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Report about new strategies and approaches developed, making use of new opportunities and results of the pilots

Activity 3

Transnational analyses and co-design of Peatland restoration strategies and approaches as input for policy making

Work Package WP.T2

Identification of socio-economic models, ecosystem services and integrated landscape strategies to promote the roll-out of developed techniques and methods for peatland restoration

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General information

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List of Partners

Organisation	Abbreviation	Country
Natuurpunt Beheer vzw	Natuurpunt	BE
Centre National de La Recherche Scientifique	CNRS	FR
Bureau de Recherches Géologiques et Minières	BRGM	FR
Lancashire Wildlife Trust	LWT	UK
Manchester Metropolitan University	MMU	UK
National University of Ireland Galway	NUI Galway	IE
Eurosite	Eurosite	NL
Vereniging Natuurmonumenten	NM	NL
Université d'Orléans	UO	FR
Hogeschool Van Hall Larenstein	HVHL	NL

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1 - Executive Summary

This report builds on input from the review of existing peatland restoration strategies and approaches in NWE, (WP.T2 D3.1) and input from the 5 stakeholder workshops carried out at national level in Belgium, France, Ireland, the Netherlands and the United Kingdom (WP.T2 D3.2) combined with new opportunities and results from the pilots which are described below in Appendix A. The recommendations were refined at a joint partner meeting and subsequently for each country. These recommendations are listed in this summary and further elaborated below in this report.

The recommendations for **Belgium** are as follows:

1. Need for preservation of peaty soils to prevent carbon loss.
Priority: 1 (Highest).
Stakeholders: Departments, research institutions, civil society.

2. Restore peat areas by rewetting and improvement of the hydrological systems at the landscape level.
Priority: 1 (Highest).
Stakeholders: Departments, research institutions, civil society.

3. Provide sufficient possibilities to impose measures and allocate financing.
Priority: 1 (Highest).
Stakeholders: Departments, research institutions, civil society.

4. Improve multi-stakeholder cooperation focused on peatland restoration.
Priority: 2 (High).
Stakeholders: Departments, research institutions, civil society.

5. Recognise the role of peatlands as unique ecosystems in Flanders.
Priority: 2 (High).
Stakeholders: Departments, research institutions, civil society.

The recommendations for **France** are as follows:

1. Update the inventory of French peatlands.
Priority: 1 (Highest).
Stakeholders: Ministry, Office français de la Biodiversité (OFB), Water Agencies, Regional authorities, Muséum national d'histoire naturelle.
Timeline: ASAP.

2. [Carbon] Assess the carbon stock of the territory's peatlands and the greenhouse gas emissions from degraded peatlands.
Priority: 1 (Highest).
Stakeholders: Universities, Regional Authorities, OFB.
Timeline: Actions to be carried out in parallel with those of objective 1.

2b. Conservation of peatbogs should focus on all their roles (e.g. carbon storage, biodiversity, ecosystem services).
Priority: 2 (High).
Stakeholders: Site managers; All persons and bodies involved.

2c. Promote wetlands as Nature-Based Solutions.
Priority: 3 (Normal).
Stakeholders: Scientists and authorities, Education bodies.
Timeline: Constant.

3. [Carbon] Obtain a low carbon label for peatland restoration.
Priority: 2 (High).
Stakeholders: Min. of Ecological Transition; universities, NGOs, private companies.
Timeline: Medium term (5 to 10 years) given the necessary prerequisites.

4. [Restoration] Continue and generalize functional restoration work.
Priority: 2 (High).
Stakeholders: Scientists and technicians; European (through EU-funded programmes), national and local / regional authorities.
Timeline: 10 years.

4b. Change of restoration strategy to include degraded peatlands.

Priority: 2 (High).
Stakeholders: All public bodies involved, NGOs.
Timeline: Mid-term.

5. [knowledge] Launch a new component of the Wetlands Research Program.
Priority: 3 (Normal).
Stakeholders: Universities and institutes; National and regional authorities; NGOs.
Timeline: Medium term 2025.

6. [knowledge, restoration] Extend to France the reflections and experiments of paludiculture.
Priority: 3 (Normal).
Stakeholders: Universities and institutes, Chambers of agriculture and local farmers, National and regional authorities.
Timeline: Medium term (5 years) for reflections, long term (10 years) for experimentation and possible generalization.

7. [protection] Restrict or even stop peat exploitation in France and peat imports.
Priority: 2 (High).
Stakeholders: Researchers on horticulture; gardening industries and retailers, consumers organisations, environmental and educational NGOs.
Timeline: Immediately to establish the modalities and timetable for action in consultation with stakeholders, in the short term (2-3 years) for the first restrictions on the French side, in the medium or long term (5 to 10 years) for a possible stop in France and for measures related to imports, the time to find the necessary substitutes and to reorient the industries.

8. [management] Improve knowledge and practice for a grazing adapted to the peatlands which can receive it.
Priority: 2 (High).
Stakeholders: Farmers and their professional organisations, agronomists.
Timeline: Ongoing action, starting now.

9. [knowledge, restoration] To set up actions concerning damaged wooded peatlands.
Priority: 3 (Normal).

Stakeholders: NGOs, Universities; forest owners; National Forest Board (ONF, Office national des forêts).
Timeline: Immediately and continuously.

10. [protection] Complete the network of protected bogs.
Priority: 1 (Highest).
Stakeholders: Government and regional authorities; NGOs.
Timeline: Immediate and ongoing.

11. [protection] Carry out a land acquisition program for peatlands that require it.
Priority: 2 (High).
Stakeholders: Government and regional / local authorities; NGOs with help of European funds and of Water Agencies (Agences de l'eau).
Timeline: Now and in the long term.

12. [protection, land-use planning] Promote the consideration and integration of peatlands in the various territorial strategies.
Priority: 2 (High).
Stakeholders: Local, regional, and national authorities.
Timeline: From now until the longer term.

13. [cooperation, various themes] Promote the cooperation of France with international actions and programs.
Priority: 2 (High).
Stakeholders: All persons involved in peatland protection and management.
Timeline: From now until the longer term.

14. [communication, environmental education] Develop communication and educational actions about peatlands.
Priority: 2 (High).
Stakeholders: Site managers, schools and other education bodies, authorities.
Timeline: From now until the long term.

15. [training] To create a training course leading to a diploma in order to train specialists in peatlands and their management/restoration.
Priority: 3 (Normal).

Stakeholders: Ministries of Ecological transition, Public Education and Agriculture, Universities, colleges and scientists, NGOs.
Timeline: Medium-term action, to find training institutions willing to take charge and organize a relatively long training course leading to a diploma (1 to 2 years), with the necessary teachers and teaching materials. The same institution(s) could then also host shorter training courses.

16. [training] To propose short information and training sessions to the public confronted with the problems of peatlands.
Priority: 3 (Normal).
Stakeholders: Professional organisations, schools and universities, OFB, site managers, local and regional authorities, ministry of National Education.
Timeline: Action to be started as soon as possible, preferably in conjunction with professional organizations with public concerns.

The recommendations for **Ireland** are as follows:

1. Develop capacity for a framework to encourage carbon sequestration (and other ecosystem services) for Peatlands.
Priority: 1 (Highest).
Stakeholders: Farmers and other Landowners, Community Wetlands Forum, Regional Government, National Parks and Wildlife Service, Academic Stakeholders, Environmental Protection Agency.
Timeline: Mid 2021 to mid 2022 for Roadmap, Monitoring is ongoing.

2. Update the National Peatlands Strategy, building on existing partnerships between state agencies, communities, landowners, policy makers and academics.
Priority: 2 (High).
Stakeholders: National Parks and Wildlife Service, Irish Peatlands Conservation Council, Academic Stakeholders, Bord na Móna, Coillte
Timeline: Ongoing.

3. Enhance knowledge about Peatlands in Ireland through research and education.
Priority: 2 (High).
Stakeholders: Irish Peatlands Conservation Council and other community stakeholders, National Parks and Wildlife Service, Ordinance Survey Ireland,

Environment Protection Agency, Central Statistics Office, Quality and Quantifications Ireland, ACCA, Teagasc, Educational and Academic Stakeholders at all levels.
Timeline: Ongoing.

4. Support organizations and communities associated with Peatlands financially, through just transition mechanisms.
Priority: 3 (Normal).
Stakeholders: Community Wetlands Forum, Irish Peatlands Conservation Council, National Parks and Wildlife Service, Environmental Protection Agency, Bord na Móna, National Government.
Timeline: Ongoing.

5. Enforce environmental protection regulations in relation to Peatlands.
Priority: 3 (Normal).
Stakeholders: Environmental Protection Agency, National Parks and Wildlife Service, Local Authorities, National Government.
Timeline: Ongoing.

6. Fastrack GHG reduction in relation to LULUCF and Peatlands in particular.
Priority: 3 (Normal).
Stakeholders: Environmental Protection Agency, Local Authorities, Central Statistics Office, OSI, Academic Stakeholders.
Timeline: Ongoing.

The recommendations for the **Netherlands** are as follows:

1. Start pilots (climate buffers) where there is area, support and funding. Don't wait.
Priority: 1 (Highest).
Stakeholders: Dutch Climate Buffer Coalition; Ministry of Agriculture, Nature, Food; Urgenda (climate action group).
Timeline: 2021-2022.

2. Make better use of business models and scale up, starting with voluntary carbon credits (Valuta voor Veen/Paying for Peat).
Priority: 2 (High).
Stakeholders: Dutch Nature and Environment Federations, Nature site managers.

Timeline: 2021-2030.

3. Urge for full clarity concerning responsibilities (incl. mandate) among governmental authorities and instruments for peat rewetting.
Priority: 3 (Normal).
Stakeholders: Authorities on the national level, Dutch Parliament.
Timeline: 2021-2030.

4. Add new integral local policies under direction of governments.
Priority: Not yet prioritised.
Stakeholders: Not yet addressed, initiative of Dutch Climate Buffer Coalition.
Timeline: 2021-2030.

5. Counter the popularity of underwater drainage.
Priority: 2/3 (High/Normal)
Stakeholders: National and regional authorities, Ministry of Agriculture, Nature and Food, farmer collectives for agricultural nature management. Environmental Federations.
Timeline: 2021-2023.

6. Promotion of land-use change - combining farming practices and peat conservation.
Priority: 2 (High).
Stakeholders: In 'Programma Natuur' & Climate Agreement involved site managers and Coalition Natural Climate Buffers. Ministry of Agriculture, Nature, Food; provinces.
Timeline: 2021-2030.

7. Take groundwater into account, e.g. where peat and sand meet and in stream valleys.
Priority: 3 (Normal).
Stakeholders: Site managers, Coalition Natural Climate Buffers, provinces.
Timeline: 2021-2030.

8. Better linkage of agriculture, nature and peat rewetting and changes to regulations.
Priority: 2 (High).

Stakeholders: Site managers, Coalition Natural Climate Buffers; Ministry of Agriculture, Nature, Food; European Commission.
Timeline: 2021.

9. Building houses on peat; this is perceived as mainly a threat, but it can also be an opportunity.
Priority: 3 (Normal).
Stakeholders: WWF-NL.
Timeline: 2021-2030

The recommendations for the **United Kingdom** are as follows:

1. Strong signal of commitment needed from government to give practitioners confidence to act.
Priority: 2 (High).
Stakeholders: UK Devolved Administrations, UK Government, Local Authorities.
Timeline: Ongoing.

2. Support peat-free horticulture.
Priority: 2 (High).
Stakeholders: UK Government, Devolved administrations, Horticulture industry, Alternative product manufacturers, eNGOs (e.g. Wildlife Trusts and others), Retailers.
Timeline: Consultation on ending use of peat in horticulture to take place in England in 2021 (0-5 years).

3. Break down barriers between policy makers, conservationists and farmers.
Priority: 1 (Highest).
Stakeholders: Farming and landowner organisations, Defra, Nature Conservation Organisations/partnerships, Local communities, Research bodies.
Timeline: Ongoing – Tests and Trials for new Environmental Land Management schemes are underway and schemes will be in place 2024/25.

4. Peat should be recognised as a multi-benefit resource – focus on carbon, biodiversity, water quality and flood risk.
Priority: 3 (Normal).
Stakeholders: UK Government.

Timeline: 0-5 years.

5. Stay involved in global and the EU initiatives and funding schemes.
Priority: 3 (Normal).
Stakeholders: IUCN, UK Peatland Programme, NGOs/NCOs, Research bodies.
Timeline: Ongoing.

6. Support and develop paludiculture methods.
Priority: 1 (Highest).
Stakeholders: Landowners/land managers, Research bodies, Supply Chain, NFU/farming bodies, Environment Agency/Internal, Drainage Boards (ADA), Defra.
Timeline: 1-5 years.

7. Monetise carbon and ecosystem services.
Priority: 1 (Highest).
Stakeholders: IUCN UK Peatland Programme, UK government (Defra, Treasury, BEIS), Private investors, Green financing organisations, Insurance bodies.
Timeline: 1-5 years.

8. Need to renew and refresh local policies and improve local cooperation.
Priority: 2 (High).
Stakeholders: Local Authorities, Local stakeholders, Peat Partnerships.
Timeline: Ongoing - this has started (e.g. GMCA, Lancs CC, Salford CC) & needs to be rolled out.

2 - Introduction

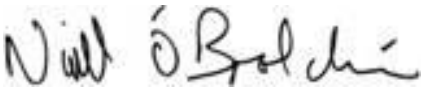
Peatlands are part of the world's most valuable ecosystems. Next to providing crucial services such as flood prevention and filtering our drinking water, they are critical for biodiversity protection and climate change mitigation. As the largest natural carbon store, covering only 3%[1] of the world's land area but storing over one quarter of the planet's soil carbon, their role in combating climate change seems evident. Nevertheless, peatlands continue to be drained for forestry, agriculture and peat extraction, resulting in them becoming carbon sources rather than sinks.

The EU is the world's second largest emitter of greenhouse gasses from drained peatlands (Joosten 2009[2]). To reduce these GHG emissions and to restore the carbon storage capacity of peatlands, introducing new socio-economic strategies is an important step. Through the INTERREG Care-Peat project, partners from 5 EU countries in North-West Europe (NWE) are developing and testing new techniques and socio-economic strategies for carbon reduction.

This report covers recommendations for new strategies and approaches to be developed by each of the countries involved, building on the input from the review of existing peatland restoration strategies and approaches in NWE (Ref: WP.T2 D3.1) combined with input from stakeholder workshops carried out in Belgium, France, Ireland, the Netherlands and the United Kingdom (Ref: WP.T2 D3.2) and combined with new opportunities and results from the pilots described below in Appendix A.

All this information will provide useful input for further discussions with policy makers. Along with results from the pilots and models of the Care-Peat project, it will provide input to co-design new strategies and policies for peatland restoration and sustainable use.

Niall Ó Brolcháin



[1] Peatlands 3%, one quarter world's soil carbon - Turetsky, M. R. *et al. Nature Geosci.* 8, 11–14 (2015).
[2] Joosten, H. (2009). The Global Peatland CO2 Picture: peatland status and drainage related emissions in all countries of the world.

3 - Scope

The purpose of this document is to report on new strategies and approaches to be developed by each of the countries involved, making use of input from the review of existing peatland restoration strategies and approaches in NWE, (Ref: WP.T2 D3.1) and the stakeholder workshops carried out at national level in Belgium, France, Ireland, the Netherlands and the United Kingdom (Ref: WP.T2 D3.2) combined with new opportunities and results from the pilots described below in Appendix A.

A joint partner meeting was convened to discuss the results of the 5 workshops. Based on this discussion, but also on discussions around the pilots in WP.LT, this report describes new and renewed strategies and approaches for restoration. These were further discussed within the partnership and further elaborated. All partners were involved in these discussions.

Each country came up with a list of recommendations which were prioritised based on expert opinions with reference to existing policies. The potential barriers, policy gaps and enablers were identified leading to action items. Stakeholders to implement each action item were identified.

This report will inform a further high level stakeholder workshop involving stakeholders from all countries involved in the Care-Peat project combined. The purpose of this workshop will be to agree a common set of goals and strategies with a European focus (Ref: WP.T2 D3.4). A final report (Ref: WP.T2 D3.5) will then be produced with a focus on how these recommendations can be implemented in policies.

4 – Action items for Belgium

This section describes the action items from the Belgian stakeholder workshop and subsequently refined by the Belgian partners in consultation with the other partners in Care Peat.

Vallei van de Zwarte Beek, Belgium

Action Items for Belgium

Recommendations	Barriers and policy gaps	Enablers	Proposed Actions
1. Need for preservation of peaty soils to prevent carbon loss. **Priority:** 1 (Highest). **Stakeholders:** Departments, research institutions, civil society.	Many peatlands are under agricultural use. The current Flemish toolbox does not allow farmers to preserve these areas.	INBO (Research Institute for Nature and Forest) estimates the potential for restoration of wetlands at 147,000 ha. One third of this area, some 49,000 ha, lies in a green zoning area (i.e. has a nature designation on the Flemish Regional Plan, Natura2000 area and/or Ramsar area. Active restoration is obvious there. New ongoing research by the University of Leuven (KUL) who is detecting and drawing up a new map of Flemish peatlands. The Flemish Coordination Committee for Integrated Water Policy (CIW) will start a project group on 'peat protection' in 2021. This project group is working on a policy framework for the protection of peatlands from desiccation. It is a co-creation project with various stakeholders.	Incorporate peatland management and restoration in national climate change plans, laws, biodiversity strategies and nature restoration plans, including tangible objectives and timescales. Create emission reduction pathways to guide peatland management in order to outline a transparent schedule for change, to which stakeholders can orientate their decisions. Integrate peatland agriculture into national CAP strategic plans and Rural Development Plans. Use agri-environmental and climate schemes (AECS) such as those proposed during the DESIRE project for Poland and Lithuania as part of a package of payments for water retention and paludiculture. Consider peatlands and their hydrology in the context of the entire watershed and catchment area in the frame of Water Framework Directive (WFD) and Flood Directive. Assess legislation holistically from an integrated perspective to ensure one area of environmental action is not negatively impacting another. For example, different EU and national funding schemes could synergistically support wet agriculture on peatlands. Assess all legislation in the light of the Paris Agreement's goals and biodiversity target to highlight the importance of land use emissions and impact on habitats. Ditto for the European Green Deal, the associated biodiversity strategy, the Farm-To-Fork-strategy and the new CAP. National and regional planning regulations should be adapted in a way which prevents minor land-owners from exercising a veto to block rewetting measures which have been agreed upon by the majority.
2. Restore peat areas by rewetting and improvement of the hydrological systems at the landscape level.	Water quality: Pollution / enrichment of groundwater by domestic wastewater discharges and flushing of fertilisers by intensive agriculture in catchment areas. Polluted water is directly injected into nature areas via canals and brooks and flood water	With the actionplan Blue Deal, the Flemish Government has, since 2020, increased its efforts in the fight against water scarcity and droughts. With this	Setting up buffer areas with specific measures (such as slower drainage) A 'landbank' (grondenbank) with sufficient resources could give the 'Blue Deal' a real boost and counter the practical objections such as fragmented

Priority: 1 (Highest). **Stakeholders:** Departments, research institutions, civil society.	from upstream built-up areas / agricultural areas. Groundwater pressure: Reduced groundwater inflow due to reduced infiltration (drainage systems, (coniferous) forest plantations and paved surface in the catchment area). (Il)legal groundwater extraction is also a problem. A solution is to increase water infiltration as much as possible by removing drainage systems, monotonous forest planting, reducing paved surfaces and infiltration places for rainwater runoff. Delimitation of nature areas: there is a narrow delimitation of most Flemish nature areas. Hydrological restoration done quickly has undesired effects in the zones adjacent to the nature area. In the vast majority of cases, this concerns land in agricultural use. If the restoration of a green-blue network in Flanders is considered, a re-evaluation of the boundaries of Special Protection Areas (SPA) and / or nature areas is inevitable. Hydrological restoration within the strict current boundaries of the nature area is in many cases not possible. If strategic parcels at landscape levels are purchased by government and nature associations, reclamation/enlargement of logical hydrological units can be carried out. However, if a current landowner does not want to sell his land within the project period, the chances of rewetting are greatly reduced. Most farmers for example, do want to leave a nature area with great potential for 'repeating', but they need land for exchange, which staheholders such as nature organisations cannot foresee within the short term of a project. Additional purchase means, that strategic (exchange) plots would allow for more leeway and less time pressure to get purchases and permits done. Reclamation / peat restoration requires complex permits. Today, the list has already become impressive with fe; Environmental impact report, MER (screening),	plan, it wants to tackle the drought issue in a structural way, with an increased use of resources and appropriate instruments. This is to be achieved with the involvement of industry and farmers as part of the solution. A total of almost half a billion euros will be made available for this. With the project subsidies for nature, the Agency for Nature and Forests (ANB) wants to stimulate concrete initiatives that mainly contribute to European nature goals. From 2021, the government pays special attention to projects that realise 'wetland-nature' (such as peat bogs) in areas where maximum added value can be created. ANB will provide €17 million in 2021, €15 million of which will come from the actionplan Blue Deal. The remaining €2 million will be partly supplemented by European co-financing from the Rural Development Programme (PDPO).	ownership situations that stand in the way of rapid realisation. Designate protected areas (national and Natura 2000 sites) within which peatlands must be better conserved.

	archaeology memorandum, VEN exemption, Forest Decree exemption, nature check (natuurtoets), and appropriate assessment. Combined with preparatory research (which is necessary to estimate the impact on the habitats), consultation and information sessions, kitchen table discussions, it takes months, sometimes years. Summarised: a simplification of the permit procedure (i.e. fewer overlapping documents) and government officials who can make the right assessments could overcome this issue.		
3. Provide sufficient possibilities to impose measures and allocate financing. **Priority:** 1 (Highest). **Stakeholders:** Departments, research institutions, civil society.		see Actionplan Blue Deal above.	Development of peatland policy in Flanders. An effective business model will keep peatlands healthy, and operate as a carbon sink, while also providing an income for farmers, funding peatland restoration activities and stimulating the local economy. When developing a business model, it's important for projects to consider affected stakeholders, the value chain, and profitability indicators. Establish voluntary carbon credit schemes and payment for ecosystem services frameworks to support sustainably managed peatlands. Increase national funding for peatland research, including increasing capacity for research into new technologies for value chains for paludiculture biomass in a circular bio-economy and monitoring and assessing peatlands. Include measures for educating students and training for administrators and practitioners on peatland related issues. Include peatland emissions within national emission inventories. Use an up-to-date methodology following 2013 IPCC Wetlands supplement and comprehensive area data for peatland distribution and status. Additional guidance is given in a policy brief by GMC here. For example, from 2021 Ireland will report GHG emissions and removals from managed wetlands (including peatlands) as part of the progress toward EU GHG targets. Establish voluntary carbon credit schemes and payments for ecosystem services (PES) frameworks for peatlands.

			Support farmers with revised CAP and ELMS payments that encourage peatland restoration. It is essential that payments can be relied upon long term, to build sufficient security for farmers to enact transformative change and make the necessary investments. Launch a corporate social responsibility policy that requires businesses to invest a percentage of annual profits in restoration of carbon rich ecosystems like local peatland sites. Link local business interests to the benefits of peatland restoration for sustained economic growth locally. For example, local manufacturers could benefit economically from the flood protection offered by healthy peatlands. Apply the “polluter-pays” principle so that the procurers of drainage-based farming must include the externalised costs of environmental damage.
4. Improve multi-stakeholder cooperation focused on peatland restoration. **Priority:** 2 (High). **Stakeholders:** Departments, research institutions, civil society.	Sharing and exchange of knowledge, linking science and practice. Identifying bottlenecks at the policy level and establish what will be needed to eliminate these and to create an integrated policy. Drawing up a working framework for regional / local consultation and realisations.		Establishment of "Flemish peat platform" with the aim of working together with multiple stakeholders. Ensure ongoing engagement and multi-stakeholder collaboration with interested groups local to peatlands such as schools, citizens, farmers, nature conservation associations, substrate industries and local businesses.
5. Recognise the role of peatlands as unique ecosystems in Flanders. **Priority:** 2 (High). **Stakeholders:** Departments, research institutions, civil society.	Flemish policy and public opinion focus primarily on (more) forest, which means that lesser-known ecosystems do not always get the attention they deserve. In the past 50 to 60 years, Flanders has drained 75 percent of its 'wetlands', which are peat bogs, lakes, wet grasslands and marshes. This is shown in research by the Institute for Nature and Forest (INBO).	European LULUCF policy. More focus on nature-based solution in Flemish policy. Importance of fens and wetlands in the fight against climate change.	Educational activities.

5 – Action items for France

This section describes the action items from the French stakeholder workshop and subsequently refined by the French partners in consultation with the other partners in Care Peat.

In La Guette in France, innovative restoration techniques are tested.

Here, sphagnum mosses were placed in patches in stripped areas. If the conditions are suitable, these patches will develop to cover more and more of the bare peat and thus store more carbon and favour biodiversity.

Action Items for France

Recommendations	Barriers and policy gaps	Enablers	Proposed Actions
1. Update the inventory of French peatlands. **Priority:** 1 (Highest). **Stakeholders:** Ministry, Office français de la Biodiversité (OFB), Water Agencies, Regional authorities, Muséum national d'histoire naturelle. **Timeline:** ASAP.	The inventory does not cover all the regions and, even in the other regions, does not include degraded peatlands still storing Carbon. The methods used for the inventories do not always allow comparisons. The condition of these peatlands should also be estimated	Inventories are already available in some regions, but they are to be updated.	- Establish a national protocol for the delimitation of peatland areas; - Establish protocols for evaluating the state of conservation of the different types of peatlands; - Disseminate, promote and implement these protocols to achieve a national mapping of peatlands The existing inventory should be improved to include sites that are no longer considered as peatlands anymore, but which can regain a carbon sink function if restoration work is carried out.
2. [Carbon] Assess the carbon stock of the territory's peatlands and the greenhouse gas emissions from degraded peatlands. **Priority:** 1 (Highest). **Stakeholders:** Universities, Regional Authorities, OFB. **Timeline:** Actions to be carried out in parallel with those of objective 1.	All future measures linked to carbon in peatlands need to have a better knowledge of what is the present stock of Carbon and how it evolves 1) spontaneously 2) in case of drainage or other destructions 3) in case of site restoration.	The importance given recently to Carbon policies should facilitate decisions and financing of this action.	- Establish a national protocol for measuring peat thicknesses. - Carry out thickness measurements during the inventories. - Calculate the quantity of carbon stored. - Evaluate the GHG emissions at the moment (link with the protocol of evaluation of the state of conservation) and in the longer term.
2b. Conservation of peatbogs should focus on all their roles (e.g. carbon storage, biodiversity, ecosystem services) **Priority:** 2 (High). **Stakeholders:** Site managers; All persons and bodies involved.	One role must not hide the other, policies need to be well balanced.	Present trends already show an inclination towards the multifunctionality of peatlands.	Having management plans that, for each site, take into account all the elements.
2c. Promote wetlands as Nature-Based Solutions **Priority:** 3 (Normal). **Stakeholders:** Scientists and authorities, Education bodies. **Timeline:** Constant.	The NBS concept is not widely recognized and accepted.	In recent times, NBS has been more widely promoted.	Going with general knowledge and acceptance of the NBS concept, and its usefulness for Peatlands.
3. [Carbon] Obtain a low carbon label for peatland restoration.	Prerequisite: - Assessment of the carbon stock of the territory's peatlands and their	Discussions are currently running with the Ministry of	- The implementation of a low-carbon label requires the creation of a certification

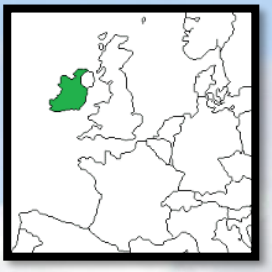
Priority: 2 (High). **Stakeholders:** Min. of Ecological Transition; universities, NGOs, private companies. T**imeline:** Medium term (5 to 10 years) given the necessary prerequisites.	GHG emissions in relation to their conservation status.	Ecological transition. Concern is shown by several private companies.	mechanism for the reduction of GHG emissions through restoration work. - Use similar considerations and approaches implemented in other European countries (Germany, United Kingdom, etc.).
4. [Restoration] Continue and generalize functional restoration work. **Priority:** 2 (High). **Stakeholders:** Scientists and technicians; European (through EU-funded programmes), national and local / regional authorities. T**imeline:** 10 years.	Prerequisite: - Inventory and characterization of the state of conservation of sites; (specify the corresponding objective number). - Functioning models (allow a faster and less expensive evaluation of the functioning of the site and the restoration measures to be implemented). - Low Carbon Label (provides additional financial leverage for the implementation of the work).	Different restoration works have been implemented in France, and their first results appear encouraging.	- Identify the most degraded sites (carbon and/or biodiversity criteria) thanks to the inventory and evaluation of the state of conservation. Prioritize the issues to obtain a decision-making tool and guide the allocation of public funds. - Carry out the work, on an ad hoc basis or as part of ambitious programmes.
4b. Change of restoration strategy to include degraded peatlands. **Priority:** 2 (High). **Stakeholders:** All public bodies involved, NGOs. T**imeline:** Mid-term.	Degraded peatlands are not included in the restoration strategy.	Implementation of political decisions and financial programmes.	Working on communication with site managers and landowners. Need for prioritization of restoration efforts to assess which types of peatlands should be restored first to maximize the difference between gains and losses.
5. [knowledge] Launch a new component of the Wetlands Research Program. **Priority:** 3 (Normal). **Stakeholders:** Universities and institutes; National and regional authorities; NGOs. T**imeline:** Medium term 2025.	Such large-scale programmes have not really occurred since the *First National Action Plan for Wetlands* in the early 2000's.	Different universities and institutes already work on peatlands, in some cases on a long term (like in the 4 SNO Tourbières sites).	This program, which would follow up on the previous research program 20 years later, will integrate new elements, in particular on ecosystem functioning, climate change and the contribution or consequences on peatlands, etc. This would be a reiteration, with new themes, of a program in the same spirit as that initiated with the 1st Wetlands Action Plan.
6. [knowledge; restoration] Extend to France the reflections and experiments of paludiculture. **Priority:** 3 (Normal). **Stakeholders:** Universities and institutes; Chambers	This topic remains largely unknown to most people who could take part in any such action. Prerequisite: knowledge of international experience feedback.	Contacts have been established with scientists working in Germany and other countries; some experimental sites could be found.	- Have French sites that take up models currently studied and tested in other countries (Germany, Great Britain, Canada, etc.). - If these experiments prove positive, and if markets can be found for the products of malaria cultivation, extend the use to new sites.

of agriculture and local farmers; National and regional authorities. **Timeline:** Medium term (5 years) for reflections, long term (10 years) for experimentation and possible generalization.			
7. [protection] Restrict or even stop peat exploitation in France and peat imports. **Priority:** 2 (High). **Stakeholders:** Researchers on horticulture; gardening industries and retailers, consumers organisations, environmental and educational NGOs. **Timeline:** Immediately to establish the modalities and timetable for action in consultation with stakeholders, in the short term (2-3 years) for the first restrictions on the French side, in the medium or long term (5 to 10 years) for a possible stop in France and for measures related to imports, the time to find the necessary substitutes and to reorient the industries.	Prerequisite: availability of sufficient quantities of peat substitutes with the required qualities. A higher public concern is needed about the effects of peat extraction on peatlands ecosystems. The use of imported peat is still favoured by a low price not taking into account the environmental impact of its extraction and probably by the low availability of good quality substitution products.	For France : the low importance, already nowadays, of peat extraction.	- Study the most appropriate ways to reduce and then stop this exploitation in France and these exports. - Develop research on alternative products to peat. - Assist the reconversion of the sectors using peat. - Plan educational actions for the general public and professional users.
8. [management] Improve knowledge and practice for a grazing adapted to the peatlands which can receive it. **Priority:** 2 (High). **Stakeholders:** Farmers and their professional organisations, agronomists. **Timeline:** Ongoing action, starting now.	Prerequisites: Some actions already carried out during the 3rd PNAMH; knowledge of other feedbacks.	Grazing experiences in peatlands and their surroundings are rather numerous, but not always monitored on the scientific and agronomic point of view.	- Distinguish between peatlands that can be grazed and those that should not be grazed. - Establish sustainable grazing practices for each type and case of peatland. - Ascertain which peatland plants are suitable for livestock grazing. - Continue experiments to control parasites without harming the peatlands, etc.
9. [knowledge, restoration] To set up actions concerning damaged wooded peatlands.	Prerequisite: More complete inventories of these environments (objective 1).		- Investigate and define the locations of wooded peatland sites. - Raise awareness among owners and managers.

Priority: 3 (Normal). **Stakeholders:** NGOs, Universities; forest owners; National Forest Board (ONF, Office national des forêts). T**imeline:** Immediately and continuously.			- Apply the most appropriate management or restoration methods.
10. [protection] Complete the network of protected bogs. **Priority:** 1 (Highest). **Stakeholders:** Government and regional authorities; NGOs. T**imeline:** Immediate and ongoing.	Prerequisite: Feasible now, but more accurate peatland inventories will assist in the implementation of this objective.	Several sites are already protected, under different status and rules.	- Extend the network of strongly protected peatlands (in RNNs, RNRs, national parks) to new sites, especially in sectors and massifs that do not benefit much from it, for little protected types of peatlands, and in overseas territories. - Extend the perimeter of already protected sites when the protected areas do not include the entire functioning zone of the peatlands. - Designate new peatland Ramsar sites.
11. [protection] Carry out a land acquisition program for peatlands that require it. **Priority:** 2 (High). **Stakeholders:** Government and regional / local authorities; NGOs with help of European funds and of Water Agencies (Agences de l'eau). T**imeline:** Now and in the long term.	Prerequisite: having the inventories noted in Objective 1 will facilitate this objective, which can nevertheless be undertaken without delay.	Several land purchasing programmes have already been implemented with success.	- Carry out land acquisition of plots by communities or conservatories: 1) in the most threatened areas, 2) in the most emblematic peatlands, 3) occasionally, depending on certain opportunities. - In addition, promote the identification and land interventions on vacant properties. - Continue the process of exemption from the tax on undeveloped land.
12. [protection, land-use planning] Promote the consideration and integration of peatlands in the various territorial strategies. **Priority:** 2 (High). **Stakeholders:** Local, regional, and national authorities. T**imeline:** From now until the longer term.	Prerequisites: Knowledge of the location of peatlands and their role in a given context.	Different policies already address wetlands in general. The specificity of peatlands has to be taken into account.	Ensure that the particularities of peatlands are taken into account at all levels of land use planning (PLU, SCOT, GEMAPI, various action plans, etc.).
13. [cooperation, various themes] Promote the cooperation of France	French peatlands representing only a small percentage of the territory, knowledge and experience need to be found in other European	Participation to international programmes or exchanges has	- Continue and develop exchanges with countries with peatland strategies. - Develop cooperation with international scientific and technical organizations.

with international actions and programs. **Priority:** 2 (High). **Stakeholders:** All persons involved in peatland protection and management. **Timeline:** From now until the longer term.	countries, and adapted to the local situation.	already largely taken place.	- To continue and develop the participation in European programs in connection with the other countries of the Union. - To promote exchanges between managers from different countries. To make known internationally the actions undertaken in France in the field of peatlands. - To include in the French development aid actions concerning peatlands (especially in the Congo basin).
14. [communication, environmental education] Develop communication and educational actions about peatlands. **Priority:** 2 (High). **Stakeholders:** Site managers, schools and other education bodies, authorities. **Timeline:** From now until the long term.	Peatlands are not very well known in France. Some are known as wetlands but not as peatlands.	Spontaneous interest for peatlands seems rather important.	- Develop books, videos, films, concerning peatlands and their dissemination by all means. - Promote peat bogs to the public, including the youngest, by all possible means, in situ and ex situ.
15. [training] To create a training course leading to a diploma in order to train specialists in peatlands and their management/restoration. **Priority:** 3 (Normal). **Stakeholders:** Ministries of Ecological transition, Public Education and Agriculture, Universities, colleges and scientists; NGOs. **Timeline:** Medium-term action, to find training institutions willing to take charge and organize a relatively long training course leading to a diploma (1 to 2 years), with the necessary teachers and teaching materials. The same institution(s) could then also host the shorter training courses.	- There is a lack of French-speaking peatland specialists, so it is important to be able to train field specialists. - Knowledge (and specialists) from Northern Europe could be used, but it will be necessary to take into account the specificities of peatlands in French-speaking Europe to create this training.	Some initiatives are taken here and there, i.e. in Switzerland.	- To identify and implement actions that could be carried out with Switzerland and Belgium. - Develop a high level training course leading to a diploma to train French-speaking peatland specialists, capable of carrying out in-depth diagnoses of peaty sites, proposing and following up complex management or restoration actions, while remaining at the cutting edge of knowledge and in contact with field research on these environments. - Shorter training courses (a few days to a few weeks) for peatland managers, in order to deepen their theoretical and practical knowledge of the fields related to peatlands.
16. [training] To propose short information and training sessions to the		The recent creation of OFB (Office français de la	- To provide the public that may be confronted with the issues arising in

public confronted with the problems of peatlands. **Priority:** 3 (Normal). **Stakeholders:** Professional organisations, schools and universities, OFB, site managers, local and regional authorities, ministry of National Education. **Timeline:** Action to be started as soon as possible, preferably in conjunction with professional organizations with public concerns.		biodiversité), which has a role for the implementation of professional training and public awareness.	peatlands with the information necessary for their work, mission or leisure activity, either by short training courses that would be specially prepared, or by intervening within their professional spheres during information days. - Concerned citizens can be quite diverse: elected officials (mayors and municipal councillors, members of parliament), technicians from local authorities, research departments, farmers and stockbreeders, foresters, nature users (hikers, nature and mountain leaders, hunters, etc.), teachers, firemen, etc...



6 – Action items for Ireland

This section describes the action items from the Irish stakeholder workshop and subsequently refined by the Irish partners in consultation with the other partners in Care Peat.

Cloncrow bog, County Westmeath, Ireland

Action Items for Ireland

Recommendations	Barriers and policy gaps	Enablers	Proposed Actions
1. Develop capacity for a framework to encourage carbon sequestration (and other ecosystem services) for Peatlands . **Priority:** 1 (Highest). **Stakeholders:** Farmers and other Landowners, Community Wetlands Forum, Regional Government, National Parks and Wildlife Service, Academic Stakeholders, Environmental Protection Agency. **Timeline:** Mid 2021 to mid 2022 for Roadmap, Monitoring is ongoing.	Lack of awareness/information about alternative income sources from peatlands. Lack of financial incentives for peatland rewetting. Identification of viable business models for peatland restoration. Requirement for ongoing Government funding and NGO or state agency to maintain the framework.	A need to enable landowner choice(s) without fear of income loss. Public and private sector investments. Sale of Carbon Credits and Ecosystem Services.	NUI Galway together with Care Peat Partners to establish a round table of stakeholders to propose a roadmap towards a Carbon Credit Framework for Ireland and to monitor ongoing progress in terms of implementation.
2. Update the National Peatlands Strategy, building on existing partnerships between state agencies, communities, landowners, policy makers and academics. **Priority:** 2 (High). **Stakeholders:** National Parks and Wildlife Service, Irish Peatlands Conservation Council, Academic Stakeholders, Bord na Móna, Coillte. **Timeline:** Ongoing.	Local Community opposition to change. Lack of transparency and enforcement for peat extraction sites and rehabilitation plans. Lack of awareness about peatland restoration and rehabilitation.	Existing National Peatland Strategy and mid term review. Ongoing project, research work, data collection and mapping. Demonstrator sites.	National Parks and Wildlife Service to update their existing National Peatland Strategy and to prepare for a new one.
3. Enhance knowledge about Peatlands in Ireland through research and education. **Priority:** 2 (High). **Stakeholders:** Irish Peatlands Conservation Council and other community stakeholders, National Parks and Wildlife Service, Ordinance Survey Ireland,	Insufficient monitoring network. Support for peatland science related and academic careers. Absence of a detailed map of the extent and condition of peatlands. Lack of formal curricular modules on Peatlands (increased education at all	Importance of biodiversity increasingly appreciated. Increased funding internationally and nationally for peatland related research. Education efforts by local interest groups. Linking local businesses to the benefits of peatland	Irish Peatlands Conservation Council to draw up a list of ongoing initiatives and to propose new ones together with academic institutions including potential engagement with NCCA to change curriculum and engagement with teacher training colleges and QQI . Establishment of a peatlands portal or one stop shop for peatlands related data and

Environment Protection Agency, Central Statistics Office, Quality and Quantifications Ireland, ACCA, Teagasc, Educational and Academic Stakeholders at all levels. **Timeline:** End 2021 for list, End 2022 for first draft of Peatlands Portal.	levels and especially in agricultural colleges). Public perception that peatlands are bad. Lack of awareness about benefits from rewetted peatlands. Requirement for awareness raising and research into paludiculture. Funding for peatland restoration both scientific and developmental activities. Support for skilled rewetting practitioners – local rewetting jobs.	restoration for sustained economic growth. Outdoor recreational opportunities of peatlands. Advances in earth observation data (Satellite, UAV) to enable assessment of peatlands. The development of monitoring systems to measure restoration effects. Private finance for educational activities related to peatlands. Landcover map by OSI and EPA.	resources for Ireland including GIS Data.
4. Support organizations and communities associated with Peatlands financially, through just transition mechanisms. **Priority:** 3 (Normal). **Stakeholders:** Community Wetlands Forum, Irish Peatlands Conservation Council, National Parks and Wildlife Service, Environmental Protection Agency, Bord na Móna, National Government. **Timeline:** Ongoing.	Community based projects require funding and insurance incentives. Alignment of existing funds.	A willingness to manage / protect / restore lands by peatland owners. Growing community engagement and leadership. The work of Community Based Organisations eg Community Wetland Forum. Development of a Landscape Vision. Development of agricultural schemes aiming at re-wetting farmland on peat. Development of agricultural schemes that maintain farmlands on peat which are already wet and with high biodiversity value.	Multiple stakeholders to work together to propose solutions to the Irish Government and the EU.
5. Enforce environmental protection regulations in relation to Peatlands. **Priority:** 3 (Normal). **Stakeholders:** Environmental Protection Agency, National Parks and Wildlife Service, Local Authorities, National Government. **Timeline:** Ongoing.	Turf cutting vigorously defended by some politicians. Existing policy infrastructure encourages maintenance of existing drainage. Cultural barriers towards the cessation of turf cutting. Rewards for good practice.	The Climate Action Bill. The Paris Climate Agreement. Schemes to disincentivize land reclamation (e.g. drainage activities). Increased public awareness of degraded peatland impacts, generational knowledge transfers and cultural awareness raising.	Ensure that laws relating to peatland protection are enforced and that new laws are implemented in line with policy. Also encourage greater awareness through education.

6. Fastrack GHG reduction in relation to LULUCF and Peatlands in particular. **Priority:** 3 (Normal). **Stakeholders:** Environmental Protection Agency, Local Authorities, Central Statistics Office, OSI, Academic Stakeholders. **Timeline:** Ongoing.	Lack of monitoring and/or baseline data on GHG emissions from a range of peatlands in different conditions.	GIS Data required at a national level to map all Peatlands and Peatland types. Increase in peatland related projects, research, and data. Enhanced measurement sensors and tools including flux towers.	Produce an open access layered map of Irish Peatlands together with GHG data. Facilitate research projects. Promote open data.

7 – Action items for the Netherlands

This section describes the action items from the Netherlands stakeholder workshop and subsequently refined by the Dutch partners in consultation with the other partners in Care Peat.

Action Items for the Netherlands

Recommendations	Barriers and policy gaps	Enablers	Proposed Actions
1. Start pilots (climate buffers) where there is area, support and funding. Don't wait. **Priority:** 1 (Highest). **Stakeholders:** Dutch Climate Buffer Coalition; Ministry of Agriculture, Nature, Food; Urgenda (climate action group). **Timeline:** 2021-2022.	National peat rewetting policies are not clear and smart enough to result in concrete localprojects and measures.	Often existing field projects more effectively (than more abstract policies) motivate others to follow up. Nature management organizations and water boards can initiate such field projects, as they have proven already with 'natural climate buffers'. They should continue to do so, now with added focus on peatland areas.	1. Proposal for 33-58 prioritized rewetting projects in existing nature reserves for next two years and lobby for national governmental funding. 2. Several climate buffer initiatives for creation of new or extension of existing peatland nature. Sum 1 and 2: 0,2 Mt CO_2 reduction in 2030.
2. Make better use of business models and scale up, starting with voluntary carbon credits (Valuta voorVeen/Paying for Peat). Priority: 2 (High). Stakeholders: Dutch Nature and Environment Federations, Nature site managers. Timeline: 2021-2030.	Lack of sufficient revenues from public and private parties are needed.	To overcome this (economic/financial) obstacle, additional revenues from public and private parties are needed. Some of them have been developed already, like Valuta voor Veen (Paying for Peat: voluntary carbon credits), the challenge now being to better inform farmers about these instruments.	Start several concrete 'Paying for Peat' projects, to be initiated by nature site managers, environmental federations and / or farmers or their organizations.
3. Urge for full clarity concerning responsibilities (incl. mandate) among governmental authorities and instruments for peat rewetting. **Priority:** 3 (Normal). **Stakeholders:** Authorities on the national level, Dutch Parliament. **Timeline:** 2021-2030.	As the Care-Peat review on peat rewetting policy has been unveiled, in The Netherlands the necessary instruments are scattered among different authorities, laws and governmental levels. The result being that none of them is able or eager to take the lead, possibly because they are afraid of the complexity and the liability for failures.	To avoid that they keep waiting for each other or, worse, play pass-the-parcel, this should be solved at the national level.	Participation in implementation organization of Dutch National Climate Agreement, lobby in Dutch Parliament.
4. Add new integral local policies under direction of governments. **Priority:** Not yet prioritised.	Within the Netherlands, the implementation of national policy is decentralized towards regional and local governments. This results in fragmented approaches, varying from government to government. Challenges like combatting climate change and nature	This should be solved at the national level.	Lobby in Dutch Parliament, suggestion to play this via Dutch National Audit Office, who gave comparable advice for more national steering on transition process in draft policy.

Stakeholders: Not yet addressed, initiative of Dutch Climate Buffer Coalition. **Timeline:** 2021-2030.	protection are a national assignment though and request an overarching and interlinked framework, which is now missing. The result is that local governments are holding back in their implementation.		
5. Counter the popularity of underwater drainage. **Priority:** 2/3 (High/Normal). **Stakeholders:** National and regional authorities, Ministry of Agriculture, Nature and Food, farmer collectives for agricultural nature management. Environmental Federations. **Timeline:** 2021-2023.	Many farmers are interested in the technique of underwater drainage as a means to manage the ground water level of their fields. This pipe-drainage technique is not only suitable for the discharge of groundwater, but it facilitates the inflow of surface water into the soil as well. With underwater-drainage the water level can be set higher or lower depending on the season and weather conditions. Although this might seem an appropriate way to cope with peat oxidation, many nature protection organizations are not happy with it. This is because they consider the underwater drainage as a halfhearted solution; after all, the ground water is still kept at too low a level to combat peat oxidation successfully. Also, the water use is about 20-40% higher than that of natural rewetting via rain and ditches. Furthermore this technique may result in a further decrease of biodiversity due to a loss of physical diversity caused by installing this intensive pipe draining system.	Nature protection organizations would rather see that farmers are counselled to transform their practices into more extensive ways of farming.	1. Follow research on this topic and stimulate that rewetting methods develop towards integrated solutions, with biodiversity and wise water use as important boundary conditions. (Priority 3). 2. Plea and lobby for integrated transition zones around nature reserves, where more natural rewetting techniques prevail. (Priority 2).
6. Promotion of land-use change - combining farming practices and peat conservation. **Priority:** 2 (High). **Stakeholders:** In 'Programma Natuur' & Climate Agreement involved site managers and Coalition Natural Climate Buffers. Ministry of Agriculture, Nature, Food; provinces. **Timeline:** 2021-2030.	Successful examples of combining farming practices and peat conservation are still too rare to counter the popularity of technical solutions, which are only successful in the short term. The implementation of land-use change is more time consuming and a more complicated process.	Land-use change would, however, provide a long term and stable solution for the peat, the land users as well as biodiversity.	National Climate Agreement and national policy for nitrogen reduction, 'Programma Natuur', explicitly mentions this as one option. Responsible parties really help realizing this on a significant scale.
7. Take groundwater into account, e.g. where peat and	When restoring peat, it is not just about the water quantity, the	Using high quality groundwater can avert	Opportunities are found on the transitions from High to Low

sand meet and in stream valleys. **Priority:** 3 (Normal). **Stakeholders:** Site managers, Coalition Natural Climate Buffers, provinces. **Timeline:** 2021-2030.	quality is important as well. Rainwater, nutrient-rich water and mineral-rich groundwater have different characteristics. Rewetting peat in natural areas also has risks, like bruising with rushes (Juncus effusus) a.s.o. and poorer manageability (carrying capacity).	some of these risks. Plus it has an added advantage: the development of (rare!) groundwater-dependent nature.	Netherlands, for example from the "Drents Plateau" to the surrounding peatlands.
8. Better link agriculture, nature and peat rewetting and change perverse regulation. **Priority:** 2 (High). **Stakeholders:** Site managers, Coalition Natural Climate Buffers; Ministry of Agriculture, Nature, Food; European Commission. **Timeline:** 2021.	There is still perverse regulation benefitting agricultural practices with negative impacts on peatlands and on finding structural solutions (for agriculture as well).	It is better to look at agriculture, nature and peat rewetting in combination. For example combining agriculture with meadow birds and peat rewetting. Or practicing rather intensive agriculture on higher and drier grounds, rewetting lower areas, combining this with agriculture and nature.	Influence new CAP regulations and implementation of it in NL.
9. Building houses on peat; this is perceived as mainly a threat, but it can also be an opportunity. **Priority:** 3 (Normal). **Stakeholders:** WWF-NL. **Timeline:** 2021-2030.	Traditional building on peatlands is a threat, as water levels are lowered.	The Netherlands aims to build a million new homes before 2030. This will have an enormous impact and may economically be the main driver on land-use. It is likely that some of these houses will be built on peatlands.	Perhaps building (and the available funding) can be an opportunity; e.g. by building high apartments on artificial mounds and rewetting the surrounding area giving the apartments a spectacular view.

8 – Action items for the United Kingdom

This section describes the action items from the United Kingdom stakeholder workshop and subsequently refined by the UK partners in consultation with the other partners in Care Peat.

Winmarleigh Carbon Farm, Lancashire, United Kingdom

Action Items for the United Kingdom

Recommendations	Barriers and policy gaps	Enablers	Proposed Actions
1. Strong signal of commitment needed from government to give practitioners confidence to act. **Priority:** 2 (High). **Stakeholders:** UK Devolved Administrations, UK Government, Local Authorities. **Timeline:** Ongoing.	Land managers are not clear or confident yet on policy / government direction and are reluctant to take action. Peatlands can be the cheapest land available so there is pressure here for inappropriate and damaging development. Need a more sophisticated land use policy that resolves these conflicts. Government funding often only funds capital investment costs not covering costs of planning and managing landscape-scale projects. Can limit the ambition of peatland partnerships if there is a lack of capacity to deliver. Lack of recognition of funding gaps from funders / government or action to address these. Association of Drainage Authorities – this is a very influential organisation in lobbying and members pay into it – this can skew the situation with respect to wanting to reduce / stop drainage of peatlands.	Peatlands should be a theme in their own right in the Environment Agency – needs separate responsibility. Significant climate change policy / climate budget targets will contribute to change. Compensation payments and additional grants where land value/loss of income are high Government funding could cover costs of planning and managing landscape-scale projects not only capital investment costs.	Development and consultation of the long-term roadmap for peatland management. UPDATE: May 2021 The UK Government has now published its England Peat Action Plan which sets out the direction and intentions for peatland management in England. It also launched a Nature for Climate funding scheme to restore 35,000 ha of peat which includes maintenance funding. Environmental land management funding schemes have been committed to being introduced from 2024. Similar peat action plans need to be published for Wales, Scotland and Northern Ireland. Proposed actions and commitments in the England Peat Action Plan need to be commuted into legislation (where appropriate) and integrated across relevant government departments and policies (e.g. National Planning Policy Framework, DBEIS).
2. Support peat-free horticulture. **Priority:** 2 (High). **Stakeholders:** UK Government, Devolved administrations, Horticulture industry, Alternative product manufacturers, eNGOs (e.g. Wildlife Trusts and others), Retailers. **Timeline:** Consultation on ending use of peat in horticulture to take place in England in 2021 (0-5 years).	Address concerns around peat-free horticultural products. Perception that quality of peat-free products is low, and apprehension about their limited availability. Current popularity of gardening is creating high demand, causing concerns over supply chain issues if shift to peat-free products is undertaken too quickly. The horticulture industry is nervous about adopting peat-free products as they are so reliant on the use of peat – there is concern over yields and additional costs of food production – lack of knowledge on how peat alternatives affect productivity levels – need research.	Incentives for the horticulture industry to move to being peat-free. Dependable income to enable alternatives for peat horticulture? More research into peat-free alternatives for amateur horticulture.	Encourage organisations such as Salford CC to promote their going peat-free and to support peat-free campaigns. Plan for helping transition away from using peat – need to overcome barriers such as lack of research, capital costs, increased risks, lower productivity. Provide support for the horticulture industry to move to being peat-free. Beadamoss have just been awarded a new 3 year Sphagnum Farming project to bring our initial paludiculture work to a commercial scale, working alongside farmers

	Lack of research into peat-free alternatives for horticulture.		searching for land uses which generate income (the Sphagnum will be sold for use as a peat-replacement in horticulture) but to also protect their fenland/peatland soils (which the Sphagnum allows).
3. Break down barriers between policy makers, conservationists and farmers. **Priority:** 1 (Highest). **Stakeholders:** Farming and landowner organisations, Defra, Nature Conservation Organisations/partnerships, Local communities, Research bodies. **Timeline:** Ongoing – Tests and Trials for new Environmental Land Management schemes are underway and schemes will be in place 2024/25.	Current disconnect between policy makers and farmers. Lack of understanding of issues facing UK farming on peat soils, and concerns around moving to new / proposed subsidy and financial support systems.	Evidence gathering is vital. This should then be shared with land managers and stakeholders. Accessible or shared repositories for information – e.g. national or local nature partnerships.	Creation of data hubs to share knowledge with academics and practitioners e.g. eyes on the bog – long term data sets based on citizen science repository. Engage local non-land management community – needs to be involved and informed to ensure peatlands valued and protected. Provide guidance on the best way of environmentally managing peatlands. Consultation with farmers and clear information on practicalities/costs/benefits.
4. Peat should be recognised as a multi-benefit resource – focus on carbon, biodiversity, water quality and flood risk. **Priority:** 3 (Normal). **Stakeholders:** UK Government . **Timeline:** 0-5 years.	Lack of sufficient available evidence regarding the resultant benefits of peatland restoration / intervention. Need to know what has been done and how effective have these measures been?	Evidence of biodiversity gains from improvements to SSSI's could be used to evidence benefits of peatland restoration. Ensure we consider biodiversity aspects of peat too. Accessible or shared repositories for information – e.g. national or local nature partnerships.	England peat strategy should focus on the whole ecology and function of peatlands not just the peat itself – to ensure that opportunities to realise the wider benefits of peatlands, such as biodiversity, are not missed. UPDATE MAY 2021: England Peat Action Plan commits to action on developing the evidence base for wider ecosystem services of peatlands.
5. Stay involved in global and the EU initiatives and funding schemes. **Priority:** 3 (Normal). **Stakeholders:** IUCN, UK Peatland Programme, NGOs/NCOs, Research bodies. **Timeline:** Ongoing.	Brexit.	Leaving EU does not mean we lose drivers to act, we still have UN / International commitments. There are still opportunities for the UK to get involved and cooperate on work across the EU. Important for UK to still be involved in the UN Decade for Ecosystem Restoration (2021-2030).	Continue to participate in eligible funding opportunities e.g. Horizon. Stay involved in transnational peatlands groups and other international programmes.

6. Support and develop paludiculture methods. **Priority:** 1 (Highest). **Stakeholders:** Landowners/land managers, Research bodies, Supply Chain , NFU/farming bodies, Environment Agency/Internal, Drainage Boards (ADA), Defra. **Timeline:** 1-5 years.	Paludiculture may be an unfamiliar word and so could appear off-putting. Not enough evidence-based methods on paludiculture – may not be ready for everyone or anywhere.	Need greater incentives for change. Need to prioritise actions e.g. certain areas for food production and use paludiculture where it can sustain an area in a productive way. Lack of evidence-based methods focussing on paludiculture, so may not have appropriate information for all areas / land types etc.	Education activities focused on paludiculture. Beadamoss working on new 3 year project to bring paludiculture work to commercial scale, working with farmers. Also working on quantifying the technical advantages of using Sphagnum in peat-free mixes, as it has similar qualities to peat. UPDATE May 2021: England Peat Action Plan proposes a more sustainable approach to farming on lowland peat and recognizes the potential for paludiculture. Recommendations and stronger commitments/plans are needed.
7. Monetise carbon and ecosystem services. **Priority:** 1 (Highest). **Stakeholders:** IUCN UK Peatland Programme, UK government (Defra, Treasury, BEIS), Private investors, Green financing organisations, Insurance bodies. **Timeline:** 1-5 years.	Complexity in land ownership and uncertainty regarding who would be eligible for payments. For example 49% of upland farms are tenanted, if payments for carbon store din the land are to be made, would these go to landowner or tenant? Also issues regarding common land (which often houses large areas of peat); the soil is conserved to be owned by the land-owner, but the commoners have grazing right. Consideration should also be given to the effects of sporting tenants land management systems, e.g. shooting/game sports.	Clear funding stream or incentive to manage sustainably – will motivate farmers. System for goods and ecosystem services incentives needed.	Update May 2021: New schemes to reward farmers and land managers for producing public goods to come in from 2022-25. The Peatland Code is being improved. England Peat Action Plan commits to exploring other monetization avenues for peatlands. Biodiversity Net Gain being introduced in Environment Act 2023.
8. Need to renew and refresh local policies and improve local cooperation. **Priority:** 2 (High). **Stakeholders:** Local Authorities, Local stakeholders, Peat Partnerships. **Timeline:** Ongoing - this has started (e.g. GMCA, Lancs CC, Salford CC) & needs to be rolled out.	County level documents are out of date on climate change. Difficult balance in agricultural areas – how to protect food chains and businesses as the UK moves out of the EU. Agriculture is not within the remit of Local Authority planning system – so drivers need to come from elsewhere for farming support / change.	Renewed and refreshed local policies. In developing local approaches, need to engage all sectors, determine priorities for local areas and strike a balance between economics and environmental protection.	Need to start bringing together groups and organisations to get ready for effective collaboration and partnership working. Do this now while we are developing the evidence bases for ecosystem service outcomes and getting the balance of priorities correct; lots of good practice examples of this e.g. Scotland, Duchy of Cornwall, Duchy of Lancaster, Grosvenor Estates, Moors for the Future. Local policies tackling peatland restoration / management for ecosystems services should be developed.

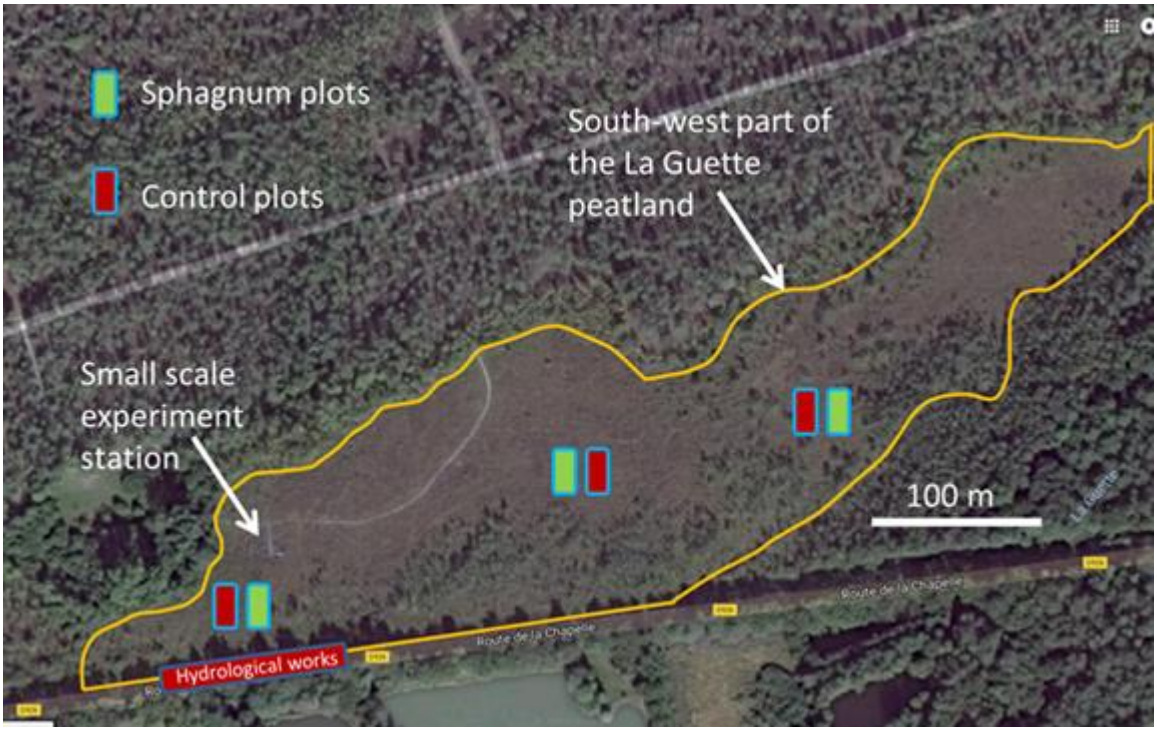
Appendix A - Pilot sites

Vallei van de Zwarte Beek (Belgium)

250 of 750 hectares of the peatland in the Nature Reserve Valley of the Black Creek ("Vallei van de Zwarte Beek") will be used for a restoration pilot. In this area, several different plots will be subjected to rewetting and adaptive management. Natuurpunt is the organisation carrying out this research.

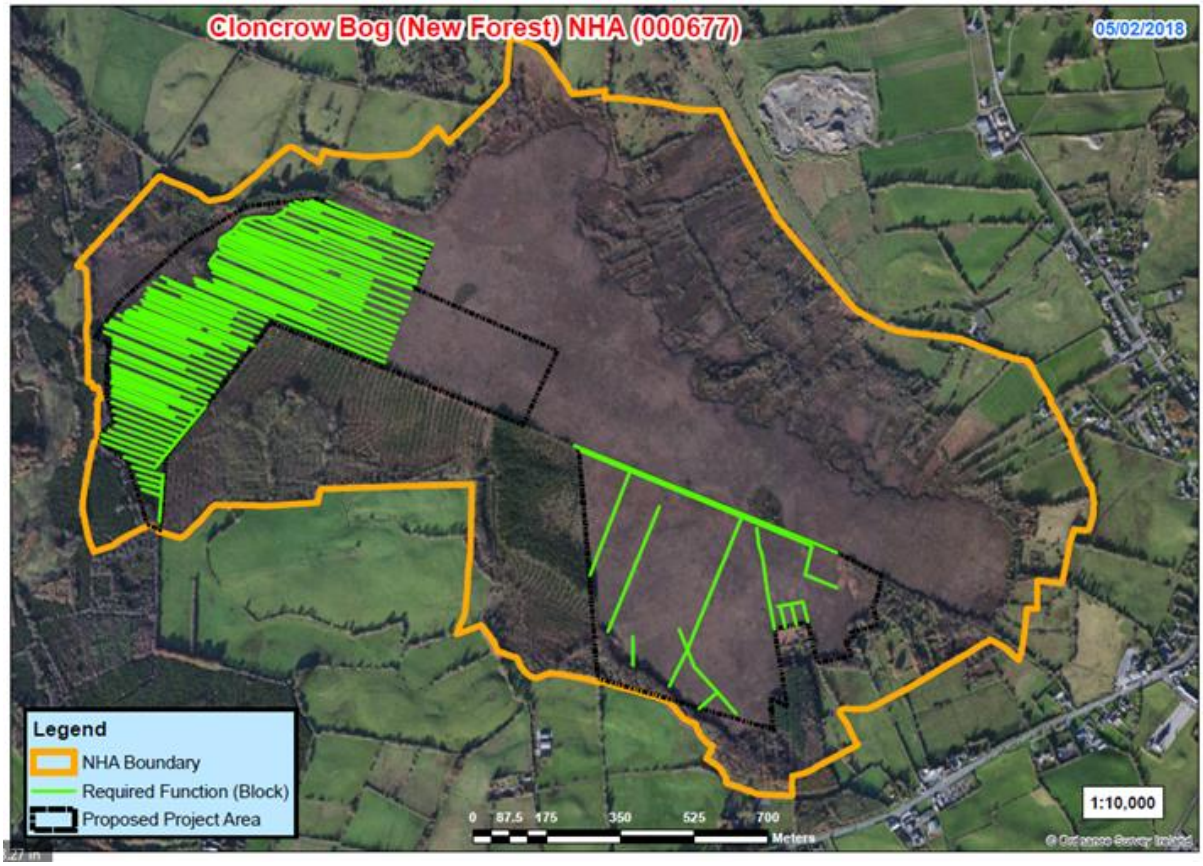
La Guette (France)

The La Guette peatland (Neuvy sur Barangeon, 200 km south of Paris) is one of the European pilot sites. This site is drained by a ditch located along a road at the outlet of the peatland. This disturbance leads to a drop in the water table level and an increase in the water table fluctuations favourable to the appearance of banal pioneer species (Molinia caerulea, Betula spp) at the expense of typical peatland species (Eriophorum angustifolium, Rynchospora alba) including *Sphagnum*, a major producer of peat. Restoration works were carried out as part of a regional project. The results showed, on reduced surfaces, the positive effect of adding *Sphagnum* on C fluxes and vegetation. The objective for this pilot is to increase the scale of the restoration tested in the previous project by stripping peat on the first 5 cm and adding *Sphagnum* in patches in 2 zones of approximately20 m x 30 m. The stripping of the peat will induce the growth of several plant species of interest. The expected results are an increase in floristic diversity typical of peat and plant species of interest, beyond the quantities present before the management action, as well as an increase in the capacity to store C through a significant increase of the *Sphagnum* percentage cover.



Cloncrow Bog (Ireland)

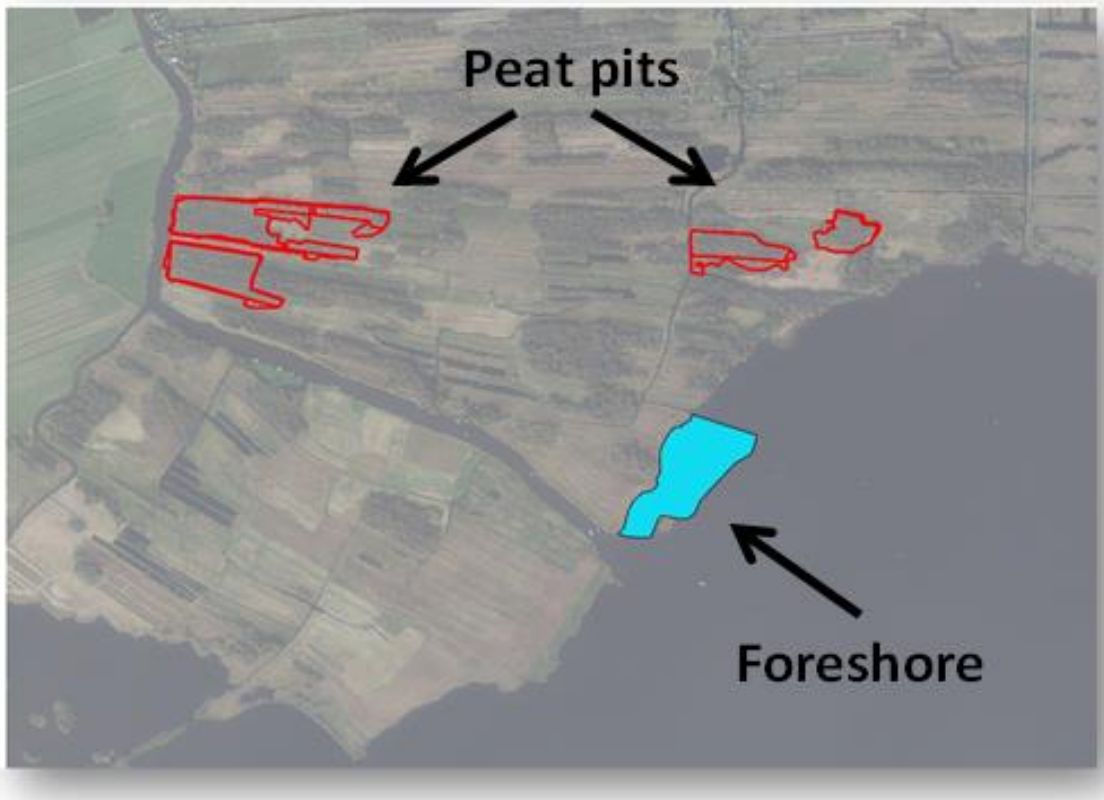
Cloncrow bog is situated in County Westmeath within the midlands region of Ireland which is the primary area for raised bog formation. Current land uses on the site comprise active peat-cutting to the east of the high bog margin and afforestation on both the high bog and- the cutover. Areas of cutover have been reclaimed for agricultural purposes around the site. The grassland is used for grazing. Damaging activities associated with these land uses include drainage and burning of the high bog. These are all activities that have resulted in loss of habitat. The Irish pilot site is located in Cloncrow Bog, designated as a Natural Heritage Area (NHA) which consists of 200ha. The Care-Peat pilot consists of 26ha which will undergo drain blocking and vegetation restoration.



De Wieden (the Netherlands)

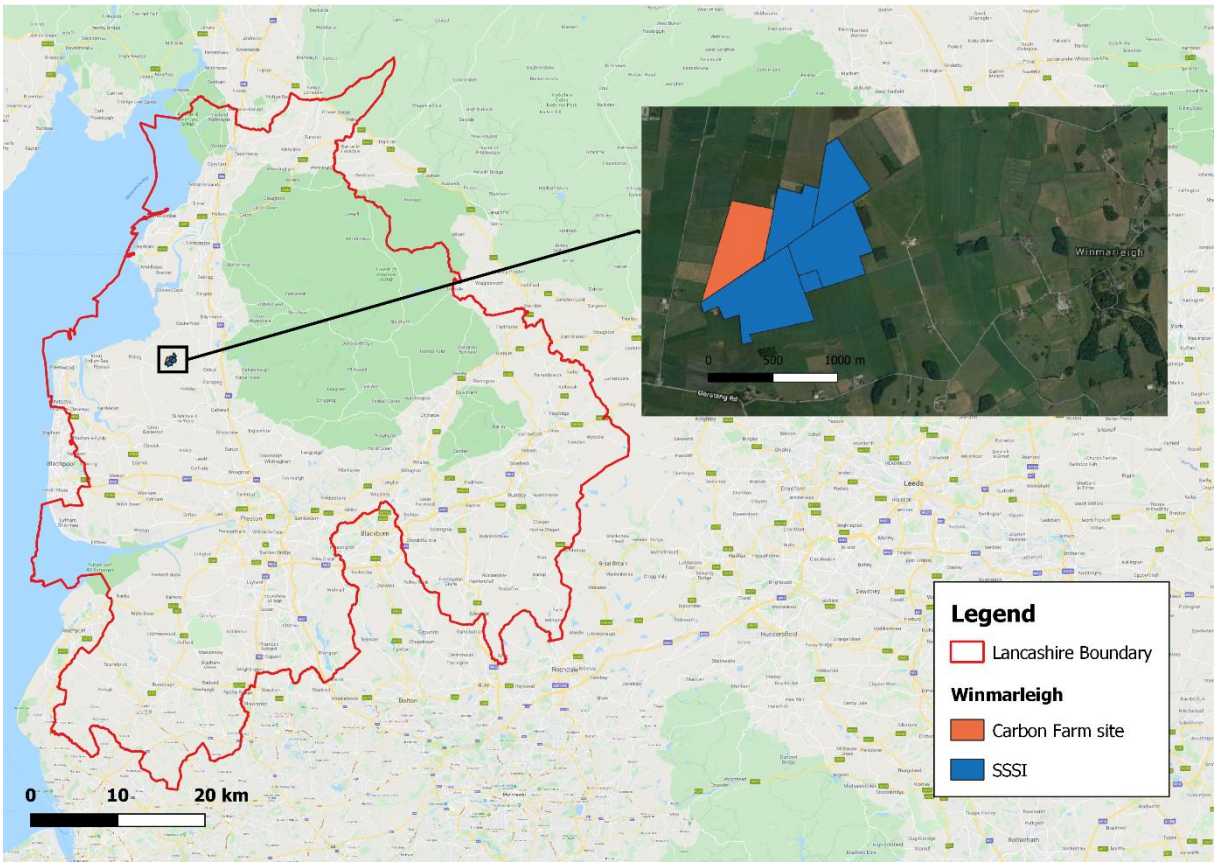
The pilot will be realized in the Dutch nature reserve area called “De Wieden”. The project makes De Wieden suitable to keep carbon in the soil and to reduce more carbon in the future. De Wieden is part of a national park in the Netherlands, in Steenwijkerland municipality of the province of Overijssel. Now the area is mentioned as a Natura 2000 area owned and managed by the private nature-conservation organization Natuurmonumenten.

In this pilot NM will create peat pits in De Wieden. By creating peat pits, more space becomes available for water plants to grow in these pits, these plants can capture carbon. In the peat pits space is also created for peat to grow and absorb carbon. The peat that comes from the new peat pits will be used to raise one of the foreshores, in Dutch called “vooroevers”. So the carbon that is stored in the peat will stay in the peat. By raising the foreshore, more water plants will grow on the foreshore. Through this process more carbon will be stored in the area.



Winmarleigh Carbon Farm (UK)

The main objective for this pilot is the change in management of 4 ha of farmland in Lancashire, North-West England, to a 'Carbon Farm' designed for the long-term storage [sequestration] of atmospheric CO2. The former agricultural pasture has been planted with Sphagnum moss for the purpose of protecting existing soil carbon and sequestering further atmospheric carbon. The pilot is testing the effectiveness of this novel method of farming as a way of managing/restoring peatland to reduce carbon emissions from the peat soils and turn the current carbon source into a carbon sink. The test site borders a Site of Special Scientific Interest (SSSI) designated lowland raised bog (Winmarleigh and Cockerham Moss Site) owned by Lancashire Wildlife Trust (LWT). The pilot is also assessing the effect of re-wetting this buffer zone farmland area on the functioning of the adjoining SSSI nature reserve and hopes to demonstrate the viability of alternative land management techniques on peatland sites in buffer zones adjacent to wildlife restoration sites, showing benefits both in terms of carbon and improvement to the wildlife site.



Appendix B - Description of Partners

Natuurpunt Beheer vzw - Natuurpunt - BE

Natuurpunt is an NGO which is the largest private nature conservation and nature management organisation in Flanders. It is also engaged in policy, research and education in the field of nature. With 105,000 families as members, its core business is the management 25,000 ha of nature for which it works primarily with volunteers that are supported by a workforce of professionals.

Centre National de La Recherche Scientifique – CNRS - FR

CNRS is one of the most important research institutes in the world. Its scientists explore the biosphere, the matter, the universe and functioning of human societies to raise current stakes. Its scientific objectives are focused on developing knowledge based on fundamental works, which are coordinated by different institutes. CNRS coordinates the French Peatland Observatory composed of 4 sites, incl. La Guette, equipped for monitoring meteorology, GHG emissions, hydrology and vegetation.

Bureau de Recherches Géologiques et Minières - BRGM - FR

France's reference public institution for Earth Science applications in the management of surface and subsurface resources and risks. Key objectives: understanding geological processes and associated risks, developing new methodologies and techniques, producing and disseminating data to support the management of soils, subsoils and resources, delivering the necessary tools for the management of soils, subsoils and their resources, risk prevention and policy responses to climate change.

Lancashire Wildlife Trust - LKW- UK

The Lancashire Wildlife Trust is a charity which has been in existence since 1962. It owns 38 sites covering over 1300 hectares and has nearly 30,000 members and around 140 staff. Its key objectives are to protect, create and enhance wildlife in the region, creating Living Landscapes and

Living Seas; to stand up for wildlife and the environment and to inspire people about the natural world and encourage everyone to take action for wildlife.

Manchester Metropolitan University - MMU - UK

The Manchester Metropolitan University is a UK Higher Education Institution dating back to 1824 and awarded university status in 1992, with a remit today to provide higher education, conduct research and engage in activities with businesses and the community. It has more than 37,000 students and employs over 5,000 people.

National University of Ireland Galway – NUIG - IE

NUI Galway is a leading higher education and research organisation ranked in the top 1% globally and has a student population of 17,000+. NUI Galway is involved in 100+ European research projects, securing €45+ million in direct funding. The Insight Centre for Data Analytics is a joint initiative between researchers at 4 Irish Universities and other partner institutions bringing more than 400+ researchers from these institutions and 80+ industry partners, to position Ireland at the heart of global data analytics research.

Eurosite - Eurosite - NL

We are the network for Europe's natural site managers. We bring together non-governmental and governmental organisations, and individuals committed to our vision. Founded in 1989, the network has grown to include 48 members from 17 European countries – from the Atlantic islands to the Black Sea; and from Scandinavia to the Mediterranean. Our core business is organising a range of networking events, such as workshops or exchange visits between members – often within our Twinning Programme.

Vereniging Natuurmonumenten - Natuurmonumenten - NL

Natuurmonumenten is an NGO and the largest private nature conservation and nature management organization in the Netherlands. Natuurmonumenten manages more

than 150,000 hectares of nature spread over 363 areas. Natuurmonumenten counts over 700,000 members and works together with almost 10,000 volunteers.

Université d'Orléans – UO - FR

The université d'Orléans (UO, www.univ-orleans.fr) is a higher education center that deliver diplomas at the bachelor, master and PhD levels. The UO is structured in faculties: 1) sciences and techniques, 2) humanities, 3) Law and management, 4) Universe Sciences Observatory. The research activities are developed in all these fields and in connection with research institute located in the "Orléans Grand Campus": CNRS (fundamental), INRA (agronomy), BRGM (geology), CNES (space agency).

Hogeschool Van Hall Larenstein – HVHL - NL

Van Hall Larenstein University of Applied Sciences (VHL) is a knowledge institute that, among other things, is engaged in practice-oriented research into the sustainable organization and management of landscape types in the delta. An important landscape type are ground peat soils. VHL is lead partner in the Interreg NWE project CConnects that was approved at the end of 2017.