

Ponderful

Deliverable 5.1

Plan for the Exploitation and Dissemination of Results (PEDR)



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For further information please contact:

Jeremy Biggs
Freshwater Habitats Trust
Bury Knowle House
North Place
Headington
Oxford, OX3 9HY

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Plan for the Exploitation and Dissemination of Results (PEDR)

1. Introduction

The **Plan for the Exploitation and Dissemination of Results (PEDR)** is the first output PONDERFUL WP5 (Task 5.1). Specifically, the PEDR describes **the ways in which the project's knowledge will be practically and commercially exploited to maximise the impact of our work**. The PEDR will ensure that the benefits of PONDERFUL are available to the largest number of EU policy makers, practitioners and citizens, and to ensure that the fruits of the research are exploited widely to benefit European society as a whole.

The PEDR provides a route map for the transfer of **new knowledge**, through research, policy, business and practical routes, with special emphasis on reaching practical **users** as these have the most impact on where change (exploitation) actually occurs. The PEDR will **translate new knowledge in three key areas**:

- (i) the continent-wide role of ponds in protecting freshwater biodiversity,
- (ii) the links between freshwater biodiversity and ES delivery and
- (iii) the impact of ponds on CC mitigation and adaptation.

When implementing the PEDR we will also set out the measures we will take to help practitioners maximise the benefits of the potential paradigm shift in water management we expect when small waters are fully incorporated into environmental management.

The PEDR summarises **the type and quantity of benefits** we will be delivering in four main categories: scientific knowledge, policy makers, practitioner actions and informing end-users. These are:

- **Scientific knowledge:** Publications and person-to-person presentations will be planned to achieve maximum benefits with exposure in journals/conferences which strategically create the maximum impact for the project (e.g. plenary presentations, key audiences, conference scale). The overall number of publications will be >100 in 8 years with 30+ in high impact journals.
- **Policy makers:** We will run national or regional policy maker workshops to exchange project outcomes, including use of the DEMO site work, to maximise interactions. We will aim to establish specific activity programmes with RAMSAR and the European Environment Bureau Water Working Group who have good working relationships with European policy makers.
- **Practitioner actions:** We will hold regional and/or national meetings and workshops with key practitioners and stakeholders (principally in WP 1) bringing together groups concerned with land and water management sectors (farming, forest, water, nature, climate) who often have similar but non-aligned aims.
- **Informing end users:** As part of the project we will maintain a live list of end-users and stakeholders which will facilitate a strategic approach to the dissemination, exploitation and communication programmes (Deliverable D5.3). The range of organisations will include regional and national public sector organizations, EU and global policy makers, NGO's (regional, national, international), industry, HEI's and local government to ensure that results receive the widest possible coverage, both within the EU and beyond. A key goal of developing interactions with key users is to facilitate bridging the gaps that often exist between water, nature, forest, agriculture and climate authorities. These interactions will also feed into the legacy programme (WP 5, Task 5.4). Training and education provided during the project will ensure that the impacts of activities outlive the duration of the project. In this first iteration of the PEDR we have provided a list of examples (Table 1) based on UK experience which we will use to develop a project-wide register of end-users. Wherever possible we will communicate in local languages rather than in English.

Table 1. Register of potential end-users using UK examples as a template for the project

<p>National and State Government departments</p>	<p>Department of Environment, Food and Rural Affairs (England) Scottish Government Environment and Forestry Directorate Northern Ireland Department of Agriculture, Environment and Rural Affairs</p>
<p>Statutory bodies</p>	<p>Environment Agency Scottish Environment Protection Agency (SEPA) Natural Resources Wales Northern Ireland Environment Agency (NIEA) NatureScot: Scotland's Nature Agency Natural England Forestry Commission Forestry and Land Scotland OFWAT (Office of Water Regulation) Health & Safety Executive (regulates pesticides) Climate Change Committee Crofting Commission (Scotland)</p>
<p>Universities and Research Institutes (almost all Universities have some water specialists; in these examples we have noted a few with specialist water centres)</p>	<p>Examples include: Centre for Ecology and Hydrology water@leeds (University of Leeds) Oxford Water Network (OWN) (Oxford University) CREW: Scotland's Centre of Expertise for Waters</p>
<p>Schools and other educators</p>	<p>Schools and educators are a potential audience for our work because many provide the first contact that children and young people have with ideas that perpetuate the Downing Saliency Error</p>
<p>Local Authorities and Council</p>	<p>In the UK all local authorities (there are c.200) are stakeholder for ponds because they manage the planning system. Other quasi-planning authorities include: National Park Authorities Areas of Outstanding Natural Beauty</p>
<p>State and private water companies</p>	<p>England has 34 private water companies Welsh Water/Dwr Cymru (public body) Scottish Water (public body) Northern Ireland Water (public body)</p>
<p>Environmental and engineering consultants Mainly represented via trade bodies</p>	<p>Examples include: CIEEM: Chartered Institute of Ecology and Environmental Management CIWEM: The Chartered Institution of Water and Environmental Management</p>
<p>Farmers and landowners</p>	<p>National Farmers Union (England) Country Landowner and Business Association</p>

	Scottish Landowners' Federation
Plant protection sector	Private agro-chemical companies Crop Protection Association
Environmental NGOs	All larger NGOs are potential stakeholders. In UK Freshwater Habitats Trust works directly with: National Trust (c. 5.6 million members) RSPB (c. 1 million members) Wildlife Trusts (C. 600,000 members) There are many other examples in UK including specialists such as Pesticide Action Network, British Dragonfly Society, Angling Trusts, etc.

2. Measures to be applied

A **summary of the measures** that will be applied as part of the PEDR is given in Table 2.2a, including estimated duration of project legacy, and indicates measures that will be **implemented during the project** and those that will continue **after it has ended**.

The physical **area of impact** of PONDERFUL is Europe and CELAC countries, although we expect the results to be relevant, and have impact, on freshwater management globally¹. The PEDR identifies the **need** for the project (to increase understanding of a critical component of the water environment), the **problems faced** (the need to overcome the pond 'saliency error', that small waters are considered not important because they are small, a problem affecting all water and land management at present) and how **new knowledge generated** will be made available to users. An example of the type of impact we expect by changing perception of ponds is shown in Box 1.

Box 1. How the UN Framework for Freshwater Ecosystem Management perpetuates an outdated views of ponds and the freshwater environment

The UN high level classification of freshwaters recognises rivers and streams, but, for standing waters, only lakes. The framework, published in 2017, **typifies the challenge provided by the Downing saliency error**²: although there may be up to 3 billion ponds³, they do not figure in international water policy. Documents in Framework for Freshwater Ecosystem Management underpin Sustainable Development Goal 5.

¹Chen, W., He, B., Nover, D., Lu, H., Liu, J., Sun, W., et al., 2019. Farm ponds in southern China: challenges and solutions for conserving a neglected wetland ecosystem. *Sci. Total Environ.* 659, 1322–1334.

²The 'Downing Saliency error' we have named after comments made by John Downing (Downing 2009) pointing out that 'human mind tends to attribute causes of events or problems to the most obvious aspects of the system, or, in the case of global questions, to those largest in spatial extent'. In freshwater science, people tend to assume the biggest waterbodies are the source of the greatest benefits and the cause of the biggest problems. In practice, the evidence shows that small waters such as ponds are at least as important as bigger waters (if not more so) depending on the specific issue considered. See: Downing, J.A., 2009. Global limnology: Up-scaling aquatic services and processes to planet Earth. *Internationale Vereinigung für theoretische und angewandte Limnologie: Verhandlungen*, 30(8), pp.1149-1166.

³Biggs, J. et al. 2017 *Hydrobiologia* 793:3-39.

The project **potential users fall into five broad groups**, with dissemination and exploitation measures designed for each group:

1. **Research users:** reached through the project's own international conference and by a structured programme of attendances at regular international symposia.
2. **Commercial users:** we will communicate specifically with SMEs and consultancy audiences through industry networks and conferences, including working with traditional engineering and private consulting companies (SO 5.4).
3. **Social / environmental users:** reached through networks with NGOs who have active water policy programmes (e.g. IUCN, WWF, Alliance for Freshwater Life, European Environment Bureau), and individual country specific environmental networks.
4. **Policy maker:** reached through a programme of meetings with policy makers at national levels, and a Brussels-based meeting to interact with EU policy makers.
5. **Public:** we will create simple public summaries of key messages for transmission through social media and more broadly through a programme of traditional media (radio, newspapers, TV) to communicate with public audiences.

We will explore **commercialisation of the project outputs** by developing prototypes of 'CLIMA-Ponds' at three key locations in the Danish DEMO site to evaluate the design principles / key variables for selected freshwater species, as well as for climate adaptation and mitigation and other ecosystem services, with monitoring for verification of designs. Stakeholders will contribute to the CLIMA-Pond designs in DEMO site workshops. Co-design with stakeholders will inform potential for transfer to the market. An evaluation and final prototype designs will be promoted through the Technical Handbook, Policy Guidance Document and decision tool and the publication of a trade-marked "business model".

End users will be informed about the project results through activities outlined in the **comprehensive communications plan** which will also be created as part of Task 5.1 with specific channels for communicating with each audience type in the project's website (Task 5.2). We will establish a project Press Office to manage interactions with the public media. We will create a project-wide communications grid for social media and traditional media planning **to ensure the use of appropriate channels of dissemination and interactions**, designed for specific audience types. This will be aligned with relevant national, European and global events (e.g. World Water Day), as well as project specific announcements. In disseminating the results we aim to reach policy, practical and public audiences involved in nature, water, urban, forest, agriculture and climate management.

3. Measures after the project (project legacy)

The project legacy is integral to all parts of the project and will be implemented through the PEDR. We have initially identified those activities which will contribute to post-project legacy (see Table 2.2a), with the expected duration of practical influence on exploitation. As far as possible, post-project exploitation will be designed to continue **without significant additional resources**, with maintenance mainly being undertaken by incorporation in the day-to-day activities of project partners. In Task 5.4 '**Work with Small and Medium Enterprises (SMEs) to explore the commercialisation of pond products**' we will exploit commercial/consultancy actions to continue post-project creation of climate mitigating ponds. The project website will be maintained post-project for 2 years, and written outputs will be taken into the EPCN and FHT networks for long-term maintenance. We expect written material to have a 'shelf-life' of c10 years or more, with outputs updated on a case by case basis (e.g. Technical Handbook).

Table 2. Summary of outputs and products to be disseminated/exploited by the project and end-users, post-project applications and estimated legacy duration in years

Note that Table 2 will be continuously updated during the project.

Output/Products and duration of legacy	WP	End user groups	Dissemination/exploitation role
<p>Peer-reviewed papers (c.100) and conference presentations (c.50) on key PONDERFUL findings</p> <p>Legacy: relevant for 20-30 years.</p>	WP1-4	Researchers, policy makers, environmental managers and agencies	Major post-project information resource
<p>Policy Briefing Notes (4) on project implications for freshwater biodiversity, climate change, ecosystem services, multi-functional impact of pond NBS.</p> <p>Legacy: 5 years</p>	WP5	Policy makers at national and EU level, environmental managers and agencies	Post-project exploitation resource
<p>Reports:</p> <p>WP1 (4): Policy context, social perceptions, sustainable financing options and socio-economic analysis of ponds and pondscapes; Legacy: 5-10 years</p> <p>WP2 (4): Pond biodiversity, ecosystem services, carbon sequestration; Legacy: 5-10 years</p> <p>WP3 (6): Social and environmental aspects of pondscape network structure; Legacy: 5-10 years</p> <p>WP4 (2): Effects of pond NBS and CIIMA-Pond trials; Legacy: 5-10 years</p>	WP1-4	Policy makers at regional, national and EU level, environmental managers, businesses and agencies	Post-project information resource
<p>Synthesis report (1) on Final PONDERFUL Framework (Deliverable 1.6)</p> <p>Legacy: 5-10 years</p>	WP1	Policy makers at national and EU level, environmental managers and agencies	Post-project exploitation resource
<p>Project website: technical and non-technical resources including videos, DEMO-site summary leaflets, landscape posters, webinars</p> <p>Legacy: leaflets, posters have c.10-year legacy on FHT/ EPCN websites</p>	WP5	Interested EU citizens, local/regional/national authorities, journalists, educators, policy makers	Website runs during project, plus 2 year post project;

<p>Targeted media approaches</p> <p>Legacy: public media, especially major news broadcasters (e.g. BBC) provides c5 years post-project legacy, and will be referred to by other media outlets post-project</p>	WP5	Interested EU citizens, local/regional/national authorities, journalists, educators, policy makers	Communicates project results during project
<p>Prototype of NBS "CLIMA-Pond"</p> <p>Legacy: 10-20 years, with on-going design refinements</p>	WP4	Individual EU citizens, local and regional authorities, environmental managers and agencies	Post-project exploitation resource
<p>Prototype chambers for GHG continuous measures</p> <p>Legacy: 5 year post-project before refined, superseded</p>	WP2	Researchers, environmental agencies	Practical tool during and after project
<p>Open source modelling framework enabling upscaling of observed empirical relationships (from WP2 and WP4) to pondscape networks</p> <p>Legacy: 5-10 years post project</p>	WP3	Researchers, environmental agencies, consultants	Post-project exploitation resource
<p>Workshops to identify stakeholders' needs and barriers to implementation of NBS, to gather data and information on social perceptions and policy context, to co-develop baseline and future scenarios, to discuss financing implementation possibilities, and to co-develop information resource set</p>	WP1, WP3, WP4	Local stakeholders, local and regional authorities, environmental managers and agencies	During project, generates practitioner network
<p>Diverse set of open access databases including policy, societal context, financing options valuation of ponds and pondsapes, empirical data on biodiversity, environmental conditions, ecological status, carbon sequestration, GHG emission, ecosystem services of ponds across Europe; targeted experiments, case studies, pondscape maps, spatially-explicit land use and climate series data. Note that some data types, such as recordings and transcriptions of personal opinions, will only be available in summary forms to maintain confidentiality.</p> <p>Legacy: 10-20 year post-project.</p>	WP1-4	Researchers, consultants, environmental managers and agencies	Major post-project exploitation resource

<p>DEMO sites to demonstrate the effectiveness of different innovative pondscape NBS</p> <p>Legacy: typically up to 30 years; Pinkhill Meadow (created 1990, potential 60 year legacy)</p>	WP4	Local and regional authorities, scientists, environmental managers and agencies	Major post-project dissemination resource
<p>Technical Handbook on pondscape NBS.</p> <p>Legacy: 10+ year for 1st Draft, lifetime of Handbook, with revisions, up to 30 years</p>	WP4	Site managers, private companies, local and regional authorities	Influential exploitation resource
<p>Policy Guidance Document supporting stakeholders in selection and evaluation of pondscape NBS</p> <p>Legacy: 5-10 years, then updated by EPCN, FHT, others</p>	WP4	Site managers, private companies, local and regional authorities	Post-project exploitation resource
<p>Open source interactive multi-criteria decision tool to promote pondscape NBS</p> <p>Legacy: C.10 years, then updated by EPCN, FHT or other users</p>	WP4	Site managers, local and regional authorities, researchers, environmental managers and agencies	Post-project exploitation resource