

Horizon 2020 Green Deal Call: Area 7.1 Restoring Biodiversity and Ecosystem Services



Title: Water-based solutions for carbon storage, people and wilderness

Acronym: WaterLANDS

List of participants

| Participant No. | Participant organisation name | Short name | Country | Type |
|-----------------|---|------------|----------------|------|
| 1 | University College Dublin (Coordinator) | UCD | Ireland | R |
| 2 | NUI Galway | NUIG | Ireland | R |
| 3 | National Parks and Wildlife Service | NPWS | Ireland | G |
| 4 | Community Wetlands Forum | CWF | Ireland | NP |
| 5 | ERINN Innovation Ltd. | ERINN | Ireland | IND |
| 6 | WWF Landscape Finance Lab | WWF-LFL | Austria | NP |
| 7 | Prospex Institute | PI | Belgium | NP |
| 8 | WWF Bulgaria | WWF-BG | Bulgaria | NP |
| 9 | Sofia Municipality | SM | Bulgaria | G |
| 10 | Tartu University | UT | Estonia | R |
| 11 | Estonian Fund for Nature | ELF | Estonia | NP |
| 12 | Estonian State Forest Management Centre | RMK | Estonia | IND |
| 13 | Tootsi Turvas OU | ToTU | Estonia | IND |
| 14 | University of Eastern Finland | UEF | Finland | R |
| 15 | Geological Survey of Finland | GTK | Finland | G |
| 16 | Plan Bleu | PB | France | NP |
| 17 | Tour du Valat | TdV | France | R |
| 18 | M. Succow Foundation | MSF | Germany | R |
| 19 | Ca' Foscari, University of Venice | UNIVE | Italy | R |
| 20 | We are here Venice | WahV | Italy | NP |
| 21 | Wageningen University | WU | Netherlands | R |
| 22 | Wetlands International | WI | Netherlands | NP |
| 23 | Radboud University Nijmegen | RUN | Netherlands | R |
| 24 | Province of Groningen | GRON | Netherlands | G |
| 25 | Staatsbosbeheer | SBB | Netherlands | G |
| 26 | Centrum Ochrony Mokradel | CMok | Poland | NP |
| 27 | University of Warsaw | UW | Poland | R |
| 28 | Estacion Biologica Doñana | CSIC-EBD | Spain | G |
| 29 | Uppsala University | UU | Sweden | R |
| 30 | Natural England | NE | United Kingdom | G |
| 31 | IUCN-UK Peatland Programme | IUCN-PP | United Kingdom | NP |
| 32 | University of Leeds | UNIVLEEDS | United Kingdom | R |

Type: R = Research organisation; G = Governmental organisation; NP = Non-profit organisation; IND = Industry

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ABSTRACT

WaterLANDS aims to enable an upscaling of the restoration of wetlands. Socio-economic factors, insufficient stakeholder engagement, lack of government commitment, lack of funding and inadequate exchange of knowledge of restoration methods have all been identified as barriers to successful restoration. Consequently, most restoration has been modest in scale, has occurred mainly where there is a single landowner or responsible organisation, and has often been undertaken principally for reasons of conservation. WaterLANDS will work to overcome these barriers. It includes both Action and Knowledge Sites, the former being the object of restoration upscaling, and the latter a source of best practice experience and knowledge. To provide for local support and sustainability, it will aim for the co-design of restoration with the on-going engagement of communities and stakeholders. It will investigate best practice in ecological restoration which meets both biodiversity and social objectives and for which restoration trajectories are specific to the physical and cultural context of the Action Sites. It will propose supportive governance structures appropriate to this process and to local and national circumstances. It will identify business models, economic incentives and international funding sources and tailor or direct these resources for each site. The project will pull this expertise and knowledge together in a co-creation work package. Process-indicators will be developed to enable on-going assessment of restoration success in terms of ecosystem services, socioeconomic embedding and financial sustainability, to ensure wide-scale restoration which catalyses scalability beyond the life of the WaterLANDS project.

1. EXCELLENCE

1.1 Context

Wetlands are amongst the most dynamic ecosystems on Earth. They are home to **40% of the world's species** and are vital to many people's livelihoods, security and safety from environmental impacts, and to their wellbeing. Wetlands are of crucial value to biodiversity, including as habitat for many specialist or migratory species. They maintain ecological processes that provide for **key ecosystem services**, including the storage of water and the recharging of aquifers, the regulation of water quality and the assimilation of pollutants and excess nutrients, the deposition of excess sediment, the capture and long-term storage of carbon, as nurseries and habitat for fisheries, and the protection of riverside and coastal communities from flooding, storm surges and sea level rise. However, the essential fabric of these landscapes has been greatly damaged. **Europe has lost up to 87% of its original wetland area** (WWF, 2019).¹

This loss is accelerating. Over the past fifty years, wetlands have drastically diminished in both their extent and capacity to support life. With the intention of boosting crop and livestock production, exploiting energy reserves and making space for urban development, rivers have been polluted, dammed and diverted, while wetlands have been diked and drained. The impacts have been severe. The shrinkage and fragmentation of wetlands, and the disruption of ecological processes, has resulted in **massive and accelerating biodiversity loss**, water and food shortages, devastating floods and fires, coastal subsidence and erosion. This in turn has undermined wetland-based economies, left both rural and urban areas and populations at greater risk of severe flooding, and made some of the poorest communities more vulnerable, triggering outmigration and resource conflicts. The degradation or loss of wetlands is, in many places, being **exacerbated by climate change** which is placing additional pressures on wetlands as water sources become more unpredictable or less reliable. Ironically, many wetlands are competing

¹ World Wildlife Fund (2019) *Climate, Nature and Our 1.5°C Future*. WWF, Gland Switzerland.
https://wwfint.awsassets.panda.org/downloads/wwf_climate_nature_and_our_1_5c_future_report.pdf

for water resources with demands for abstraction when they should be prioritised as a resource for water retention and groundwater recharge.

The urgency of largescale restoration is unquestionable. This has been emphasised by recent reports from the IPCC and IPBES on land degradation.² The EU Green Deal and Biodiversity Strategy to 2030 acknowledge the severe pressures being placed on European biodiversity and call for an upscaling of the restoration of all ecosystems. The UN has declared a decade of Ecosystem Restoration which coincides with the targets for its Sustainable Development Goals. It is acknowledged that there are solutions for restoration, including of wetlands, but that **these have not been of a sufficient scale or integrated enough** to prevent the current loss of nature or to protect ecosystem services. Instead, a **systematic approach of holistic measures will be needed** to bring about the large-scale recovery of entire wetland landscapes. While the necessary strategies are ambitious, the wholesale restoration of wetlands has the capacity to regenerate local economies, protect and improve human health, mitigate and facilitate adaptation to climate change, supply reliable and accessible supplies of clean water, protect and cool our cities, provide for amenity, and enhance biodiversity.

The science is clear and the social and economic case for recovering wetlands is a powerful one. A recent assessment of wetlands in the USA found, for example, that a doubling of targeted investment in wetland restoration could increase their uptake of nitrogen by 40-times, mitigating the effect of intensive agriculture³. However, the simple **protection of individual sites is not sufficient**, since their reliance on water means that effective action requires coordination across landscapes and national boundaries. An upscaling of restoration is needed whereby large areas are set aside for this purpose and **physically networked to form a green infrastructure** of peatlands, wetlands, rivers, lakes, flood plains, estuaries and salt marsh. To date, much wetland protection has been undertaken with a view to preserving biodiversity in-situ or as sanctuaries for migratory species. By stepping up actions to safeguard and restore wetlands we can protect biodiversity at a continental scale. However, technological solutions framed around ecology, hydrology, and economic benefits of ecosystem services are not sufficient on their own. **People matter too**. The relational values between people and wetlands must come to the fore. By recognising the links with quality of life, as well as the ecological returns, we may be able to **heal and reset our relationship with wetlands** and build momentum for their sustained recovery. This understanding will provide a solid basis for a new Green Deal economy and provide the **critical step-change** that will enable the upscaling of restoration to the benefit of the health and well-being of Europe's citizens.

1.2 Objectives

The seven objectives of WaterLANDS are:

1. **Demonstrate wetland restoration and establish a basis for the upscaling of restoration on a large scale,**
2. **Identify barriers to the upscaling of restoration and how to overcome these,**
3. **Ensure that different disciplines work together to provide integrated and co-designed solutions with a common aim of informing restoration at identified 'Action Sites',**
4. **Apply a community-led paradigm of stakeholder engagement and co-design or co-creation,**
5. **Inform restoration with knowledge learned from former or existing projects and 'Knowledge Sites',**
6. **Provide tailored restoration and financial plans for each restoration site,**
7. **Communicate results and incubate a legacy through guidelines, tools, information, knowledge, and facilities to support restoration at a continental scale.**

Objective 1

The primary objective of WaterLANDS is to **provide a demonstration of the upscaling of restoration**. These are distributed across Europe to capture varying climatic and cultural contexts. They also include different wetland types, namely peatlands, fens, fluvial wetlands, floodplains and coastal wetlands. Physical activities at six restoration, or Action Sites, are given priority in the budget and are represented in a core work package (WP6). This WP will provide for tangible activities, including local ecological assessment, on-site stakeholder engagement and restoration works such as revegetation, reprofiling or drain blocking. Initial restoration results will be evident by 2024 and tangible plans will be prepared to provide for upscaling that addresses those factors which have

² A co-sponsored workshop was to be held in Dec 2020, but was postponed due to Covid-19. A relevant discussion can be found in WWF (2019) and the IPBES Assessment Report on Land Degradation and restoration (2018) and in the IPCC report *Climate Change and Land, an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (2019).

³ [Cheng et al. 2020](#). Maximizing US nitrate removal through wetland protection and restoration. *Nature* **588**

contributed to degradation, which are adequately resourced, and have wide legitimacy across the community, supported also by relevant and informed local measures and policies.

Key performance indicators (KPIs): restoration measures taken, area undergoing restoration.

Objective 2

The project will address **barriers to restoration**, be they physical, ecological, hydrological, social or economic, funding or policy, and will be supported by the respective work packages. The intention is to remove or reduce stressors which are contributing to degradation, but as our experience of largescale restoration is rather limited, we must ensure that this response is effective and lasting, providing for ecosystem resilience against new and emerging threats such as climate change. Together, the WPs will **identify integrated solutions for upscaling** at a landscape level.

KPIs: reduction in stressors, changes in water levels, water quality, vegetation traits, species present.

Objective 3

The consortium aims to **foster effective cross-sectoral and interdisciplinary collaboration** to co-create restoration strategies. It includes a range of expertise in natural science, social science, governance and finance, as well as on-the-ground applied knowledge of restoration. It includes multinational and national conservation agencies, universities and research bodies, environmental NGOs, government agencies, local government and environmental and communication consultancies. It is intended that this experience will inform each of the work packages and that these be integrated in joint tasks and sub-tasks.

KPIs: completion of joint work tasks, project deliverables, joint deliverables.

Objective 4

WaterLANDS will **apply a community-led paradigm** to restoration whereby communities and key stakeholders are involved in the co-design of each stage of the restoration pathway, not simply to respond to proposals by the team with immediate responsibility for the works, but to provide informed input to the restoration strategy, plans and implementation. It is intended that this engagement will constitute a 'living lab' that continues beyond the life of the project to include its on-going management.

KPIs: attendance at workshops, representativeness of attendance, engagement of key stakeholders, repeated attendance, support for preferred solutions, evidence of stakeholder input to design.

Objective 5

This project will ensure that relevant **past experience informs future wetland restoration**. To this end, WaterLANDS includes 15 Knowledge Sites which have been identified as examples where successful restoration has been achieved, be this in terms of public engagement, supportive governance mechanisms, successful financial incentivisation, or physical restoration of habitats and ecosystem services. Most partners in the WaterLANDS project will have been involved at some point in restoration activities, but similar Knowledge and Action Sites will be twinned to facilitate the exchange of ideas, strategies and human resources. Continued physical restoration works and associated activities will also be supported at some Knowledge Sites.

KPIs: internal workshops held, participation of external experts, replication of best practice in the AS.

Objective 6

WaterLANDS will provide **tailored financial solutions** and resources for each Action Site. Increasingly, international finance is becoming available for the voluntary, and potentially mandatory, offsetting of carbon through the restoration of peatlands which provide a natural service of carbon sequestration. In addition, funds are becoming available for biodiversity-related investments where there are tangible returns from nature-based solutions such as flood mitigation, or where the restoration of wetlands can be shown to be more cost-effective than building physical defences. The project will pull together existing knowledge and specific partners' experience in biodiversity finance such as green/impact bonds, biodiversity offsetting and banking, and identify solutions for each Action Site.

KPIs: contacts made with financial institutions/funds, financial measures under negotiation, measures agreed.

Objective 7

Finally, WaterLANDS will provide a **legacy for subsequent restoration** to follow, by demonstrating the basis for an upscaling of restoration in a range of ecological and cultural settings across Europe. The project will reach out to as wide an audience as possible through a range of communication activities. It will leave behind a legacy of

methodologies, guidelines and training to support a continuation of successful approaches to community and stakeholder engagement.

KPIs: website hits, Twitter followers, media events, art events, event attendance, visitor numbers.

SMART

The WaterLANDS objectives conform to the principles of being *Specific, Measurable, Achievable, Realistic* and *Time-bound*.

Specific - WaterLANDS is specific in its intentions to upscale wetland restoration, based on using best practice experience to overcome previously identified barriers and to secure a comprehensive approach that has the support of communities and key decision makers, and which is adequately funded. Each WP is directed towards the objective or supporting actual restoration and its upscaling.

Measurable - Process indicators will be developed for each WP to assess progress, including evidence that drivers of degradation are reducing, that water levels are appropriate, that target wetland vegetation is becoming established, that wetland wildlife is returning, that there is engagement of an adequate number of stakeholders that they are representative of all stakeholders, that progress to agreed restoration plans is being achieved, that decision and policy supports are being agreed, and that financing solutions are being proposed for each site, investigated, adopted or not. Evidence of restoration will be provided by the KPIs, especially indicators which demonstrate a transition to the characteristics of functional wetlands, e.g. area restored, vegetation composition and health, species communities, etc., as well as social indicators such as visits, awareness or changes in attitudes.

Achievable - The project will provide a comprehensive package of supports for restoration which it will aim to apply at every Action Site and suitable Knowledge Sites. It will provide measurable evidence of restoration by 2024 and demonstrate how these restoration works can provide the basis of upscaling and be sustained in the long term.

Realistic - The project has obtained provisional support for the upscaling of restoration from government agencies, local authorities or NGOs with a responsibility or ownership of the Action Sites. This support will be secured before actual works commence. Stakeholder input will be actively nurtured and consensus sought on the way forward. Each WP is directed at supporting restoration in the Action Sites with the knowledge acquired, and practical lessons learnt, brought together in a co-creation framework. WaterLANDS will deliver on-going tailored advice to each Action Site as well as guidance for external or future restoration projects.

Time-bound - The co-creation framework will provide for full collaboration between project participants. The framework will be put in place at an early stage. Each WP will commence early in the project. Interactions between WPs are identified in this proposal and are timed to support consecutive stages along a restoration trajectory. Measurable results will be evident by the third year of the project. However, activities at the Action Sites will be designed in such a way that they will form part on an on-going upscaling of restoration. Project outputs and guidelines will be available to inform future restoration in other projects, locations and ecosystems.

1.3 Relation to the Work Programme

The WaterLANDS project targets the Horizon 2020 Green Deal Call Area 7.1 Restoring Biodiversity and Ecosystem Services (LC-GD-7-1-2020). Table 1 summarises how WaterLANDS addresses the specific elements of this call.

Table 1: WaterLANDS' relation to the specific elements of the call.

“Provide large-scale demonstrators of how systemic upscaling and replication of best practice ecosystem restoration can be deployed at regional, national and cross-border levels, focusing on degraded terrestrial, freshwater, coastal or marine ecosystems, responding to relevant restoration goals enhancing biodiversity”

Work Packages addressing this: WP1, WP2, WP3, WP4, WP6

WP6 of WaterLANDS is dedicated to restoration in six degraded freshwater and coastal wetland Action Sites where there is potential for upscaling and where necessary permissions and working relationships have been established with local communities, eNGOs, public agencies or authorities. Physical works are proposed for each site with the aim being to achieve and demonstrate practical restoration which can then be upscaled by relevant bodies. Local restoration plans will have been informed by advice and on-site support on ecosystem assessment and mapping (WP1), stakeholder engagement (WP2), and assessment and guidance on the local governance mechanisms needed to sustain restoration (WP3), with the work programme for each of the WPs having been informed by studies of the restoration experience at 14 Knowledge Sites. WP5 will bring together this knowledge

and experience in a programme of co-design at the Action sites, providing also guidance to inform future restoration across Europe. National and international financing mechanisms for each Action Site will be identified and examined in WP4, evaluated by stakeholders in WP2, and assessed by WP3 for the EU, national and local mechanisms, actions and policies needed. This will present a challenge as some Action Sites cross administrative boundaries. There is an international dimension too as other sites border national boundaries or influence environmental conditions in other Member States.

“In line with the EU Biodiversity Strategy for 2030, restore degraded ecosystems, in particular those with high potential to capture and store carbon and to prevent and reduce the impact of natural disasters, and, where relevant, to contribute to the achievement of favourable status for species and habitats of the Birds and Habitats Directives inside and outside the Natura 2000 network of protected areas”

Work Packages addressing this: All WPs, feeding into WP6

WaterLANDS will contribute directly to the restoration of degraded ecosystems at six Action Sites and to on-going restoration at selected Knowledge Sites (WP6). Both freshwater and coastal wetlands are included, with these being distributed across Europe to capture varying climatic and cultural contexts. The Action Sites will function as best practice examples of restoration, with the objective of demonstrating how this can be upscaled at regional and national level. The work programme is not confined to the sites within WaterLANDS alone and will aim to provide guidance for the co-design and sustainability of restoration across Europe and connectivity between Natura2000 sites. Wetlands are especially important for ecosystem services. Restoration at the peatland sites, for example, will demonstrate how carbon sequestration and storage can be achieved, while restoration at each site will focus on the rehabilitation and strengthening of ecosystem services, including resilience towards the risk of natural disasters from fluvial or coastal flooding, sea level rise or loss of water supplies. Restoration of wetlands will help to return many species and habitats to their former favourable status, noting particularly the relevance to a wetland network and mosaics of suitable habitat to species migration and expansion.

“Adapt, integrate and demonstrate innovative methods (technological, non-technological, social and governance, including sustainable financing) on upscaling ecosystem restoration, also in regions and for communities in transition”

Work Packages addressing this: WP1, WP2, WP3, WP4, WP5

Each WP will strive to develop innovative methods to support, not just restoration per se, but its upscaling. WP1 is focused on identifying and delivering a ‘Safe Operating Space’ to restore and sustain ecosystem functioning. It will identify drivers and tipping points and employ GIS and remote sensing technologies for large-scale assessment. WP2 and WP3 are dedicated to correcting former deficits in local, regional and national stakeholder participation, including those stakeholders who can influence or manage external environmental pressures, effect community buy-in, or are responsible for administrative and political commitment and implementation of governance structures and mechanisms to deliver restoration. WP5 pulls this knowledge together to support an innovative co-design approach that is not confined to scientific or conservation expertise and is based on concurrent work in WP1, 2 and 3 and the experience provided by the Knowledge Sites and best-practice tools. WaterLANDS recognises that change must confront conflicting agendas, but that the achievement of a just transition requires that community interests and values are respected, that ecosystem service benefits be demonstrated, that costs are not assigned to any one group and that benefits are widely distributed. WP4 will support this transition with analysis of innovative financing for restoration, including support for funding applications.

“Support the development of specific demand and supply chains in restoring ecosystems on land or at sea – recognising that conditions at sea can considerably differ from the ones on land (including freshwater), that speed of change and disturbance might differ, and that solutions to reverse biodiversity decline are context-specific”

Work Packages addressing this: WP1, WP2, WP3, WP4, WP5, WP6

For restoration to be upscaled and sustainable, it cannot result in isolated examples where species habitats alone have been rehabilitated. It requires that the environmental conditions and, in some cases, human systems which support wetland ecosystems are maintained, for example water supply or grazing regimes. This, in turn, requires that restoration objectives are aligned with stakeholder interests where possible and with community health and well-being. It requires on-going public engagement and appropriate governance to sustain restoration that may require years before full ecosystem service benefits are realised and apex species return. WP1 will address how resilience can be designed into the restoration of ecosystems faced with climate change, critical thresholds and the risk of unexpected external pressures. WaterLANDS will support the restoration of both freshwater and

coastal wetlands across Europe where varying climatic conditions and vulnerabilities are present (WP6). It will develop generic approaches, but their application will be context-specific in terms of environmental, social, economic and cultural conditions (WP1, WP2, WP3). It will identify opportunities to re-establish supply-demand chains and tangible rewards where wetlands sustain ecosystem service benefits downstream or at national level (WP4). It is directed at ensuring that restoration through co-design (WP5) provides the long-term community, political and financial support for restoration that can be upscaled over the long-term through climatic events, economic circumstances and political change.

“Demonstrate and test how restoration activities and socio-ecological management of ecosystems enable sustainable, climate-neutral and climate-resilient, inclusive, transformative approaches, including across the bioeconomy (agriculture, forestry, marine and innovative bio-based sectors) and as investments in disaster risk reduction”

Work Packages addressing this: WP2, WP4, WP5, WP6, WP7

For wetland restoration to be successful, it must coincide with the re-establishment of socio-ecological relationships. In some instances, this objective will conflict with established activities such as peat extraction or intensive agricultural systems. There may indeed be overriding social objectives to curtail activities that contribute to climate change or the degradation of water resources or biodiversity. However, through its programmes of community engagement (WP2) and co-design (WP5), WaterLANDS will aim to achieve a just transition ensuring that genuine stakeholder needs in terms of incomes and employment are respected and accounted for and, where possible, losses are addressed through transfer payments and investment in return for ecosystem service benefits of value to the wider community (WP2, WP4). For peatlands, this will involve the protection of carbon stores and a return to carbon sequestration. For fluvial and coastal wetlands, it will include the capacity to reduce environmental risks from drought, water contamination, flooding, sea level rise or coastal surges. Potential benefits in terms of quality farm produce, paludiculture, fisheries, renewable energy and tourism will also be explored. Community engagement will be encouraged through citizen science, publicity, art exhibitions and facilities for public access and education (WP1, WP6, WP7).

“Promote scaling up and stepping up of implementation of nature-based solutions building on existing experience in particular on lessons learned and best practices gained through EU-funded projects and initiatives such as those supported by Horizon 2020 and the LIFE programme in order to address barriers to implementation for systemic nature-based solutions focussing on restoration in urban, peri-urban, rural or marine areas”

Work Packages addressing this: WP1, WP2, WP5, WP6, WP7

Various EU-funded projects and LIFE projects have sought to demonstrate the benefit of nature-based solutions (NBS) or to implement these. WaterLANDS will explore this experience in WP1 and WP5 and will aim to communicate, through WP5 and WP7, the potential benefits to the community and to government agencies charged with climate change, mitigation adaptation, flood mitigation, coastal defence, agriculture or fisheries. Wetlands have been maligned for decades as wastelands when, if in a favourable state, they are capable of supplying valuable or essential ecosystem services for water supply, fisheries and tourism, and NBS to climate change, flood risk and coastal defence. Raising awareness of these benefits is key to establishing public support and for restoring socio-ecological relationships. It may, in some cases, have implications for the nature, design and transition of ecological restoration and trade-offs can be debated through the proposed participatory multi-criteria analysis included in WP2. Restoration at a local level will help to protect the livelihoods and well-being of people at regional or national levels. It will contribute to national policies, EU Directives and international agreements. Therefore, there is a strong case for delivering NBS in WaterLANDS WP6 and for promoting the benefits to all stakeholders, locally and nationally.

“Showcase how restoring ecosystems at large scale will also help human communities to adapt to changing conditions at their local level, and how restoration activities can be integrated into economically and socially viable land use practices, enabling a shift of social and behavioural patterns towards increased benefits for biodiversity and strengthening social acceptance and social resilience”

Work Packages addressing this: WP1, WP2, WP3, WP5, WP6

To date, most examples of ecological restoration around Europe have been on a modest scale. Knowledge Sites within the WaterLANDS project can demonstrate the value of restoration for conservation (WP1) and, in some cases, for community engagement (WP2). WaterLANDS will then explore what is possible and will aim to convert current local public and NGO support into commitments to restoration on a larger scale (WP3, WP5, WP6). It is at this level that significant ecosystem service benefits kick in. In their pristine state, peatlands sequester only slight amounts of carbon per square metre, but the huge area of degraded peatland available can make a

significant difference to national carbon emissions. The same is true of the capacity of wetlands to store floodwater or of coastal wetlands to protect against storms. Restoration on this scale can provide visible resilience to communities at risk from climate change. It presents opportunities for new economic activities, from local paludiculture to fisheries to sites for wind or tidal energy. This change will transform restoration from a marginal enterprise of some conservation or tourism value, into an activity that can make a real difference to livelihoods and quality of life and will likewise demonstrate social acceptance if undertaken with the support of local communities, especially if viable economic returns can be demonstrated (WP4).

“Demonstrate how to maximise synergies and avoid trade-offs between priorities for restoring biodiversity, mitigating and adapting to climate change (such as those identified jointly by the IPCC and IPBES)”

Work Packages addressing this: WP1, WP2, WP3, WP5

Once restored, there will in most cases be a synergy between returning biodiversity to former levels and in providing for the mitigation of, or adaptation to, climate change. However, these co-benefits will only be realised if measures are taken to upscale restoration within a network of ecosystems of complementary value to biodiversity and ecosystem services at a landscape or catchment scale. The greater risk is that restoration will fall short of its potential if the public is not convinced or if economic interests seek to preserve existing activities that have a detrimental impact. This is why it is essential that WaterLANDS is able to demonstrate the effect of external pressures on ecosystems and drivers of change (WP1), accepting also that there is a possibility that restoration will not always be able to guarantee a return to pristine systems. WaterLANDS will invest much effort into public engagement (WP2), co-design (WP5) and the identification of governance that can sustain restoration (WP3), by demonstrating to all stakeholders the benefits of a meaningful transition to restored ecosystems.

“Generate knowledge on how large-scale restoration can accelerate transformative change beneficial for biodiversity and climate resilience, and bring this information to UN programmes, as well as to IPCC and IPBES processes”

Work Packages addressing this: WP3, WP4, WP5, WP7

WP5 and WP7 of WaterLANDS contain strategies for the dissemination of knowledge acquired and lessons learned through guidelines for future restoration projects. Examples of large-scale restoration in Europe are few. Research into methods of physical restoration for either biodiversity or carbon sequestration, or a balance of both objectives, has been limited to rather few sites. Applications of stakeholder engagement practice have often been peripheral to restoration works or undertaken at an academic level. Analysis of the governance systems needed to deliver restoration has similarly been limited. WP3 will characterise these governance shortcomings, while WP4 will examine the financial options available to invest in restoration. WP5 will bring together the knowledge from the WPs, including the co-design they contain, to provide guidance for on-going restoration in the Action Sites and for the future large-scale restoration of wetlands and other environments.

1.4 Concept and Methodology

1.4.1 Concept

WaterLANDS sets out an approach to inform and demonstrate the upscaling of ecological restoration using the case of wetlands. Europe has lost most of its wetlands over the past 200 years with an acceleration of these losses having occurred in the last 50 years due largely to drainage or reclamation of land for agriculture or built development. The loss of habitat has contributed to the loss of wetland species, many of which have been driven to rarity or even extinction, while the populations of others have become confined to a handful of protected areas. Wetlands also provide essential ecosystem services of immense value to human beings as described above.

An upscaling of wetland restoration is a Europe-wide challenge that has yet to be achieved. WaterLANDS is not intended as a research project. It is an applied Research and Innovation Action. The project is conscious that we have 40-50 years of knowledge of how to physically restore many ecosystems. However, much of this expertise is localised. Wetlands are also dependent on many stressors being managed simultaneously, including social and economic drivers as well as ecological⁴. At the very least, wetlands are dependent on water flows and so vulnerable to abstraction or pollution from activities that often occur from outside. They were often supported by traditional activities and land use that are no longer profitable or prevalent. And, of course, they are also now highly vulnerable

⁴Fisher et al 2019. EKLIPSE: What is Hampering Current Restoration Effectiveness? An Expert Working Group Report. H2020.

to climate change. Perhaps most of all, though, restoration is dependent on public support, both local and national. If the benefits are restricted to conservation alone then experience suggests that there can be ambivalence among a wider community towards addressing drivers which threaten to undermine biodiversity objectives, especially where these are associated with economic interests. This, in turn, will mean that projects fail to be adequately supported by policy measures, or their proper implementation, and fail to attract the funding needed to sustain and up-scale restoration.

WaterLANDS is founded within a concept of interdisciplinary co-creation involving practitioners, researchers, communities and key stakeholders. The project's assumption is that an up-scaling of restoration can only occur and be sustained through a process of cooperation that respects a range of knowledge and experience. Consequently, rather than being expected to simply react to restoration proposals by a team with immediate responsibility for the works, communities, including key stakeholders, are included in the co-design of solutions. They will be encouraged to input local knowledge to the restoration strategy, plans and implementation, to express their needs and expectations and to deliberate on solutions that respect the values and needs of others. They will also be encouraged to participate directly in restoration activities where they have an influence, for example, over land use or water flows and quality, by contributing to citizen science, input of labour, skills or resources for restoration work, and through site visits. It is intended that this engagement will support on-going management and could even extend to communities having principal future responsibility or ownership of individual sites. This community engagement will help to ensure the sustainability of individual projects as the objectives for each site should coincide with the vision that communities have for their own future.

The project's work programme is arranged to provide for Knowledge, Action and Legacy. It seeks to demonstrate, not only how restoration can be upscaled, but how this upscaling can be maintained beyond the life of the project, whereby the ecosystem services provided by functioning wetlands contribute tangibly to the prosperity and health of communities. WPs are proposed for ecological restoration, stakeholder engagement, governance and finance and are coordinated and channelled into advice via a dedicated co-creation WP. Each WP draws on the experience of Knowledge Sites which have demonstrated levels of success with restoration. This knowledge, together with evidence of best practice generally, is then directed towards guidance and on-site investigations at a set of Action Sites located in participating countries across Europe.

The project will leave behind a legacy of knowledge for future projects and upscaling, including by means of reports, guidance, decision support systems, training and social media, including website portals, webinars, videos and podcasts, and of course, through the live examples provided by the Action Sites.

1.4.2 Experience

WaterLANDS will not arrive newly formed in the restoration community. The knowledge behind the project will have been informed by numerous earlier and on-going projects and initiatives, in which many project partners have been involved. These include assessments by IPBES, the IPCC, Ramsar, UNEP-WCMC and the IUCN, wetland restoration works undertaken by international and national agencies or eNGO, including Rewilding Europe, the Royal Society for the Protection of Birds, International Peatland Society, numerous LIFE projects and organisations represented in the project, namely Wetlands International, World Wildlife Fund, the Succow Foundation, Tour du Valat, Estacion Biologica Donana and We are here Venice. There is also the much guidance on ecosystem services, nature-based solutions and finance available from the European Environment Agency, CBD, OPPLA, the Platform for Sustainable Finance, and the Institute for European Environmental Policy. The Danube represents one of the largest wetland restoration projects in Europe and is included in the project through the participation of WWF-BG.

By design, WaterLANDS will not work in isolation from the myriad existing projects on wetlands restoration across Europe, nor will it attempt to 'reinvent the wheel'. Rather, WaterLANDS will, through its network of 32 partners across 14 countries, capitalise and coalesce existing knowledge relating to wetland restoration. Table 1.4a, below, is a selection of highly relevant projects coordinated and/or conducted by WaterLANDS partners across Europe, the results of which will mutually support WaterLANDS and the network of broader projects. These span wetland restoration, policy engagement, stakeholder engagement, knowledge cohesion and the identification of supportive financial mechanisms. This list is not exhaustive and does not include numerous other projects with which WaterLANDS will directly benefit from and will be of benefit to.

Table 1.4a: Existing programmes across Europe with linkages to WaterLANDS.

| Project name | Country | Link to WaterLANDS |
|--|--------------------|--|
| LIFE-IP Wild Atlantic Nature | IE | WaterLANDS will dove-tail with planned actions on the ground, and will provide governance and financial guidance to form a dedicated action site |
| LIFE Irish Raised Bogs | IE | Extensive restoration project focusing in raised bog SACS in Ireland. The extensive knowledge of community engagement and practical conservation gained will feed into WaterLANDS. |
| INTERREG CARE-PEAT | IE/BE/FR /UK/NL | A cross-border project centred on demonstrative actions for carbon and restoration across 5 European nations, with strong policy and advocacy action. Beyond its conclusion in 2022, WaterLANDS will continue this work. |
| Eurosite Study Tour | IE | CWF co-organises this pan-EU knowledge sharing platform on wetland restoration & community engagement. Findings will feed into WaterLANDS. |
| INTERREG CANN (Collaborate Action for the Natura Network) | IE/UK | Cross-border restoration activities for uplands wetlands in the Cuilagh-Anierin SAC. Concludes 2022, allowing for expansion through WaterLANDS, providing results-based payments with policy and financial guidance |
| LIFE Vimine | IT | WahV will utilise knowledge gained through this project and continue to collaborate with the Provveditore (Cinzia Zinconone) on Barene saltmarsh restoration, Venice Lagoon. |
| LIFE PollinAction | IT | Actions for boosting pollination in rural and urban areas: UNIVE coordinates. Aims to increase recovery of ecosystem functionality and the provision of services, including pollination services that relies on the richness and abundance of plant and pollinator species. |
| H2020 TranspArEEnS | IT | Mainstreaming transparent assessment of energy efficiency in environmental social governance ratings: UNIVE coordinates. Will present guidance for ESG investment in biodiversity and WaterLANDS sites, using the network of banks behind the project. |
| EeMMIP – Energy efficient Mortgage Market Implementation Plan | IT | Analyses current market systems for the energy efficiency mortgage (EEM) markets, establishing demonstrators and market-based governance of EEM Label to support recognition and confidence in EEM. Findings will help develop and scale novel financial markets for WaterLANDS. |
| MoorDialog | DE | WaterLANDS will benefit from project results on communication and knowledge transfer, capacity building and awareness raising to increase implementation of peatland rewetting and paludiculture in Germany |
| LIFE Peat Restore | DE | Reduction of CO2 emissions by restoring degraded peatlands in Northern European Lowland. Experience of peatland restoration in Baltics and Poland and development of monitoring will feed into WaterLANDS co-creation. |
| INTERREG Mediterranean Biodiversity Protection community | FR | Mainstreaming biodiversity management in the Mediterranean and ensuring synergies between relevant stakeholders, capitalizing on achievements of modular projects. Plan Bleu led capitalisation. |
| INTERREG PANACeA | FR | Streamline networking and management efforts in Mediterranean Protected Areas to enhance conservation in the region. PB led capitalization activities. |
| England Peat Strategy (EPS) | UK | Deploys investment efforts in England under the Nature for Climate Fund allocation (~€80M nationally for peatland restoration). WaterLANDS will directly inform its future. A key mechanism for WaterLANDS upscaling. |
| IUCN UK Peatland Code | UK | A voluntary certification standard for UK peatland private projects wishing to market the climate benefits of peatland restoration. Developed by IUCN-UK as part of the UK's Peatland Strategy, it will serve as part of the Knowledge Site for WaterLANDS. |
| Integrated Catchment Solution Programme (iCASP) | UK | Aimed at translating existing science into benefits to the Yorkshire region through co-construction of catchment solutions between academic and non-academic partners. iCASP constitutes the platform for WaterLANDS Action Site in the UK, giving access to stakeholders, tools and mechanisms. |
| LIFE Mires Estonia | Es | Large scale (7500 ha) wetland restoration up to 2020, including forest drainage and former peat extraction. Techniques and findings to be used in WaterLANDS. |
| DREX project | Es | University of Tartu and State Forestry study on effect of mire forest restoration on hydrology, soil decomposition, microclimate and biodiversity. |
| GEF/World Bank – Persin Island | BG | On the largest island on the Danube, 2000ha of wetlands were restored in 2000-2008, under the Wetlands Restoration and Pollution Reduction Project. As a Knowledge Site, Lessons fed into WaterLANDS by WWF-BG. |

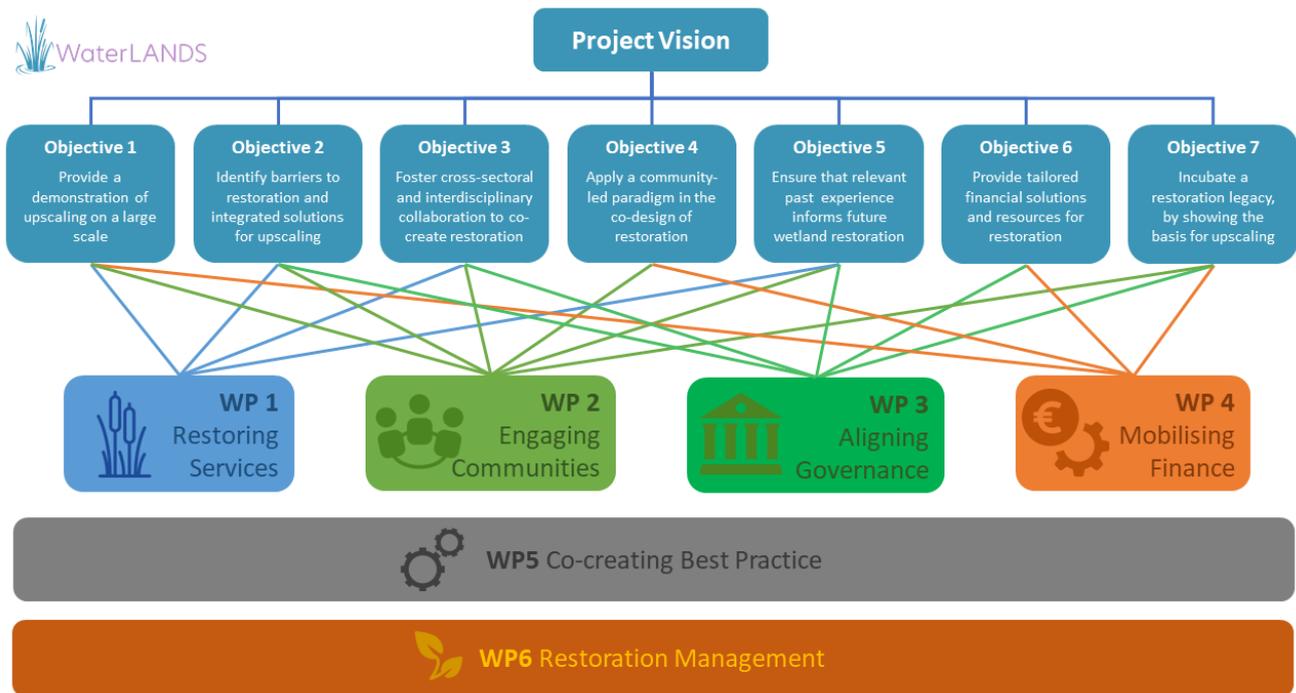


Figure 1.4a: Overall concept of WaterLANDS, showing how work packages will interact and knowledge will flow.

1.4.3 Methodology

Each work package of WaterLANDS makes the best use of specialist skills and includes interactions with others so as to demonstrably contribute to comprehensive restoration solutions. The project includes practitioners with direct experience of wetland restoration, ecologists and hydrologists with knowledge of the prerequisites for restoration, specialists in public participation, social scientists with an understanding of social and economic values and governance structures, environmental finance experts and communication advisors. This expertise will be brought to respective WPs. Figure 1.4a presents a schematic of how these will work together. Note that each Objective is supported by at least three WPs, while each WP feeds into at least four Objectives.

WP1 (Restoring Services) aims to assess how wetlands respond to different pressures (drivers) and how a transformation to ecological restoration can be achieved and sustained under various environmental and socio-economic conditions. The WP will respond to community needs with respect to target ecosystem services as confirmed by deliberation processes included in WP2. It will identify the thresholds (tipping points) in these drivers that should not be crossed in order to maintain these ecosystem services. Defining this Safe Operating Space⁵ for wetland ecosystems is an essential step to both 1) prevent undesirable changes as well as to 2) identify restoration targets and strategies, including what is needed for the ecosystem to return to a stable state, be this through a corresponding or a greater reduction in the drivers responsible or through more distinct interventions. We will use multiple indicators of wetland functioning and relate those to key direct and indirect drivers, including through the application of a functional trait approach based on plant properties and their prevalence at different spatial scales. These indicators will be derived from a combination of remote sensing, available databases and field data at different spatiotemporal scales. Our approach fosters ecosystem resilience to prevent undesirable changes and highlights likely restoration pathways and milestones for returning wetland ecosystems to a ‘Safe Operating Space’. The mechanistic knowledge will be combined with technical solutions in a Decision Support System that will guide the iterative design of adaptive strategies and evaluation of monitoring results, enabling learning-by-doing cycles that leads towards the desired outcome. We believe that this is the most promising approach for applying lessons from Knowledge Sites for application to larger spatial scales and other wetlands across Europe.

WP2 (Engaging Communities) will actively involve communities in restoration solutions. The WP will then progress through a set of participatory stages to identify people’s socio-ecological knowledge, values and needs. It will identify what ecosystem services communities value now, or which could be of potential importance, be this biodiversity, amenity or tourism, or more fundamental relationships with water supply or flood risk, etc. It will bring together this knowledge to inform the selection of agreed restoration pathways in WP1. The WP will firstly map

⁵ Scheffer, M. et al. (2015) Creating a Safe Operating Space for Iconic Ecosystems. *Science Magazine*:1317-1319. Green, A.J. et al (2017) Creating a Safe Operating Space for Wetlands in the Current Climate. *Frontiers in Ecology and Environment*. doi:10.1002

the composition of the community at each Action Site and identify stakeholders who are most likely to have an interest in, or influence on, the prospects for restoration. Where appropriate to the context, the WP will explore the plurality of people's values, needs and aspirations through a deliberative workshop-based approach in the first instance. Past experience suggests that values may be firmly tied to established activities and land uses supported by the prevailing institutional and socio-cultural context, but also that ambivalence can be present with regard to restoration or conservation. To ensure that the engagement has relevance to all stakeholders and not just a conservation community, it will be necessary to explore participants' awareness of ecosystem services and their prevailing or potential relevance to local stakeholders. The deliberative workshops can then move to scenario planning where there is some convergence of preferences, or to rounds of participatory multi-criteria analysis where trade-offs need to be agreed. The WP will also examine what is preferable and feasible under existing or alternative economic circumstances or governance arrangements or frameworks, including the potential for market-based solutions or economic instruments.

WP3 (Aligning Governance) will support the objective of co-design of restoration by identifying governance and the potential for alternative administrative or policy arrangements. It will provide the consortium with an understanding of international conventions, EU and national policy with regard to wetlands and ecosystem restoration. It will use examples of successful governance mechanisms for wetland restoration, as demonstrated by the Knowledge Sites and by the scientific and civil society network of project partners, to create supportive policy and governance models. A generic ideal governance model will be developed, but the WP will link closely with the community engagement in WP2 to propose a governance infrastructure that is relevant to each Action Site. The engagement process will provide information by which to understand the role of existing industries and influential stakeholders, the community's preparedness for change, its awareness of ecosystem services, and the rationale for the existing management of the wetland environment. The objective is to identify a 'just transition' whereby a broad consensus can be identified, that furthers co-creation with the community, and which can then be supported by appropriate governance to secure the Safe Operating Space for restoration identified by WP1. WP3 will aim to provide a model of sustainable socio-economic activity for use across the EU which is socially just and circular and adheres to the Sustainable Development Goals.

WP4 (Mobilising Finance) links closely with WP3 in that it will examine the role of both public and private finance and their respective objectives in funding ecosystem restoration. Noting the very considerable financial resources that are becoming available for nature-based solutions in ecosystems large enough to address pressing issues such as climate change or disaster reduction, particularly in the developing world, it will determine how biodiversity finance can also be directed to largescale restoration in Europe. The WP will explore the potential for public-private partnerships and blended finance using partners' connections with the financial markets. It will examine the financial resources available and propose solutions and instruments specific to the needs and context of each restoration Action Site. The WP will examine the potential for diversifying funding away from an over-dependence on the public sector towards a scaling-up private sector funding. It will review best case models, examine the demand for financial opportunities focused on nature-based solutions to climate, water supply and disaster mitigation. A business case will be prepared to attract finance to wetland restoration and to identify the potential role of EU institutions such as the EIB. It will work with financial bodies to direct international green bond investment towards restoration and to leverage innovative finance linked to sustainability, the insurance industry, biodiversity and carbon offsetting. It will examine each Action Site's capacity to respond to additional financing and identify the pathways to this finance, noting the characteristics of each wetland (e.g. peatland, fluvial or coastal) and the particular ecosystem services that each can provide.

WP5 (Co-creating Best Practice) is a distinct element of the work programme which will ensure that integration is achieved between the other WPs, consistent with the links included in this proposal. It will synthesise the outputs from each WP and ensure that they are informed by a process of co-creation between all parties, namely natural scientists, social scientists, conservation practitioners, policy and finance experts, and, not least, the community and key stakeholders. While links are described between WPs and project partners, WP5 will assure collaboration and synergy is tangible and that outputs that input to other work packages are relevant, delivered on time and integrated further into the work programme. WP5 will bring together this knowledge and learning on a continuous basis to inform both best practice guidelines and tailored solutions for each of the Action Sites where restoration will be implemented.

The Action Sites themselves are represented by a dedicated WP, **WP6** (Restoration Management). This WP is shown in Figures 1.4a and 1.4b to be the focus of each of the applied work packages 1-5. WP6 itself represents the application of the restoration which is informed by the preceding WPs. Via direct interaction with these WPs, and

specifically through the channel of WP5, WP6 will address the local logistics and deliver practical restoration activity on site, i.e. local fieldwork and monitoring of ecological conditions, the recruitment of stakeholders for the engagement and holding and the facilitation of the workshops, negotiations with local rights holders and discussions with local administrators, planners and policy makers. The WP has been provided with the resources to deliver this particular objective. It will have, as its major asset, the locality’s participation in a significant EC project and the opportunity to use this to leverage financial resources for restoration along with the potential benefits this can bring to the local economy and ecosystem services. The WP will aim to obtain the support of local communities through outreach, education, art (see box below) and facilities for amenity.

The Action Sites represent a resource in themselves for the promotion of restoration solutions which will be complemented by a further work package, **WP7** (Communications and Dissemination) whereby guidance on best practice is made available across Europe. The WP will aim to communicate the project’s progress and benefits locally through means of website cases studies, presentations, newsletters, education, art, citizen science and volunteering, and by promoting access in collaboration with the Action Sites themselves. An examination of best practice will be an objective of each of the WPs and the project will disseminate this guidance and its own experience to inform the wider restoration community by means of reports and guidelines. its website, social media, media interviews, videos, presentations and publications.

Finally, **WP8** (Project Management) will oversee the project’s dealings with the Commission, ensure that resources are delivered on time to the WPs, that the work programme and deliverables adhere to the timeline, and that coordination and interaction is maintained between WPs in cooperation with WP5.

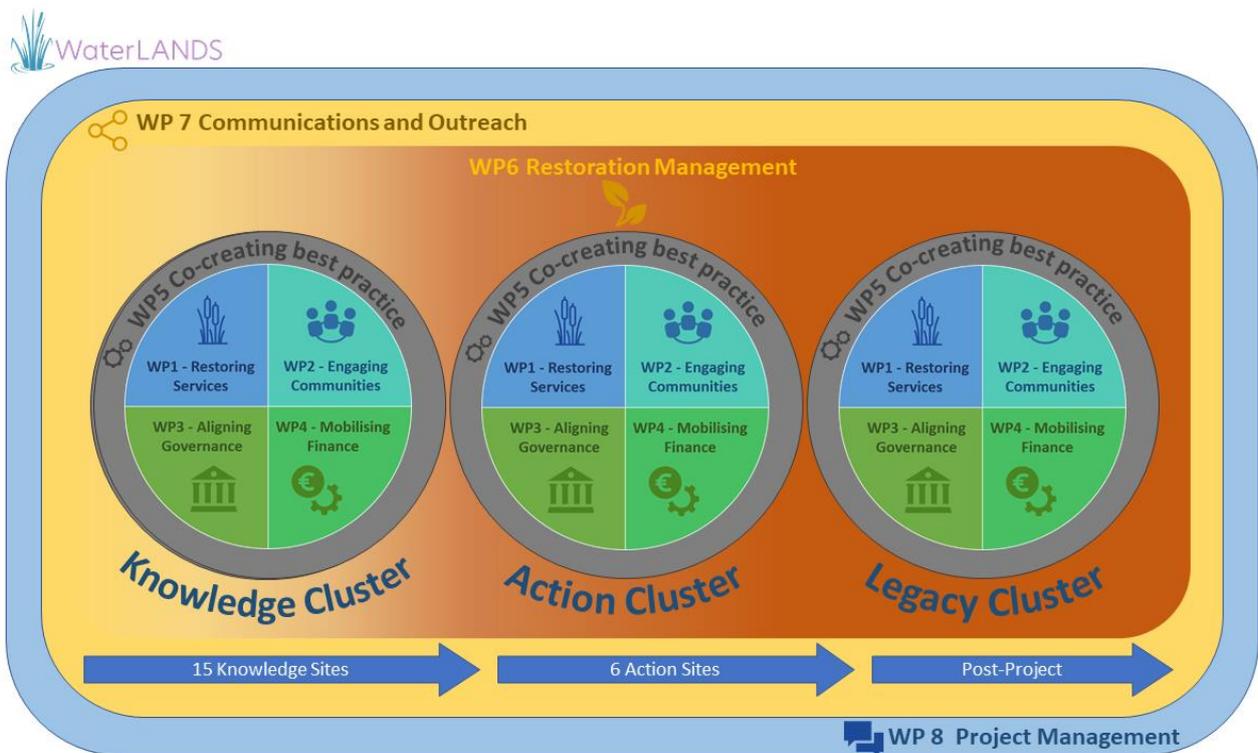


Figure 1.4b: WaterLANDS project structure, showing the flow from Knowledge, to Action, to Legacy.

Figure 1.4b demonstrates how the project structure ensures that no single WP is isolated, but that each contributes together to the Action Sites in WP6. Each WP does this through three consecutive project clusters, namely **Knowledge, Action** and **Legacy**. Each WP will operate concurrently to inform the project as a whole, through the co-creation WP5.

Each of the WPs have one or more sub-tasks which address **Knowledge**. These include reviews of best practice based on desk studies and the experience of the specialists engaged in the project, from previous restoration projects and, importantly, from 13 ‘Knowledge Sites’ located in countries included in the Consortium. For instance, WP1 reviews best practice ecological restoration for both freshwater and coastal wetlands and the means used to address common environmental pressures such as changes in water regimes. WP2 examines some of the best practice approaches that have used for public participation and stakeholder engagement, applying, in the first instance, a tried-and-tested approach used for stakeholder mapping by the WP Lead. WP3 examines some of the approaches or requirements needed for governance that can best support wetland restoration. Given the nature

of rivers and wetlands, this will include consideration of EU Directives and cross-boundary strategies. WP4 examines the growing range of options that are becoming available for conservation finance and how these can support biodiversity and ecosystem services in wetlands. WP5 pulls together all this best practice guidance to inform a range of strategies that can be tailored to specific contexts.

Each work package also has work-tasks addressed towards the **Action**. As the Action Sites represent different types of wetlands, different climatic zones, different cultural contexts, and have varying governance structures and financial infrastructure, advice will vary even through many of the same pressures and drivers are likely to be present. WP1 will examine which approaches to ecological restoration are best suited for the particular contexts of each Action Sites. WP2 will apply the stakeholder engagement that is most suited to the types of stakeholders identified by the earlier mapping including considerations of social values, economic interests and user rights/land ownerships, including where conflicting objectives are present. WP3 will propose administration strategies and policies which are most suitable to the needs of the restoration sites and the political context. WP4 will propose economic instruments and financial solutions most suitable to local interests, the type of ecosystem services and the financial context. WP5 will pull together these outputs into a single package for each Action Site which has informed been informed by the co-creation including the local stakeholder engagement.

WP6 is represented by the Action Sites themselves. Specialist input and advice will have been provided by the other work packages, but it is WP6 which will need to deliver on the local logistics for wetland restoration. For each Action Site, much of the expertise required by the work programmes for the WPs will be available within the respective Member State. Additional restoration work will also be considered for some Knowledge Sites where this can be used to meet WaterLANDS' overall objective of demonstrating upscaling of restoration.

Engagement in each Action Site will also be fostered by WP7 through the use of art to permit communities to develop an understanding of their wetlands, the unique character of their biodiversity, the local benefits to tourism, water quality or flooding and their national and international importance as defences against climate change (see Box 1). Together with the provision of access and interpretation facilities, art will help to develop new values.

Box 1: Art and WaterLANDS

Wetland restoration is an urgent and complex challenge which requires an holistic and innovative response. WaterLANDS' portfolio of actions and approaches is built on interdisciplinarity, intersectoral collaboration and co-creation. Uniquely, the project gives art a central role in dissemination, outreach and community engagement, **reflecting on the journey** of the Action Sites and the importance of restoration. This will act as a **catalyst for creating and sharing knowledge** across the project. Art and Science are both driven by curiosity and inquiry. Art, like Science, often involves empirical research practices but its exploratory processes are less bound by disciplinary formality. This integrative, agile capacity offers different ways of seeing the world and will ultimately bring new forms of knowledge production to WaterLANDS. Art is intrinsically generative, facilitating meaning-making and the communication of complex information. Restoration can be aided by this capability, in the creation of new meanings, values, and relationships to the landscape. Change can be difficult and there may be some resistance around restoration initiatives. Art can allow communities to **'re-see' the story of their landscape**, creating a narrative of ownership, dignity, sense of place, environmental justice and just transition. It can engage communities by providing new perspectives on natural and cultural heritage of landscapes, adapting our relationship with nature and our past (e.g. peat mining), helping us **see the familiar in new ways**, and creating a reinvigorated sense of place. Restoration brings cultural renewal. In WaterLANDS we want art to be an integral part of creating and reflecting that renewal.

Each WP will also contribute to a **Legacy** cluster by providing guidance for future restoration, for wetlands and other ecosystems, based on both the knowledge available and the experience of applications in the Knowledge and Action Sites. This experience will be pulled together by the Co-creation package WP5 for the benefit of restoration outside of the project Consortium and across Europe and elsewhere. The Communication package, WP7, will ensure that this knowledge does not conclude with the WaterLANDS project itself, but continues to inform practical restoration and relevant European policies into the future.

As the WaterLANDS methodology includes substantial social engagement and investigation, strong attention will be paid to the role of **gender** in both engagement and application, in line with appropriate research practices. These will include ensuring equal representation and freedom of expression in workshops and public fora, the acknowledgement of differential landholding rights between men and women where applicable, guaranteeing good gender balance in project teams and committees, and ensuring that all grounds of equality (gender, age, ethnicity, disability, religion, sexual orientation) are considered in the design of restoration strategies and socio-economic models where appropriate. This will also be a condition of any ethical approval obtained, further detail of which is outlined in Section 5 of this application.

Site Selection

Careful consideration was applied to the selection of sites for inclusion in the WaterLANDS project, under the acknowledgement that no two wetlands are regulated by the exact same ecological factors, are hindered by the same set of socio-ecological conditions or would be restored using the same set of applications. As such, the following criteria were used to capture this variability, to ensure that an eventual framework for wetlands restoration is both scalable across space and time and allows for context-specific considerations.

- **Wetland type** - Both Knowledge and Action Sites cover a spectrum of wetland types including peatlands and fens (Ireland, England, Sweden, Finland, Estonia), fluvial wetlands and floodplains (Estonia, Spain, France Bulgaria), and coastal wetlands (Italy, Netherlands, France).
- **Stage of development** - The Knowledge Sites have been selected as restoration works have already been undertaken here, but the scale of these wetlands and the associated works and community engagement varies. Each of the Action Sites has considerable potential for upscaling and, in most cases, some restoration works have already begun with varying levels.
- **Geography / climate** - Sites are located in northern and north-west Europe where rainfall levels are high and in eastern and southern Europe where temperatures are higher and rainfall lower or more variable.
- **Socioeconomic status** - Sites are located in higher income countries and in Member States where the level of economic development is lower. This is presumed to play a role in existing restoration investment.
- **Existing use model** - Some wetland sites have a history of economic utilization, in either sustainable practices or in those which impact on the functioning of those wetlands. These includes salt production, grazing of livestock, or for fuel, food and/or fibre.
- **Land tenure model** - This varies from no rights, squatters-rights, commonage arrangements, State ownership, private ownership or commercial holdings.
- **Scalability potential** - The ability to scale up restoration around sites is important and varies between direct expansion of existing site boundaries, replication at (or connectivity to) surrounding regional sites, or application of lessons learned at similar landscapes in the region or across Europe.

Using these criteria, a set of Knowledge and Action Sites were selected, justification for which is outlined below.

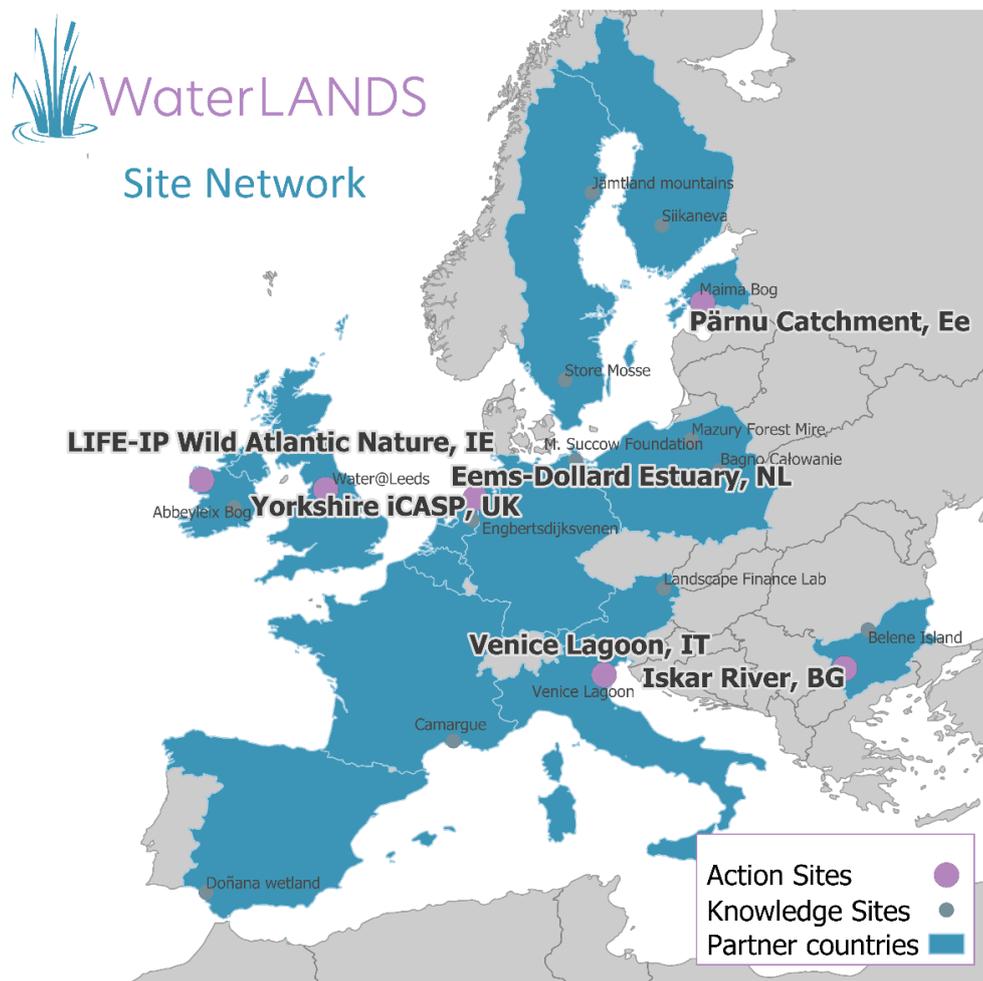


Figure 1.4c: The WaterLANDS network, showing partner countries, location of Knowledge Sites and Action Sites.

Table 1.4b: List of Knowledge sites with justification for inclusion in the WaterLANDS network

| Knowledge Site | Nation | Stage of development | Wetland type | GDP* | Existing use | Land tenure | Protected status | ES relevance ⁺ |
|--------------------------------|--------|----------------------|--------------|------|---------------------------|-------------|------------------|---------------------------|
| Engbergsdijkvenen | NL | Advanced | Peatland | €60k | Nature | State | Natura | C, W, Re |
| Maima | EE | Ongoing | Palustrine | €39k | Nature | Mixed | Partial | C, W, F, Re |
| Venice lagoon | IT | Ongoing | Estuarine | €44k | Numerous | Mixed | Limited | F |
| Donana wetlands | ES | Advanced | Palustrine | €42k | Nature | State | Nat. Park | W, F, |
| Abbeyleix Bog | IE | Ongoing | Peatland | €88k | Amenity | NGO | None | C, W, F, Re |
| Store mosse, Småland | SE | Advanced | Peatland | €59k | Nature | State | Nat. Park | C, Re |
| Jämtland mountains | SE | Ongoing | Peatland | €56k | Amenity | Mixed | Partial | C, Re |
| Bagno Calownaie | PL | Ongoing | Palustrine | €34k | Forestry | Mixed | Partial | C, Re |
| Mazury Forest Mire Restoration | PL | Advanced | Peatland | €34k | Forestry | Mixed | Limited | C, W |
| Siikaneva fen & bog | FI | Advanced | Peatland | €51k | Forestry, amenity | Mixed | Nat. Res. | C |
| Water@Leeds | UK | Ongoing | Peatland | €49k | Agriculture amenity | Mixed | Partial | C, W, Re |
| Camargue | FR | Ongoing | Palustrine | €49k | Nature, tourism, industry | Mixed | Natura | W, F, Re |
| Persin/Belene Island | BG | Ongoing | Palustrine | €25k | Agriculture nature | Mixed | Natura | W, F, Re |
| M. Succow Foundation | DE | Advanced | N/A | €56k | N/A | N/A | N/A | All |
| Landscape Finance Lab | AT | Advanced | N/A | €59k | N/A | N/A | N/A | All |

* GDP: Gross Domestic Product per capital, adjusted for Purchasing Power Parity (PPP)

⁺ Ecosystem Services (ES): Carbon (C), Water (W), Recreation (Re), Flood mitigation (F)

Table 1.4c: List of Action Sites with justification for inclusion, including the initial target area for restoration

| Action Site | Nation | Stage of develop. | Target area (ha) | Wetland type | GDP* | Existing use | Land tenure | Protected status | ES. relevance ⁺ |
|------------------------------|--------|-------------------|------------------|--------------|------|---------------------------------|-------------|------------------|----------------------------|
| LIFE-IP Wild Atlantic Nature | IE | Early stage | 5,000 | Peatland | €88k | Agriculture Peat mining Amenity | Mixed | Natura 2000 | C, W, Fi, Bd, Re |
| Yorkshire iCASP | UK | Early stage | 2,000 | Peatland | €49k | Agriculture Amenity | Mixed | Natura 2000 | C, W, F, Bd, Re |
| Ems-Dollard estuary | NL | Early stage | 39 | Estuarine | €60k | Agriculture Wasteland | Mixed | None | C, F, Bd |
| Parnu catchment | EE | Early stage | 3,500+ | Peatland | €39k | Peat mining Forestry | Mixed | None | C, W, F, Bd |
| Venice Lagoon | IT | Ongoing | 2,000 | Estuarine | €36k | Agriculture Industry | Mixed | Natura 2000 | C, W, F, Bd Re |
| Iskar River | BG | None | 35 | Riparian | €25k | Agriculture Urban dev. | Mixed | None | C, W, F, Bd Re |

* GDP: Gross Domestic Product per capital, adjusted for Purchasing Power Parity (PPP)

⁺ Ecosystem Services (ES): Carbon (C), Water (W), Recreation (Re), Flood mitigation (F), Biodiversity (Bd)

Action Site 1: LIFE-IP Wild Atlantic Nature, Ireland



The Cuilcagh-Anierin Uplands SAC is a blanket bog site covering 9,735 ha comprising 11 habitats and 7 species protected under the Habitats and Birds Directives. The site is part of the EU INTERREG Collaborative Action for the Natura Network (CANN) project, wetlands conservation project being delivered by partners in Northern Ireland, Republic of Ireland and Scotland across 27 Natura designated sites. The main output will be the development of a Conservation Management Plan for each site, and delivery of on-ground restoration to bring these sites towards favourable

condition status. Along with agriculture, peat-cutting, burning, invasive conifer encroachment and unmanaged recreation are the primary threats to the site. Restoration actions are being driven through a results-based agri-environment payment scheme (RBPS) approach whereby farmer's agri-environmental payment relates to the quality of the habitats following supporting actions undertaken with the assistance of expert advice. The RBPS programme will be developed through the Wild Atlantic Nature LIFE IP, with a view to scalability of similar approaches across broad areas of Ireland and the EU through CAP Strategic Plans. It will focus on a catchment level approach to include c.2500ha of the SAC and a similar-sized area that is non-designated. The focus is on integrated land use for the delivery ecosystem services including water flows, carbon and nature.

Action Site 2: Yorkshire iCASP, England

The Yorkshire iCASP Action Site covers a range of blanket peatland across Northern England including parts of three National Parks: Peak District, Yorkshire Dales and North York Moors. Across the area there are ~80000 hectares of peat still to be restored. The peat is several metres deep and a very important carbon store which is currently subject to severe erosion, often down to the bedrock. These upland peatlands are among the most important peatland-fed water supply systems in the world and deliver water to several million people⁶. The Action Site will enable restoration in around 2,000 hectares but with a view to upscaling the work across much of the 80,000 hectares. There is mixed land ownership including the private regional water utility and large private estates, some owned by charitable organisations. The precise area to be restored through co-creation with regional stakeholders will be funded either by private investment (e.g. Yorkshire Water have allocated ~€10M to spend on peatland restoration by 2025) or through public investment via the England Peat Strategy's Nature for Climate Fund allocation (~€80M nationally for peatland restoration). WaterLANDS Action Site funding would support the co-ordination of wider investment and upscaling, embedding improved techniques to maximise carbon and water ecosystem service benefits, improved community engagement, and governance. It would also directly inform the future of the England Peat Strategy via the direct involvement of Defra as the Government body responsible for national policy and funding and the IUCN UK Peatland programme who manage the UK's Peatland Code as a private financing instrument to support peatland restoration. Thus, there is outstanding potential for landscape-scale upscaling at the national UK level as a result of WaterLANDS.



Action Site 3: Ems-Dollard Estuary, Netherlands



The Ems-Dollard estuary is located on the border between the Netherlands and Germany where the river Ems flows in the Wadden Sea, one of the world's largest tidal areas, renowned for its sandflats, mudflats and coastal salt marshes. The current shape of the Ems-Dollard estuary is strongly influenced by human actions. Starting from the Middle Ages, salt marshes were reclaimed by building dikes and coastal peatlands were drained for agricultural use, resulting in soil subsidence. The size of the estuary has decreased due to sedimentation of sand and silt, and reclamation of salt marshes along the coast. Currently, major parts of the area seaward of the dikes are designated as Natura 2000 sites, in both the Netherlands and Germany. However, sea level rise will threaten the survival of coastal wetlands. Partly due to the deepening of the Ems river for shipping purposes, the silt concentration in the estuary has become too high. The resulting water quality problems and the need to reinforce flood defenses has led to the idea of removing sediment from the estuary in a newly created intertidal area in the hinterland. By building a second dike landward of the existing dike, a pilot area of ~39 ha will be created through WaterLANDS. This area of former agricultural land is split into three sections. The southernmost section is connected directly to the Ems through a culvert, where a combination of clay mining and nature development is proposed, and other sections, for which aquaculture and saline agriculture are planned. This so-called 'Twin Dike' project is located near the city of Delfzijl, and the project is managed by the Province of Groningen.

⁶ Xu et al. (2018) Hotspots of peatland-derived potable water use identified by global analysis. *Nature Sustainability* 1

Action Site 4: Parnu Catchment, Estonia

The Parnu catchment of western Estonia presents enormous potential for widescale restoration providing a broad set of ecosystem services with economic incentives. Three areas have been identified for restoration, totalling over 3,500 ha. First, Lavassaare exhausted peat fields (807 ha) are currently drained and have almost no vegetation cover and represent a huge carbon emitter. This site has great potential for integrated wetland restoration and green energy development (wind and/or solar). Nearby, currently active peat extraction sites (>5000 ha) offer clear upscaling potential for the future, given appropriate linkages to industry (a partner of WaterLANDS). Second, the Kõrsa abandoned peat extraction fields (241 ha) are also drained, with inappropriate revegetation. Kõrsa has great potential for integrated recreation and wetland restoration due to its proximity to local communities, who will be heavily involved in restoration through planning, implementation and monitoring (citizen science). Further, currently active peat extraction sites (~500 ha) in the vicinity offer clear upscaling potential and will be developed during the WaterLANDS project with corporate partners. Finally, Kikepera forest drainage area (2,482 ha) lies on former mires and wet forest. The Parnu catchment is landscape-scale restoration that ties various wetlands habitats, from bogs to river meadows, into a hydrologically connected landscape. It offers huge biodiversity benefits due to its large size, variable habitats and proximity to existing large-scale restoration sites. Rewetting will restore long-term carbon sinks and will prevent further oxidative emissions. Further, there is enormous upscaling potential, since Estonian protected areas alone have 50,000+ ha of forest drainage that can be readily restored if funding allows. Firm linkages have been established with two key stakeholders; Tootsi Turvas peat extraction company and the Estonian State Forest Management Centre, both of whom are WaterLANDS partners.



Action Site 5: Venice Lagoon, Italy



The Venetian Lagoon is the largest coastal wetland in Italy at 55,000 ha (8% islands, 12% salt marsh, 13% mudflats, 67% water). It is characterised by a tidal system and a thousand years of human interventions. It hosts a unique range of biotypes - salt marshes, reed beds, seagrass meadows, mudflats. Challenges include extensive loss of salt marsh, ongoing erosion, limited sediment inputs and large volumes of sediments exported to the sea, exacerbated by urbanization, erosion from shipping and local water traffic and canal dredging. Venice and the

Lagoon were designated UNESCO World Heritage sites in 1987 and the lagoon is an SCI and ZPS site under the Habitats Directive (92/43 ECC). Administratively, the lagoon is under the remit of the Provveditorato Interregionale per le Opere Pubbliche per il Veneto, Trentino Alto Adige e Friuli Venezia Giulia. ‘Venezia è laguna’ (“Venice is its lagoon”) is our mantra to reinforce awareness that the fate of the city and the encircling lagoon are interconnected. It is the key to shifting the city towards recognising the value of its natural capital and the full range of ecosystem services. The Action Site programme will complement the plans of the Provveditorato to design new areas of salt marsh in the central and northern lagoon. Dredging and construction of areas to contain sediment infill will be publicly funded but regenerative revegetation is an action that would not otherwise receive financial support. This project will accelerate and improve the process of colonisation by appropriate salt marsh species to maximise ecological performance, especially in terms of carbon sequestration. Work is also planned to reframe the identity of the lagoon via public engagement activities as well as signage and other communications interventions.

Action Site 6: Iskar River, Bulgaria

The riparian wetland associated with the Iskar River flowing through Sofia is 15 km long with 200ha of adjacent former floodplains suitable for conservation and wetland restoration. The river has been heavily modified (urbanized) and this has both restricted wetland function and has had a negative impact on native species – black and white alder, *Sabanejewia aurata*, Romanian barbel, Eurasian otter, etc. In addition, the proximity of the Pancharevo Lake and changes in distribution of precipitation poses significantly higher flood risk in the urban part of the river. The Iskar River is included in the municipal plans for spatial development with a specific requirement for nature-based restoration that will provide for a variety of ecosystem services, including amenity and flood prevention. The main concept is to restore the whole stretch of river wetland in a way that will decrease flood risk (flood protection) with an additional focus on biodiversity conservation, recreation and tourism. Land ownership is mostly state and municipal lands, but there are also some private lands. The first phase of restoration work is scheduled for a 35ha site along the river, to be used as a model for expanded restoration of the whole stretch. Lessons from Knowledge Sites in stakeholder engagement,



restoration planning, flood prevention and financial mobilisation will be vital to restoring the Iskar River. The successful co-created community-led restoration of this riparian wetland will scale to advise a broad range of urban and peri-urban wetlands across Europe, notably through the offsetting of flood prevention investment, the provision of amenity, bolstering biodiversity and carbon sequestration.

1.5 Ambition

WaterLANDS proposes to apply a co-creation approach to the upscaling of wetland restoration. To date, most wetland restoration has been modest in scope and mainly focused on conservation of biodiversity. There have been some excellent examples, but the areas involved have often been modest, and often too small in extent to deliver significant ecosystem services. It is argued here that evidence of a range of ecosystem service benefits are one means by which to effectively engage communities.

1) WaterLANDS includes some of Europe's best wetlands as Knowledge Sites and some Action Sites which have substantial areas available for restoration.

WaterLANDS includes some European wetlands and peatlands that are large in extent. In Ireland, raised and blanket bog covers 1,082,000 hectares, but only around 20% is in good condition, but of which just 1% of raised bog is thought to be active peat forming and capable of sequestering carbon. The same is true of blanket bog in Northern England which covers 244,000 hectares. Finland and the Baltic States contain large areas of fen and forest mire. The Parnu catchment in Estonia, for example, covers 18,000 hectares of peatland and mire and includes the Soomaa National Park which is inhabited by beaver, bear and elk. Persina/Belene Island in Bulgaria, the Camargue in France and the Donana wetland in Spain are included as riparian wetlands, while the Venice Lagoon (Italy) and Ems-Dollard Estuary as coastal wetlands. These areas represent either Knowledge or Action Sites in WaterLANDS. Each of these sites has the potential for large-scale restoration, to provide significant habitat for biodiversity and to provide important ecosystem services that could make a considerable difference to net carbon emissions and for adaptation to climate change.

2) Much of the best knowledge we have has been learnt from past restoration, but applying this knowledge at large scale is ambitious and will require that varied practical and scientific expertise is brought together in an interdisciplinary strategy of co-creation.

Environmental projects often disproportionately focus on ecological research and conservation projects have often been primarily focused on habitat restoration, with only marginal use of qualitative assessment, in particular social investigation. WaterLANDS is designed as a focused interdisciplinary project with controls to ensure that WP outputs from mutually supportive and applied directly at Action Sites.

WaterLANDS will be informed by the experience with restoration at 13 Knowledge Sites and two other centres, the Succow Foundation and WWF Landscape Finance Lab, where expertise is founded on practical experience with restoration. Many of the practicalities of wetland ecological restoration are now understood, but this knowledge is often localised and site-specific, sometimes invested in experienced individuals working on-site. The practicalities of restoration have also often been confined to small areas where the cost of direct human intervention to maintain ecological regimes e.g. site protection or daily management of water levels, has been manageable. There is still a limited experience of largescale restoration. The Knowledge Sites include some of Europe's largest wetlands and so the project will be able to pull together this experience. In addition, there is the prospect of a naturally mutual-supportive relationship between practitioners in the Knowledge and Action Sites which will be strengthened through the project's intention of twinning similar sites or sites requiring related expertise. The sites also include smaller examples where community engagement, market-based incentives, payment by results measures and innovative financial arrangements can inform much of the restoration which is proposed for the Action Sites, especially once this has been amalgamated by the Co-creation WP.

3) Approaches to ecological restoration which work for smaller sites will not necessary be as successful at a larger scale. WaterLANDS includes innovative approaches that will place large scale restoration on a firm footing

The Restoring Services WP (WP1) will build on the ecological lessons from the Knowledge Sites, but includes also innovative approaches that will help to fill the gaps in our knowledge as regards restoration at a larger scale. The WP will, for example, use a functional trait approach combined with remote sensing to correlate the composition and extent of wetland flora with the contribution to ecosystem services. For example, while we know that peatlands can sequester carbon, or that wetlands can generally contribute to water quality and nutrient assimilation, we do not always know the role of vegetation mosaics or the particular hydrological or climatic conditions on which they depend to fulfil these services. In a situation, where we are faced with the significant risk of deteriorating water

quality, hitherto unseen levels of flooding and sea level rise, along with the potentially huge social and economic cost these present, we need to know how best, and under what circumstances, an upscaling of restoration can provide for adaptation. WP1 also includes an assessment of the role of thresholds to inform us of how ecosystems will themselves adapt to climate change and what resilience we may have to introduce to restoration to ensure that it is sustainable and able to provide the ecosystem services and biodiversity gains that society expects. This is a topical area of ecological science. It is also one related to the innovative notion of Safe Operating Spaces included in WP1. Given the resources required, the aspirations of conservationists and communities, and the expectations of investors in biodiversity finance and of EU policy, specifically the Green Deal, it is essential that upscaling delivers results.

- 4) *Restoration needs community buy-in to be successful and sustainable. Exploring ways forward that satisfy people's values, needs and livelihoods has often been more a feature of applied research studies than reality. The co-design included in WaterLANDS will ensure that these methods are applied to the Action Sites.*

Over the past few decades, conservation has learnt the importance of obtaining **support from local communities** and stakeholders. Wetlands, in particular, are very dependent on actions outside of protected areas, including the effect of abstraction and impacts due to land use or wastewater on the eutrophication or pollution of waters. In these circumstances it is essential to bring relevant stakeholders on board and to mitigate such pressures. Widespread public support is also needed to support restoration and changes in land use. In some of Knowledge and Action sites, peat extraction has been an important industry or source of fuel. Fishing, salt production, demand for development land are other economic activities that can have detrimental impacts.

WaterLANDS therefore places great emphasis on **community engagement** as we believe that, only through such engagement, and the co-design that can follow, will we secure the community's support for restoration that will be needed in the long term. This reaching out and involvement of the community has not always been a feature of conservation or, indeed, of built projects generally where engagement rarely extends beyond consultation at best. The Stakeholder Engagement WP2 will provide feedback for WP1 on the ecosystem services of most value to restore and will lead directly into the information needed by WP3 (Governance) and WP4 (Finance) which will, in turn, provide input to the workshops that are proposed. WP2 will commence with tried and tested methods of stakeholder mapping and engagement at an early stage. It will then move into a deliberative process of identifying community knowledge and values. There has been a flurry of academic work in this area, partly in response to IPBES work on *Diverse Conceptualisation of Values*, but rather fewer occasions on which these methods have been applied to real situations, including environmental projects, in which this information is needed for a project to progress.⁷

- 5) *Community engagement, good governance and public good benefits are mutually reinforcing*

A lack of constructive **governance** frequently undermines efforts at largescale conservation or restoration. Politics has its influence. Bureaucracy, local and national, can be a significant barrier to the radical actions that often need to be taken to advance restoration. This can mean confronting established industries or land uses which can be drivers of ecological degradation. The public good benefits of restoration can usually be assumed to be more valuable, but they can be difficult to demonstrate or quantify such that restoration may not attract widespread support. Consequently, WaterLANDS contains a Governance WP (WP3) which is directed at finding administrative and policy arrangements that can provide for a *just transition* whereby communities and stakeholders are included in restoration decision-making. It will map a course to restoration that ensures all interests are considered (or at the very least compensated), or otherwise transformed through the promotion of complementary activities. These activities could include paludiculture, artisanal fishing, low impact farming, carbon farming, alternative energy and tourism/ecotourism.

- 6) *Biodiversity conservation has suffered from insufficient funding, but restoration linked to ecosystem services has the potential to tap into a huge reservoir of private finance*

Good governance is also essential to public-private partnerships and to reassuring private investors of the returns from **financing restoration**. The WaterLANDS WP4 on Finance will be led by an organisation with state-of-the-art experience of negotiating financing arrangements. The whole area of biodiversity finance has expanded tremendously in recent years. Much of this expansion has been as a result of the need to address carbon storage, deforestation or biodiversity losses in developing countries, often with the tangible support of international

⁷ Pascual et al (2017) Valuing Nature's Contribution to People: The IPBES Approach. *Current Opinion in Envir Sustainability* 26-27: 7-16
 Garmendia, E and Gamboa, G. (2012) Weighting social preferences in participatory multi-criteria evaluations, *Ecological Economics* 84,
 Giupponi, C. et al (2020). Sustainability of complex social-ecological systems, methods, tools and approaches <https://doi.org/10.1007/s10113-020-01692-9>.
 Kenter, J.O., Reed, M.S. & Fazey, I. (2016) The Deliberative Value Formation Model. *Ecosystem Services* 21, 194-207.

development agencies. However, conservation in Europe is still dominated by public funding and has yet to tap into this potential resource beyond a few examples of voluntary carbon or biodiversity offsetting. The potential financial resource for restoration is considerable, but is dependent on WP1 demonstrating a route to realising ecosystem service benefits and on WP3 achieving synergy in relation to governance policy and financial guarantees.

7) *WaterLANDS has considerable ambition in leaving behind a legacy for future on-going public engagement and largescale restoration.*

Finally, WP7 is dedicated to **communication** and will use a range of methods to disseminate the experience, outputs and findings from the project, both to secure continuing support within the countries and communities where the Knowledge and Action Sites are located, but also for future restoration beyond the life of the project. This effort will include the production of guidance for future restoration projects, including decision support tools. Within the sites, the project will strive to achieve continuing community engagement by constructing facilities for **public access** for amenity and education, simultaneously raising awareness of the benefits of restoration and the importance of protecting biodiversity among people, not all of whom might be inclined to participate in workshops or other fora. **Art** is an innovative characteristic of WaterLANDS and will be used also to increase awareness and engagement with the project and encourage a new understanding, and new values, to form where communities may hitherto have had a relationship with wetlands that was not related to natural capital or ecosystem service benefits.

Table 1.5: Innovation potential of WaterLANDS

| Current challenge | Innovative WaterLANDS solution |
|--|--|
| Much restoration has been on a small scale | WaterLANDS will draw on accumulated expertise from 13 Knowledge Sites and combine this is state-of-the-art science to address environmental stressors to ensure that resilience is achieved at a larger scale |
| Restoration has been focused on conservation | The large scale of restoration planned in WaterLANDS will help us to realise biodiversity objectives, but the project will also focus on ecosystem services which can deliver public support and finance. |
| In practice, many environmental projects have failed to fully engage communities | WaterLANDS places considerable emphasis on stakeholder engagement to achieve restoration through co-design which responds to communities' values and needs, which provides for public goods and ecosystem services and which will align with their visions for future development and quality of life. |
| Restoration has been piecemeal | The project will pull together the varied experience provided by Knowledge Sites together with the expertise of practitioners, scientists and community stakeholders in a process of co-creation, |
| Restoration is vulnerable to external impacts | WP1 will identify the stressors that impact on wetland status and ecosystem services delivery and propose solutions to achieve resilience. Through stakeholder engagement, the project will address external factors which could compromise restoration and identify solutions which can have the support of local public and administrations. |
| Restoration has not always been aligned with policy and governance | The project will identify the characteristics of good governance needed for restoration. It will aim for public legitimacy through community engagement and the emphasis of public good benefits strengthening the case for supportive local and national policy. |
| Restoration has been underfunded | WaterLANDS will examine the options available to obtain private finance linked to ecosystem services and NBS, including public-private partnerships, blended finance, carbon offsets, biodiversity offsets and impact bonds. |

2. IMPACT

2.1 Expected Impacts

The Call document anticipates that actions will demonstrate transformational change through ecosystem restoration at large scales and with visible results. The following sections explain how WaterLANDS will effectively deliver these expected impacts. However, beyond these explicit impacts related to the LC-GD-7.1-2020 call, WaterLANDS will exceed these expectations by establishing a scalable restoration legacy and by advocating for policy modifications to support expansive restoration.

*“...to demonstrate how transformational change through ecosystem restoration delivers at **large scale** delivering first visible results and examples on land and at sea by 2024, with **benefits increasing in the long-term**”.*

WaterLANDS provides the foundations for transformational change through a process of co-creation from initial project design to implementation that combines the Team's expertise with the input of communities and stakeholders. In this way, communities will be encouraged to see the benefits of restoration and are provided with a degree of ownership that will support the continued management of site-specific works into the long term. They

will be supported in this manner through a process of engagement designed to reveal their needs, values and expectations and which is managed to deliver a just transition with the consent of the community. WPs on governance and environmental finance are intended to provide recommendations and support on the most appropriate measures and policies, combined with finance that is targeted for restoration at each Action Site. The contribution of each work package is cumulative and directed at the specific requirements of the Action Sites such that visible results will be apparent by 2024.

“...maintained and enhanced natural carbon sinks and reduced greenhouse gas emissions through the important role of biodiversity, local reversal of the degradation of ecosystems, recovery of ecosystem functions, increased connectivity and resilience of ecosystems, and improved delivery of a range of ecosystem services.”

WP1 will reveal the principal drivers causing degradation and propose restoration measures specific for each Action Site that can restore biodiversity and ecosystem functions and provide a resilient Safe Operating Space. Remote sensing and spatial analysis will identify where restoration will be most effective and how connectivity and positive cumulative impacts can best be achieved. The WP will likewise identify which ecosystem systems can be restored, and their potential explored through the process of co-creation. The other WPs will examine the potential of supporting instruments and policies along with availability of appropriate finance, which for the enhancement of carbon sinks, could include climate change finance and payments for ecosystem services linked to carbon offsetting.

“...widespread and innovative scaling-up of ecosystem restoration to maintain and enhance natural carbon sinks and other ecosystem services, with a view to significantly reducing the carbon and environmental footprint of Europe.”

WaterLANDS recognises that only an upscaling of restoration can deliver the substantial enhancement in ecosystem services needed to reverse biodiversity losses, to mitigate climate change or to deliver reliable and adequate ecosystem services for water supply, or protection from flooding or storms. The project proposes a comprehensive approach to restoration supported by the process of co-creation needed for this to be sustainable. Action Sites with evident potential for the upscaling of restoration have been identified and are the focus of all work packages. Innovative financial solutions will be identified and initiated where possible.

“...increased restoration through uptake of public-private partnerships and (voluntary) market-based incentives for business and individuals within restoration initiatives, including as the result of trans-disciplinary research and stakeholder engagement to help identify co-funding for long-term maintenance and buy-in from the private sector.”

Across Europe, conservation agencies are struggling to realise a share of public finance even to conserve protected areas. Most enhancement actions have occurred through EU LIFE funding. However, large-scale restoration has the potential to restore ecosystem services to tangible levels where they become a justification for restoration. Carbon offsetting already attracts substantial voluntary finance. As CO₂ emissions have a price under the Emissions Trading Scheme the potential exists to transform this into market-based incentive for rights owners, landowners, and physical restoration works by NGOs or private enterprises. There is significant international Impact Bond financing available for nature-based solutions whereby wetlands deliver reliable water supplies, assimilate excess nutrients from agriculture or wastewater, or protect communities from flooding or storm surges. For coastal cities, in particular, the benefits in terms of human and property damage avoided are immense and of a scale to attract private investment or public-private partnerships, including by the insurance industry and pension funds. WP2 will investigate the benefits of nature-based solutions, stakeholder awareness and interest in payments for ecosystem services. WP3 will examine the public incentives, structures or policies needed to support investment in such solutions. WP4 will specifically examine the potential for environmental finance, both blended finance underpinned by the EIB or equity finance.

“...enhanced empowerment, engagement and reconnection of local communities with nature and increased social awareness on restoration actions, and their benefits.”

National conservation agencies have not always attracted local public support, and while some NGOs have learnt the value of nurturing good relationships with local communities, this has not always extended beyond an appreciation of local conservation or tourism benefits. Engagement with local communities and their involvement in the co-creation of restoration is central to WaterLANDS objectives. It is essential for the sustainability of upscaling and to ensure that restoration is valued for the contribution it can make to ecosystem services and the benefits for people and livelihoods. These benefits will be explored within WP2 through deliberative workshops on values and alternative scenarios and through WP5’s objective of instilling co-creation into the tangible interventions taken at the Action Sites. These WPs will explore community needs, the implications for income returns, frank discussion of the trade-offs between established and new economic enterprises, sustainable tourism, protection of water

resources and security from environmental impacts. The values element proposed for the stakeholder engagement in WP2 will work to align restoration objectives with the vision that communities themselves have for their future. It will use engagement to empower communities in decision making and provide a sense of ownership of restoration.

“...transformational change supporting a just transition based on investing in nature together with vulnerable regions and communities improving their resilience in the face of rapid changes in climate and environment, economies and social conditions.”

Through its WP on community engagement, WaterLANDS will seek to identify routes towards a just transition whereby no stakeholder group is significantly disadvantaged. Poor and vulnerable groups are at most risk from climate change and environmental disasters, but also amongst those most vulnerable to the loss of established activities or employment associated with industries such as peat extraction. To ensure public support for restoration, WaterLANDS community engagement will be open and thorough, addressing trade-offs head on through deliberation on alternative scenarios and approaches such as participatory multi-criteria analysis, comparing short and long-term, and local and societal benefits and costs, and the visions that communities have for their future. Consensus is not assured for all Action Sites, but the comprehensive approach to co-creation proposed by WaterLANDS is capable of addressing the challenge.

Policy impacts: EU Green Deal and beyond

WaterLANDS will directly impact upon the implementation of the EU Green Deal and other key policies of the European Union and the United Nations, strengthening our legacy and ensuring a ‘resilience through diversity’ of socioeconomic models and funding mechanisms. Through the governance assessment of WP3 and the co-creation with stakeholders in WP5, WaterLANDS will contribute to the following:

- **EU Green Deal policies with a special focus on the following strategies:**
 - **EU Biodiversity Strategy for 2030:** The ambitious scale of restoration, revealed in WaterLANDS by the inclusion of a mixture of wetland sites across Europe, will make a distinct contribution to the European Green Deal. WP1 will explore how to most effectively restore ecosystems for biodiversity, assessing the potential for connectivity to restore wetland biodiversity beyond isolated reserves. WaterLANDS will create the base for the implementation of legally binding EU nature restoration targets in the Member States.
 - **Farm-to-Fork Strategy:** By assessing alternative use strategies for wetlands in Europe, including the use of paludiculture and its integration into CAP reform, WaterLANDS will contribute to the provision of healthy and sustainable farm products.
 - **2030 Climate & Energy Framework and EU Climate Law:** With its objective of upscaling restoration, WaterLANDS will contribute to a major enhancement in ecosystem services. This will include evidence of reduced net carbon emissions by re-establishing carbon functions at its wetland Action Sites. It will showcase sustainable use options like peatland carbon farming as nature-based solutions for GHG mitigation across Member States, protecting carbon stores and transforming emissions into carbon sequestration.
- **EU Natura Directives:** The Natura 2000 Directives is directly addressed through the protection of SACs and SPAs and the species/habitats they support, and restoration of habitats like peatlands which are among the most threatened in Europe. WaterLANDS will examine the potential to increase the footprint of Natura 2000 wetland sites by restoring wetlands outside of current designations.
- **EU Common Agricultural Policy:** Sustainable agricultural measures on wetlands and peatlands like paludiculture will show how ecosystem restoration can go along with agricultural activities and how specific interventions in CAP Strategic Plans of the Member States can support such measures for farmers. The project will formulate a basis for carbon farming approaches and give concrete guidance for the implementation of conditionality GAEC 2 in the Member States.
- **Water Framework Directive and EU Marine Strategy:** The functioning of wetlands and the ecosystem services they provide is largely reliant on functioning and clean hydrological regimes. Similarly, wetlands are vital to the regulation of this hydrology, through flood attenuation, sediment capture and nutrient processing. As a result, WaterLANDS will directly impact upon the application of the Water Framework Directive. As most water eventually flows into the seas, WaterLANDS will positively affect the water quality in the North, Baltic and Mediterranean Sea and therefore contribute to Marine Strategy. WaterLANDS will also contribute to the objectives of the Marine Strategy Framework Directive by protecting coastal wetlands and the protection they in turn provide against storms, sea level rise and saltwater incursion.

- **Pollinators Initiative:** Water meadows and floodplains make a considerable contribution to pollination, although reedbeds and peatlands can be characterised by supporting relatively few pollinators compared with other ecosystems. Each contribute as part of the diversity of ecosystems, being used for foraging of some insects at various times of year and being especially important for some species such as hoverflies.
- **EU Bioeconomy Strategy and Action Plan:** In innovative land use systems on wetlands, specific biomass could be produced for bio-based construction materials, peat-free horticultural substrates, renewable energies or bio-chars for fertilisation.
- **EU Urban Policies:** Wetlands survive in urban areas and are enjoying a renaissance due to strategies such as Sustainable Urban Drainage and constructed wetlands. WaterLANDS will demonstrate this value for nature-based solutions directly, including through the Bulgarian Action Site and through the protection being provided by the Venice Lagoon to one of Europe's most iconic cities.
- **EU Adaptation Strategy:** Wetland restoration is an important part of ecosystem-based adaptation. It provides buffer areas for extensive rainfalls to prevent floods, positively affect landscape hydrology and thereby mitigate severe droughts and provide local cooling by evaporation. In coastal areas, wetland restoration can protect against high tides and storm surges and arrest land subsidence in times of rising sea levels.
- **EU Covenant of Mayors:** By providing options for the restoration of urban and peri-urban wetlands, and by developing sustainable financing solutions for this, WaterLANDS will directly address the climate adaptation goals of the EU Covenant of Mayors.
- **Sendai Framework for Disaster Risk Reduction (2015-2030):** A key ecosystem service provided by wetlands is their ability to attenuate inland flood events and protect against coastal erosion and sea-level rise. WaterLANDS will therefore directly support the Sendai Framework by improving the provision of these services through restoration on a large enough scale to withhold flood waters.
- **UN Decade of Restoration including land/sea degradation neutrality:** WaterLANDS will directly address this UN initiative and its aim to “prevent, halt and reverse the degradation of ecosystems”, by ensuring large-scale restoration and providing community-led strategies to sustain this beyond the life of the project.
- **UN Sustainable Development Goals:** By expanding the restoration of terrestrial and coastal wetland across Europe, WaterLANDS directly addresses the targets of SDG 3 (Health and Wellbeing), 6 (Clean Water), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 13 (Climate Action), 14 (Life below Water) and 15 (Life on Land).
- **UN Global Peatlands Initiative (GPI):** WaterLANDS partners are among the founding members of the initiative lead by UN Environment and FAO. Project results will be transferred to GPI members in Europe and beyond.

Further, by its inclusion of a dedicated Governance WP and cross-cutting activities, WaterLANDS will contribute to the development of future policies relating to restoration of degraded ecosystems and the services they provide.

2.2 Measures to Maximise Impact

Dissemination, communication, outreach and exploitation activities will have a core role within WATERLANDS to maximise the impact of the project. The project includes a WP dedicated to these activities (WP7). All 32 partners will be involved in dissemination and exploitation as they represent applied university researchers, practitioners, NGOs and government agencies and their combined contacts and networks represent a diverse range of expertise and activities at national, EU and international level. The geographic coverage of the project will ensure that the resulting applications and guidance for large-scale restoration is applicable across a range of conditions and not restricted to wetlands alone. WATERLANDS will integrate diverse outreach activities during the project's lifetime to **enhance the dissemination and exploitation strategy, maximize the expected impact and boost the project's sustainability and legacy**. This is elaborated upon in the following sections.

2.2.1 Dissemination and exploitation of results

WATERLANDS will maximise the impact of the project outputs by developing a well-structured Plan for the Exploitation and Dissemination of Results (PEDR). *Section 2.2.1.A* provides a draft overview of this plan which outlines its key elements. *Sections 2.2.1.B-D* provide further information on specific elements of the PEDR, addressing:

- The ways in which the proposed measures will achieve the expected impacts
- Management of generated research data
- Strategy for knowledge management and protection.

2.2.1.A Draft Plan for the Exploitation and Dissemination of Results (PEDR)

The Plan for the Exploitation and Dissemination of Results (PEDR) is intended to reach the widest audience and to maximise the expected project impacts. It will be updated and implemented immediately from the start of the project through a dedicated Task (T7.1) and Deliverable (D7.1). The PEDR will support the strategic and effective communication, dissemination and exploitation of outputs and guidance from WaterLANDS to all stakeholders including the general public, while being cognisant of data protection issues. Addressing the six key questions (who, what, why, when, where and how) and using EC best practice guidelines, the detailed PEDR will:

- Identify and profile the target stakeholders for the different project results
- outline the knowledge management principles and protocols to ensure effective transfer of Key Exploitable Results (KERs)
- Define the most effective dissemination and exploitation channels, tools and means tailored to the relevant stakeholders
- Outline the protection strategy and intellectual property rights (IPR) management, in accordance with the Grant Agreement, Consortium Agreement and project Data Management Plan and
- Maximise post-project uptake by developing thorough and forward-thinking plans that clearly outline the potential users and applications of the project's KERs and the Knowledge Transfer (KT) activity required to ensure objective and measurable short and long-term project impacts.

Users and beneficiaries of WATERLANDS results

The PEDR incorporates a Stakeholder Engagement Strategy, which starts by identifying the various groups in society with a vested interest in the WATERLANDS results. Likely end users of WaterLANDS' Key Exploitable Results (KERs) include:

- **Citizens:** engaging and empowering citizens is an integral objective of WATERLANDS. Through their direct participation in the project and Action Site restoration, citizens will be empowered to co-design solutions for wetland restoration in their community. The project will work to reconnect citizens with the natural environment, increase their awareness of and participation in restoration activities, and empower them with a genuine input to how restoration proceeds and its environmental, social and economic consequences.
- **Landowners:** WaterLANDS will include all stakeholders in the wetland catchments as part the community engagement (WP2) and co-creation (WP5). Landowners and managers are stakeholders whose activities can have a significant influence on the factors driving wetland ecological status. The project will provide them with the opportunity to shape and contribute to wetland restoration. Where change is needed, the project will demonstrate what economic supports and instruments are available where these are coincident with wetland restoration and the public good.
- **Authorities:** For many sites, local authorities and national responsible bodies for relevant EU Directives will be fundamental in synthesising a co-created solution and applying these lessons and Action Sites. For all Action Sites, the support of local authorities has been gained, either through direct partnership in WaterLANDS or through formal statements of support.
- **Businesses/Industry:** By engaging with large scale restoration, established businesses and their employees, e.g. peat extraction, salt production or fishing, will be directed towards supports that can facilitate a just transition and, along with new businesses, be encouraged to examine new economic opportunities. These options will be explored in WP2 and WP3. WP4 addresses the financing of restoration and will reveal opportunities for diversification, market-based incentives and funding which incentivises restoration.
- **Policymakers:** WATERLANDS will explore restoration solutions that demonstrate environmental, social and economic sustainability. These solutions should also reward aspired policy making at local, national and European level that supports large scale wetland restoration. Section 2.1 outlines these linkages further.
- **Academics and Scientists including actors within:** i) Environmental science; ii) Hydrology; iii) Climate; and iii) Social science, along with the complementary input of citizen science expertise.
- **Civil society groups, and non-profit organisations motivated to activate change:** WaterLANDS has partnered with 10 non-profit organisations spanning environmental, governance and community concerns. Further, three of these organisations represent large multi-national umbrella organisations providing additional connectivity and linkages to smaller organisations for local outreach.

Geographical coverage and size of the target markets

Key expertise and experience on wetlands restoration in various environments, including peatland, permanent and seasonal wetland and coastal wetlands will be harnessed by the project and brought together through the diverse expertise of the participants, stakeholder knowledge and most specifically, through the experience at the participating Knowledge Sites in Austria, Bulgaria, Estonia, France, Germany, Italy, Ireland, the Netherlands, Poland,

Sweden, Spain and the United Kingdom. Project scalability actions will be demonstrated at the Action Sites in Bulgaria, Estonia, Italy, Ireland and the Netherlands. While the project has been designed for Europe, and this region is the primary target, the concepts and innovations with scalability potential identified will have the potential to be applied globally.

Intellectual property

The ownership of results, access rights and IPR protection will be defined in the WATERLANDS GA and CA, following H2020 principles. The objective is to ensure fair and transparent means for exploiting and protecting the background information and the project outputs. The CA will be prepared and signed before the start of the project. WATERLANDS will have an Exploitation and IPR Management Committee to support IPR protection and ensure that effective protocols are established and adhered to for the management of IP during knowledge transfer and dissemination activities. All Key Exploitable Results (KERs) produced during the project will be assessed for IPR protection by the consortium through the Exploitation and IPR Management Committee, which will also discuss strategic issues, ethics and the exploitation of results, to ensure joint understanding and facilitate creative collaboration. The partners will ensure that adequate steps towards protection are taken prior to exploitation, dissemination and communication, preventing unapproved public disclosure of results, tools, products and services.

Table 2.2a: Possible foreground and exploitation mechanisms of WATERLANDS project

| Result to be exploited | Owners | Protection | Potential users | Exploitation |
|---|----------|---|---|---|
| Policy recommendations | Partners | Open source | Government bodies and policymakers (local and central governments) | <ul style="list-style-type: none"> - Policy advocacy paper, - Policy workshops, - Publications in Open Access Journals |
| | WI | Open source | Policy makers, academics, civil-society, not-for-profit, | <ul style="list-style-type: none"> - Dissemination - Publications - Open access resources on website |
| Creation of scientific data | Partners | Open databases | Researchers, academics, decisionmakers at local, national and European level. | <ul style="list-style-type: none"> - Dissemination - Open Access publications - Lectures - Webinars - Case studies - Website and magazine publication - Decision Support Systems |
| Technical Reports/deliverables | Partners | Through the publication of scientific papers | Researchers, academics, decisionmakers at local, national and European level. | <ul style="list-style-type: none"> - Conferences and events - Publications (scientific and promotional articles) - Online 'Results Pack' (e.g. CORDIS) |
| Scalability plan for wetland restoration | Partners | Publications, knowledge transfer and exploitation | Government bodies, landowners, civil society groups | <ul style="list-style-type: none"> - Dissemination - Workshops - Open Access publications, - Lectures, webinar - Website and magazine publication - Decision Support Systems - Results Pack' (e.g. CORDIS) |
| Community engagement approaches | PI | GDPR compliant | Civil and community groups, local and national decisionmakers, citizens | <ul style="list-style-type: none"> - Dissemination - Webinars - Case studies - Success stories - Knowledge transfer activities and outputs (user guides, protocols, exhibitions) |

Using EC services and other RI networks as multipliers

WaterLANDS will use EC supported publications and resources to ‘spread the word’ such as: Cordis, CordisWire, Horizon Magazine, research*eu magazine, FUTURIS on Euronews, Alpha Galileo and Meltwater. The WaterLANDS EC Project Officer will also be informed of relevant topics, news and events concerning the project. WaterLANDS will forge working links with related projects, such as those funded under the same and similar calls, to enhance the cumulative impact of the dissemination of project results and activities. Under the GD Call these could include Area 1 (cross-sectoral climate challenges), Area 6 Farm-to-Fork, Area 9 Knowledge in support of the EGD, Area 10 Empowering citizens to climate neutrality and sustainability, as well as restoration in other environments, e.g.: other coastal areas or forests, that may be supported under Area 7. Links will be sought with external restoration projects, including LIFE and biodiversity finance initiatives of the CBD and others. Finally, WaterLANDS will engage with the EU Green Deal Call’s intention to share experience throughout *network activities for the funded projects, as included in ‘Other Actions’*.

Exploitation Roadmap

The PEDR includes an exploitation roadmap to support the strategic and effective exploitation of WATERLANDS Key Exploitable Results (KERs). The exploitation roadmap outlines the steps required after the completion of the project to bring the identified solutions to the relevant target groups and end-users. The roadmap considers issues such as ensuring access to approaches, methodologies, their applicability in other land types, and the stage of restoration. It will also ensure that results are transferred effectively to other relevant stakeholders, considering issues such as suitability to land type, stage of restoration, etc. It will also consider how to address any additional investments required, cost effectiveness, standardisation and privacy issues. Details of this plan can be found in Table 2.2b, below. The PEDR plan/roadmap will address the following six points:

- What are the expected Key Exploitable Results? (identified as high potential exploitation with the support of the Advisory Board)
- Why should these results be exploited? (what are the opportunities for exploitation?)
- Who are the targeted users? (who can use, apply, and benefit from exploitation of these results?)
- How can the project facilitate the exploitation of results? (outreach, company creation, private-public partnership)
- Where is the market?
- When and how should the innovation be brought to market? (what is the transfer and exploitation pathway?)



Table 2.2b: Draft exploitation and dissemination plan

| Timing: Activity | Target Group |
|--|---|
| Year 1: Establishment of the project website, analysis of relevant information resources in terms of identification of dissemination opportunities and creation of basic dissemination tools including graphical identity of the project (i.e., project logo, templates for project documents and presentations). A mapping of the stakeholder database to optimize targeted communication and dissemination. | All end-users |
| Continuous: Participation at conferences and publications on project website, social media and relevant networks, and open access scientific publications, in order to spread the new knowledge created, enabling its use by other researchers | Academia, Civil society |
| Year 1 - 3: Set-up of an Advisory board and interaction with its member: We explain the potential of the proposed concept, methodologies and technologies, our approach and the role they could play. They provide us with feedback and input regarding the approach and the characteristics of the project outputs in order to reach relevant stakeholders | Landowners, Business Industry, Policy makers |
| Continuous: The partners in the consortium developing new knowledge, will apply for patents for any protectable IP | Consortium |
| Year 2 - 4: Bilateral meetings with relevant stakeholders as part of the process in Task 7.5, where the sector is analysed, and a knowledge transfer process is organised | Landowners, Business, Industry, Policy makers |
| Year 3 - 4: Identifying end-users that KERs can be transferred to as early adopters outside the scope of the project | All potential end-users |
| Year 4 - 5: Assessing impact on the project outcomes with direct feedback to relevant partners through stakeholder validation of project outcomes. | Consortium |
| Year 5: Presenting the projects most significant outcomes | All end-users |
| Beyond the project’s lifetime: International meetings re policy, restoration, biodiversity finance, Restoration networks, clusters, e.g.: EU Web portals, OPPLA, IUCN Global Restoration Network, Community Restoration Network. | |

2.2.1.B Ways in which the proposed measures will help to achieve the expected impact

The proposed measures outlined in the PEDR are designed for maximising the impact of the project. The PEDR ensures that there is a clear strategy, both during the project, and for after its completion, that leads to the uptake of results and guidance, and their continued use for environmental restoration into the future.

Stakeholder Engagement Strategy

The likely end users are described under the heading ‘Users and beneficiaries of the WATERLANDS results’, above. The PEDR will have a section entitled Stakeholder Engagement Strategy, which will analyse in more detail the main users and other relevant stakeholders. It will outline how exchanges will be tailored to best fit specific and relevant stakeholder groups. Under these activities will also be general communication tools and channels for broader uptake. Details of this strategy are outlined in Table 2.2c, below.

The consortium has extensive experience in multinational, multi-lingual, multi-disciplinary and multi-partner collaborative research and innovation activities, and in effective communication of progress and results. A professional communication and knowledge management partner (ERINN) whose staff have a strong track record in this field, will be responsible for implementing the PEDR, in collaboration with all partners of the project.

Table 2.2c: WATERLANDS Stakeholder Engagement Strategy:

| Target and user groups | Tools of Engagement | Impact |
|---|--|--|
| Academia and research <ul style="list-style-type: none"> - Hydrology - Botany - Climate scientists - Social scientists and - Environmental scientists - Economists - Sustainable Finance - Early Career Researchers | <ul style="list-style-type: none"> - Public deliverables - Scientific publications - Conferences - Other events | Transfer of knowledge raise awareness, reuse of the scientific data, boost the project sustainability through the development of new related research projects. |
| Citizens <ul style="list-style-type: none"> - In surrounding communities - Rural communities - Youth groups - Citizen Interest Groups - Society as whole (general public) | <ul style="list-style-type: none"> - Community Engagement activities - Promotional material - Project Website - Project videos - Workshops - Art engagement and exhibition - Factsheets in relevant languages - Social media | Increase citizens participation in restoration activities, increased awareness of the benefits of positive interactions with surrounding environment. Raise awareness on the importance of the WaterLANDS topic for the future, and inform about the benefits of the project towards a resilient society |
| Landowners <ul style="list-style-type: none"> - Both small and largescale - Directly involved in sites and surrounding communities - Landowners beyond the scope of the project | <ul style="list-style-type: none"> - Public deliverables, - Promotional material - Project Website - Project videos - Workshops and events - Case studies - Factsheets in relevant languages - Social media | Financial mechanisms that support restoration can encourage landowners to participant in land restoration activities, thus increasing the replicability of the scalability plan in other areas outside action sites. This will lead to increasing the possibility of restoration, positively impacting the surrounding environment, biodiversity and supporting climate change mitigation actions. |
| Business/Industry <ul style="list-style-type: none"> - | <ul style="list-style-type: none"> - Public deliverables, - Workshops, - Publications in industry relevant magazines, - Project events and exhibition in trade fairs - Project website - Factsheets | Demonstrate the business potential and opportunities for land restoration, creating push towards adoption of WaterLANDS scalability plan. Resulting in buy-in and uptake of public-private partnership and market-based incentives that have long term benefits to businesses in surrounding communities and positive environmental change. |
| Policy and Decisionmakers <ul style="list-style-type: none"> - EC and European Parliament - National, regional and local authorities | <ul style="list-style-type: none"> - Final recommendations, - Advocacy paper - Participation and presentation of the project results in events, | Demonstrate the benefits of WaterLANDS approach and to raise awareness about proposed regulatory evolution in WaterLANDS. |

| | | |
|---|---|---|
| - Bodies and authorities | - Face to face contacts (new or based on current relationships) - WaterLANDS events, particularly policy workshops - Through the Advisory Board | Ultimately positively influencing policy and supporting the achievement of EU Green Deal to become net carbon-neutral by 2050, Biodiversity Strategy, the SDGs, CBD Aichi Targets, Ramsar Strategic Plan. |
| Other EU projects and networks in similar domains | - WaterLANDS events, - Presentation at conferences, - Participation in workshops from other projects - Art engagement and exhibition | Coordinated dissemination activities in order to maximize their impact, exchange on R&D results to improve robustness of project results |
| Civil Society and Not-for Profit Groups | - Project website, - Factsheet, - Press releases, - Social media, - Events, videos - Webinars - Art engagement and exhibition - Case studies | Raise awareness on the importance of the WaterLANDS topic for the future, and inform about the benefits of the project towards a resilient society |

2.2.1.C Management of generated research data

All research activities of the project will generate data (WP1, 2, 3, 4, 5 and 6). A dedicated Task (T8.5) will be established to manage this.

WATERLANDS will participate in the Open Research Data Pilot to improve and maximise access to and re-use of research data and will take into account the need to balance openness and protection of scientific information, commercialisation and Intellectual Property Rights (IPR), privacy concerns, security as well as data management and preservation questions. Protocols for data management will be outlined in a Data Management Plan (DMP) (D8.5.1) to be produced by the consortium within 6-months of the start of the grant. The DMP will ensure that data management and protection is compliant with EU principles and standards, and with relevant national data protection laws and institutional data management policies. The DMP will address the points below and will observe FAIR (Findable, Accessible, Interoperable and Reusable) Data Management Protocols:

- *Dataset reference and name* - Identifier for the data set to be produced.
- *Dataset description* - Description of the data that will be generated or collected, its origin, nature and scale.
- *Standards and metadata* - Reference to existing suitable standards of the discipline.
- *Data sharing* - Description of how data will be shared, including access procedures, embargo periods etc.
- *Archiving and preservation* - Description of the procedures for long-term preservation of the data.

According to the publication and data policies of the consortium, data produced in this project will be made (fully or partially) available both for the scientific community and society as a whole. The right of the data producer (members of the research team) to the use of research data is reserved when providing open access. Right to use here refers to the right of the data producer to execute the original project plan before opening the data for further use. If there are reasons for data not being shared include commercial exploitation, protection of IPR, GDPR, securing of future data production, project agreements, privacy policy or other legislation. To secure the continuation of research and commercial developments, EU regulations on variety use and preservation of IP rights will be followed.

2.2.1.D Strategies for Knowledge Management and IPR

Knowledge management

Knowledge Management and Exploitation of WaterLANDS' results by key stakeholders will be ensured through a range of strategic engagement and exchange activities to translate research results and approaches. All knowledge generated will be assessed for (1) Intellectual Property Rights (IPR) protection through each partner's licensing officer, in compliance with the rules established in the Consortium Agreement and (2) the identification of the highest innovation capacity and relevance through knowledge management and transfer (exploitation) processes. WaterLANDS will employ a proven and robust Knowledge Management System to ensure that all Key Exploitable Results (KERs) are identified, captured, analysed and exploited appropriately including those not yet foreseen such as new methodologies, data, protocols, experimental approaches and strategies.

The Knowledge Management System and Knowledge Transfer (KT) strategy to be applied in WaterLANDS will be based on the methodology developed through two knowledge management and transfer focused EU-funded

projects: FP7 MarineTT project and H2020 COLUMBUS. The methodology is described in the PEDR (D7.1) and integrated into the project in T7.5.

Knowledge will be managed by regularly collecting project KERs through structured templates and interviews with partners responsible for developing the results. Collected and analysed results will be assessed based on criteria related to their innovation capacity, relevance to the sector and adherence to the project and call objectives and expected impact by project partners, supported by the Advisory Board.

All captured knowledge will be assessed respecting privacy and IPR requirements. High impact KERs will be identified, and Knowledge Transfer Plans (KTPs) will be developed for individual or clusters of KERs assessed as contributing to the implementation of large-scale wetlands restoration throughout Europe and the Mediterranean. Foreseen WaterLANDS KT and exploitation activities for the different stakeholders are outlined in detail below and are integrated into the project in T7.5. This customised approach will increase the likelihood that 1) KERs will be transferred and exploited successfully and the result applied; 2) there is an increased potential for impact from the transfer; and 3) it is possible to measure and demonstrate the impact of the transfer.

Intellectual Property Rights (IPR)

The Consortium Agreement (CA) will follow the standard rules as outlined in the DESCA model for Horizon 2020. This defines the main approach regarding the ownership, protection and access to key knowledge like IPR and data. Some of the major aspects covered are briefly indicated below:

- **Confidentiality.** Each partner will treat information from other partners as confidential.
- **Open access to publications.** Any proposed publication is required to be submitted for the prior consent of the other partners. After consortium approval, all publications will be either gold or green open access.
- **Pre-existing know-how.** Each partner is and remains the sole owner of its IPR over its pre-existing know-how. Access Rights to the Pre-existing Know-How needed for the project shall be granted on a royalty-free basis.
- **Ownership and protection of Foreground.** The ownership of foreground will belong to the partner/s generating it. Partners who own knowledge suitable for protection are encouraged to apply for a patent.
- **Use and dissemination.** If dissemination of knowledge does not adversely affect its protection or use and subject to legitimate interests, the partners shall ensure further dissemination of their own knowledge as provided under the Grant Agreement and the CA, which will be signed by all partners.

Open Access to results

All peer-reviewed publications generated in WaterLANDS will be provided in open access format, following the Guidelines on Open Access to publications and data in Horizon 2020 in either green or gold Open Access, as well as other methods acceptable to the EU, which may become available during the project. Partners expecting to publish have reserved budget for Gold OA and/or will make use of institutional and domain-related free online repositories for Green OA to publish Author Accepted Manuscripts (AAM). Whenever self-archiving of publications is allowed, articles will be made available on the WaterLANDS website. The Advisory Committee will be responsible for WaterLANDS publication activities. This will lead the discussion regarding authorships of the publications that will come out of WaterLANDS project that will be detailed in the Consortium Agreement and follow the recommendations of the H2020 DESCA consortium agreement model and put to a vote during the General Assembly.

2.2.2 Communication activities

The communication activities that will be part of the dissemination plan will be tailored to ensure that important messages are directed to the targeted audience and to support public engagement with WATERLANDS. Such activities complement the dissemination as they ‘translate’ the often-complex results into easy-to-understand media resources focusing more on the impacts and added value for the end-users and society.

The main purposes of the communication activities (Table 2.2d) of the project have been defined as follow:

- To show how European collaboration has achieved more than would have otherwise been possible, notably in achieving scientific excellence, contributing to competitiveness and solving societal challenges
- To show how the outcomes are relevant to people’s everyday lives, by creating jobs, introducing large scale restoration practices, or positively contributing to transformative change in society
- To make better use of results, by ensuring they are taken up by decision-makers to influence policy making and by industry and the scientific community to ensure continued upscaling of the identified restoration approaches
- To be more effective, the communication strategy will be conducted around six main elements: Visual Identity; Communication tools; Website; social networks; Press relations and Impact monitoring

- To establish the dialogue with all stakeholders to achieve the WATERLANDS objectives as stakeholder engagement is a two-way process.

Table 2.2d: Communication activities of WaterLANDS

| Communication tools | Academics | Businesses / Landowners | Citizens | Civil Society | Policymakers | Other |
|---|-----------|-------------------------|----------|---------------|--------------|-------|
| Website | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>The project website will constitute the main communication tool as it provides easy access to a broad audience around the world. The website will be designed following the best practice guidelines for EU project websites.</p> <p>Target: 20,000 visits over the 5-year project duration</p> | | | | | | |
| Project Factsheets | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>A project factsheet (both printed and electronic versions) will be produced for distribution in relevant events and meetings for raising awareness about the project and trigger the interest of stakeholders to visit the website and stay informed about the project's progress. The project factsheet will be translated to relevant languages and updated towards the end of the project to highlight key results. All partners will distribute to their relevant networks. Country factsheet will also be developed to be used for engagement with regional policymakers, these will be shared when engaging with actors in policy outreach activities (T7.5).</p> <p>Target: The factsheets will reach more than 5,000 people overall.</p> | | | | | | |
| Press Releases | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>Press releases will be produced regularly making use of a range of services and publications aiming at increasing awareness about the project's objectives, progress and outcomes.</p> <p>Target: 6 press-releases to be published and put up to CORDIS wire leading to publication of at least 14 articles in the press and specialised publications like research.eu.</p> | | | | | | |
| Promotional Articles | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>Promotional articles will also be regularly produced on project progress, highlighting specific sites and their restoration progress and updates. These articles will be shared on the project website, throughout social media, in relevant magazines and stakeholder networks.</p> <p>Target: 40 promotional articles will be written and posted on the project website and shared with other networks and websites such as offyourmap.org.</p> | | | | | | |
| Newsletters | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>Annual e-newsletters will be published starting in M12, showcasing the previous years' highlights, project partner interviews, publications and upcoming events.</p> <p>Target: The newsletters will be viewed by more than 2,000 people</p> | | | | | | |
| Videos | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <p>At least three project videos will be produced as part of the project, providing first an introduction to the project and its objectives, this then an updated with project outcomes towards the end of the project and presented at the final event. An additional video will be developed as part of the art activities, which will showcase the ongoing art activities of the project and this video will also highlight the actions sites. Short videos will also within the actions sites to showcase restoration activities and results, these videos will be used on the project website and social media campaigns.</p> <p>Target: The videos will be viewed by more than 4,000 people</p> | | | | | | |
| Social Media and Campaign | ✓ | ✓ | ✓ | ✓ | | ✓ |
| <p>The project will have a LinkedIn page, Twitter account and ResearchGate accounts, others will be created as appropriate, which will target the general audience as well as more technology related stakeholders. All project partners' social media-outlets will share content and point out the relevance for their specific target groups, and thus direct their audience to WaterLANDS' channels and website. In doing so, the consortium will reap the benefits of the partners' combined audience base, while building a strong brand that is able to live beyond the 5-year project and thus have an extended impact on cultural heritage transformation. By adding relevant hashtags (such as #H2020, #GreenDeal, #WetlandsRestoration, #Biodiversity) WaterLANDS reach will be further amplified.</p> <p>Target: The social media accounts will reach more than 5,000 people</p> | | | | | | |
| Policy Advocacy and Outreach | | | | ✓ | ✓ | |
| <p>A policy advocacy paper will be produced as part of WP3, this paper will identify best practice approaches and policy recommendations for the implementation of large-scale wetlands restoration. This policy paper will be widely distributed</p> | | | | | | |

to local, national, regional, Europe, including Mediterranean policy actors, made available to the project website and distributed through partners' well-established networks.

Two policy workshops will take place to engage relevant actors: 1. At the beginning of the project to identify opportunities, challenges and enablers which will support the development of the policy advocacy paper; 2. Towards the end of the project to present the policy advocacy paper and discuss next steps for wetland restorations.

Target: The policy briefing will be downloaded from the website more than 150 times and the Policy Workshop to engage 40 – 50 key stakeholders.

Events and Workshops ✓ ✓ ✓ ✓ ✓ ✓

The consortium will participate in at least 10 conferences, with different target audiences. It will host XX events within knowledge sites as part of WP2 and WP5. A number of national, European and international events will be targeted for dissemination activities including **side events, webinars** and **online campaigns**, these include: World Wetlands Day, World Water Day, World Soil Day, EU Green Week, UNFCCC COP, Ramsar COP, IUCN World Conservation Congress, Barcelona Convention COP, Global Conference on Ecological Restoration, Mediterranean Water Forum. The project will also participant in at least one exhibition in science popularization events, such as the EU Research and Innovation days, and the Science is Wonderful exhibition.

Finally, WaterLANDS will host a final event, including an exhibition showcasing artwork based on action sites. The final event that will target a wide range of stakeholders including policymakers, industry and the general public.

Target: The WaterLANDS events will target > 4,000 people, while attendance at other event will reach > 3,000 people

Scientific Publications ✓

The consortium will publish at least **10 open access articles over the four-year project**. A selection of science, industry and social science journals have been identified and include, but are not limited to:

Ecological Economics, Conservation Biology, Environmental and Resource Economics, Journal of Environmental Policy and Management, Ecosystem Services, journal of Applied Ecology, Journal of Environmental Management, Area, Land Economics, Journal of Financial Economics, Journal of Financial Stability, Environment and Planning, Policy and Society.

3. IMPLEMENTATION

3.1 Work Plan – Work Packages, Deliverables and Milestones

3.1.1 Work Plan Overview

Table 3.1a: List of work packages, leaders, person-months and timing

| WP | Work Package title | Lead participant | Person months | Start month | End month |
|----|--|------------------|---------------|-------------|-----------|
| 1 | Restoring Services | WU | 182.4 | 2 | 36 |
| 2 | Engaging Communities | PI | 302 | 1 | 60 |
| 3 | Aligning Governance | NUIG | 176.5 | 1 | 60 |
| 4 | Mobilising Finance | WWF-LFL | 190.3 | 1 | 60 |
| 5 | Co-creating Best Practice | WI | 212.2 | 1 | 60 |
| 6 | Restoration Management | UCD | 886 | 1 | 60 |
| 7 | Communication, Dissemination, Knowledge Management and Exploitation of Results | ERINN | 114 | 1 | 60 |
| 8 | Project Management | UCD | 161 | 1 | 60 |

The Concept Map shown in Figure 3.1a, below, illustrates the detailed interactions within and between WPs, showing how knowledge and information flows from one task to another.

There are 4 work packages which provide specialist input to restoration at the 8 Action Sites. WP1 Restoring Services is focused on the biological and hydrological aspects to define a Safe Operating Space for restoration and a Decision Support System. WP2 is directed at community engagement, which includes both the engagement of key stakeholders and the participation of the local and wider community. WP3 addresses governance with a view to describing an optimal governance model and providing advice on measure and policies at the Action Sites. Similarly, WP4 will identify the main sources and types of finance available for restoration.

Each of these work packages is informed by the team members' expertise, best practice as demonstrated by previous projects, and the actual experience at 15 Knowledge Sites in participating countries. Each work package will commence with this work at the start of the project, although the periods of greatest input will typically await particular outputs from preceding work packages. For instance, the most intense community engagement will depend on the development of initial ecological scenarios, while the governance would be informed by the diversity

of stakeholder interests and the finance options by the value of ecosystem services. There will also be reverse flows of information, for example WP1 will be informed by stakeholders’ perceptions of ecosystem services or options for governance and land use measures. Each of the packages contains some work tasks where there is a defined link with another work package, often represented by a specific deliverable.

The work packages will work directly with the Action Sites contained in WP6. However, their outputs will also be coordinated by the Co-Creation work package (WP5). WP5 will work with key stakeholders to determine a comprehensive package of ecological restoration, engagement, governance and finance for each Action Site. It will also collect this output to prepare best practice guidance for future projects, which will also be informed by the actual experience at the Action Sites. The sites themselves will manage the on-the-ground logistics of restoration including public participation, finance negotiations and physical works. This practical demonstration of the benefits of large-scale restoration is the principal objective of WaterLANDS and the main justification for the distribution of expenditure.

WP7 will provide for Communications, Dissemination and Knowledge Management throughout the project, overseeing the Consortium Agreement, publicity and outreach. Finally, WP8 Project Management will provide the vital service of ensuring that the project runs according to plan, most particularly that budgets are distributed, outputs delivered and that knowledge is shared within and outside of the project.

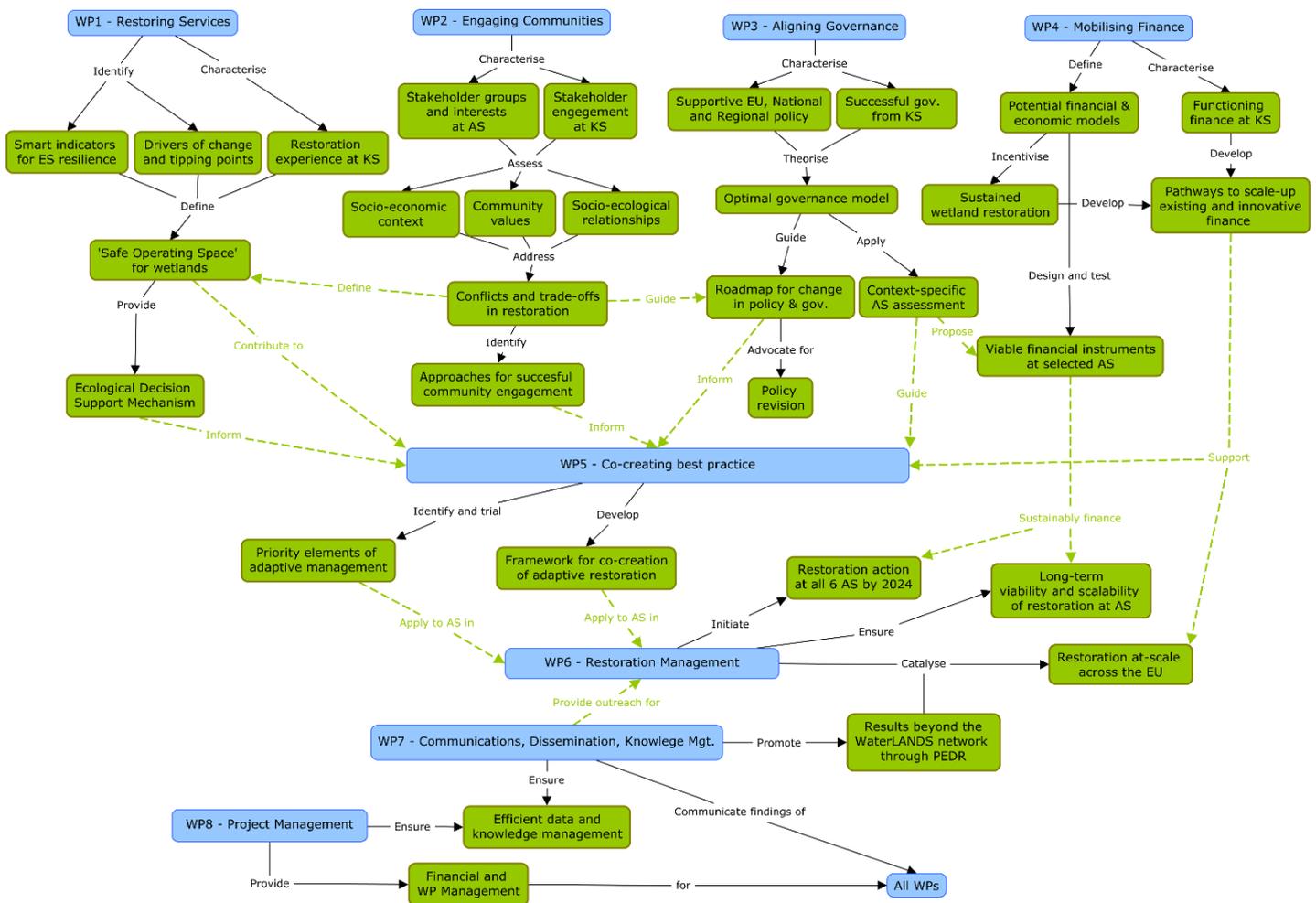


Figure 3.1a: Detailed Concept Map of the workflow within and between each WaterLANDS Work Package. WPs are in blue and expected outcomes are in green, while the labelling of each arrow indicates the nature of the workflow, which should be read as a narrative.

3.1.1 Timing of Work Packages and Component Parts

The timings of these work packages, tasks and associated deliverables across the 60-month project are detailed in the following GANNT chart (Figure 3.1b).

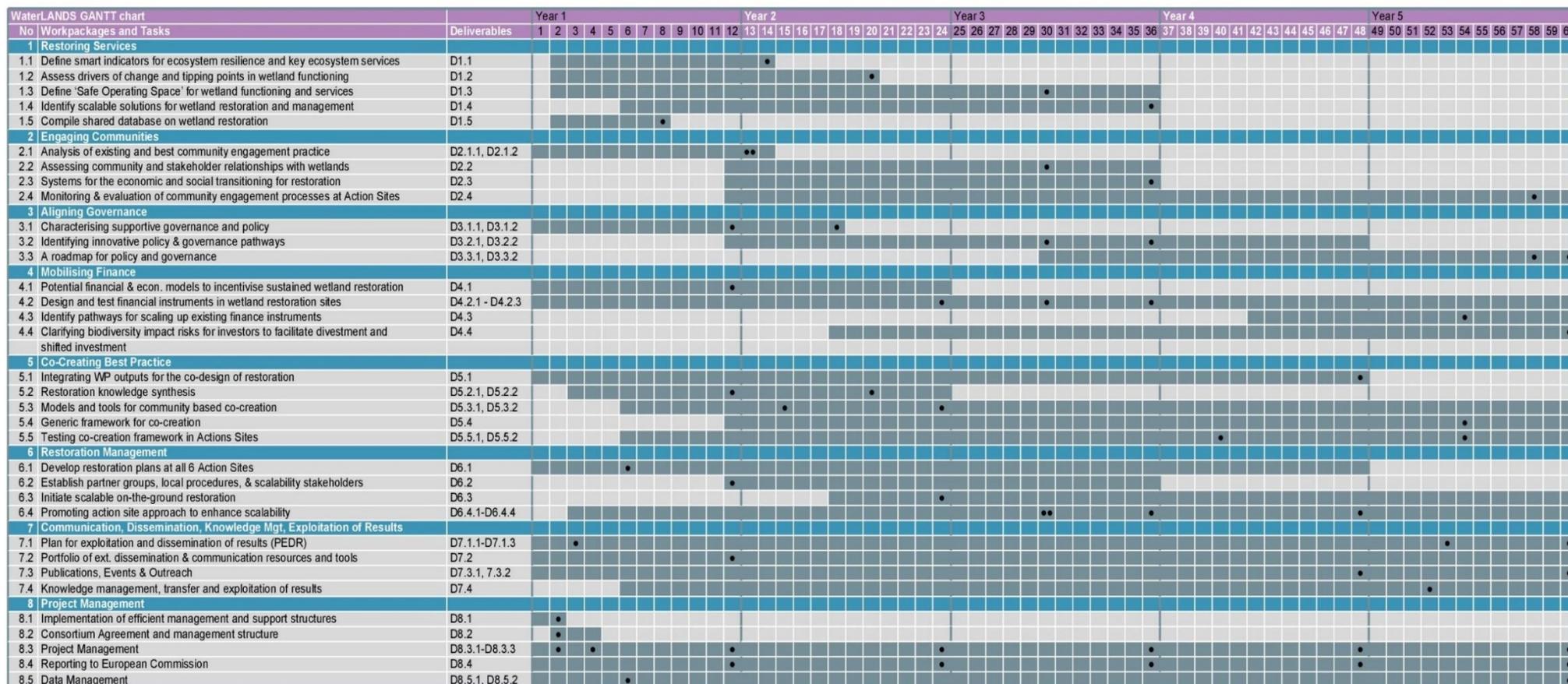


Figure 3.1b: GANNT chart for the WaterLANDS project; Blue = Work Packages, Grey = Deliverable progress, Black dots = Date of delivery

The intended start date for this project cannot yet be confirmed, and is subject to the speed of evaluation decisions, negotiations between the European Commission and project partners, and the drawing up and signing of the formal Grant Agreement. However, if successful, it is expected that this project will commence **no later than November 2021**.

We will likewise develop quantitative measures to assess progress towards target states for key **ecosystem services**. These targets, and trajectories toward the target state, will be defined and finalised in cooperation with WP2, 3 and 4, taking account of the objectives of the EU Green Deal and the EU Biodiversity Strategy. Targets will be linked to existing conditions and to Natura 2000 habitat types and their configuration at a landscape scale, and be oriented towards the provision of, and potential for, desired ecosystem services.

At site level, the first step will be to use easy-to-measure environmental indicators related to ecosystem structure (cover of relevant plant functional groups, such as Sphagnum mosses, shrubs, sedges), biodiversity (flora, birds, insects, mammals), soil (e.g. pH, organic matter content), water status (abundance of open water, mean water level, water level range) and their dynamics. To further connect the ecosystem structure with functions we will use a **functional trait approach** in which measurable indicators are calculated based on plant composition at different spatial scales. Drawing on existing knowledge and literature, a set of traits will be defined as a proxy for key ecosystem services, including carbon sequestration, litter decomposability with climate service, provision of habitat for fauna, and pollination. The traits will be measured at selected Knowledge Sites and linked with the ecosystem services which can be measured by ongoing projects at these sites. We will also use these traits to define resilience, the operating space that allows the ecosystem to maintain its functioning under various pressures, and functional diversity at different trophic levels. The data collected will be added to existing trait data bases that can be used in combination with repeated vegetation composition surveys to evaluate restoration success. At a landscape level, we will use spatial patterns of vegetation, landforms and connectivity between habitats as indicators of wetland functioning and resilience⁸.

We will identify trajectories leading towards the desired target states by analysing change in the indicators in response to the restoration actions which have occurred in selected Knowledge Sites. We will use successfully restored sites to enable us to define process indicators for desired and undesired trajectories. The usability of these process indicators will be evaluated by an expert survey of wetland researchers and wetland practitioners (Task 1.2). The indicators of services and resilience will be applied to the Action Sites.

This new way of developing indicators of ecosystem functioning is much more promising than current approaches in wetland restoration. Instead of focussing on the traditional detection of particular species, we will develop generic indicators of wetland functions that can be matched better with ecosystem services and scaled up at European level and beyond.

Task 1.2 - Assess drivers of change and tipping points in wetland functioning

| | | |
|-----------------|---|----------|
| Lead: UNIVLEEDS | Participants: WU, EBD, WI, CMok, UU, UEF, GTK, NUIG, PI, KS, AS | M2 – M20 |
|-----------------|---|----------|

This task will assess the direct and indirect **drivers of change** in wetland functioning and whether changes or reversals in some drivers will contribute to sustained restoration. Drivers include, for example, climate, water and land management, as well as community interactions (WP2), policy, and governance (WP3). The Task will assess the interactions between these drivers and their role in pushing wetlands across thresholds of change. In many wetland systems there are feedback loops and non-linear interactions between drivers of change and wetland function, which may result in catastrophic shifts between alternative stable states. If a wetland crosses a threshold or tipping point, then the reversal of a driver (e.g. reduced phosphorus input) may not simply result in the wetland functions returning to their original state. Therefore, in addition to changing the driving forces, other actions may be required to restore wetland functions. Hence, understanding the different drivers, their interactions with each other, how they influence wetland functioning, and identifying critical thresholds, is essential for defining the 'Safe Operating Space' for wetlands (Task 1.3).

We will synthesise the scientific understanding of drivers of wetland change across disciplines and subject it to an external on-line review by wetland researchers and wetland practitioners (~ 200 people). Opening the evidence to external evaluation, it will support wider project objectives of co-creation (WP5) and dissemination (WP7) with regard to the understanding of the interactions between on-site drivers of change and off-site stressors) Drivers may be direct (e.g. water level) or indirect (e.g. water management and regional upstream abstraction policy), local (e.g. livestock grazing pressure) or regional (e.g. water abstraction elsewhere in the watershed/aquifer). We will also be able to extract information specifically about our Knowledge and Action Sites from this expert survey but will include a larger sampling of experts from other locations with similar wetlands to allow for wider applicability to the assessment for future upscaling.

⁸ van de Koppel et al. (2015): Long-distance interactions regulate the structure and resilience of coastal ecosystems. *Annual Review of Marine Science* 7

We will use the data and feedback to derive quantifiable functional relationships of the response of wetlands to drivers of change, including the indicators outlined by Task 1.1 for the Knowledge and Action sites. For example, we will quantify the upstream flow stressors or nutrient loading drivers that result in cumulative effects. We will also analyse the evidence for whether reversing/reducing different drivers of change in a recovery of wetland functioning or not.

Task 1.3 - Define 'Safe Operating Space' for wetland functioning and services

| | | |
|----------|---|----------|
| Lead: WU | Participants: CSIC-EBD, WI, CMok, UNIVLEEDS, UU, UEF, GTK, RUN, NUIG, WWF-LFL, PI, KS, AS | M2 – M36 |
|----------|---|----------|

This Task will integrate the results of Tasks 1.1 and 1.2 to estimate the **Safe Operating Space**⁹ of palustrine and estuarine wetlands and apply this concept to the project sites under future scenarios of climate and socioeconomic change. This will also inform the qualification and quantification of ecosystem service values at specific Knowledge and Action Sites in WP2. It will identify ways by which wetlands can be made more resilient to future climate conditions. It will inform the subsequent assessment in WP2 and WP3 of implications for local communities and the directions available for policy makers under different land-use change scenarios.

We will spatially **map current ecosystem functions and services** at the Knowledge and Action Sites, applying the process indicators (Task 1.1), noting their sensitivity to direct and indirect drivers (Task 1.2), and by following a Landscape Ecological Systems Analysis (LESA) approach (Task 1.5). Remote sensing (ESA Sentinel) imagery of relevant conditions (e.g. greenness, surface wetness, topography index) will be included to inform a tool that can be used to upscale mapping to other sites. The maps and remote sensing products will be validated using targeted field sampling in a subset of Knowledge and Action Sites. This will entail a combination of point measurements related to ecosystem functions, services and drivers identified in Tasks 1.1 & 1.2 to capture both local- and larger-scale indicators in the wetland ecosystems and their surrounding landscape. The field sampling will be complemented with data coming from citizen science projects (Task 5.4).

The maps will be used to explore how the current wetland functions and services change along gradients of climate and land-use, and in the restoration trajectories. This analysis of the Safe Operating Space will be primarily based on the Knowledge and Action Sites but may be upscaled to other sites using remote sensing data, depending on the wetland function and services investigated. For example, wetland carbon storage potential may be more accurately derived from satellite images than ground-based surveys. To estimate the recovery rate of key indicators of ecosystem functions after restoration practices, we will analyse a time series for these for a subset of Knowledge Sites using a combination of available field data and remote sensing.

Finally, we will spatially record the potential provision of future ecosystem services for palustrine and estuarine wetlands using downscaled IPCC scenarios for climate and socio-economic land-use changes in cooperation with WP2, WP3 and WP4. This analysis will project how wetland functions and services may change under future climate conditions and identify changes in local drivers which can increase the resilience of wetland systems. This knowledge will be used in Tasks 1.4 & 5.4 to explore how the necessary changes in local drivers relate to restoration trajectories.

Task 1.4 - Identify scalable solutions for wetland restoration and management

| | | |
|----------------|--|----------|
| Lead: CSIC-EBD | Participants: WU, WI, CMok, UU, UEF, GTK, RUN, NUIG, WWF-LFL, PI, UT, UNIVE, UCD, KS, AS | M6 – M36 |
|----------------|--|----------|

This Task will develop a **Decision Support System (DSS)** for adaptive wetland restoration informed by the analysis in the preceding work tasks and which takes into account the baseline data, past trajectories, goals and uncertainties which apply at a specific location. It will consider three critical steps required for successful restoration of wetland ecosystems: i) the identification of desired outcomes and goals (which may span from preserving iconic species, to preserving species interactions, community composition, ecosystem functioning, the provision of ecosystem services, or their resilience to global change); ii) the comparison of potential pathways towards such states (including possible trade-offs); and iii) the identification of uncertainties and knowledge gaps that may compromise implementation and lead to unexpected outcomes. This will guide the iterative design of adaptive strategies and an evaluation of monitoring results, that enable learning-by-doing cycles that lead to desired outcomes.

⁹ Scheffer, M,... Green, A., ... Holmgren, M, ... (2015), Creating a safe operating space for iconic ecosystems. *Science* 20. Green et al.(2017) Creating a safe operating space for wetlands in a changing climate. *Frontiers in Ecology and the Environment* 15

We will combine the knowledge synthesized in Task 1.1, 1.2, 1.3 and 1.5 with practical knowledge derived from previous and current restoration efforts; information on the key-processes at the landscape scale derived from the application of the LESA; as well as information on the socio-ecological context and governance system (obtained in collaboration with WP 2 and 3), and use it to evaluate the level of achievement of each of the three critical steps described above (desired states and goals; pathways and techniques; uncertainties and knowledge gaps) to derive a DSS for the collaborative design and development of Adaptive Restoration strategies (in collaboration with WP5). The approaches derived will be subsequently implemented for all Action Sites.

Desired states, overarching goals, techniques, synergies and trade-offs will be compared using systematic maps and causal-chain analyses; and the results evaluated by focus groups with experts from a selection of the Knowledge Sites. Uncertainties and knowledge gaps will be subsequently identified using a combination of online questionnaires and workshops (e.g. expert consultation using a Delphi process). The array of cases described will be used to draft a DSS for adaptive large-scale wetland restoration which will be further elaborated and validated using the multi-criteria analysis in WP2.3. The DSS will be tested with the teams in the various Action Sites in cooperation with WP5, to either support the development of local implementation strategies or as a benchmark to evaluate the restoration design and implementation. Feedback from the Action Sites will be used to further refine and upscale the DSS.

Task 1.5 - Compile shared database on wetland restoration

Lead: RUN Participants: NUIG, UT, WU, UNIVLEEDS, WI M2 – M8

This task will collect and synthesise relevant published and grey literature into a **shared database** for use within the project. It will be designed at the beginning of the project, with the information gathered being used to inform WP1 to WP5. The database will also support a map of European wetland restoration projects, expanding the existing IUCN georeferenced and searchable peatland project mapping system across more wetland types. For peatland sites, metadata will connect with the existing PeatDataHub system which is an open data resource for the global community. This task will support identification of successful restoration pathways (T1.4) as well as feed information to the Knowledge Hub in Task 5.2.

Deliverables for WP1

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|------|--|------------------|-------|---------------------|----------------|
| D1.1 | SMART Indicators for quantifying wetland resilience and services and relevance to Action Sites | UEF | R | PU | 14 |
| D1.2 | Drivers and thresholds of change in wetland functioning | UNIVLEEDS | R | PU | 20 |
| D1.3 | Safe Operating Space for wetlands to safeguard future provision of ecosystem services | WU | R | PU | 30 |
| D1.4 | Decision Support System for scalable adaptive wetland restoration and management | CSIC-EBD | R | PU | 36 |
| D1.5 | Open-access database on wetland restoration projects and outcomes | RUN | OTHER | CO, PU | 8 |

| WP Number | 2 | | WP Title | | | | Engaging Communities | | | | | | | | | | Total PM |
|------------------------|-----|------|----------|------|-------|---------|----------------------|--------|-----|------|-----------|----------|------|-----|---------|-----------|----------|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SM | UT | ELF | RMK | TOTU | UEF | GTK | PB | |
| Person months | 20 | - | 15 | 6 | - | 6 | 43 | 21 | 6 | 7 | 10 | 2 | 1 | 3 | 3 | 1 | |
| Participant no. | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | |
| Participant short name | TAV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | |
| Person months | 6 | 6 | 30 | 21 | 5 | - | - | 10 | 6 | 6 | 6 | 6 | 6 | 12 | 2 | 36 | |
| Start month | M1 | | | | | | | | | | End Month | | | | | | M60 |

Overall Objective: To facilitate and ensure the effective engagement of communities and key stakeholders in wetland areas, to foster social acceptance of mutually beneficial restoration solutions through co-design. It will draw on best practice and experience at the Knowledge Sites to identify the most appropriate practice for engagement at the Action sites by understanding the needs and expectations of local stakeholders and involving them in the co-design of the solutions.

Specific objectives:

1. Consolidate information on best practice for community engagement from the literature and experience at the Knowledge Sites and from
2. among the partners (Knowledge).
3. Identify and map stakeholder groups and interests at the Action Sites (Action)
4. Understand the socio-economic context, explore community values within deliberative workshops and socio-ecological or other relationships with wetlands at the Action Sites (Action)
5. Overcome possible conflicts and trade-offs through an extension of the workshops to address diverse environmental, social and economic interests (Action)
6. Identify co-designed paths towards restoration (Action)

Description of work:

WP2 will draw on best practice and the experience with community and stakeholder engagement at the Knowledge Sites to inform a process of co-design for wetland restoration at the Action Sites. The WP will assess the socio-economic context and explore community values, socio-ecological and other interactions with wetlands through a sequence of deliberative workshops. Where economic or governance issues are a feature, or where trade-offs need to be examined, the WP will extend the workshops to include scenario analysis or participatory multi-criteria analysis to seek a consensual solution for restoration. The WP will also monitor and evaluate the approach to engagement and the impact and benefits of the restoration solutions on local communities, as well as reconciliation of different land uses. Ultimately, WP2 will contribute to transformational change, increased awareness and social resilience around wetland restoration, by exploring options for successful economic and social transitioning. Outcomes from WP2 will support co-creation activities in WP5 and feed into governance and finance aspects in WP3 and WP4.

Task 2.1 - Analysis of existing and best community engagement practice

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|-----------------|--|-----------------|
| <i>Lead: PI</i> | <i>Participants: WU, GRON, TdV, CSIC-EBD, CWF, WahV, UNIVLEEDS, ELF, UT, UEF, CMok</i> | <i>M1 – M14</i> |
|-----------------|--|-----------------|

Subtask 2.1.1 Analysis of Knowledge Sites and engagement practices (Lead: PI)

The aim of this task is to identify and draw on examples of positive engagement, lessons learned, and best practice as demonstrated by the literature and previous projects, including H2020 and LIFE, and by the experience at the Knowledge sites. The Task will allow us to understand which engagement methods enable or hinder the successful implementation of solutions in different contexts. In this task, we will proceed in three steps:

The Sub-Task will (i) first review the literature and examples of best practice for stakeholder and community engagement in different contexts, especially when applied to environmental restoration. It will review tools, methodologies or examples from previous EU-funded projects, e.g. LIFE. The Sub-Task will then (ii) consult with local project management organisations and stakeholders at each Knowledge Site on the mechanisms used to involve the local community, from the initial restoration proposals, through solution design, to follow-up. The outcomes of this engagement will be analysed and compared to identify common patterns and key elements, both positive and negative, as well as recurrent challenges and the role of exogenous factors such as land use policies or water use. Thirdly, (iii) a **replication workshop** will be organised, gathering a selection of the community leaders at the Knowledge Sites. Initial findings of the preceding comparative analysis will be presented and discussed. Participants will discuss elements that make for successful community engagement based on their diverse experience and knowledge of good practice approaches. In particular, this task will be used to identify how attitudes can evolve to allow for social acceptance of restoration. It will also help Knowledge Sites to further improve their engagement approach.

Subtask 2.1.2 – Action Sites stakeholder analysis and inception engagement – M1 – M14 (Lead: PI)

In parallel to Subtask 2.1.1, an extensive **stakeholder mapping** will be carried out at each Action Site to identify key stakeholders who could have an impact on and/or be affected by the design and roll-out of restoration solutions. Attention will be paid to landowners, business stakeholders, administrative authorities, policymakers,

knowledge holders and site users, but also members of wider community who may not previously have had an input into decision making. To identify stakeholders, we will apply the dedicated Prospex-CQI method to define a set of criteria and categories (C) for stakeholder groups that are either affecting, or being affected by, by the project's solutions (or both), a minimum quota (Q) for each category, and a range of individuals (I) who fit the categories and the quotas set. The Prospex-CQI method is designed to create representative samples of stakeholders and to respect demographic balance, including gender and age groups. This mapping will feed into the co-creation strategy (WP5) and will remain open for completion on a rolling basis throughout the project.

To build trust, stakeholders at each Action Site will be invited to a workshop in which they will have an opportunity to learn more about the proposed restoration, but also to voice any concerns, or to challenge or identify opportunities related to the restoration solution. In these workshops, the co-creation approach to local engagement will commence initially through consultation with stakeholders on those elements which they believe to be most important for a restoration solution, and their preferences in terms of the subsequent engagement, communication and follow-up with the local community.

The outcomes of the engagement carried out in this task will input to Task 5.3 as a basis for the cross-fertilization workshop to roll-out the co-creation strategy and support local engagement activities.

Task 2.2 - Assessing community and stakeholder relationships with wetlands

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|------------------|---|------------------|
| <i>Lead: UCD</i> | <i>Participants: UCD, UNIVLEEDS, TdV, CSIC-EBD, GRON, WahV, UEF</i> | <i>M12 – M36</i> |
|------------------|---|------------------|

This task will examine the relationships that local communities and stakeholders have with wetlands at the Knowledge and Action Sites, and how these interplay with restoration solutions (WP1), governance models (WP3) and financing systems (WP4). It will first review objectively the **socio-economic context** including those activities that represent pressures for wetland ecosystems, along with their consequences, but also activities for which there is a beneficial (or prospective beneficial) association with the wetland. All the activities carried out at the Action Sites are driven by contextual factors (such as historical uses and established land management) that have consequences for the status of the ecosystem. Drawing on the mapping of ecosystem services provided by WP1.3, this task will undertake an objective examination of the social and spatial distribution of the benefits, i.e. within the local population, and downstream, along with the adaptive capacity of socio-ecological systems and their potential for transformation. The task will also contribute directly to the community engagement framework model for shared learning and co-creation and the Action Site community engagement activities to be carried out in Tasks 5.3 to 5.5.

Based on the stakeholder mapping in Task 2.1, this task will combine the preceding objective assessment with a comprehensive understanding of the plurality of people's relationship with wetlands in the Action Sites, including economic and socio-cultural values, based on the IPBES diverse conceptualisation of values typology. The task will use **deliberative workshops** to explore the range of stakeholders' values, from transcendental belief-based values to the instrumental values associated with ecosystem service outputs, as well as relational and intrinsic values. It will also examine the extent to which these are realised at the level of the individual or are shared within communities. A deliberative value formation approach will be applied within the workshops to identify the respective role of these values bearing in mind people's experiences of living from, with and in wetlands. This task may be supplemented by surveys of a wider audience to compare the values of the broader community to alternative future scenarios using either qualitative or quantitative methods such as stated preference or factor analysis. Past experience suggests that values may be firmly tied to established activities and land uses supported by the institutional and socio-cultural context, but also that ambivalence can emerge with regard to restoration or conservation. To ensure that the engagement has relevance to all stakeholders and not just a conservation community it will be necessary to explore participants' awareness of ecosystem services and their prevailing or potential relevance to local stakeholders. The information on socio-economic and socio-ecological context and on values will input to WP1, WP3 and WP4.

Task 2.3 - Systems for the economic and social transitioning for restoration

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|--------------------|--|------------------|
| <i>Lead: UNIVE</i> | <i>Participants: UCD, UW, UNIVLEEDS, WWF-LFL, PB, PI</i> | <i>M12 – M36</i> |
|--------------------|--|------------------|

This task will follow on from the preceding task in examining stakeholder relationships with wetlands, but will also include a focus on the **economic value** (income and employment) of existing activities in the Action Sites and the governance and policy frameworks that support them (WP3). It will likewise draw on the restoration solutions and mapping of ecosystem services included in WP1.3, particularly those of an instrument nature, and will input to the identification of financial measures for restoration solutions in WP4.

Sub-Task 2.3.1. Understanding existing and potential economic returns from wetland activities (Lead UNIVE)

This will integrate the information on socio-economic context and socio-cultural values, both qualitative and quantitative, from Task 2.2 and combine this with estimates of **economic returns** from existing activities, on site or within catchments, that have direct or indirect effects on wetlands, and will include activities such as agriculture, fishing and industries or tourism. The economic and social benefits and costs of alternative restoration scenarios (including opportunities for new sustainable systems such as paludiculture or low intensity grazing, renewable energy or tourism) will be investigated for each Action Site. Their potential returns and future sustainability will be compared with the contribution made by existing activities to the local economy and employment. The benefits of both sets of activities will be compared with respect to external environmental costs deriving from excess use or mismanagement of resources, and social costs related to distributional effects and equity issues (informing also WP1). Some use of benefit transfer methods may be used based on the Knowledge Sites where data is not available for Action Sites. Given the need to consider relatively long timeframes (e.g. when considering the profitability of investments), a **scenario analysis** will be undertaken based on various prospective solutions. Scenarios will be characterised by assumptions and hypotheses about the extent and type of restoration and future assumptions for exogenous drivers such as policy, market and climate.

Sub-Task 2.3.2. Exploring a Just Transition through PMCA (Lead UNIVE)

As some current activities may not be compatible with wetland restoration, this subtask has the objective of identifying ways forward that achieve a ‘just transition’ without significantly disadvantaging any one group of stakeholders. Based on the information on socio-cultural values and criteria emerging from Task 2.2, this subtask will use **participatory multi-criteria analysis (PMCA)** to work towards a consensus position. The benefits from restoration could include the enhancement of ecosystem services that improve water quality, provide flood mitigation, etc. Depending on local contexts, including the policy and governance frameworks being assessed concurrently by WP3, PMCA would complement and contribute to 2.3.1 by providing more comprehensive data for cost-benefit (CBA) or cost-effectiveness analysis (CEA).

Various mechanisms to achieve the proposed changes can be considered by both 2.3.1 and 2.3.2 and may include environmental transfer payments, payments for ecosystem services, carbon financing, and biodiversity offsetting. The design of such mechanisms, and estimates of their value, will be examined further in WP4.

Task 2.4 - Monitoring and Evaluation of community engagement processes at the Action Sites

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|------------------------|--|------------------|
| <i>Lead: UNIVLEEDS</i> | <i>Participants: PI, TdV, GRON, CSIC-EBD, WahV</i> | <i>M14 – M60</i> |
|------------------------|--|------------------|

This task will create and implement a programme for monitoring the community engagement across the WP2 tasks. The objective is to ensure that the process is truly participatory and transdisciplinary and that its outcomes are aligned with the shared goals of project participants and communities. This monitoring and evaluation exercise will build on the DSS provided by Task1.4 and contribute to the general framework for community engagement in Task5.3. It will include KPIs, such as number and representativeness of participants, that allow for an evaluation. As the monitoring proceeds, results will be shared across all the relevant participants, so that the engagement can continue to be shaped and adjusted following an iterative learning-by-doing methodology within and between WPs that conforms with the principles of adaptive co-management. Particular attention will be paid to the socio-economic impact and benefits of the restoration solutions, the level of social acceptance, and the social learning which emerges as part of the co-construction processes. Various methodologies (such as Social Network Analysis or triple-loop learning assessments) will be considered for implementation of the evaluation and the most suitable will be agreed at early stages of the project. This task will be closely related to Tasks 2.2 and 2.3, and will rely on various formats (e.g. interviews and short online questionnaires) for both project participants and community representatives. These will be carefully inserted within other activities of the engagement process (including those in Tasks 1.4, 3.2, 4.2 and 4.3) to avoid fatigue (e.g.: as feedback questionnaires following community events). Lessons learnt from the community engagement process resulting from this evaluation task will be part of the legacy of WaterLANDS to inform further and broader processes of community-oriented ecosystem restoration in the future.

Deliverables for WP2

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|--|------------------|------|---------------------|----------------|
| D2.1.1 | Analysis of existing community engagement practices and initial stakeholder expectations | PI | R | CO | 13 |
| D2.1.2 | Stakeholder mapping | PI | R | CO | 13 |
| D2.2 | Report on deliberative process and stakeholder values | UCD | R | PU | 30 |
| D2.3 | Assessment of socio-economic options | UNIVE | R | PU | 36 |

| | | | | | |
|------|---|-----------|---|----|----|
| D2.4 | Consolidated monitoring and evaluation report including legacy lessons learnt | UNIVLEEDS | R | PU | 58 |
|------|---|-----------|---|----|----|

| WP Number | 3 | | WP Title | | | | | | | | | | | | | | Aligning Governance | |
|------------------------|-----|------|----------|------|-------|---------|-----|--------|-----|------|-----------|----------|------|-----|---------|-----------|---------------------|-------|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Total PM | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SM | UT | ELF | RMK | TOTU | UEF | GTK | PB | | |
| Person months | 11 | 28 | 2 | 6.5 | - | 2.5 | - | 9.5 | 5 | 3 | 5 | 1 | 1 | 18 | 1.5 | 24.5 | | |
| Participant no. | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | Total PM | |
| Participant short name | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | | |
| Person months | 6.5 | 19 | - | 8 | - | - | - | 2 | 2.5 | 2.5 | 2.5 | 6.5 | 2 | 2.5 | 3 | 1 | | 176.5 |
| Start month | M1 | | | | | | | | | | End Month | | | | | | M60 | |

Overall Objective: To identify and develop suitable policy and governance frameworks for the successful large-scale ecological restoration of inland and coastal wetlands, through a participatory approach.

Specific objectives:

1. Conceptualise the conditions of governance for successful ecological restoration of wetlands and associated ecosystem services based on (i) a review of the literature, (ii) lessons from the Knowledge Sites, and (iii) mapping of the key EU, national and regional policies (Knowledge).
2. Identify governance challenges and gaps at the Action Sites including a mapping of local policies (Action)
3. Model a 'theoretical' state-of-the-art governance framework for successful restoration for each Action Site (Action)
4. Co-create a pathway to transformational change in policy and governance, providing a roadmap for the upscaling of restoration at each Action Site (Action),
5. Develop online evidence-based policy development toolkit and a best-practice handbook of governance models for different wetland ecosystems and land use settings at appropriate scales, using proven ecological and just transition principles, including advocacy tools to guide future policy development like policy briefs (Legacy).

Description of work:

This WP plans to identify and develop an enabling policy and governance framework for upscaling restoration of wetlands and coastal ecosystems in Europe. It will review best practice and draw lessons from the Knowledge Sites before examining the governance situation at each Action Site. Based on its assessment, it will provide specific guidance to the Action Sites on a framework for governance and associated measures to support the prerequisites needed for restoration and to maximise stakeholder participation. It will propose transformative roadmaps and advocacy tools for decision-makers and practitioners in ecological restoration and contribute to the achievement of international targets such as the UN SDGs 2030, the EU Green Deal including the Biodiversity Strategy 2030 and EU commitments to the Paris Agreement on Climate Change, emphasising the contribution of restoration. The team will also build on its experience from existing and previous projects (e.g. Interreg Med projects - WETNET, TUNE-UP; LIFE WETLANDS4CLIMATE, INTERREG NWE projects CARE PEAT and CCONNECTS, INTERREG BSR project DESIRE, LIFE OrgBalt).

Task 3.1 - Characterising supportive governance and policy

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|----------|--|----------|
| Lead: PB | Participants: NUIG, WI, MSF, UCD, ELF, CSIC-EBD, CWF, TdV, WWF-LFL | M1 – M18 |
|----------|--|----------|

Knowledge: Task 3.1 will identify the policy and governance conditions that contribute to the successful development and implementation process for ecological restoration of wetlands. A 'theoretical' **ideal governance framework** will be identified from (i) a review of the literature, (ii) lessons learned from the Knowledge Sites, by stakeholder interviews and review of project reports and (iii) a mapping of the key relevant EU, national and regional policies. The analysis will compare and contrast successful governance conditions and measures taken across the network of Knowledge Sites and which can provide for the 'Safe Operating Space' for

wetland sustainability identified by WP1. The Task will analyse the respective roles of government agencies, including those with responsibility for conservation, agriculture, planning or disaster management, and the various objectives, both conflicting or complementary, with regard to water quality and availability, economic growth, agricultural productivity, health and tourism. The role of the normative context of politics, legislation and local administration will be examined in relation to the services realised by different stakeholders and the options that exist for shared or mutually beneficial goals. Further, significant use will be made of existing investigations on the governance of wetlands based on the experience of projects such as WETNET, TUNE-UP; LIFE WETLANDS4CLIMATE, Interreg NWE projects CARE PEAT and CCONNECTS, Interreg Baltic Sea Region project DESIRE, LIFE OrgBalt.

Task 3.2 - Identifying innovative policy and governance pathways

Lead: NUIG

Participants: UEF, PB, MSF, WI, TdV, ELF, CSIC-EBD

M12 – M48

Action:

Sub-task 3.2.1: Analysis of governance challenges and gaps at the Action Sites

Analyse specific governance challenges and gaps at the Action Sites, including a mapping of local and regional policies and their alignment with EU policies. The analysis will be informed by the stakeholder mapping exercises conducted in WP2.1 and be linked into the community engagement of WP2.2 and 2.3. The ideal governance framework identified in 3.1 will be adapted for each Action Site, tailored to the local context of wetland drivers, the types of stakeholders, preferences of the local community, and the existing local and national policies and administrative structures. A roadmap will be created for each Action Site through integration with the stakeholder engagement of WP2, to provide strategies that combine wetland restoration with the values and community ideals identified by Task 2.2 and to identify measures by which the varying political, economic and social interests of stakeholders can be met by a mutually supporting strategy. With WP6, the Task will work closely with local decision-makers to find a governance framework by which policy or administrative arrangements can support socio-ecologically sustainable restoration.

Sub-task 3.2.2: Strategy for transformational change

Together with WP2 (Task 2.3), this Sub-task will strategize a means to achieve transformational change by identifying innovative economic solutions to address governance challenges, including the use of market-based incentives such as payments for ecosystem services (PES). This will include cognisance of local, regional and cross-border inter-dependencies and provide a tangible means whereby local stakeholders can be rewarded for providing ecosystem services which give local benefits (e.g. water quality, coastal defence, amenity), which provide downstream benefits such as flood mitigation, and which meet national objectives in relation to biodiversity or carbon sequestration. The Sub-task will work closely with WP2.3 to determine which measures are most appropriate or acceptable to stakeholders and input to WP4 (Task 4.2.3) which will identify the incentives required and economic costs. Further, this task will investigate the prospects for innovative stakeholder engagement linked to PES, including the use of public-private partnerships (PPP) or European Innovation Partnerships (EIPs).

Sub-task 3.2.3: Communication strategies

The sensitivities of advising the Action Site Teams on modifications to the local political and administrative apparatus will demand a detailed understanding of the local context, and that close reliable working relationships be established. The Task will support this with evidence-based communication strategies for co-creation with decision makers and other key stakeholders. This will include innovative engagement methods like online geo-services with different layers that permit different stakeholders to appreciate their reliance on ecosystem services or their interdependencies in relation to the use of natural resources. This will be undertaken in conjunction with the co-creation activities proposed within WP5, at both local level and more broadly across the WaterLANDS network and will build on existing online platforms such as www.MoorWissen.de.

Task 3.3 - A roadmap for policy and governance

Lead: UEF

Participants: PB, NUIG, MSF, WI, TdV, ELF, CSIC-EBD

M30 – M60

Legacy:

Sub-task 3.3.1: Multi-stakeholder platform

Following on from connections made within WP2 (Task 2.3), this sub-task will establish a multi-stakeholder policy platform for wetlands linked to regional and national governance, in collaboration with WP7, that can maintain a continuing communication on policy and governance supports for wetlands.

Sub-task 3.3.2: Advocacy

Targeted advocacy papers will be produced to promote awareness at a stakeholder level of government strategies for wetland restoration, and which enable stakeholders to capitalize on WaterLANDS project knowledge (tools, key findings and policy recommendations). The advocacy papers will emerge together with the co-creation approach being developed in WP5 and input to the overall project advocacy proposed in Task 7.4.2, which will outlive WaterLANDS, leading to the production of a video for governance stakeholders. The advocacy papers will also be submitted to national and sub-national ministries and agencies (environment, nature conservation, agriculture, forestry, fisheries), the European Commission (DG Envi, Climate, Agri), the EU Nature Restoration Plan 'Facility' of the EU Biodiversity Strategy, Members of European Parliament, civil society networks on EU level (WI-EA, EEB etc.), Ramsar Convention Secretariat, and Contracting Parties of the Barcelona Convention (UNEP/MAP).

Deliverables for WP3

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|--|------------------|------|---------------------|----------------|
| D3.1.1 | Characterise governance landscape based on Knowledge Sites' experience and mapping of key policies | PB | R | PU | 12 |
| D3.1.2 | Devise ideal 'theoretical' governance framework for restoration | PB | R | PU | 18 |
| D3.2.1 | Identify governance challenges and gaps at each Action Site (Roadmap) | NUIG | R | CO | 30 |
| D3.2.2 | Identify evidence-based recommendations for governance at each Action Site | NUIG | R | CO | 36 |
| D3.3.1 | Best practice handbook for up-scaling of transformational change for restoration | NUIG/UEF | R | PU | 58 |
| D3.3.2 | Advocacy paper for restoration, including video for governance stakeholders | PB/MSF | R | PU | 60 |

| WP Number | 4 | | | | | | | | | | | | | | | | WP Title | | | | | | | | | | | | | | | | Mobilising Finance | | | | | | | | | | | | | | | |
|------------------------|-----|------|------|-----|-------|---------|----|--------|-----|----|-----|-----------|------|-----|-----|----|----------|-----|-------|------|----|----|-----|------|-----|------|----|----------|----|----|---------|-----------|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | Total PM | | | | | | | | | | | | | | | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SMI | UT | ELF | RMK | ToTu | UEF | GTK | PB | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | | | | | | | | | | | | | | | | |
| Person months | 13 | - | 5 | 2 | - | 48.5 | - | 11 | 4.3 | 3 | 2 | - | - | 1 | 1 | - | 2 | 2 | 39 | 7.5 | 10 | - | - | 5 | 2 | 2 | 2 | 2 | 3 | 3 | 18 | 190.3 | | | | | | | | | | | | | | | | |
| Start month | M1 | | | | | | | | | | | End Month | | | | | M60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Overall Objective: To develop and test mechanisms for sustainable finance for large scale restoration of wetlands and their services.

Specific objectives:

1. Define potential financial and economic models to incentivise sustained wetland restoration (Knowledge).
2. Design and test economic and financial instruments in wetland restoration sites (Action)
3. Identify pathways for scaling up existing and innovative finance instruments (Legacy).

Description of work:

Public sector funding of conservation dominates current financing for wetland restoration. Expanding restoration financing by attracting private finance or by introducing market-based incentives linked to ecosystem service outputs can increase the potential to achieve resilience over the long term and generate a greater scale of restoration. Substantial expansion is possible by directing the €1T new green bond industry to restoration through the addition of exemplary business models, standardised investment blueprints, and sectoral uptake mechanisms linked to policy incentives.

WP4 will examine these opportunities as part of global effort to establish a systematic industry of wetland restoration finance including, for example, joint initiatives between State Agencies, the European Investment Bank and private investors. This includes a significant potential role for the insurance industry in recognition of the insurance value of wetland ecosystems in mitigating the impacts of climate change. The WP will identify packages of finance appropriate for each Action Site and, where possible, support steps by the respective institutions to access this finance.

Finally, WP4 will create a lasting business case for public and private investors to foster financial innovation for restoration through an understanding of how biodiversity risk can cascade to individual economic activities and investors, and how a definition of mitigation schemes can allow for innovative solutions in which private finance becomes an enabler of biodiversity and ecosystem preservation.

Task 4.1 - Define potential financial and economic models to incentivise sustained wetland restoration

Lead: UNIVE

Participants: WU, WWF-LFL

M1 – M24

This task will examine European and international experience to determine business and financing options most relevant to the upscaling of wetland restoration in Europe and to achieve a transitioning of economic activity to more sustainable development. Options will cover the full range of wetland types found in the WaterLANDS project. The Task will define the rationale and evidence for financial supports that can deliver ‘impact’ returns to State agencies and investors, blending together public-private sector partnerships that can incentivise commercial investment in solutions that regenerate wetlands and their services and promote green economic growth. A set of reports and tools will be generated, refined through expert seminars, and disseminated at key European and global conferences for the finance, business and sustainability industries.

Sub-task 4.1.1 Business models (Lead: UNIVE)

Review models for business activities that can provide benefit to wetlands and ecosystem services. These include alternative land use (e.g. paludiculture), provision of clean and reliable supplies of water, carbon-markets (e.g. Peatland Codes) and non-use payments for Natura 2000 results. A report will be produced which will cover a typology of activities, including the financial models available, the financial instruments which are in development, and the governance arrangements that are in either place or proposed to support these. It will also provide an understanding of existing barriers to investment and the pathways to address them. Examples of businesses applying these models will be featured. This background work will link to and support stakeholder consideration of income options and supports in WP2 (Sub-task2.3) and the range of business and financing propositions relevant for the Action Sites.

Sub-task 4.1.2 Finance mechanisms (Lead: UNIVE)

Capture lessons from past and ongoing research and existing reviews of commercial and blended financial mechanisms which are relevant to ecosystem restoration (World Bank, WWF, Clarmondial, IEEP, etc. Consider the potential for linkages to existing EU-funded investigations of finance, including a review of existing EU grant mechanisms and projects (e.g. LIFE, LIFE-IP, EIPS, SNAPS, Interreg, EAFRD (CAP, etc.), which will be covered in more depth in WP3.

Sub-task 4.1.3 Policy and economic incentives (Lead: UNIVE)

This Sub-Task will examine the role of Payments for Ecosystem Services (PES) i.e. for carbon-capture, biodiversity, water, or flood mitigation, and incentives for alternative land management, including paludiculture, wind energy etc. The Sub-Task will also examine the complementary with international finance flows and the attractiveness of measures to, respectively, private or public funding. Task 2.3 and WP3 (Task 3.2.2).

Task 4.2 - Design and test financial instruments in wetland restoration sites

Lead: WWF-LFL

Participants: WU, UNIVE, AS

M1 – M60

This task will build investment cases for commercial and blended finance that can extend wetland restoration in at least two Action Sites, applying the lessons and methodologies from Task 4.1. The strongest cases will be consolidated; business models will be defined, and commercial financing instruments prepared. Possible options apparent at this stage include: carbon peatland instruments (e.g. Ireland, Estonia), water incentives (Ireland), flood mitigation (Bulgaria), sustainable rice production and hydrological tools for carbon sequestration (Camargue, France); and flood control (Estonia, Netherlands). Activities will include helping stakeholders to understand optimum business models for wetland restoration, assisting the development of clear landscape visions and business/investment propositions, preparing strong investment cases, engaging anchor partners and pitching to key investors and providers of services (e.g. water).

Sub-task 4.2.1: Develop finance options and economic instruments for Action Sites

Build on the knowledge from Sub-task 4.1.4 by inputting to the assessments in WP2 (Tasks 2.2 & 2.3) and WP3 (Task 3.2.2) on the acceptability of economic and market-based incentives to affect drivers of wetland status or which directly encourage habitat or ecosystem function at the Action Sites. Estimate the incentive levels needed and input this advice to the MCA /scenario analysis in Task 2.3. Incorporate governance considerations from Task 3.3 and provide a recommended blueprint design specific to the Action Sites. Estimate likely take-up, effectiveness and economic costs.

Sub-task 4.2.2: Business and investment propositions for Action Sites

Develop outline business and investment propositions based on bankable projects with Action Site partners, to include background analysis, due diligence, business operations review and examination of investment potential.

Sub-task 4.2.3: Financial instruments for Action Sites

Specific instruments will be designed with the Action Sites in collaboration with local government bodies or agencies, finance industry partners (e.g. Finance Earth), and EU financial institutions (e.g. EIB). Support will be provided for financial structuring, legal analysis and institutional design. Production of initial material for discussion with key investment and implementation partners prior to reaching out to investors to provide feedback, confirm engagement and help with the securing of design and development funds. Support for pitch materials, negotiations and contract preparation. Launch of financial instruments at Action Sites based on successful achievements in the above.

Task 4.3 - Identify pathways for scaling up existing finance instruments

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|------------------|---|------------------|
| Lead: UCD | Participants: WWF-LFL, UNIVE, WU, KS, AS | M42 – M60 |
|------------------|---|------------------|

The last two years of the project will focus on the conditions and opportunities to scale solutions that are proving successful. Lessons will be captured from the activities in the models prepared for scaling at the Action Sites. Scaling pathways may include the development of similar actions in other landscapes, the integration of actions in sectoral strategies and with financial bodies locally and Europe wide, and/or building policy and financial incentives.

Sub-task 4.3.1. Convening workshops to explore and capture lessons (Lead: UCD)

Through a series of workshops with Knowledge Sites, a report will be prepared on the development of financial instruments for wetland restoration in Action Sites based on prior activities of this work package. This will include the lessons of the IUCN Peatland Code, various peatland strategies across Europe and existing State and public-private investments in wetlands. A presentation of these findings will be made at key conferences and international fora.

Sub-task 4.3.2 Market research on scaling options (Lead: UCD & UNIVE)

This task will involve market research to understand motivations, expectations and incentives of private investors towards financial instruments, to better assess the potential of scalability for biodiversity preservation, utilising the results of 4.3.1 as a baseline for scalability. It will scope scaling pathway recommendations with relevant stakeholder groups to ensure support and potential for take up. Focus groups will test assumptions and develop the detail of implementation, while interview and online surveys with the financial industry will identify interested investors and investment opportunities for wider action both at/around Action Sites and at wetlands across Europe beyond the life of WaterLANDS.

Task 4.4 - Clarifying biodiversity impact risks for investors to facilitate divestment and shifted investment

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|--------------------|----------------------------------|------------------|
| Lead: UNIVE | Participants: WWF-LFL, WU | M18 – M60 |
|--------------------|----------------------------------|------------------|

This Task will provide a Legacy output by creating a lasting business case for public and private investors to foster financial innovation for biodiversity and ecosystem restoration. Firstly, it will identify the drivers of investors' exposure to biodiversity risk and the risk transmission channels in the economy and finance. Then, by reviewing the experience of financial innovation schemes for sustainability (e.g. green bonds, Environmental Social Governance (ESG) products), it will identify opportunities and challenges for financial innovation that provides for biodiversity and ecosystem restoration while providing investment returns. In particular, it will analyse how biodiversity considerations could be included in private and public valuation of investments in order to incentivise change in investment decisions and public supports which can align finance to sustainability objectives and benefit local communities.

Sub-task 4.4.1 Understanding the financial implications of biodiversity loss

In this task, we will qualitatively assess the risk transmission channels from biodiversity and ecosystems services to sectors of the economy and finance, identifying the potential drivers which reinforce negative feedbacks and risk cascades. Although it accepts that biodiversity loss introduces additional risk to the economy, this Task has the objective of demonstrating and quantifying how this risk is channelled with a view to supporting the case for large-scale restoration of ecosystems. The Task will commence by reviewing and building on existing classifications of investments at risk from biodiversity loss, such as the EU Taxonomy of Sustainable Investments and the Climate Policy Relevant Sectors (CPRS)¹⁰, which is used by several international financial institutions to assess investors' exposure to climate risk (e.g EIOPA, ECB, OeNB). We will introduce a standardized, transparent classification of assets based on their exposure to biodiversity risk.

Based on this understanding, we will develop robust econometric models to test under what conditions biodiversity-aware financial portfolios (i.e. those with a low degree of exposure to biodiversity risk) could outperform traditional portfolios in the same risk profile. A latent class analysis will be undertaken to group assets by their biodiversity dependence, or 'shades of biodiversity awareness'. This will identify homogeneous groups among Euro Area investors who share a similar awareness and financial performance, both being treated as latent (unobservable) variables. We will then extend the 5-factor model¹¹ by including the 'biodiversity-aware' factor to assess the performance of portfolios in the Euro-Area market. The new factor captures abnormal risk-adjusted returns of assets due to their shades of biodiversity awareness. We will draw on this output to perform a credit valuation of biodiversity-adjusted ESG products, and to analyse under what conditions biodiversity-aware investments contribute to a lower investment risk. We will analyse a set of financial and economic ratios in a corporate bankruptcy model and we analyse how the biodiversity-aware factor affects standard financial risk metrics such as the Probability of Default (PD) and Loss Given Default (LGD).

4.4.2 Recommendations for developing business cases for biodiversity-aware finance.

By building on the results of 4.4.1, we will evaluate the implications for financial policy, with a focus on banks and insurance companies, This task will include: i) revision of banks' provisioning, i.e. determining if biodiversity-aware investments provide better fair-value than standard valuation and thus justify lower provisioning (and thus lower costs for banks); ii) inputs on inclusion of biodiversity awareness in the calculation of capital requirements of banks (Basel IV) and insurance companies (SOLVENCY II). It will:

- Identify opportunities and challenges for innovative finance for biodiversity and ecosystem restoration. We will apply these considerations to extend ESG products and EU green bond standards to include biodiversity and restoration considerations.

- Identify new models for upscaling that are emerging in the financing and business industry such as parametric insurance, landscape scale carbon instruments, NDC contributions, impact credits, convening actors in these sectors to explore relevance to biodiversity and wetland restoration.

A white paper of guidelines will be developed benefitting from the inputs of leading climate finance stakeholders who will be invited to a knowledge co-creation workshop following an initial drafting of D4.5.

Deliverables for WP4

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|---|------------------|------|---------------------|----------------|
| D4.1 | Review of business and finance models and market demand | UNIVE | R | PU | 12 |
| D4.2.1 | Assessment and recommendations for economic incentives at Action Sites | UNIVE | R | PU | 24 |
| D4.2.2 | Design of financial instruments for Action Sites | WWF-LFL | R | CO | 30 |
| D4.2.3 | Negotiation of financial instrument for two or more Action Sites | WWF-LFL | DEM | CO | 36 |
| D4.3 | Lessons learnt from Action Sites on financial mechanisms | UCD | R | PU | 54 |
| D4.4 | Strategic report on benefits and returns from the development of biodiversity and restoration finance | UNIVE | R | PU | 60 |

¹⁰ Battiston S., Mandel A., Monasterolo, I., Schütze, F. and Visentin G. (2017). A climate stress-test of the financial system, *Nature Climate Change* 7

¹¹ Fama, E.F. and French, K.R. (2015). A five-factor asset price model. *Journal of Financial Economics*. 116

| WP Number | 5 | | | | | Co-creating Best Practice | | | | | | | | | | | Total PM |
|------------------------|--------------|------|-------|------|-------|---------------------------|-----|--------|-----|------|-----|----------|------|-----|---------|-----------|----------|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SMI | UT | ELF | RMK | ToTu | UEF | GTK | PB | |
| Person months | 3 | 6 | 10 | 1 | 6 | 6 | 23 | 18 | 7.2 | 10 | 2 | 3 | - | 2 | 1 | 2 | |
| Participant no. | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | |
| Participant short name | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | |
| Person months | 1 | 2 | 1 | 16 | 15 | 46 | - | 10 | 1 | 3 | 1 | 1 | 1 | 7 | 2 | 5 | |
| Total PM | 212.2 | | | | | | | | | | | | | | | | |

| | | | |
|-------------|----|-----------|-----|
| Start month | M1 | End Month | M60 |
|-------------|----|-----------|-----|

Overall Objective: To bring together the outputs of preceding WPs into a framework for co-creation that is scalable, socially and economically viable and able to sustain partnerships between local communities and environmental restoration initiatives. Upscaling will require a comprehensive package that brings together the engagement of communities and local stakeholders, and an alignment of governance policy frameworks, funding mechanisms and business opportunities. The final framework will be adaptable to the specific social, economic and ecological situations at each Action Site and for future projects.

Specific objectives:

1. Identify, address and trial the most important elements of adaptive restoration, co-creation and co-management through the: (i) engagement of local communities and stakeholders, (ii) access to the experience provided by the Knowledge Sites, (iii) the exchange of knowledge from other European and international experience, and (iv) establishment of mechanisms for iterative refinement and co-learning.
2. Ensure that the outputs from the preceding WPs (WP1-WP4) are fully coordinated and integrated to form a cohesive package of proposals for upscaling restoration at the Action Sites.
3. Develop a framework for co-creation of adaptive restoration that can be applied for the upscaling of wetlands and other ecosystems that outlives the WaterLANDS project itself.

Description of work:

WP5 will develop a framework to synthesise the information collected by the preceding WPs on best practice and past experience as informed by the Knowledge Sites (Task 5.1). Working with WP1, the WP will build a knowledge base to identify barriers and effective scalable solutions for wetland restoration (Task 5.2). It will ensure that this understanding is informed by local knowledge, preferences and values through a process of co-creation, that builds trust between partners and empowers local communities (Task 5.3). WP5 will pull together guidance on appropriate governance identified by WP3, and solutions for financial mechanisms described by WP4. A key role of the WP is therefore to ensure that there is integration between the WPs so that all outputs are directed to a scalable framework for co-creation of restoration (Task 5.4). This will be tested in the Action Sites (Task 5.5) and communicated through field-based workshops and a virtual training course (via WP7).

Task 5.1 - Integrating work package outputs for the co-design of restoration

| | | |
|----------|---|----------|
| Lead: WI | Participants: WI, WU, PI, NUIG, MSF, WWF-LFL, UCD | M1 – M48 |
|----------|---|----------|

This Task will collate and **integrate the results of other WPs**, facilitate the flow of knowledge from the Knowledge Sites, and assimilate international experience in restoration. The objective is not to duplicate the preceding WPs, but to ensure that the output from these is fully integrated into an evolving package of co-design that can inform restoration in the Action Sites.

The Task will ensure (with WP8) that the methodologies and **enabling factors** for ecosystem restoration (WP1), the engagement process (WP2), the proposals for governance and policy (WP3), and available funding streams (WP4), are directed towards the principal objective of upscaling restoration in the Action Sites in the first instance, and then for future guidance. The Task will commence with conceptual modelling (M6) to identify the interdependencies, trade-offs and positive feedbacks between physical ecosystem health (improvements in ecosystem functioning) and the social and economic wellbeing of local communities, following positive inputs on governance and finance. Regular coordination meetings will be held (virtual) and three interactive workshops

will be organised with all WPs to build cohesion between project elements and to organise the flow of information from Knowledge Sites to WPs (1st for coordination M4, 2nd first results M16, 3rd end results M46).

Task 5.2 - Restoration knowledge synthesis

| | | |
|-----------------|--|-----------------|
| Lead: WI | Participants: PI, WU, CMok, PB, UCD, MSF, TdV, CSIC-EBD, KS, AS | M3 – M24 |
|-----------------|--|-----------------|

This Task will synthesise **best practice in innovative solutions to wetland restoration** based on both the European and international experience. All partners and all Knowledge Sites will be involved. The Task will build on existing restoration-related activities and reports, e.g. well-established networks such as Oppla, the EKLIPSE report of barriers to restoration, SER-Europe, Eurosite, technical support reports for EC on restoration, etc.

Sub-task 5.2.1. Review of best practice (Lead: WI)

The sub-task will review the literature on **best practice for restoration**, including both peer-reviewed and grey literature from former projects. Working with each of the WPs, we will evaluate existing guidelines and handbooks and publish a comprehensive review. The evidence will be made available in different formats to target the diversity of stakeholders and increase the uptake of best practices throughout the restoration community (Lead WI).

Sub-task 5.2.2. International experience (Lead: WI)

Sub-task 5.2.2 will examine the **international experience** and has particular relevance to WP2 (engagement) and WP4 (finance). It will also include the transfer of knowledge from the global South, as practice in community engagement can often be quite advanced in developing countries with lessons for the European context. The sub-task will also include a review of the role of agribusiness, of ‘disaster-risk reduction’ and Nature-Based Solutions, linking with the opportunities for financing being examined in WP4. This will be presented as 8 adaptable business models, an analytical report (M8) and an interactive workshop (M6) linking WaterLANDS’ contribution to large-scale restoration with initiatives in countries where expansive areas of land can be available.

Sub-task 5.2.3. The European experience (Lead: WI)

Using the information from the Knowledge Sites, other pilot projects and network platforms, this sub-task will identify the key factors from the **European experience** that make for the sustainable upscaling of restoration. The sub-task will quantify the size, effects, costs and benefits of wetland restoration currently taking place across Europe, taking care to include a wide cross-section of experience, including the particular role of peatlands with their distinct carbon storage function. The objective here is to integrate information about the effectiveness of restoration, governance, community support and social processes, and funding, by comparing successful and less successful cases. Evidence will be collated from experts and actors via targeted questionnaires and interviews. These in turn will inform workshops for all partners with the focus on practical restoration solutions (e.g. restoring semi-natural systems and production functions vs. the restoration of wild landscapes), managing conflicting interests, and dealing with trade-offs and sub-optimal solutions. For logistical purposes, these sessions will be combined with the workshop proposed for 5.3.1.

Task 5.3 - Models and tools for community-based co-creation

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|-----------------|---|-----------------|
| Lead: PI | Participants: WI, WU, TdV, WWF-LFL, CSIC-EBD, AS | M6 – M60 |
|-----------------|---|-----------------|

This Task will identify models for **community-based co-creation**. Successful landscape-scale restoration projects require that trust is built between partners and that a sense of ‘ownership’ is created. The Task will build on, and complement, WP2 with an understanding of what is important for different stakeholders. Task 5.3 will focus on three, inter-related elements: (1) building trust; (2) learning together; (3) empowering local actors/ communities. There is a collective need in the project to achieve solutions based on a common vision of joint discovery, learning and working, and agreed results that extends beyond the immediate engagement process at any one Action Site. The sub-task will explore the use of ‘citizen science’, the powerful role of art in ‘re-seeing’ landscapes, and the promotion of personal socio-ecological experience. This task will build on Tasks 2.1 and 2.2 and provide input for Task 5.5.

Sub-task 5.3.1. Shared learning at community level (M14-M60) (Lead: PI)

The aim of this task is to create a bridge between the Knowledge Sites and Action Sites, thus enabling the transfer of experience. A two-day interactive cross-fertilization workshop will be organised with representatives of all sites. In this workshop, the outcomes of initial engagement activities at the Action Sites in Task 2.1 will be debated in interactive discussions moderated by the PI. The objective will be to reach a consensus on the important elements for successful community engagement given the local context and expectations of stakeholders. The

workshop will provide the initial input to the general **framework for co-creation at the Action Sites** (5.4), to be developed over time as Tasks 2.2 and 2.3 progress.

Sub-task 5.3.2. Citizen science (Lead WU)

Joint researcher-community pilots of **citizen science** initiatives in 3 Action sites will be developed at an early stage and continue for one year (M8-M24). They will draw on local knowledge, the daily experience of local resource users and the enthusiasm of local interest groups or individuals by engaging them in the restoration activities through the collection of information using robust, but simple techniques (e.g. hydrological measurements, nitrogen pollution measurements, species counts, etc.). The Task will provide baseline data and monitoring input for WP1 (and WP6) linked with the parameters and indicators that the WP has identified as being relevant to measure wetland ecosystem health and services. The sub-task will also reinforce ties wetlands and the surrounding communities.

Sub-task 5.3.3. Twinning Knowledge and Action Sites (Lead: P1)

This sub-task will establish a **twinning system** of Knowledge and Action sites. This activity will link Action Site representatives to the knowledge flows. It will be initiated at the workshop proposed for 5.3.1 and further developed at a dedicated twinning meeting (M12) and through bilateral contacts.

Task 5.4 - Generic framework for co-creation

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|-----------------|---|------------------|
| <i>Lead: WI</i> | <i>Participants: PI, UCD, WU, UT, NPWS, UNIVE, UNIVLEEDS, CSIC-EBD, PB, NUIG, WWF-LFL, TdV, + all for review and feedback</i> | <i>M12 – M60</i> |
|-----------------|---|------------------|

This Task will develop a **generic framework for co-creation** to inform future EU or other restoration projects. The Task will identify what knowledge is needed, what site processes need to be included (both in social and in physical environment), and how different models are likely to work in different European contexts and cultures (with examples). The Task will draw on the experience obtained from the 15 Knowledge Sites and from the wider experience of restoration work in Europe and globally (input from 5.2). It will use the Decision Support System (developed in Task 1.4) and draw on information from the preceding WPs to provide evidence for sustainable methods of large-scale wetland restoration, supported with information on viable funding solutions (WP4).

Sub-task 5.4.1. Develop guidance document (Lead: WI)

In this sub-task, outputs from other WPs will be fine-tuned and developed, firstly via input from three workshops (combined with workshops of 5.1.1), and secondly from the results of the community engagement process (specifically Task 2.4) to produce a guidance document for future projects.

Sub-task 5.4.2. Maximise the legacy impact (Lead: WI)

Although concrete restoration actions will be delivered within the scope of WaterLANDS, the intention is that it should provide a lasting impact by embedding its concepts and methods in future projects and policies, including the restoration of other environments such as forests, grasslands or the marine. We will form a cluster with at least two other EU projects by means of bilateral contacts and 10 on-the-ground training events (2 days events, 2-3 per year) in the Action Sites and study visits by the project team to new projects that are under development. The training events will be closely linked with outreach tasks 7.5 and 7.6.

Task 5.5 - Testing co-creation framework in Actions Sites

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|-----------------|--|-----------------|
| <i>Lead: WI</i> | <i>Participants: PI, UT, WU, NPWS, WahV, UNIVLEEDS, SM, WWF-BG</i> | <i>M6 – M60</i> |
|-----------------|--|-----------------|

This Task will test and finalise the co-creation framework to ensure coherence across the WaterLANDS project while still allowing the flexibility for each Action Site to adopt the approach to that is most relevant for their specific context. The Action Site coordinators will lead the co-creation testing and implementation process which will be monitored via task 2.4. WI and PI have the coordination and advisory functions to assist with the on-the-ground delivery of the concrete project results. Links: The Task will draw on the results of 5.4, output from 2.2, 2.3, and provide input for 5.4 (via 2.4).

Sub-task 5.5.1. Set up and implement the Action Site co-creation environment (Lead: PI)

The co-creation framework will be applied to the 6 Action Sites beginning with interactive workshops in each Action Site during the early phases of the co-creation framework (M12-M14) and subsequent regular online meetings (every 6 months) with Action site coordinators. These meetings will ensure feedback and good information flow (M6 – M60) between the project team and Action sites and reveal opportunities to steer the co-creation framework as issues emerge. This will also ensure that the activities are covering the data needs of other WPs.

Sub-task 5.5.2: Finalisation of the Action Site co-creation framework (Lead: WI)

This sub-task will use the evidence gathered during the set-up and implementation (5.5.1) and Legacy tasks (5.4.2) to improve and finalise the Co-creation framework.

Sub-task 5.5.3. Recommendations on co-creation framework (lead WI)

This task will develop training material for the implementation of the co-creation for four audience groups: project architects, policy makers and administrators, restoration scientists, knowledge brokers and educational facilities (universities and colleges). This Task will be closely coordinated and linked to the development of a virtual training course for educational institutions (in task 6.6). The materials will be tested during a series of training events (combined with 5.4.2 and at EU and University-level in cooperation with WP6).

Deliverables for WP5

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|--|--|------|---------------------|----------------|
| D5.1 | Report on the analysis and integration of results from WP1-WP4, identifying the roles of community and governance mechanisms | WI | R | CO | 48 |
| D5.2.1 | Report on international transfer of knowledge on community engagement and the role of business | WI | R | PU | 12 |
| D5.2.2 | Wetland restoration best practice hub | WI | DEM | PU | 20 |
| D5.3.1 | Strategy for community engagement at the Action Sites | PI | R | PU | 15 |
| D5.3.2 | Report on citizen science pilots in the Action Sites | WI | R | PU | 24 |
| D5.4 | A generic adaptable framework for co-creation | WI | R | PU | 54 |
| D5.5.1 | Road map to co-creation and testing of the adaptable framework at the Action Sites | WI/UT/WU/ NPWS/UNIVE/ UNIVLEEDS/SM | R | PU | 40 |
| D5.5.2 | Recommendations on co-creation framework use | WI | R | PU | 54 |

| WP Number | 6 | | | | | | | | | | | | | | | | WP Title | | | | | | | | | | | | | | | | Restoration Management | | | | | | | | | | | | | | | |
|------------------------|-----|------|------|-----|-------|---------|----|--------|------|-----|-----|-----|------|-----|-----|----|-----------|-----|-------|-------|----|----|-----|------|-----|------|----|----------|----|----|---------|-----------|------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | Total PM | | | | | | | | | | | | | | | |
| Participant short name | UCD | NUIG | NPWS | CFW | ERINN | WWF-LEL | PI | WWF-BG | SM | UT | ELF | RMK | ToTu | UEF | GTK | PB | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | | | | | | | | | | | | | | | | |
| Person months | 18 | - | 19 | - | 4 | - | - | 87 | 58.5 | 311 | 113 | 53 | 15 | - | - | - | - | - | - | 102.5 | - | - | - | 22 | - | - | - | - | - | - | 1 | 99 | | | | | | | | | | | | | | | | |
| Start month | M1 | | | | | | | | | | | | | | | | End Month | | | | | | | | | | | | | | | | | M60 | | | | | | | | | | | | | | |

Overall Objective: To ensure the effective development, planning and execution of wide-scale restoration of wetlands across the WaterLANDS network of Action Sites.

Specific objectives:

1. To draw on the interdisciplinary expertise and developments in the preceding WPs to plan and commence practical restoration actions with a view to visible results by 2024.
2. To provide the practical means to recruit and engage local stakeholders in the co-design of restoration.
3. To identify and satisfy the planning and regulatory requirements of instigating large-scale restoration.
4. To monitor the effectiveness of restoration activities.
5. To ensure the foundations for long-term viability and scalability of restoration at all action sites and a selection of knowledge sites.

Description of work:

WP6 will provide for the logistics, personnel and facilities to implement the activities and on-going outputs of WPs 1, 2, 3 and 4, as captured also by WP5. It will provide for local expertise that is able to devise tailored

ecological restoration plans at each Action Site and support these with mechanisms for community engagement and local commitments in relation to governance. In short, the WP will ensure the supply of these local resources and provide for restoration management. WP6 will demonstrate the benefits of wetland restoration by complementing the technical expertise available within the project with investment in physical restoration works on site. It will support this by setting up structures to maintain local community, administrative and political support, by undertaking monitoring and seeking to avail of external financial supports and mechanisms that can sustain and upscale restoration. These tasks will be overseen by UCD, with contributions from those project partners who will coordinate the restoration actions on the ground at all 6 Action Sites and a selected number of Knowledge Sites.

Task 6.1 - Develop restoration plans at all 6 Action Sites

| | | |
|------------------|----------------------------------|-----------------|
| <i>Lead: UCD</i> | <i>Participants: AS partners</i> | <i>M1 – M48</i> |
|------------------|----------------------------------|-----------------|

This task will undertake practical **restoration planning and works** at each Action Site. The task will draw on the expertise and lessons learnt from the preceding WPs and from the Knowledge Sites, including the twinning arrangements in Work Task 5.5.

Work Task 6.1.1: Set up Steering Groups

Establish a local Steering Group at each Action Site, consisting of the Task Lead, the local partner institutions, local NGOs and environmental interests, and other informed parties that can agree and oversee a programme of activities, including the input from the stakeholder engagement. The Steering Group will meet 3-4 times/yr.

Work Task 6.1.2: Restoration planning

The restoration plans will, for each site, 1) identify the extent of habitat types, protected species, their value and relationships with ecosystem services; 2) determine the effect of existing land uses and economic activities which are likely to have supporting or limiting effects on restoration; 3) propose surveys and plans as are necessary for physical restoration works in collaboration with all stakeholders; and 4) identify the physical restoration works which can best support the restoration of the ecology and ecosystem services of the sites. based on an assessment of local ecological and hydrological conditions and the interventions needed to support the integrity of the site and its restoration potential.

Further, it will prioritise preliminary restoration works in locations where these will be most effective. It will set temporal and spatial targets for activities based on the funds available. Following an initial survey of conditions, it will prepare a scalability plan that examines the potential for upscaling, the requirements, sets timelines and identifies the supporting infrastructure necessary at each stage commencing with a legal framework. It will draft a detailed budget and allocate dates and responsibilities for the implementation of actions and delivery of funds and assess any possible physical restoration risks and conflicts including contingency actions to address these.

Task 6.2 - Establish partner groups, local procedures, and scalability stakeholders

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|------------------|---|------------------|
| <i>Lead: UCD</i> | <i>Participants: All Action Site partners</i> | <i>M12 – M36</i> |
|------------------|---|------------------|

This Task provides the local personnel, logistical and physical supports needed to provide for the **engagement of all local stakeholders** as set out in WP2 and to transform this engagement from an understanding of the local context into the proactive co-design of restoration actions. In practice, the workshops will be funded and managed through this WP to engage local stakeholders in the co-design. Commitments will be sought on collaboration from the community, administrative bodies, political stakeholders, NGOs and international backers.

The task will assimilate from WP3 the international knowledge needed to **identify appropriate local governance** structures, processes and means that will be needed to facilitate restoration on site. It will ensure that; 1) all local procedures for undertaking the restoration work have been addressed, and 2) that these are sufficient to ensure scalability. While all Action Sites currently have, in principle, overarching permissions for restoration action, it will be necessary to develop detailed procedural arrangements to adhere to the specific requirements of the local context and to display accountability.

To this end, the Steering Group will appoint a 'local taskforce' at each site to oversee procedural matters with the appropriate stakeholders, policy and decision makers. In addition, it will identify an 'upscaling taskforce' of stakeholders at a larger regional or national/international scale who are able to provide the policy and financial support to strengthen scalability and can interact with each Action Site to maximise the management, logistical and collaborative supports. These will include agencies that will, for example, directly fund or develop finance mechanisms for upscaling at landscape/ national level (e.g. IUCN-PP, Defra).

Task 6.3 - Initiate scalable on-the-ground restoration

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|------------------|---|------------------|
| <i>Lead: UCD</i> | <i>Participants: All Action Site partners</i> | <i>M18 – M60</i> |
|------------------|---|------------------|

This task will deliver **on-the-ground restoration** at Action Sites that can be scaled up over larger landscape areas. The task will reference the physical restoration plans from WP6.1 and garner the support of the taskforce established in WP6.2, converting these outputs into the delivery of **science-based and community co-designed restoration** with a view to delivering first visible results by 2024 as exemplars that demonstrate how landscape-scale restoration can be achieved. Appropriate performance indicators will have been identified by WP1 (1.1) and the collection of baseline data that is not already available will commence in the Action Site using local resources available to the Action Site partners. Physical works will be undertaken at each site that could involve site protection works, drain blocking, restoration of water flows or hydrology, reinstatement of wetland plant communities, new habitat creation or activities to facilitate the return of former species. These actions will be based on the plans prepared in WT6.1 and informed by the community engagement and needs of local stakeholders as identified and agreed in WT6.2. This will result in the restoration of areas of wetland and the rehabilitation of former ecosystem services. It is envisaged that the project will demonstrate successful and sustainable restoration within targeted areas of the wetlands. These can be areas which can either yield effective results in the short term, or which can be used to demonstrate how challenges which are more pervasive to the entire site can be overcome. Hence, these areas will achieve visible restoration in their own right, but also reveal how upscaling can be achieved. The restoration will be supported by on-going public engagement, detailed reporting and evidence of beneficial outputs, that can underpin the case for maintaining funding to sustain the process. Strong interaction with WP1 is expected, in developing ecological metrics, in addition to implementing the adaptive management plan of WP2.

Task 6.4 - Promoting action site approach to enhance scalability

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|------------------|---|-----------------|
| <i>Lead: UCD</i> | <i>Participants: All Action Site partners</i> | <i>M3 – M60</i> |
|------------------|---|-----------------|

This Task will enhance the scalability of restoration by **promoting activities and achievements** at the Action Sites as exemplars of how new forms of community engagement, governance and finance can be brought together to underpin environmental restoration. While the objective is to achieve a just transition to new socio-ecological relationships, initial resistance or indifference from some stakeholders can also be anticipated and it will be an important activity of the project to demonstrate how the restoration of ecological systems can provide public goods through enhanced ecosystem service delivery, nature-based solutions and new economic opportunities. It will show how a wider distribution of economic and social wellbeing benefits can be realised through a transitioning away from systems which, either perceive wetlands as wasteland, or are based on short-term drainage for land use, waste assimilation, the mining of finite resources such as peat, or other activities that are not sustainable in the long-term and which present external social and economic costs for the wider population.

Task 6.4 will **promote the benefits** of wetland restoration through projects that aim to stimulate community interest and support for transformational environmental change. It will **provide a vision of a future** in which these special environments can be restored on a large scale, providing distinct benefits for local communities and economies, as well as benefits to wider society through both adaptation to, and mitigation of, climate change. At a practical level, it will do this through **community arts projects** and promotional material such as videos in collaboration with WP7 (7.3.3). It will finance the provision of **educational signage**, ‘nature days’, school and college visits, projects and field trips. It will fund the construction of **infrastructure for access and amenity**, such as raised boardwalks or wildlife-viewing hides using voluntary or paid community input that allows a range of people to input in ways other than through workshops alone, to develop their interests, learn new vocational skills and forge new personal relationships while ultimately supplying the means for people to access wetlands for amenity and to engage with and appreciate the natural world.

Deliverables for WP6

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|---|------------------|------|---------------------|----------------|
| D6.1 | Set up Steering Groups in Action Sites. Evidence of recruitment and terms of references | UCD | DEM | PU | 6 |
| D6.2 | Evidence that procedures and permissions have been met. Establishment of Local taskforce and Upscaling Taskforce. | UCD | R | CO | 12 |
| D6.3 | Ecological and scalability plan for restoration at each Action Site | WU/WI | R | PU | 24 |
| D6.4.1 | Evidence of co-design in the restoration of wetlands ecosystems and their continued management | UCD | R | PU | 30 |

| | | | | | |
|--------|---|---------|---------|----|----|
| D6.4.2 | Tailored financial supports, mechanisms or recommendations for each site. | WWF-LFL | R | CO | 30 |
| D6.4.3 | Deliver initial visible onsite restoration and evidence that requirements for upscaling have been met | UCD/WU | DEM / R | PU | 36 |
| D6.4.4 | Inspirational promotional activities and commence construction of facilities for access and amenity. | UCD | DEM | PU | 48 |

| WP Number | 7 | | | | | | | | | | | | | | | | Communication, Dissemination, Knowledge Management, and Exploitation of results | |
|------------------------|-----|------|-------|------|-------|---------|-----|--------|-----|------|-----------|----------|------|-----|---------|-----------|---|--|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Total PM | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SMI | UT | ELF | RMK | ToTu | UEF | GTK | PB | | |
| Person months | 11 | 2 | 4 | 0.5 | 45 | 2 | 2 | 9 | 7 | - | 4 | - | - | 0.5 | 0.5 | 10 | | |
| Participant no. | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | | |
| Participant short name | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | | |
| Person months | 0.5 | 0.5 | 0.5 | 5 | 2 | - | - | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 4 | 114 | |
| Start month | M1 | | | | | | | | | | End Month | | | | | | M60 | |

Overall Objective: The overall objective of WP7 is to ensure effective external communication, dissemination and optimal knowledge transfer of WaterLANDS results beyond the project partners, leading to effective exploitation of the project outputs and an uptake of the WaterLANDS approach to largescale wetland restoration.

Specific objectives:

1. Promote the project activities and results beyond the consortium to relevant stakeholders and the general public by implementing the Plan for Exploitation and Dissemination of Results (PEDR) on an ongoing basis over the full duration of the project.
2. Ensure efficient and strategic external communication and dissemination for widespread awareness of WaterLANDS activities amongst and beyond the participating communities.
3. Ensure efficient data and knowledge management, facilitating open access of appropriate results.
4. Ensure streamlining of project results amongst stakeholders, in particular across EU and national levels and aligning with relevant policies.
5. Ensure knowledge transfer of best practice examples of wetland restoration to relevant stakeholders beyond the project in location and lifetime.

Description of work:

This WP will achieve effective external communication, dissemination and exploitation of WaterLANDS results. This will be achieved through the implementation of the PEDR throughout the duration of the project, the development of a strong project brand and by providing access to associated tools and resources. Project partners will promote the project to all relevant stakeholders through events, publications and outreach activities, including media campaigns and by engaging with visual and social media to promote greater understanding of wetland restoration within communities participating in the project, and beyond. To ensure impact of the project and support the continuation of the WaterLANDS approach to largescale wetland restoration, ERINN will implement a well-established knowledge management and transfer methodology to ensure that key exploitable results will be captured and transferred to appropriate end users. In particular, a number of policy engagement activities will take place to promote WaterLANDS results, especially an advocacy paper to relevant policymakers in Europe and the Mediterranean.

Task 7.1 - Plan for Exploitation and Dissemination of Results

Lead: ERINN Participants: WP leaders M1 – M60

The WaterLANDS PEDR outlines strategic and concrete actions related to external communication, dissemination, and exploitation activities, which will be ongoing throughout the full project duration. It describes methodologies that will be used throughout the community engagement (WP2), as well as co-creation and co-design (WP5) activities in the Knowledge and Action Sites of the project. The first draft of the PEDR is described

in Section 2.2 (Measures to maximise impact) and will be updated and implemented immediately upon the start of the project, with the involvement of all partners. The PEDR will adopt EC best practice guidelines and define the objectives, a stakeholder engagement strategy, end-user identification, knowledge management and transfer protocols, communication tools and channels, responsibilities, resources, and metrics for measuring impact.

At EC reporting stages, the PEDR will be evaluated and updated where applicable. ERINN will oversee the continuous implementation of the PEDR, with all partners contributing by carrying out communication, dissemination, and exploitation activities.

Task 7.2 - Portfolio of External Dissemination and Communication Resources and Tools

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|-------------|--------------------------|----------|
| Lead: ERINN | Participants: WP leaders | M1 – M60 |
|-------------|--------------------------|----------|

To facilitate communication, dissemination and exploitation, a range of resources, tools and activities will be developed and implemented for widespread promotion of WaterLANDS and its results amongst all relevant stakeholders, including the general public. Project promotional material will include:

- The development of **strong branding** and logo that will form the basis of a robust communication portfolio
- **Promotional factsheets** developed for general dissemination and project promotion that will be translated into local languages to be used across Knowledge and Action Sites to inform and engage local communities.
- PowerPoint, poster and country profile **templates**, and a generic project presentation slide deck for events and conferences
- A **project website** will be developed and maintained (beyond the project lifetime) to provide information on and access to WaterLANDS information, results, outputs, and the project partners
- **Project videos** to showcase the project to the general public: these will include a project overview video at the beginning of the project (M12), short videos that showcase the action sites and the work being conducted there (M36), a final project video that will highlight key outcomes and achievements, which will be presented at the final event (M58)
- Annual **project newsletters** highlighting project progress, partner interviews, news, and relevant events
- Social networking channels such as Twitter, ResearchGate and others as relevant will be used to promote WATERLANDS activities widely via dedicated WaterLANDS accounts and via partnership existing accounts. A project **social media campaign** will be carried out, with the strategy for this outlined in the PEDR, including allocation of responsibility, identifying and building audiences, risks, and measuring impact and performance.

Task 7.3 - Publications, Events & Outreach

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|-----------|-------------------------------|----------|
| Lead: UCD | Participants: All AS partners | M1 – M60 |
|-----------|-------------------------------|----------|

Sub-task 7.3.1. Publications (M1-M60) (Lead: ERINN, WP leaders)

To promote the project widely amongst all relevant stakeholders, including the general public, a number of media campaigns will be launched regularly throughout the project, including **promotional articles, interviews of local stakeholders**, and **press releases** around key project achievements and other activities. All articles developed will be promoted widely through partners extensive network, existing relevant newsletters, published on CORDIS, Alpha Galileo and relevant webpage platforms such as Off Your Map (www.offyourmap.org). The main scientific and methodological findings of the project will be shared with the scientific community by publishing in **reputable, high-impact, cross-disciplinary journals**, complying with GA Article 29 to provide **Open Access (OA)**.

Sub-task 7.3.2: Conferences and Events (M1 – M60) (Lead: Plan Bleu / Wetlands International)

Project partners will also participate in **major relevant conferences** and other **events** in order to present the project and disseminate its results and achievements. A preliminary list of relevant events is outlined in Section 2.2 and there will be a continuous effort to identify additional relevant conferences and events. Within the project, numerous events will take place within WP2 and WP5. Within this task, support will be provided, such as the preparation of flyers and event promotion on social media and through existing dissemination channels. A **final event** will also take place, organised by UCD and Plan Bleu where all the project findings will be showcased and promoted to invited decision-makers, researchers, NGOs, practitioners and civil society stakeholders.

Sub-task 7.3.3. WaterLANDS outreach and awareness through art (M6- M60) (Lead: UCD, AS partners)

Art has the power to captivate audiences and communicate complex ideas. The overall aim of this sub-task is to work with artists to **engage communities and stakeholders** in the project and to promote greater understanding of wetland ecosystem restoration. WaterLANDS will partner with one artist for each Action Site, to create individual pieces of work based on the site, their engagement with local communities, and the research project.

Through an open call, artists will be selected based on criteria established by the Action Site partners and on relevance to the core themes of the project. One artist will be recruited for each of the six Action Sites during year one. Each artist will have a host institution, a node partner with active involvement in the relevant restoration actions. They will be included in ongoing project communications and, most importantly, to undertake a ‘residency’ connected to the Action Sites for a period of 2-3 weeks in years two, three and four. The motivation for a residency is for artists to visit the sites and interact with the associated stakeholders and communities. At the end of each year, a public workshop will be organised where the artists will present their ongoing relationship with the project and their work in progress, with a final piece of art in specified formats to be produced in year five. Artists can be invited to support the co-creation process and inspire communities to creatively engage with their wetlands site and its restoration challenges, contributing to co-creation (WP5) and increased engagement at Action Sites (WP6). At the end of the project, an exhibition will take place alongside the final event to showcase the output of the project in an engaging and interactive way. The artist and their works will be documented in a video, which can be shared on the project website and beyond. The overall ambition is to offer a creative way to translate the restoration and research activities to the wider community, and to generate media interest in the findings and recommendations of the WaterLANDS project.

Task 7.4 - Knowledge management, transfer and exploitation of results

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|---------------|---|----------|
| Lead: WI & PB | Participants: ERINN, WP leaders, Action Sites | M6 – M60 |
|---------------|---|----------|

Sub-task 7.4.1 Knowledge Management and Transfer of Results (M12 – M60) (Lead: ERINN, participants: PB, WP leaders)

Knowledge Management systems will be set up to ensure all outputs produced are fully captured and appropriately managed. These systems will be outlined in the PEDR (D7.1) and regularly updated as required. ERINN will monitor the knowledge generated by carrying out regular collection rounds from all WPs (at least one every reporting period). All outputs collected will be analysed, with support from partners, to identify **Key Exploitable Results** (KERs) which have the potential to support large-scale restoration of wetlands. Those outputs with high potential will be reviewed by WP leaders and prioritised. **Knowledge Transfer Plans** (KTPs) (Exploitation Routes) will then be developed, detailing customised activities directed at targeted end-users. This process will include mapping of the knowledge landscape (value chains, key actors, relevant legislation, milestones and events) to inform a stepwise plan on how each KER can achieve impact. Detailed KTPs will be developed for each high priority KER based on their potential applications and users. The user focused KTPs will describe the message and activities planned to ensure effective impact is achieved. ERINN will support KER owners in planning the implementation of KTPs (identifying relevant stakeholders, events etc.) and dissemination activities needed. KERs will be showcased on the EC’s Horizon Results Platform and presented to the consortium (webinar/one-day seminar), outlining the actions required to fulfil their market potential. These outcomes will also be included in e-resources on project achievements. Amongst stakeholders, the Sub-task will ensure that knowledge is shared with policy makers, government agencies, local government, universities, schools, community groups, civil society, landowners, industry and other relevant projects. This task will create a number of online resources to ensure widespread accessibility and will include webinars, and case studies for submission to the Oppla platform on Natural Capital. The resources will be communicated through the well-established networks of the consortium.

Sub-task 7.4.2 Policy Outreach and Advocacy (M6 – M60) (Lead: WI/ PB, participants: NUIG)

This Sub-task will focus on policy outreach and advocacy on European level, including the Mediterranean. The activities will receive inputs and key findings from WP3 Governance for dissemination to relevant EU and regional policymakers. Through this task, the project will engage with and aim to influence policy development (such as the European Green Deal, including the EU Restoration Plan and the EU Biodiversity Strategy). Activities will showcase how wetlands restoration can positively impact other domains including climate change, disaster risk reduction and support the EU to achieve its domestic and international goals. In order to reach policymakers, country profile factsheets will be developed to target regional representatives and showcase specific areas of focus in participating countries. These country factsheets will be disseminated prior to meetings with relevant EC bodies such as DG ENVI, DG AGRI, DG CLIMA, country/regional representatives and UN agencies such as the FAO and UN Environment in Brussels. As part of policy outreach and advocacy, partners will host two workshops in Brussels. The first will take place in M6 and will engage policy makers on current thinking and policy progress on wetland restoration, it will identify opportunities, challenges and enablers that will support the development of the policy advocacy paper (D3.3.2 in WP3). This first workshop will also serve to create connection with the EU Green Deal and UN Decade of ecosystem restoration. A second workshop will take place, towards the end of

the project (M48), when the policy advocacy paper will be presented to policymakers and next steps for restoration will be discussed based on the key findings of the paper. The advocacy paper will also be submitted to the annual COP of Barcelona Convention and will be presented at the final conference.

To sum up, in order to reach out to EU Institutions and Members states, partners will:

- Organise formal meetings (at least 20) and breakfast meetings (at least 2) with decision and policy makers in collaboration with WP3
- Produce five country factsheets with specific policy recommendations
- Produce response to relevant consultations
- Develop input to influence different policy moments (for instance for the EU Nature Restoration law)
- Organise two seminars in M8/9 and M58.

Deliverables for WP7

| No. | Deliverable name | Lead participant | Type | Dissemination level | Delivery month |
|--------|---|------------------|------|---------------------|----------------|
| D7.1.1 | Plan for Exploitation and Dissemination of Results (PEDR) | ERINN | R | CO | 3 |
| D7.1.2 | Publication on key project achievements | ERINN | DEC | PU | 53 |
| D7.1.3 | Final PEDR | ERINN | R | CO | 60 |
| D7.2 | Portfolio of Dissemination Tools and Resources | ERINN | DEC | PU | 12 |
| D7.3.1 | Report on WaterLANDS events | PB + WI | R | PU | 48 |
| D7.3.2 | Final project event, including exhibition with contribution from WaterLANDS artists | UCD | DEC | PU | 60 |
| D7.4 | Policy factsheet studies | WI + PB | R | CO | 52 |

| WP Number | 8 | | | | | | | | | | | | | | | | Project Management | | | | | | | | | | | | | | | |
|------------------------|-----|------|-------|------|-------|---------|-----|--------|-----|------|-----|-----------|------|-----|---------|-----------|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Participant no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Total PM | | | | | | | | | | | | | | | |
| Participant short name | UCD | NUIG | NPWS | CWF | ERINN | WWF-LFL | PI | WWF-BG | SMI | UT | ELF | RMK | ToTu | UEF | GTK | PB | | | | | | | | | | | | | | | | |
| Person months | 102 | 1 | 2 | 1 | 5 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | |
| Participant no. | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | | | | | | | | | | | | | | | | |
| Participant short name | TdV | MSF | UNIVE | Wahv | WU | WI | RUN | GRON | SBB | CMOK | UW | CSIC-EBD | UU | NE | IUCN-PP | UNIVLEEDS | | | | | | | | | | | | | | | | |
| Person months | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 161 | | | | | | | | | | | | | | | |
| Start month | M1 | | | | | | | | | | | End Month | | | | | M60 | | | | | | | | | | | | | | | |

Overall Objective: The purpose of the Project Management Work Package is to ensure that the management of such a large and logistically challenging project as WaterLANDS across its 5-year term is effective and efficient. This includes the effective management of funds received, facilitating appropriate high-level communication between partner organisations and across WPs, and coordinating formal communication with the European Commission in line with Grant Agreement obligations. Further, this WP aims to establish the structures and capacity by which the results of WaterLANDS can outlive this project, by providing the basis for successful and self-sustaining co-creation frameworks to ensure the continued scalability of wetland restoration across Europe.

Specific objectives:

1. To provide overall management to support the **implementation** of the necessary consortium objectives as set out in the list of **work packages and tasks**, to optimize the allocation of resources in line with these responsibilities, and to ensure that contractual requirements are met by all project partners in relation to the **delivery of activities**, the **responsible and efficient use of resources**, and reporting.
2. To convene and oversee a **Project Management Committee** to ensure operations remain aligned with the overall objectives of WaterLANDS.
3. To establish and maintain an appropriate **consortium management structure**, as a means of overseeing the delivery of WP tasks and deliverables in a timely and cost-effective manner.

4. To guarantee that funds for hands-on restoration activities are **securely disbursed** to Action Site partners and that local coordinating partners **effectively engage sub-contractors**, where required, under procurement best-practice.
5. To ensure that **periodic reporting** to, and liaising with, the European Commission is conducted effectively and is in line with Grant Agreement procedures.

Description of work:

The sections below outline key Work Tasks and Deliverables required to reach the above objectives for WP7. These tasks will be led by UCD, with contributions from all partners across the project life. Greater involvement of Action Site partners is expected in years 2-5 of this project, with initiation of hands-on restoration guided by co-created lessons gleaned from Knowledge Sites.

Task 8.1 - Implementation of efficient management and support structures

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|------------------|--|----------------|
| <i>Lead: UCD</i> | | <i>M1 – M2</i> |
|------------------|--|----------------|

Within the first month of WaterLANDS, a Project Management team will be convened. This team will include:

Project Coordinator: To represent the project in its interaction with the European Commission, third parties and the public. To provide for regular discussion and interchange with WP Leaders. To ensure that the overall vision of the project is maintained and that it fulfils its objectives.

Deputy Coordinator / Project Manager: To provide day-to-day project management, to track and measure progress in terms of work timelines and outputs, to provide support to all WP and WT Leaders, to ensure timely production of all deliverables, adherence to the Consortium Agreement, and setting of agendas for meetings.

Project Administrator: to provide administrative support, logistical management, budgeting, oversee financial transfers, organise logistical and travel arrangements, prepare documents, supply supporting data and prepare minutes and actions agreed at consortium meetings.

Part-time Financial Manager: to provide relevant expertise for financial management, collation of financial records, financial reporting to the EC, and verification transfers to partners.

Task 8.2 - Consortium Agreement and management structure

| | | |
|------------------|-----------------------------------|----------------|
| <i>Lead: UCD</i> | <i>Participants: All partners</i> | <i>M2 – M4</i> |
|------------------|-----------------------------------|----------------|

To effectively govern a project involving 32 partners in 13 Member States and the UK over 5 years, a clear understanding of the mutual obligations and expectations of partner organisations is necessary. A Consortium Agreement will be drafted and agreed with Project Partners as a priority. The Launch Meeting (D8.3) will involve the participation of all partner institutions to invest time in confirming the project objectives and to ensure common purpose without any ambiguities. A facilitated consensus-building exercise will be undertaken to support the preparation of a 'WaterLANDS Partner Handbook', which can then be developed further and finalised in conjunction with core partners. This will confirm the management hierarchy of WaterLANDS, timelines for WPs, WTs, milestones and deliverables, and expectations regarding collaboration and exchange of information, quality of output, and proposals for an intra-project communications plan in conjunction with WP7. This document will also provide guidance on procurement best-practice, financial management, and procedures for hiring staff and subcontractors. It will observe all necessary equality grounds in recruitment and management.

Task 8.3 - Project Management

| | | |
|------------------|--|-----------------|
| <i>Lead: UCD</i> | | <i>M1 – M60</i> |
|------------------|--|-----------------|

The day-to-day project management will entail leadership in terms of the project direction, ensuring that the Project Management team is always available to respond to queries from all parties. A project intranet or file share facility will be established to provide a consistent source of communication between the Project Management team and partners, and between the partners themselves within and between WPs. A regular communication exchange will occur on an at least weekly basis and be supported by monthly virtual meetings with WP leaders to ensure that the project is on track to meet its objectives and to conform to agreed timelines for WPs, WTs, milestones and deliverables. Project Management will organise the dates, agenda and document the minutes of the Project Meetings of the Consortium and of meetings of the Project Steering Committee. It will also allocate responsibilities and oversee the financing related to the hosting of project meetings by partners.

A priority is to ensure that there is full collaboration between WPs and that the different expertise and specialisms of project participants are brought together to address the common objectives set out in each WP and the needs of the Knowledge and Action Sites. This will also involve updates and discussion of work programmes, respective partner inputs, decision making procedures, strategies to overcome challenges encountered, the coordination and exchange of knowledge gained, and recognition and follow-up of

opportunities for innovation and dissemination of positive strategies for restoration. In these respects, the Project Management team will adhere to management principles set by ISO 9001 and ISO 10006 by providing for regular critiques of work plans, adequacy of management procedures, risk management, conflict management, document management and quality of output.

The Project Management team must similarly ensure that financial and logistical resources are made available on time to partners as set out in the Consortium Agreement, that these resources are used appropriately to secure the outputs described for each WP and that sufficient resources are forthcoming to support the restoration activities which are at the heart of the project objectives. There will be a need for timely financial reporting and monitoring of these reports, maintenance of expenditure records throughout the project timeframe, ensuring that the requisite management and financial supports are provided at the appropriate times.

A key element of this Task will be to oversee the coordination of lessons learnt from Knowledge Sites as revealed through the early stages of WP1, WP2 and WP3. At a practical level, coordination will involve pulling together the various lessons learnt at ecological, environmental, governance, social and economic levels and drawing on these to support continued restoration at the Knowledge Sites, and in particular the application of this knowledge to the Action Sites. The immediate responsibility for bringing together these outputs and the co-creation falls to WP5, but such is the importance of ensuring integration between WPs and the transfer of knowledge to inform restoration at the Action Sites, that the Project Management task will oversee this collaboration, while ensuring also that the Action Sites exchange their own experience in turn with the wider consortium. Given the applied nature of the project, and involvement of NGOs or local administrations, the Project Management task will also identify beneficial pairings within WPs between partners with more and less experience of EU projects to facilitate capacity building and the long-term success of the project beyond its 5-year life.

Project Management will oversee the promotion of gender equality in the project, and that research ethics and responsible behaviour are adhered to. See Section 5 of this application for a detailed treatment of these concerns and mitigation strategies.

Task 8.4 - Reporting to European Commission

| | | |
|------------------|--|-----------------|
| <i>Lead: UCD</i> | | <i>M1 – M60</i> |
|------------------|--|-----------------|

The Coordinator will take sole responsibility for liaising with, and reporting to, the Commission. The Coordinator will ensure that all milestones are met and that all deliverables are prepared and submitted to the EC in accordance with contractual arrangements. Official reporting will occur M18, M36, M48 and M60.

Task 8.5 - Data Management

| | | |
|--------------------|---------------------------------|-----------------|
| <i>Lead: ERINN</i> | <i>Participants: WP leaders</i> | <i>M1 – M60</i> |
|--------------------|---------------------------------|-----------------|

A Data Management Plan (D8.4) will be developed that identifies and describes how the project will manage its generated data both internally and externally. The DMP will identify WaterLANDS data repositories and provide an overview of the type and volume of data potentially generated by the project. It will also outline how the project will respond to the principles of FAIR: Findable, Accessible, Interoperable and Reusable data. The DMP will be both implemented and updated regularly by ERINN, with the contribution from all partners, and will include information on:

- the handling of research data during and after the end of the project
- what data will be collected, processed and/or generated
- which methodology and standards will be applied
- whether data will be shared/made open access and
- how data will be curated and preserved (including after the end of the project)

Deliverables for WP8

| No. | Name | Lead participant | Type | Dissemination level | Delivery month |
|--------|---|------------------|------|---------------------|----------------|
| D8.1 | Formalise WaterLANDS Project Management Team at UCD and recruit Project Administrator | UCD | R | CO | 2 |
| D8.2 | Finalise Consortium Agreement | UCD | R | PU | 2 |
| D8.3.1 | WaterLANDS Launch Meeting | UCD | DEM | CO | 2 |
| D8.3.2 | Produce and distribute WaterLANDS Partner Handbook | UCD | R | CO | 4 |

| | | | | | |
|--------|---|-------|---------------------------------|----|--------------------|
| D8.3.3 | Organisation of annual project meetings | UCD | Other | CO | 12, 24, 36, 48, 60 |
| D8.4 | WaterLANDS Annual Report | UCD | R | CO | 12, 24, 36, 48, 60 |
| D8.5.1 | Data Management Plan | ERINN | ORDP (Open Research Data Pilot) | CO | 6 |
| D8.5.2 | Final DMP | ERINN | ORDP | CO | 60 |

Table 3.1c: List of all WaterLANDS deliverables, spanning WPs 1-8.

| No. | Deliverable name | Lead participant | Type | Dissemination level | Delivery month |
|--------|--|------------------|-------|---------------------|----------------|
| D1.1 | SMART indicators for quantifying wetland resilience and services and relevance to Action Sites | UEF | R | PU | 14 |
| D1.2 | Drivers and thresholds of change for European wetlands | UNIVLEEDS | R | PU | 20 |
| D1.3 | Safe Operating Space for wetlands to safeguard future provision of ecosystem services | WU | R | PU | 30 |
| D1.4 | Decision Support System for adaptive wetland restoration and management | CSIC-EBD | R | PU | 36 |
| D1.5 | Open-access database on wetland restoration projects and outcomes | RUN | OTHER | CO, PU | 8 |
| D2.1.1 | Analysis of existing community engagement practices and initial stakeholder expectations | PI | R | CO | 13 |
| D2.1.2 | Stakeholder mapping | PI | R | CO | 13 |
| D2.2 | Report on deliberative process and stakeholder values | UCD | R | PU | 30 |
| D2.3 | Assessment of socio-economic options | UNIVE | R | PU | 36 |
| D2.4 | Consolidated monitoring and evaluation report including legacy lessons learnt | UNIVLEEDS | R | PU | 58 |
| D3.1.1 | Characterise governance landscape based on knowledge sites' experiences, including a mapping of key policies | PB | R | PU | 12 |
| D3.1.2 | Devise ideal 'theoretical' governance framework for restoration | PB | R | PU | 18 |
| D3.2.1 | Identify governance challenges and gaps at each Action Site (Roadmap) | NUIG | R | CO | 30 |
| D3.2.2 | Identify evidence-based recommendations for governance at each Action Site | NUIG | R | CO | 36 |
| D3.3.1 | Best practice handbook for up-scaling of transformational change for restoration | NUIG/UEF | R | PU | 58 |
| D3.3.2 | Advocacy paper for restoration, including video for governance stakeholders | PB/MSF | R | PU | 60 |
| D4.1 | Review of business and finance models and market demand | UNIVE | R | PU | 12 |
| D4.2.1 | Assessment and recommendations for economic incentives at Action Sites | UNIVE | R | PU | 24 |
| D4.2.2 | Design of financial instruments for Action Sites | WWF-LFL | R | CO | 30 |
| D4.2.3 | Negotiation of financial instruments for two or more Action Sites | WWF-LFL | DEM | CO | 36 |
| D4.3 | Lessons learnt from Actions Sites on financial mechanisms | UCD | R | PU | 54 |
| D4.4 | Strategic report on benefits and returns from the development of biodiversity and restoration finance | UNIVE | R | PU | 60 |

| | | | | | |
|---------------|--|--|---|----|--------------------|
| D5.1 | Report on the analysis and integration of results from WP1-WP4, identifying the roles of community and governance mechanisms | WI | R | CO | 48 |
| D5.2.1 | Report on international transfer of knowledge on community engagement and the role of business | WI | R | PU | 12 |
| D5.2.2 | Wetland restoration best practice hub | WI | DEM | PU | 20 |
| D5.3.1 | Strategy for community engagement at the Action Sites | PI | R | PU | 15 |
| D5.3.2 | Report on the citizen science pilots in the Action sites. | WI | R | PU | 24 |
| D5.4 | A generic adaptable framework for co-creation | WI | R | PU | 54 |
| D5.5.1 | Road map to co-creation and testing of the adaptable framework at the Action Sites | WI/UT/WU/ NPWS/UNIVE/ UNIVLEEDS/ SM | R | PU | 40 |
| D5.5.2 | Recommendations on co-creation framework use | WI | R | PU | 54 |
| D6.1 | Set up Steering Groups in Action Sites. Evidence of recruitment and terms of references | UCD | DEM | PU | 6 |
| D6.2 | Evidence that procedures and permissions have been met. Establishment of local taskforce and upscaling taskforce. | UCD | R | CO | 12 |
| D6.3 | Ecological and scalability plan for restoration at each Action Site | WU/WI | R | PU | 24 |
| D6.4.1 | Evidence of co-design in the restoration of wetlands ecosystems and their continued management | UCD | R | PU | 30 |
| D6.4.2 | Tailored financial supports, mechanisms or recommendations for each site | WWF-LFL | R | CO | 30 |
| D6.4.3 | Deliver initial visible onsite restoration and evidence that requirements for upscaling have been met | UCD/WU | DEM / R | PU | 36 |
| D6.4.4 | Inspirational promotional activities and commence construction of facilities for access and amenity | UCD | DEM | PU | 48 |
| D7.1.1 | Plan for Exploitation and Dissemination of Results (PEDR) | ERINN | R | CO | 3 |
| D7.1.2 | Publication on key project achievements | ERINN | DEC | PU | 53 |
| D7.1.3 | Final PEDR | ERINN | R | CO | 60 |
| D7.2 | Portfolio of Dissemination Tools and Resources | ERINN | DEC | PU | 12 |
| D7.3.1 | Report on WaterLANDS events | PB/WI | R | PU | 48 |
| D7.3.2 | Final project event, including exhibition with contribution from WaterLANDS artists | UCD | DEC | PU | 60 |
| D7.4 | Policy factsheet studies | WI/PB | R | CO | 52 |
| D8.1 | Formalise WaterLANDS Project Management Team at UCD and recruit Project Administrator | UCD | R | CO | 2 |
| D8.2 | Finalise Consortium Agreement | UCD | R | PU | 2 |
| D8.3.1 | WaterLANDS Launch Meeting | UCD | DEM | CO | 2 |
| D8.3.2 | Produce and distribute WaterLANDS Partner Handbook | UCD | R | CO | 4 |
| D8.3.3 | Organisation of annual project meetings | UCD | R | CO | 12,24, 36,48,60 |
| D8.4 | WaterLANDS Annual Report | UCD | R | CO | 12,24, 36,48,60 |
| D8.5.1 | Data Management Plan | ERINN | ORDP (Open Research Data Pilot) | CO | 6 |

| | | | | | |
|--|-----------|---|------|----|----|
| D8.5.2 | Final DMP | ERINN | ORDP | CO | 60 |
| Type R = Document, Report DEM = Demonstrator, pilot, prototype, plan designs DEC = Websites, patent filing, press/media actions, video OTHER = Software, technical diagram etc. | | Dissemination level PU = Public, fully open (internet) CO = Confidential (conditions outlined in the Grant Agreement) CI = Classified information | | | |

3.2 Management Structure, Procedures and Milestones

3.2.1 Organisational structure and decision-making mechanisms

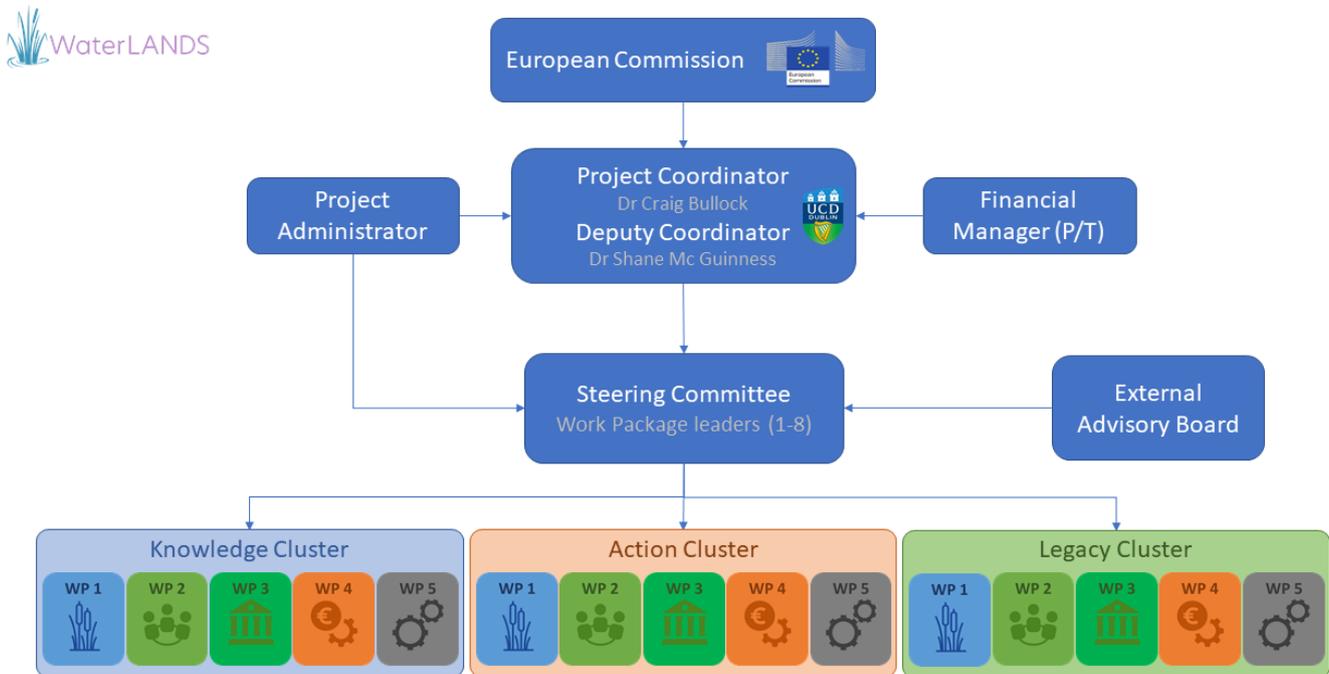


Figure 3.2: Management structure of WaterLANDS.

As shown in the generalised Project Management structure above, WaterLANDS will be coordinated by Dr. Craig Bullock of University College Dublin with the support of Dr. Shane Mc Guinness as Deputy Coordinator and Project Manager. The Coordinator will act as principal contact point between the project and the Commission and will act as the foremost representative of the project for its promotion and interaction with third parties. The coordinator will be principally responsible for the strategic management of the project and its smooth running and for ensuring that the work programme proceeds on time. This will include addressing project risks, taking corrective actions and motivating the project team to encourage proactive participation. This responsibility will include ensuring that WPs proceed as outlined, that these integrate with other WPs as intended, meet respective milestones, and produce agreed deliverables of the scientific and professional excellence expected of the team. The coordinator is also responsible for ensuring that monies are transferred efficiently to all members of the Consortium as contracted and with regard for the allocated person months. Day-to-day management of the project, including regular communication and physical transfer of funds will be undertaken by a project administrator reporting to the Coordinator. More discussion of the project management responsibilities is provided in the description of WP8.

To ensure that all activities proceed as proposed, the Coordinators and Project Administrator will work through a Steering Committee comprising each of the work package Leads. The WP Leads will, in turn, be responsible for ensuring that Task and Sub-Task Leads deliver these components on time and as described in the Grant Agreement, and that these are integrated with respect to the Knowledge, Action and Legacy Clusters. The Lead for WP5 will have a secondary responsibility in this respect by ensuring that each WP conforms to the philosophy of co-creation described in this submission in contributing input to the restoration works at the Action Sites, with the UCD Team being responsible for overseeing these works as overall Lead for WP6.

Project Coordinator – Dr Craig Bullock: Dr. Bullock has been working in the field of environmental economics and policy for 30 years, mostly in an inter-disciplinary capacity that has involved work with natural scientists, local government officials and government agencies. His work has included both applied research at University College Dublin since 2001 and consultancy. Craig coordinated the EU FP4 project Greenspace from 2001-04 which examined

the value of urban green areas and acted as Lead for the Socio-cultural Task of FP7 OPERAs on ‘Operationalising Ecosystem Services’. He has been a member of the European projects EKLIPSE (on barriers to restoration), Land2Sea (ecosystem services interactions between land and sea), JPI Water AQUATAP, EU COST Action ToBeWell, and has provided expert input to scoping workshops for BiodivERsA. Craig has also been the Principal Investigator for nationally funded projects on biodiversity finance, including an on-going Financial Needs Assessment for Biodiversity. He has been PI for Irish Environmental Protection Agency projects on environmental liability, adaptation to climate change, and packaging waste, and a principal researcher for other EPA funded projects on peatland restoration, social values of rivers, aquatic ecosystem services, river barriers and environmental risk communication. Consultancy work has covered climate change, amenity, natural capital accounting, and environmental impact assessment. Craig is on the steering committee for Natural Capital Ireland.

Deputy Project Coordinator & Project Manager – Dr Shane Mc Guinness: Dr. Mc Guinness has extensive experience managing large and technically-complex research and outreach projects around the world. This includes Science Foundation Ireland funded Discover networks, Irish Research Council research projects and Royal Geographical Society expeditions. Shane has delivered numerous practical conservation projects globally involving broad stakeholder partnerships with varied vested interests and continues to develop networks and partnerships in restoration, most recently with the European Investment Bank and the WWF. Shane is lead researcher on the on-going Financial Needs Assessment for Biodiversity, is a member of Natural Capital Ireland and is a Fellow of the Royal Geographical Society.

Project Administrator: A full-time project administrator will be hired for duration of WaterLANDS, recruited by UCD to begin in M1. This person will provide administrative support, logistical management, budgeting, financial transfers, logistical and travel arrangements and prepare minutes and actions agreed at consortium meetings.

Project Management Team: The above three operatives (Coordinator, Deputy Coordinator/Project Manager and Project Administrator), as well as a **part-time Financial Manager** already in place within the Department of Architecture, Planning and Environmental Policy, will form a core Project Management Team based in UCD.

WaterLANDS Steering Committee (SC): This Steering Committee will consist of a single representative from all WP lead partners, plus the WaterLANDS Project Coordinator and Deputy Coordinator. Each member is given one vote each in decision making for all project issues – conflict, progress, financial etc. and will guide the dissemination of results arising from the project. The Steering Committee will meet once every 6 months, alternating between teleconference and in-person meetings, the latter to be coordinated with the annual WaterLANDS meeting.

External Advisory Board: The work of the Steering Committee and outputs of the work programme will be assessed by an External Advisory Board, principally to ensure that the project is on track to meet its objectives. This external oversight group, totalling 10 members, will consist of international experts (technical or academic) representing the focus of WPs (1-4) and will meet once a year, with additional attendance at consortium meetings. Logistics for this Advisory Board will be coordinated through WP8.

Knowledge Cluster: Represented by one delegate from each partner represented in WPs 1-5, the Knowledge Cluster will convene at months 6, 12, 18 and 24, to coordinate the collection and co-creation of interdisciplinary knowledge from the Knowledge Sites and will involve the participation of specific KS partners when required.

Action Cluster: Although membership will align closely with that of the Knowledge Cluster, the Action Cluster will include specific representation from the node/coordinating partner at each Action Site. Its purpose is to help guide progress at Action Sites, match co-created solutions with specific conditions at Action Sites and ensure that issues arising at Action Sites are effectively resolved. Meetings will occur at months 24, 30, 36 and 48.

Legacy Cluster: The final Cluster in the WaterLANDS management structure will help guide the project’s lasting legacy. Partners with specific roles in ensuring the legacy of WaterLANDS will be represented, including those relating to co-creation, outreach, finance and governance, as well as representation from those Action Site partners demonstrating particular potential for immediate scalability. Meetings will occur at months 48, 54 and 60, with an option of continued voluntary involvement beyond WaterLANDS, if additional funding is secured.

As a tool to assist project management, a series of project milestones (Table 3.2a) have been established as key events that should receive special attention. Some have been placed at the end of different project stages to mark the completion of an important task or deliverable, and a number of others have been positioned before the end of a Cluster so that **adaptive management actions** can be taken if problems arise, and that the project Outputs and Deliverables can be completed on time.

Table 3.2a List of milestones of WaterLANDS project

| No. | Milestone name | Related WPs | Estimated month | Means of verification |
|-----|---|---------------|-----------------|--|
| 1 | Strong project identity/brand established | WP7 | 6 | Website, logo, social media and communications channels open |
| 2 | Successful stakeholder mapping at Knowledge & Action Sites | WP2, WP5 | 10 | Database of representative stakeholders across Knowledge & Action Sites |
| 3 | Identification of subset of viable landscapes identified for financial development | WP4 | 12 | Selection of sites and justification |
| 4 | Formal permissions for Action Site restoration granted, where applicable (same as Del 6.2?) | WP6 | 12 | Notification of approval from relevant stakeholders |
| 5 | Recruitment of artists at all 6 Action Sites for task 7.3.3 | WP7 | 12 | Recruited, with press release |
| 6 | Action Sites paired with appropriate Knowledge Site | WP5, WP6 | 13 | List of twinned sites |
| 7 | Rollout of online platform for Action Site teams | WP3, WP6 | 24 | Evidence of sharing and implementation of online platform with Action Site teams |
| 8 | Delivery of expert seminars on market & demand | WP4 | 24 | List of seminars and attendance information |
| 9 | Process of financial development initiated in at least two Action Sites | WP4, WP6 | 24 | Report on inception of development in relevant Action Sites |
| 10 | Protocol for effective co-creation initiated | WP5, WP2 | 24 | Integrated protocol shared with partners |
| 11 | Integration of WP1-4 into WP5 to begin WP6 Restoration Management | WP1-6 | 24 | Final co-creation report shared with partners |
| 12 | Delivery of partner workshops on practical restoration solutions and cross fertilisation | WP5 | 24 | Workshop attendance and documentation |
| 13 | Ecological and hydrological surveying completed | WP6 | 24 | Reports from surveying |
| 14 | Formal EU engagement commenced | WP7 | 24 | List of targeted policymakers / politicians, with strategy for engagement |
| 15 | Completion of community leader and stakeholder workshops | WP2 | 36 | Lists of events and attendees |
| 16 | System established for measuring and monitoring socioeconomic factors | WP2 | 36 | Reports are compiled and shared with project partners |
| 17 | Identification of local decision makers at Knowledge and Action Sites to implement governance framework | WP2, WP3 | 36 | List of key decision makers engaged with project |
| 18 | Establishment of multi-stakeholder platform | WP3, WP6 | 36 | Details of membership and activity of MSP |
| 19 | Policy & governance engagement at EU level commences | WP3, WP7 | 36 | Strategy for dissemination, and key meetings at EU level |
| 20 | Delivery of Action Site partner and scalability workshops | WP6 | 36 | Workshop attendance and documentation |
| 21 | Mobilisation of Decision Support System based on Indicators, Drivers and 'Safe Operating Space' | WP1, WP5, WP6 | 40 | Statement of DSS efficacy and implementation at 6 Action Sites |
| 22 | Tangible hands-on restoration underway at all Action Sites | WP6 | 40 | Works commenced |
| 23 | Market research completed with potential investors | WP4, WP6 | 60 | Workshop summary shared with partners |

Innovation Management

WaterLANDS will deliver innovative solutions to inform the upscaling of wetland restoration. A key focus is ensuring tangible restoration on the ground led by WP6, as well as making use of the Key Exploitable Results from WP7. However, an objective of publicly funded research is that it should go **beyond the production of the immediate deliverables** of the core project description and the dissemination of immediate results, and that it should produce advances in the state-of-the-art which contribute to the advancement of restoration at a European level. It is proposed that all participants in the project will be aware of the innovation potential and their responsibilities to realising this potential in line with the co-creation: a central feature of WaterLANDS. The **realisation of innovation**

opportunities is therefore a subject that will be discussed regularly with project partners and in consortium meetings. The project will be **mindful of the value of products**, such as publishable guidance, training sessions or training materials, and decision support systems or software which can inform future physical restoration or further the engagement of citizens. In some cases, restoration will be replacing former industries such as peat extraction, so it will be incumbent on the team to be **constantly alert to economic opportunities** or demand for particular skills that would further integrate the project in those communities where restoration is intended. New methods of restoration, new land use options or eco-tourism could be among these opportunities. In addition, the project has a finance WP which will explore the potential for conservation finance or finance related to nature-based solutions. Although biodiversity has attracted only a fraction of the \$200 billion being invested in Green Bonds, this is an expanding area, particularly with regard to the synergies between ecosystem restoration and climate finance. WaterLANDS will therefore be **attuned to opportunities to develop innovative finance** packages on the back of experience gained with restoration at the Action Sites.

3.2.2 Critical risks and mitigation measures

In order to maximise the success of the WaterLANDS project, an assessment of the key risks expected to arise during the course of the project has been conducted, while measures to mitigate the impact of these risks have also been proposed (Table 3.2b). It is acknowledged that this list is not exhaustive, though through the practice of adaptive management, and through reliance on our well balanced management structure, effective responses to unforeseen risks will be instigated.

Table 3.2b Critical risks for implementation

| Description of risk | Related WP | Proposed risk mitigation measures |
|--|------------|--|
| Personnel needed for local ecological or related work are no longer available. (Medium risk) | WP1/WP6 | Identify if alternative national personnel are available within the partner institution or Action Site country. Decide if more visits from the specialist institution are feasible or if the work can be performed by the institution recruiting a contract researcher. Determine the dependence of successful restoration on the originally proposed work. |
| One or more key stakeholders refuse to participate in stakeholder engagement. (High risk) | WP2/WP6 | Document process. Open participation with stakeholders who do engage. Approach any representative bodies, e.g.: farming or industry associations. Use other approaches where necessary, including one-to-one meetings, surveys, desk studies, previous scenarios, if necessary, to determine position of absent stakeholders. Be transparent about breadth and depth of engagement achieved. |
| Consistent stakeholder attendance is not achieved. (High risk) | WP2/WP6 | Keep all stakeholders informed of developments. Determine if other methods are less dependent on consistent attendance. Keep meetings agreeable and shorten if still effective. Note who is present or not and weight responses accordingly depending on representation. Undertake analysis for core group and those attending less frequently. |
| Administrative or political authority refuses to consider positive change in policy. (High risk) | WP3/WP6 | Outline range of best practice policies in circumstances resembling the Action Site in question. Determine if there are second best policies that would be more acceptable? Can appeals be made to a higher level? |
| International private finance is not available. (High risk) | WP4/WP6 | Document why this is the case and if anything would need to change to make this accessible. Determine if there is other public or NGO funding available. |
| Restoration efforts undermined by exogenous factors (High risk) | WP6 | Can these factors be managed? Are they relevant to certain stakeholders to whom the project can reach out? Are alternative instruments available? Are there other parts of the Action Site which are not affected? |
| Expected land or site is no longer available. (Medium risk) | WP6 | Are alternative lands available within the Action Site or alternative wetlands available with upscaling potential? Last resort would be to direct funds to other sites in the consortium, including potentially a Knowledge Site. |

| | | |
|---|-------------------|---|
| Disagreement between Project Coordinator, specialist partners and Action Site on how to proceed with restoration. (Low risk) | WP6 & all project | Subject to the conditions of the Consortium Agreement. Managed through majority decision of work package leads. Retention of funding by coordinator as last resort. |
|---|-------------------|---|

3.3 Consortium as a Whole

If it is to provide adequate advice and support to wetland restoration, the WaterLANDS project needs an experienced and capable team to support each of its work packages. The principal objective of the project is to demonstrate the upscaling of restoration. This it does through the inclusion of 15 Knowledge Sites (13 physical sites) and 6 Action Sites which are located across climate and ecological zones in different cultural contexts across northern, eastern and southern Europe. Another key element of the project is its emphasis on public and stakeholder engagement and the co-creation of solutions. These solutions are supported by strong expertise in wetland ecology and hydrology, governance, conservation finance and communications. The partners represent applied research institutions, municipal bodies, government agencies, environmental NGOs and consultancies. The project has aimed for gender representation. Of the named participants in Section 4-5, 44% are female and 56% are male.

The application is being led by University College Dublin. Members of the UCD team have experience of both coordination or work task involvement in previous EU-funded Framework, EKLIPSE, BiodivERsA and INTERREG projects, as well as national projects, in areas that mirror that of the consortium as a whole, including public engagement, economics, governance, with expertise in ecology and finance available through other national partners. The project's eight WPs each have an experienced lead and are split into sub-tasks which also possess their own lead. Several institutions also have responsibility or a significant involvement in tasks falling into other work packages where the intention is that this will support the integration of the project work programme. Each of the Action Sites is able to draw on expertise from across the WPs.

The first work package, **WP1**, addresses the ecological and physical aspects of wetland restoration. The WP is being led by Wageningen University and includes a principal participation from 10 institutions, including members with expertise in fresh and saltwater ecosystems, wildlife ecology, landscape ecology, conservation, soil carbon, biogeochemistry and plant/climate interactions.

WP2 is led by the Prospec Institute which provides expertise in participatory and co-creation methodologies and has had a major role in several large EU projects. This WP on community engagement includes participation from at least 10 institutions and contains members with both practical and applied research skills in working with stakeholders, including in conservation education. The WP includes socio-cultural expertise and expertise of multi-criteria analysis and environmental economic valuation methods.

WP3 is led by the National University of Ireland, Galway, with input from the Succow Foundation and other institutions with experience and knowledge of finding governance solutions and of designing economic instruments specifically for conservation or restoration. NUIG also lead the governance deliverable in the INTERREG Care-Peat Project.

WP4 includes 6 institutions with expertise or experience in conservation finance and natural resource economics. These include bodies such as the WWF Landscape Finance Lab with a demonstrated ability to obtain innovative finance related to climate change, biodiversity or restoration. Input is also being provided by the University of Venice which has much experience in the area of conservation finance, while other partner institutions include state agencies or have links to international organisations such as WWF or UNEP with expertise or access to finance for upscaling.

All partners contribute to **WP5** on co-creation with this package led by Wetlands International who have strong experience in bringing together varied expertise and the input of the public and stakeholders. All of the NGOs involved in the project also have experience in advocacy as well as in obtaining finance of addressing governance. Several institutions have expertise in communication, the WP for which is being led by ERINN (formerly Intrigo Ltd. / AquaTT) who have held this responsibility for other H2020 projects. Indeed, over half of the partners have experience with H2020, Framework or Interreg projects or with multinational conservation funding.

Eighteen institutions are located in countries with Knowledge Sites on which they have worked. Each of the 10 institutions in countries with Action Sites has a mixture of local experience in practical restoration or restoration ecology, engagement, governance of in obtaining funding which they can combine with complementary or research

experience of other partners in the Consortium. The project team includes national and international conservation NGOs with direct objectives to upscale restoration. It also includes government agencies with this same objective. It is therefore intended that the project will be able to hit the ground running and that new knowledge can be put into effect immediately.

3.4 Resources to be Committed

The WaterLANDS project is highly ambitious in nature – spanning 32 partners and 14 European countries – and will, by necessity, entail a large budget with a total request from the European Commission of **€ 23,068,487**. However, testament to the commitment for scalability and legacy beyond the life of this project, **significant co-funding** from various corporate and State partners (RMK, ERINN, ToTu, NE) amounts to an additional €600,000.

The H2020 Green Deal Call 7.1 requires that the majority of spending is on active restoration. As such, **61% of our allocated budget is dedicated to active restoration** efforts across 6 Action Sites. To best achieve this restoration, we have given flexibility to Action Site partners in how these funds are to be administered, respecting existing relationships, the capacities of partner organisations and acknowledging the technical experience of local affiliates. Therefore, some works will be sub-contracted, some will be through a direct Linked Third Party and some will be conducted directly by the partner organisation itself. This **built-in flexibility** is reflected in person-month allocations (Table 3.4a), where some partners utilise in-house expertise to conduct restoration (e.g. UT), while others outsource these efforts to cost-effective local parties (e.g. NPWS, GRON). This encourages local legitimacy and incubates long-term scalability of wetland restoration. The co-creation process of WaterLANDS will require substantial interaction across the network. To reduce the travel costs associated with this, and to minimise the project’s carbon emissions, we have carefully **aligned site visits, annual conferences WP meetings to limit travel**. Further, where feasible, flight costs will include carbon offset payments. We have also ensured that smaller meetings will be conducted remotely using video conferencing software, where possible. Importantly, WaterLANDS resources are designed to diversify and grow as financial instruments solidify and new socio-economics models are proposed. As such, resources requested of the EC should be seen as **catalytic funding**, instigating a process of **resilience through diversification** in funding sources beyond WaterLANDS.

Where ‘Other Direct Costs’ exceed 15% of staff costs, these are detailed and justified in Table 3.4b.

Table 3.4a: Summary of staff effort in person months (PM), itemised by partner and Work Package

| Partner No. | Short name | WP1 | WP2 | WP3 | WP4 | WP5 | WP6 | WP7 | WP8 | Total PM |
|-------------|------------|------|-----|------|------|-----|-------|-----|-----|----------|
| 1 | UCD | 1 | 20 | 11 | 13 | 3 | 18 | 11 | 102 | 179 |
| 2 | NUIG | 2 | 0 | 28 | 0 | 6 | 0 | 2 | 1 | 39 |
| 3 | NPWS | 2 | 15 | 2 | 5 | 10 | 19 | 4 | 2 | 59 |
| 4 | CWF | 1 | 6 | 6.5 | 2 | 1 | 0 | 0.5 | 1 | 18 |
| 5 | ERINN | 0 | 0 | 0 | 0 | 6 | 4 | 45 | 5 | 60 |
| 6 | WWF-LFL | 2 | 6 | 2.5 | 48.5 | 6 | 0 | 2 | 1 | 68 |
| 7 | PI | 0 | 43 | 0 | 0 | 23 | 0 | 2 | 1 | 69 |
| 8 | WWF-BG | 9.5 | 21 | 9.5 | 11 | 18 | 87 | 9 | 2 | 167 |
| 9 | SM | 3.4 | 6 | 5 | 4.3 | 7.2 | 58.5 | 7 | 2 | 93.4 |
| 10 | UT | 2 | 7 | 3 | 3 | 10 | 311 | 0 | 2 | 338 |
| 11 | ELF | 0 | 10 | 5 | 2 | 2 | 113 | 4 | 1 | 137 |
| 12 | RMK | 0 | 2 | 1 | 0 | 3 | 53 | 0 | 1 | 60 |
| 13 | ToTu | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 1 | 18 |
| 14 | UEF | 18 | 3 | 18 | 1 | 2 | 0 | 0.5 | 1 | 43.5 |
| 15 | GTK | 7 | 3 | 1.5 | 1 | 1 | 0 | 0.5 | 1 | 15 |
| 16 | PB | 1 | 1 | 24.5 | 0 | 2 | 0 | 10 | 1 | 39.5 |
| 17 | TdV | 1 | 6 | 6.5 | 2 | 1 | 0 | 0.5 | 1 | 18 |
| 18 | MSF | 1 | 6 | 19 | 2 | 2 | 0 | 0.5 | 1 | 31.5 |
| 19 | UNIVE | 0 | 30 | 0 | 39 | 1 | 0 | 0.5 | 1 | 71.5 |
| 20 | WahV | 3.5 | 21 | 8 | 7.5 | 16 | 102.5 | 5 | 2 | 165.5 |
| 21 | WU | 40.5 | 5 | 0 | 10 | 15 | 0 | 2 | 1 | 73.5 |
| 22 | WI | 6 | 0 | 0 | 0 | 46 | 0 | 0 | 2 | 54 |
| 23 | RUN | 4.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.5 |
| 24 | GRON | 1.5 | 10 | 2 | 5 | 10 | 22 | 0.5 | 1 | 52 |
| 25 | SBB | 0.5 | 6 | 2.5 | 2 | 1 | 0 | 0.5 | 1 | 13.5 |
| 26 | CMok | 3 | 6 | 2.5 | 2 | 3 | 0 | 0.5 | 1 | 18 |

| | | | | | | | | | | |
|-----------|--------------|--------------|------------|--------------|--------------|--------------|------------|------------|------------|---------------|
| 27 | UW | 1 | 6 | 2.5 | 2 | 1 | 0 | 0.5 | 1 | 14 |
| 28 | CSIC-EBD | 30 | 6 | 6.5 | 2 | 1 | 0 | 0.5 | 1 | 47 |
| 29 | UU | 7 | 6 | 2 | 2 | 1 | 0 | 0.5 | 1 | 19.5 |
| 30 | NE* | 2 | 12 | 2.5 | 3 | 7 | 0 | 0.5 | 1 | 28 |
| 31 | IUCN-PP | 1 | 2 | 3 | 3 | 2 | 1 | 0.5 | 1 | 13.5 |
| 32 | UNIVLEEDS | 31 | 36 | 1 | 18 | 5 | 99 | 4 | 2 | 196 |
| | TOTAL | 182.4 | 302 | 176.5 | 190.3 | 212.2 | 903 | 114 | 144 | 2224.4 |

* Although PMs for Natural England are 13.5, the cost of staff contributions from this partner are being offered in-kind.

Table 3.4b: Other direct costs, and justification thereof, if this exceeds 15% of personnel costs.

| 4. CWF | Cost (€) | Justification |
|---------------------------------|-----------------|--|
| Consumables | 1,000 | Consumables for modified management practices |
| Travel | 6,900 | Attendance at 6 x Annual meetings @600 (€3.6k), 1 conference presentation @1,500, 3 x KS meetings @600 (€1.8k) |
| Other goods and services | 2,500 | Production of pamphlets and improved interpretation on-site |
| Total | 10,400 | |

| 8. WWF-BG | Cost (€) | Justification |
|---------------------------------------|-----------------|---|
| Consumables | 2,000 | Focus group and office supplies |
| Travel | 24,500 | Attendance at 6 x Annual meetings @1800 (€10.8k), 1 conference presentation @1,500, 10 x data collection travel @200 (€2k), (3 x KS meetings @1200 (€3.6k), 3 x AS meetings @1200 (€3.6k), internal site travel (€3k) |
| Equipment | 3,000 | Computers, fieldwork equipment for Action Site and Knowledge Site |
| Audit | 6,000 | Budget over 325k |
| Action Site Direct Costs | 148,000 | Detailed design and implementation of spatial concept for 35ha linear wetland, with associated planning, engagement, groundworks and monitoring |
| Action site Artist consumables | 2,000 | Art supplies and internal travel |
| WaterLANDS Annual meeting | 12,000 | Costs to organise Annual Consortium meeting in Sofia |
| Knowledge site Persina costs | 8,000 | Room rental and catering of meetings for WP2 and WP3 activities around KS in Persina/Belene |
| Total | 205,500 | |

| 9. SM | Cost (€) | Justification |
|---------------|-----------------|--|
| Travel | 21,900 | Attendance at 6 x Annual meetings @1800 (€10.8), 1 conference presentation @1,500, 3 x AS meetings @1200 (€3.6k), within-country AS travel (€6k) |
| Audit | 4,000 | Budget exceeds 325k |
| Total | 25,900 | |

| 10. UT | Cost (€) | Justification |
|---|-----------------|--|
| Equipment | 262,500 | Depreciation value of eddy covariance tower and UAV (drone) equipped with various sensors/metres |
| Consumables | 27,000 | Lab, office and fieldwork consumables for knowledge site and extensive action site |
| Travel | 32,700 | Attendance at 6 x Annual meetings @1800 (€10.8), 1 conference presentation @1,500, 2 x bilateral WP meetings @800 (€1.6k), 6 x specific trips to AS @600 (€3.6k), 3 x KS meetings @1200 (€3.6k), 3 x AS meetings @1200 (€3.6k), within AS travel (€8k) |
| Audit | 8,000 | Budget exceeds 325k |
| Field work cost | 54,143 | Monthly GHG measurement collection from eddy towers, including travel and accommodation for 400+km trip to sites |
| In-house GHG samples analysis | 102,000 | Sample analysis using UT in-house testing and analysis unit |
| Consortium Annual Meeting in Tartu | 13,000 | Costs to organise Annual Consortium meeting in Tartu |
| Dissemination, publication fees | 10,000 | Translation, production and printing, including artist expenses |
| Total | 509,343 | |

| 11. ELF | Cost (€) | Justification |
|------------------|-----------------|----------------------------------|
| Equipment | 7,000 | Computer and fieldwork equipment |

| | | |
|----------------------------|---------------|---|
| Consumables | 7,800 | Lab, field and office consumables |
| Travel | 29,100 | Attendance at 6 x Annual meetings @1800 (€10.8), 1 conference presentation @1,500, 2 x bilateral WP meetings @800 (€1.6k), 6 x specific trips to AS @600 (€3.6k), 3 x AS meetings @1200 (€3.6k), within AS travel (€8k) |
| Audit | 8,000 | Budget exceeds 325k |
| Costs for AS events | 17,600 | Catering, room and bus rent, translation, editing, artist supplies, with communities, stakeholders and artist |
| Publication fees | 2,000 | Open access publication fees |
| Fieldwork costs | 21,800 | Coordination, site planning and oversight of subcontracted groundworks. Weekly visit required for duration of works. |
| Total | 93,300 | |

| 20. WahV | Cost (€) | Justification |
|---|----------------|--|
| Travel | 17,700 | Attendance at 6 x Annual meetings @1200 (€7.2k), 1 conference presentation @1,500, (3 x KS meetings @1200 (€3.6k), 3 x AS meetings @1200 (€3.6k), data collection travel to AS (€4.2k) |
| Audit | 8,000 | Budget exceeds 325k |
| Artist expenses | 15,000 | Consumables, travel and expenses for artist-in-residence |
| Restoration materials | 480,000 | Materials for soft bunding, removal of invasive species, surveying, and other expenses to restore coastal saltmarshes |
| Amenity signage / infrastructure | 105,000 | Materials and expenses for widescale outreach campaign to promote environmentally positive behaviour change in lagoon, and for improvement and maintenance of amenity infrastructure |
| Consortium Annual Meeting | 15,000 | Costs for holding WaterLANDS annual meeting in Venice, including room rental, catering, interpretation, group transportation and ancillary expenses |
| Total | 640,700 | |

| 21. WU | Cost (€) | Justification |
|----------------------------------|----------------|--|
| Consumables | 50,000 | Office and laboratory consumables relating to ecological investigations planned in WP1 |
| Travel | 38,000 | Attendance at 6 x Annual meetings @1800 (€10.8), 1 conference presentation @1,500, 2 x bilateral WP meetings @800 (€1.6k), 6 x specific WP1 trips to AS @600 (€3.6k), 3 x KS meetings @1200 (€3.6k), 3 x AS meetings @1200 (€3.6k), 18 x additional data collection days around annual meetings @200 (€3.6k), within KS and AS travel (€13.3k) |
| Audit | 5,000 | Budget exceeds 325k |
| Artist expenses | 15,000 | Consumables, travel and expenses for artist-in-residence |
| Annual Consortium meeting | 14,000 | Costs for holding WaterLANDS annual meeting in Venice, including room rental, catering, interpretation, group transportation and ancillary expenses |
| Total | 122,000 | |

| 22. WI | Cost (€) | Justification |
|--------------------|----------------|---|
| Equipment | 5,000 | Computers (€3k) and equipment to support co-creation events across Europe (€2k) |
| Consumables | 107,000 | Materials required for 30 workshops, training events and site twinning 'dates'. 12 x large events @5k (€60k), 18 x small events @2.5k (€45k), office and other consumables (€2k) |
| Travel | 54,000 | Attendance at 6 x Annual meetings @1800 (€10.8), 1 conference presentation @1,500, 2 x bilateral WP meetings @800 (€1.6k), 30 x specific WP5 trips to AS/KS @600 (€18k), 18 x additional data collection days around annual meetings @200 (€3.6k), travel of international Wetland International landscape experts (€18.5k) |
| Audit | 12,500 | Budget over 325k |
| Total | 178,500 | |

| 23. RUN | Cost (€) | Justification |
|----------------------------------|---------------|---|
| Travel | 4,000 | Attendance at 6 x Annual meetings @600 (€3.6k), 2 x KS trips @200 (€400) |
| Biogeochemical monitoring | 31,683 | In-house processing and administration of biogeochemical samples to identify indicators for WP1 |
| Total | 35,683 | |

| 24. GRON | Cost (€) | Justification |
|-------------------------------------|----------|--|
| Consumables | 22,000 | Consumables for 10+ events planned (€20k) and office consumables for support of integration with ED2050 project |
| Travel | 12,000 | Attendance at 6 x Annual meetings @1200 (€7.2), 1 conference presentation @1,500, AS travel and other visits (€3.3k) |
| Audit | 8,000 | Budget exceeds 325k |
| Translation, room rental and | 40,000 | Costs for events associated with participation process and interviews for aims of WP2, WP3, WP5 and WP6 |

| | | |
|--|-----------------|--|
| surveying for Eems-Dollard Action Site | | |
| Total | 82,000 | |
| 26. CMok | Cost (€) | Justification |
| Equipment | 2,000 | Computer for fieldwork at two knowledge sites |
| Consumables | 5,000 | Office and fieldwork consumables for knowledge sites social investigation |
| Travel | 7,700 | Attendance at 6 x Annual meetings @600 (€3.6k), 1 conference presentation @1,500, 2 x bilateral WP meetings @400 (€800), 3 x KS meetings @600 (€1.8k) |
| Workshop costs | 2,000 | Costs for running knowledge site social investigation workshops |
| Total | 16,700 | |
| 27. UW | Cost (€) | Justification |
| Equipment | 1,000 | Computing costs for interpretation of knowledge site social investigation and data analysis |
| Consumables | 1,000 | Fieldwork consumables for knowledge sites social investigation |
| Travel | 7,700 | Attendance at 6 x Annual meetings @600 (€3.6k), 1 conference presentation @1,500, 2 x bilateral WP meetings @400 (€800), 3 x KS meetings @600 (€1.8k) |
| Total | 9,700 | |
| 28. CSIC-EBD | Cost (€) | Justification |
| Equipment | 1,158 | Computer and equipment for workshops |
| Consumables | 1,600 | Consumables for workshops and ongoing WP1 input as KS |
| Travel | 28,300 | Attendance at 6 x Annual meetings @1800 (€10.8k), 1 conference presentation @1,500, 2 x bilateral WP meetings @800 (€1.6k), 3 x focus group events @1200 (€4.8k), 3 x KS meetings @1200 (€3.6k), 6 x additional data collection days @400 (€2.4k), 3 x AS meetings @1200 (€3.6k) |
| KS Doñana visit | 3,432 | Room rental, catering, on-site travel |
| Joint workshop for DSS development | 3,432 | Room rental, catering, on-site travel |
| Open access pub. | 4,000 | Fees for open access publication |
| Total | 42,694 | |
| 31. IUCN-PP | Cost (€) | Justification |
| Travel | 6,000 | Attendance at 6 x Annual meetings @600 (€3.6k), 2 x WP3/4 meetings @600 (€1.2k), 2 x KS meetings @600 (€1.2k) |
| Total | 6,000 | |