time from precipitation events, improve flood resilience and decrease fire risks.
4. **Ecosystem cultural services (aesthetic inspiration, recreation):** the non-material benefits people obtain from ecosystems are called cultural services. They include aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment (FAO[4]). In this regard, the number of hectares restored, and the hectares of the habitats positively affected by the project measures will serve to assess the project's indirect contribution to the cultural services of aesthetic inspiration and recreation.

[2] Supporting services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[3] Provisioning services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)
[4] Cultural services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

Project site level

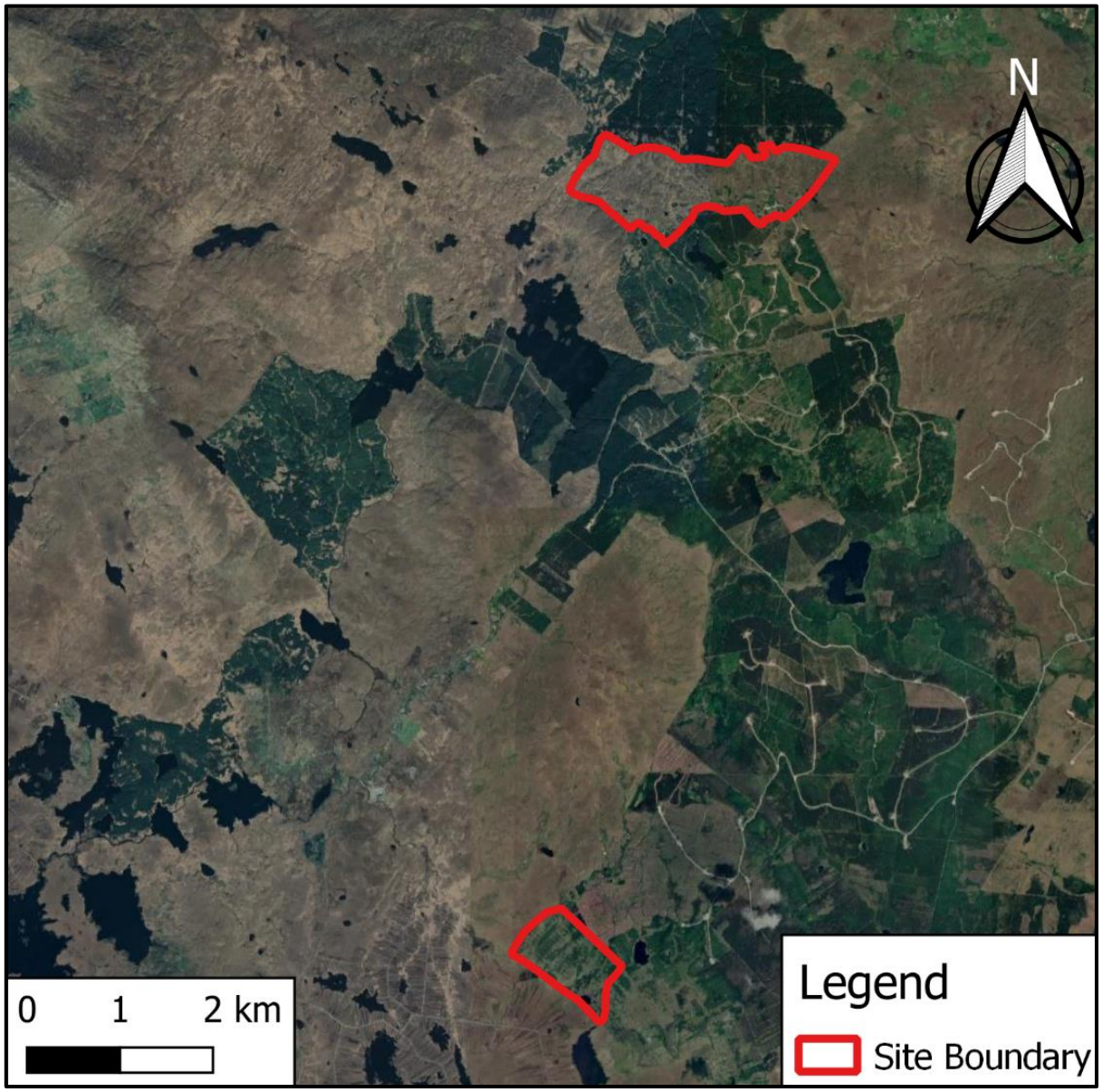


Figure 1.1 – Site location map with Doire Fhada to the north and Fionnán to the south

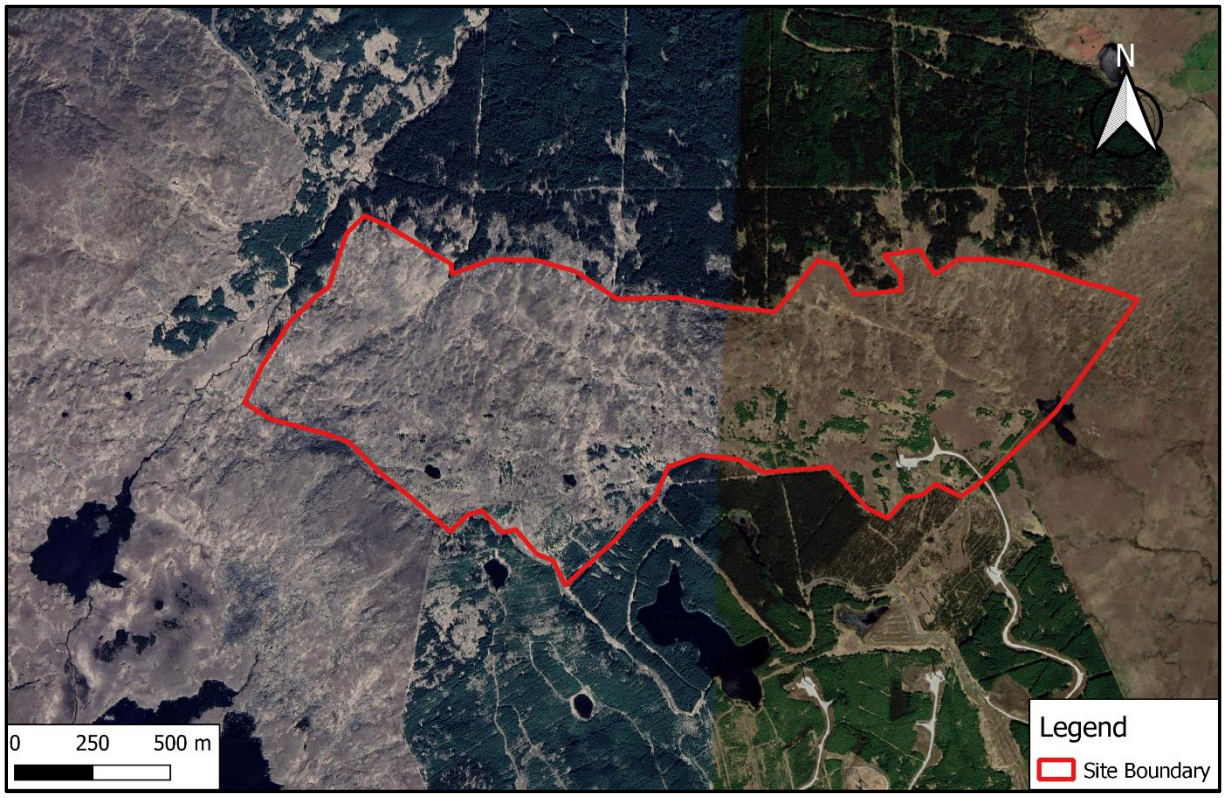


Figure 1.2 – Site location map of Doire Fhada

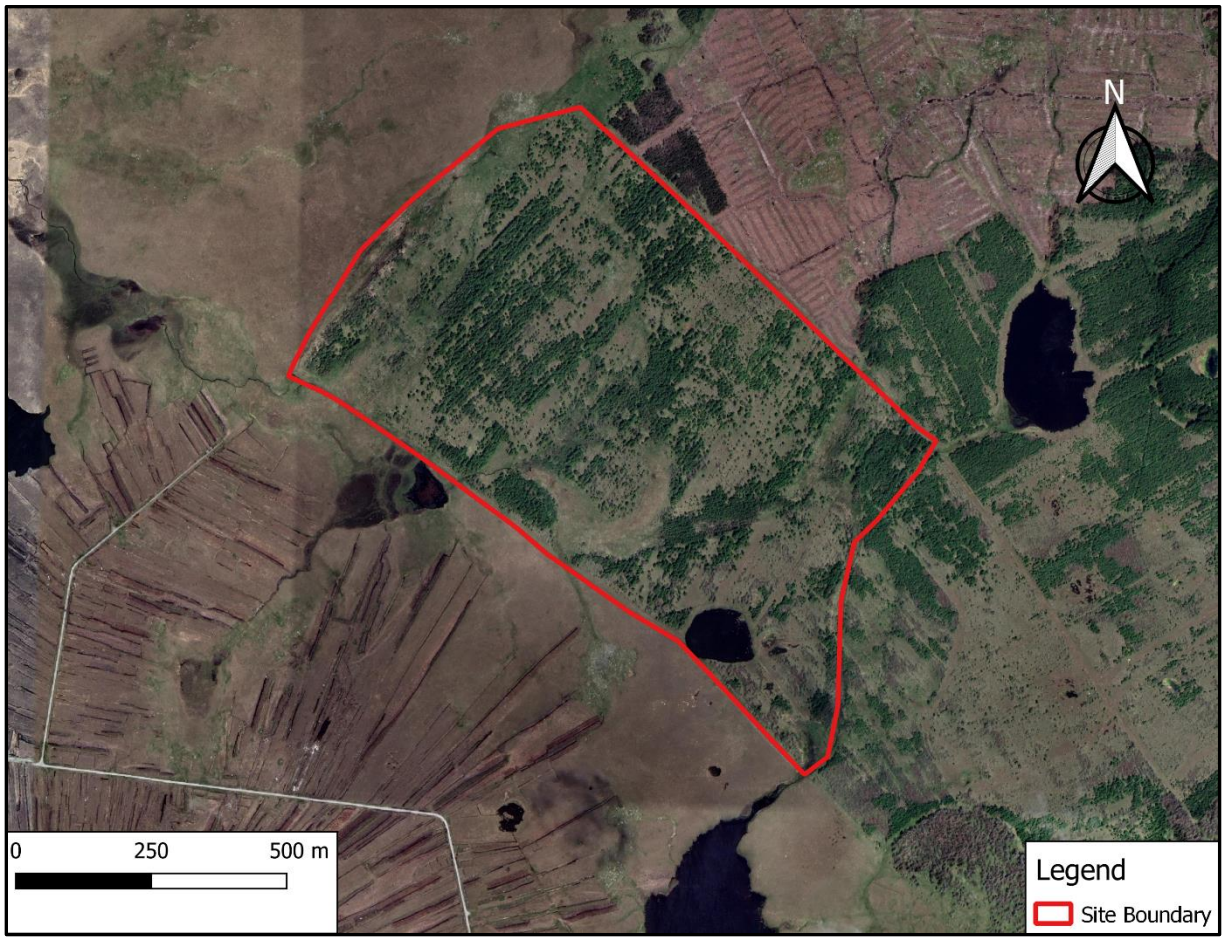


Figure 1.3 – Site location map of FionnánSite

Site Details for Ireland

Site name	Doire Fhada & Fionnán, Galway Wind Park.
Location	The overall site is located within the Galway Wind Park approximately 35km north west of Galway City. It consists of two parcels of land: Doire Fhada (179.39 ha) and Fionnán (65.89 ha), located approximately 7km apart. Doire Fhada is the northern site within the Galway Wind Park and is located at an elevation of approximately 300m with the land sloping to the north. Fionnán is the southern site and is located at a higher elevation of approximately 160m above sea level. Neither sites fall under any nature designations, however both are bordered by the Connemara Bog Complex SAC, and the Connemara Bog SPA
Project site size	245.28 ha
Conservation status	Not designated but bordered by Connemara Bog Complex SAC and Connemara Bog SPA
Habitat type	Upland blanket bog, dry siliceous heath, wet heath, conifer plantation.
Habitat status	Good to degraded

Site level stakeholders

- Residents
- Coillte and Airtricity Partners at Cloosh Valley Wind Farm (CVWFD) who run Galway wind park.
- Other local land managers and land-users: mainly small to medium scale farmers
- Other landowners
- Local authority: Galway County Council
- Development companies Forum Connemara and Udaras na Gaeltachta
- Neighbouring settlement:
- Rosaveel village
    - Population: 208 (in 2011)
    - Main economic activities: fishing harbour, main ferry port for Aran Islands
- Oughterard village
    - Population: 1,318 residents
    - Main economic activities: farming, small scale companies, tourism, fishing

Local impact assessment

Considering the project is only at the beginning, implementation actions (C.1-C.3), which are expected to impact socio-economic indicators, have not yet started. This initial stage has focussed on informing local stakeholders and working with CVWFD to access certain areas to set up hydrological, greenhouse gas and vegetation monitoring plots.

Since the project start the University of Galway has engaged with local stakeholders through one-on-one meetings (e.g., Coillte Irelands forest service) We have done a number of outreach events with stakeholders including a site visit with local and regional conservation groups (Wild Atlantic Nature project and authorities (NPWS) and an event with the European peatland community as part of the Care Peat conference in Galway. We have more outreach events planned.

We have also leveraged another small peatland site for restoration in partnership with Udaras na Gaeltachta and a group of local residents. This site boarder the southern site witin the wind park and will form a part of a local landowner outreach platform for community-led restoration.

The University of Galway team has also through our contacts with Coillte, Ireland's largest peatland owner encouraged a significant partnership with Rewilding Europe and Wetlands International. The University of Galway team expects to increase impact on all indicators as the project progresses, especially those associated with ecosystem services and economic contributions.

Furthermore, above mentioned local small-scale businesses will, or already do, economically benefit from project measures: hospitality companies (accommodation, venues) through project events and team members accommodated, contracts with service providers e.g., for transport, restoration, and later maintenance works.

Life Multi Peat site visit to Galway Wind Park during the Care Peat conference, April 2022.

Regional level stakeholders

- Peatland experts: practitioners, land managers, scientists, environmentalists, land use policy, climate policy
- Non-profit organisations: Galway Environmental Network, Farmer association the Irish and Natura Hill Farmers Association.
- The Northern and Western Regional Assembly which is the regional authority for the area

Regional impact assessment

The University of Galway team has engaged with regional stakeholders though one-on-one meetings as well as inviting members of the regional assembly to the peatland conference in Galway organised by the Care Peat project in partnership with Life Multi Peat.

It is expected that impact to indicators such as economic contribution and ecosystem services – regulating, provisioning, and supporting – will significantly increase once the implementation of actions C.1, C.2 and C.3 start. As implementation on action E.3 progresses, awareness raising at the regional level is also expected to increase.

Community Peatlands Initiative near Oughterard supported by University of Galway, 27 August 2022.

European level stakeholders

- Research institutes: Universities, Finish Meteorological Institution, SILAVA, LUKE, etc.
- Peatland projects (LIFE, Interreg, Horizon Europe): Care Peat, Wild Atlantic Nature, Peatlands and People, Waterlands, Alfawetland, etc.
- Non-profit organisations: Birdlife Europe, IUCN UK, EEB, Wetlands International, etc.
- EU policymakers and representatives: EU Commission, Members of the European Parliament

European impact assessment

During this initial stage, the project activities have a greater impact on raising awareness. The indicators associated with ecosystem services are expected to have significant impact once the implementation of actions C.1, C.2 and C.3 start. Moreover, it is expected that engagement with European stakeholders will only increase as implementation of communication actions progress, especially actions E.2 and E.4.

The University of Galway team has networked with European stakeholders mainly through online meetings and participation in conferences. Our experts have participated via presentations in a total of 3 conferences, where a range of issues surrounding peatlands were discussed, from restoration and monitoring techniques to national and EU peatland policy:

- Care Peat Conference (28-29 April 2022): oral presentations, workshop chairs, and panel discussions. (national coordinator and GHG expert)
- European Peatlands Initiative Workshop (27 April 2022): participation (national coordinator and GHG expert)
- Care-Peat/Waterlands Workshop (26th October 2022, Brussels): For Peat's Sake – Strengthening Peatlands Targets in the Nature Restoration Law
- Community Peatlands Initiative in adjacent peatland near Oughterard owned by Udaras na Gaeltachta

Moreover, during the project team meeting in Mechelen, Belgium (28th November – 1st December 2022) the University of Galway team, together with project partners, organized an open policy workshop. In total 7 representatives from LIFE, Horizon and Interreg funded projects participated in the workshop, providing short presentations and joining our discussions.

Ireland (Estimates)							
	INDICATORS						
	DIRECT			**INDIRECT**			
Units	**Economic contribution**	**Ecosystem regulating services** (GHG emissions)	**Awareness raising**	**Ecosystem supporting services** (habitat for species)	**Ecosystem provisioning services** (raw materials, freshwater)	**Ecosystem regulating services** (Fire/flood prevention)	**Ecosystem cultural services** (recreation, aesthetic appreciation, and inspiration)
Stakeholder and Duty holder engagement			15				
Information boards/panels			0				
Employment (Individuals/companies hired by the project)	(pending eLMA update)						
Amount spent (€)[5]	(pending eLMA update)						
Number of jobs (FTE and PTE)	1						
Number of events organised or participated	4		4				
Number of participants in events organised by the beneficiary			120				
Number of hectares restored		0 ha		0 ha		0 ha	0 ha
GWP reduction[6] (tons of GWP CO_2-eq/ha/yr)		0 tons of GWP eq.					
Number of Print media			1				

[5] The sum of costs from external assistance, consumables, travels, other costs
[6] Reduction by tons CO2-eq/ha/yr

Number of Publications/Reports, promotional material produced			0				
Media coverage (newspaper articles, press releases, radio, podcast)							
Website – visits[7]			Input pending				
Climate Performance (tons/year CO2)		0					
Climate Performance (tons/year CH4)		0					
Environmental Performance – resilience to flooding (ha)						0 ha	
Baseflow contribution of receiving water (m3/s) by percentage		0%				0 %	
Sustainable land use, agriculture, and forestry (hectares of agricultural land under sustainable management)					0 ha		
Habitats positively affected (ha) and change in percent cover of indicator species associated with their respective target habitat				0% 0 ha			0% 0 ha

[7] Visits are understood as ...
Due to the recent EU Data Protection Law (GDDR), which allows visitors the option to block statistical tracking of the website traffic; it is assumed the figures may be higher.