Annex 2: Template for Mid-Term Progress Report

The 2022 Joint Transnational Call for projects on the theme **"Management of water resources: resilience, adaptation & mitigation to hydroclimatic extreme events & management tools"** resulted in 27 funded consortia. The template for Mid-Term Progress Report details the reporting requirements half-way through the project lifetime.

The format of this reporting template may be modified to fit the online reporting platform.

This template does not substitute national regulations

The complex INTERLink of safeguarding wAter availabilitY and quality to mitigatE and adapt to hydroclimatic extRemes - INTERLAYER

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Project code: Water4All 2022 JTC-00261 [**INTERLAYER**]
Start date: 01/04/2024 End date: **30/03/2027**
Period covered by this report: 01/04/2024 to 30/09/2025

1. Publishable Summary

*The content of this section is intended for dissemination by the Water4All, mainly through its website. The style should be adapted for communication to a wide audience (**non-technical English**) and the quality of the data must enable direct publication.*

The publishable summary should provide the following information:

- *The project context and objectives; the address of the project's public website, if applicable.*
- *The approaches used, methods, work performed since the beginning of the project and main achievements;*
- *The results beyond the state of the art and their scientific and socio-economic impact and use; and*
- *Policy relevance of your project.*

Maximum 1 page

The EU-Water4All project INTERLAYER, 2024-2027 (www.interlayer.uevora.pt), focuses on developing cumulative adaptation strategies in the complex interlink between surface and groundwater management, using water retention measures to reduce water runoff and fill-up groundwater storages, to minimize hydroclimatic extreme events' impacts in water quantity and quality. Further, governance mechanisms are also addressed, to promote the rapid uptake of the technologies.

Water retention is explored through Slow Hydrology measures, guided by terrain and water balance analysis, and related to land use (especially agriculture), water quality and biodiversity from a synergistic perspective to facilitate robust future River Basin Management Plans. Future climate simulations are produced locally in order to ensure that the proposed measures improve the resilient, adaptation and mitigation to hydroclimatic extreme events. A comprehensive catalogue of Nature-Based Solutions (NBS) dedicated to Slow Hydrology has been compiled, establishing a robust foundation for the project's subsequent tasks and for the integration of NBS into sustainable hydrological management.

The concept of Slow Hydrology is tested in four living lab watersheds, addressing the following key questions: (i) how can excess water be stored to reduce water velocity during flash floods, using field topography and drainage systems to increase detention and infiltration strategically in the catchment; (ii) how can water availability during dry periods be improved, considering the water needs for human activities without compromising biodiversity conservation, water quality or ecosystem services; (iii) how can the suggested NBS influence the local biodiversity and provide benefits and co-benefits to local population and stakeholders.

The Living Labs (LL) represent contrasting European edaphoclimatic regions with different geologic characteristics and land uses:

1) Portugal, Guadiana River - Covering 136 km^2 in the Toutalga sub-basin, the catchment is dominated by intermittent rivers and ephemeral streams (IRES), characterized by flash flood and dry-phase periods. The basin has a hot summer Mediterranean climate and is protected under the Natura 2000 Protected Areas

Network. The key challenges include drainage, water abstraction, urban development, deforestation, and rising temperatures, disrupting the hydrological balance and increasing drought risk. The watershed is characterized in term of meteorological conditions, Land Use and Land Cover, historical physico-chemical and aquatic biological communities, mapping the complex natural and man-made structures and processes impacting hydrology and map the slow hydrology techniques / nature-based solutions (NBS) already implemented in the watershed.

2) Denmark, Værebro River - The catchment is 153 km^2 and the river itself is 35 km long, having its source in a biodiversity-rich bog area. This living lab has a mixed land use with small and medium-sized villages, many spare-time farmers, and some agriculture, before discharging to Roskilde Fjord. It allows for a source-to-sea approach in a region with a continental humid and warm summer climate. Mapping of potential intervention sites within the river catchment has been done, and municipal stakeholders have been involved and visited the sites. A characterisation of the LL landscape has also been video recorded, and a film is currently under production by the University of Copenhagen.

3) Austria, Liesing River - The catchment is 112 km^2, can be divided into a forest-dominated area followed by an urban river section, in a region with a continental humid and warm summer climate. A primary GIS analysis was already carried out. Vegetation was classified, and essential input data were gathered for hydrological water temperature modelling. Engagement with key stakeholders was strengthened through meetings and site visits with the Municipal Department 45 - Water Management Vienna.

4) Romania, Danube River - Spanning 77 km^2 along the Danube River floodplain between Salcia and Maglavit, features agricultural lands, wetlands, and peri-urban areas, elevation under 100 meters, under a continental humid climate with hot summers. Extensive GIS and remote sensing analyses, CORINE Land Cover, Sentinel-1 radar imagery and Sentinel-2 optical data analyses form a robust baseline for identifying priority areas where NBS can restore hydrological connectivity and strengthen ecosystem services. GeoEcoMar organized a stakeholder workshop, enabling dialogue on monitoring strategies and the integration of slow hydrology measures, ensuring that scientific analyses are aligned with local governance, practical needs, and community perspectives.

2. Work performed and results achieved within the project

a. Scientific and technological progress

*Please describe the **work performed <u>per work package</u> and the results obtained during the reporting period**.*
Please, comment on the achieved work progress compared to the initial schedule.
Information to be included:

- *Did the project achieve its main objectives, milestones and deliverables?*
- *How did the project promote a multidisciplinary approach?*

Maximum 2 pages

WP1: Project Management and Coordination (UEVORA)

As INTERLAYER's Project Coordinator, Miguel Potes - UEVORA, was involved in all the transversal activities of the project and was the focal point between the Water4All Secretariat and the project partners, sharing among them all the information and requests.

Deliverable 1.1 - Initial data management plan was prepared and submitted under UEVORA coordination.

WP2: Inventory of NBS for slow hydrology (GeoEcoMar)

T2.1 Inventory of NBS methodologies

Deliverable 2.1 was prepared and submitted under the coordination of GeoEcoMar as a comprehensive catalogue of Nature-Based Solutions (NBS) dedicated to Slow Hydrology. Overall, the catalogue establishes a robust foundation for the project's subsequent tasks and for the integration of NBS into sustainable hydrological management.

WP3: Demonstration in Living Labs (BOKU)

T3.1 Living Lab Coordination

The LL coordination plan (Milestone 3.1/ Deliverable 3.1) defines a timetable of meetings and regular exchange and process of documentation of the work done in the LL's. It aims to generate a plan on how the research work can be structured and organized in a systematic way in order to generate reliable, comparable and useful project outputs.

The LL Baseline Report (Milestone 3.2/Deliverable 3.2) has been co-developed by LL coordinators and shares the findings of the first research, analysis and calculations related to the four Interlayer Living Labs.

T3.2: Værebro River (Denmark)

The Danish Living Lab has ensured good contact to key stakeholders. Several meetings and workshops have been held among the Danish partners (GEUS, UCPH and RegionH) and LL stakeholders, ensuring continued progress in the living lab.

T3.3 Liesing River (Austria)

For the Living Lab Liesing a primary GIS analysis was carried out. Based on the gained information about land use, geological, hydrogeological parameters, existing monitoring infrastructure etc. the catchment was divided into an upper and a lower part, leading into different research questions.

T3.4 Guadiana River Watershed – Toutalga sub-basin (Portugal)

The site for the Portuguese Living Lab was decided by UEVORA and the Portuguese Environmental Agency in a meeting in the beginning of the project. The Living Lab is characterized in terms of meteorological conditions, Land Use and Land Cover, historical and actual physico-chemical and aquatic biological communities, mapping the complex natural and man-made structures and processes impacting hydrology and map the slow hydrology techniques / NBS already implemented in the watershed.

T3.5 Danube River (Romania)

In the Romanian Living Lab at Salcia–Maglavit, extensive GIS and remote sensing analyses have been carried out to characterize land cover, hydrology, vegetation, and climate-related risks. CORINE Land Cover data confirmed a predominantly agricultural landscape with significant patches of wetland and forest, while Sentinel-1 radar imagery and Sentinel-2 optical data provided time series on surface water dynamics and vegetation stability.

WP4: Monitoring and Modelling of the interlayer between surface and groundwater (quality and quantity) (GEUS)

Task 4.1: Identify water retention hydrologic processes and options for online sensor monitoring for different types of the Living Labs

NBS techniques (modification of topography / drainage, land use to retain surface water for recharge to shallow groundwater for water storage), identified in WP2 and included in all Living Labs are inspected for implementation in selected hydrological models, parameterization carried out and used for modelling and monitoring purposes in Task 4.3.

Task 4.2: Future climate modelling and resilience

Deliverable 4.1. Preliminary draft report on future climate at local scale in each LL. A preliminary characterization of the future climate for each LL, which will serve as a basis for project partners to explore the future climate at the local scale and orientate towards identifying NBS for slow hydrology accounting for this information.

Task 4.3: Hydrological modelling, monitoring and assessment of water retention measures in Task 4.1 for LL under different climate scenarios LL, provided in Task 4.2.

Værebro catchment (Denmark)

GEUS prepared a submodel from the National Hydrological Model, enhanced by additional local calibration, to evaluate intervention effects and land-use changes on river discharge and (shallow) groundwater levels. The localized model further enables climate impact assessments by simulating selected climate scenarios. The model outputs are integrated with GIS-based estimates to validate water balances and identify zones

with infiltration potential, including pathways for deeper groundwater recharge, under wet, dry, and future climate conditions (input from Task 4.2, Deliverable 4.1).
Liesing catchment (Austria)
A three step based modelling approach for Living Lab Liesing was developed: rainfall runoff (upper catchment), hydraulic model (lower catchment) and water temperature model (lower catchment). The input data was collected and pre-processed. Vegetation was classified, and essential input data were gathered for hydrological water temperature modelling.
Toutalga catchment (Portugal)
The calibration and validation of a hydrological model of flood propagation reaching the infiltration/retention basin (produced by the river basin) is underway. A monitoring system was implemented in the LL consisting of continuous measurement of meteorological, hydrological, water quality, hydromorphology (RHS) (https://meteo.create.uevora.pt/solis/toutalga.php , in Portuguese).
Danube catchment (Romania)
The outputs from Task 4.1 (bluespot mapping, process identification, and sensor-based monitoring strategy) will serve as inputs for Task 4.3, supporting model calibration, validation, and scenario-based assessment of water retention options under varying climate conditions.
WP5: Transfer of Interlayer findings to policy, business and society (UCPH)
Draft guidelines for co-creation (Milestone 5.3) has been created; the document has three main headlines: Relevant legislation (at EU and Living Lab country level); Transition arena and slow hydrology co-benefits; Stakeholder landscape.
The document is in draft version and needs to be further informed with knowledge from INTERLAYER partners. Overview of governance and policies at national level has only been completed for Denmark.
WP6: Dissemination, Communication and Exploitation (UEVORA)
Task 6.1: Plan for the dissemination, exploitation, and communication activities (PDEC)
In this task the PDEC (Deliverable 6.1) was developed with the purpose of defining the actions, messages, type of audiences, communication methods and timing over the project execution.
Task 6.2: INTERLAYER Dissemination activities
An "INTERLAYER Agenda" of events of the project was created with the events that the consortium is planning to attend or organize.
Task 6.3: INTERLAYER Communication activities
The project website was designed and launched (www.interlayer.uevora.pt, Deliverable 6.2), as well as the LinkedIn public profile (www.linkedin.com/in/interlayer-project-28391a338), both acting as powerful communication tools to all target audiences.

A. Collaboration, coordination and mobility

Information to be included:

- *Describe how the work was distributed among partners.*
- *Describe how effective the collaboration between partners was (incl. in-kind partners) and how this is reflected in the results (e.g., tools comprising multidisciplinary elements, joint publications, etc.)*
- *Does the project still meet the transnational nature? Please, explain.*
- *Were the coordination and organisation of the project effective? Please, explain.*
- *Describe the mobility of the researchers within the Consortium. Please specify the number of researchers concerned by mobilities.*
- *How did the project and/or researchers' careers benefit from the mobility within the Consortium?*
- *Indicate coordination with other projects funded in the 2022 Joint Transnational Call or national and international projects funded by other instruments.*

Maximum 2 pages

The work was distributed among partners according to their expertise, were assigned Work Package leaders, Task leaders and participants. At the beginning of the project, the following Committees were established:

- *Steering Committee*, composed of one representative from each of the seven partners, meets every six months.
- *Advisory Scientific Board* composed by three top researchers in the project scientific area, highly relevant for the project that can support and advise the scientific activities and join the Annual Assembly.
- *Living Labs Coordinators*, composed of one responsible per LL, assuring the proper development of the LL activities, meets every two months in the first year and every four months onwards.
- *Work Package Leaders*, who meet with the regularity chosen by the WP Leader.

The collaboration between partners is healthy and pushes the project to a transnational level. Some examples of this can be found:

- The hydrological GIS analysis identified blue spots with retention capacity and mapped runoff pathways forming a hierarchical network. This approach is a fast method for identifying potential intervention locations and was made for all the LL.
- The Ecosystem Services (ES) mapping was generated for all the LL, including the Basis, Regulating, Cultural and Provisioning ES.
- The Deliverable 2.1 - Inventory of NBS methodologies for surface water retention, slow hydrology and groundwater recharge - was prepared with the contributions from all the partners as a comprehensive catalogue of NBS dedicated to Slow Hydrology. Overall, the catalogue establishes a robust foundation for the project's subsequent tasks and for integrating NBS into sustainable hydrological management.
- The Deliverable 4.1 - Preliminary draft report on future climate at local scale in each LL - was prepared with regional downscaling for each LL and the pretended outputs were discussed between all the partners according to all needs in terms of modelling.

The coordination and organisation of the project were effective, in the sense that INTERLAYER is running as expected, Deliverables and Milestones were achieved, and good expectations for the rest of the project.

One Erasmus student from Aeres University of Applied Sciences (Netherlands) was visiting the Portuguese partner and carried out activities in the Portuguese LL with the title "Soil Erosion Risk Assessment: A Southern Portuguese Case Study" with collaboration with Polytechnic Institute of Beja.

Two UCPH MSc students at GEUS worked on the Danish LL case on preparing a hydrological submodel, calibration and effects of NBS interventions.

Two UCPH MSc students in landscape architecture have included in their thesis the work developed in designing proposals for future landscapes linked to potential slow hydrology co-benefits, becoming strong socio-ecological interventions and proposing new larger wetlands with variated forest types, grazing systems and regenerative agriculture based in the local community.

Within the BOKU University the following activities took place:

- Field course: soil- and water bioengineering in the Living Lab Liesing
- Course: Planning nature-based solutions at a stretch of River Liesing
- Bachelor thesis: Ecosystem services of urban rivers – assessment methods based on an exemplary stretch of River Liesing [Flora Amler]
- Bachelor thesis: Impact of vegetation on water temperature – assessment of an exemplary stretch of River Liesing [Anna Ludwiczek]

b. Impact statement

Please describe the progress of the project so far towards delivering:

- ***Scientific impact**, based on its objectives, including quantification to the extent possible.*
- ***Economic impact**, based on its objectives (e.g., to what extent will the project increase cost-effectiveness of industrial production or processes) including quantification to the extent possible.*
- ***Impact for society, including environmental impact**, based on its objectives, including quantification to the extent possible.*

Optional: Can you describe the achieved impact and the added-value of participating in the Knowledge Hub activity? (only for those projects belonging to the Knowledge Hub activity under 2023 Joint Transnational Call)

Maximum 2 pages

The Interlayer has nine specific objectives and so far, four of them are being accomplished:

Objective 1. To create an inventory of European techniques, including Water Retentions Measures (WRM), NBS and Bioengineering that combine additive results in surface water retention, promoting slow hydrology and groundwater recharge (linked to WP2).

This objective is linked to the Deliverable 2.1 - Inventory of NBS methodologies for surface water retention, slow hydrology and groundwater recharge. The D2.1 presents eight methodologies that address water retention, groundwater recharge, flood and drought resilience, and ecosystem service enhancement. Traditional approaches such as terrace farming, ridge and furrow systems, and half-moon water harvesting, are described alongside more innovative measures including artificial recharge systems, wetland restoration, soil and water bioengineering, blue-green urban infrastructure, and continuous contour trenching. Each method is examined in terms of technical implementation, anticipated benefits, costs, challenges, and monitoring frameworks, ensuring both scientific depth and practical guidance. The deliverable also emphasizes cross-cutting aspects, particularly biodiversity improvement, carbon storage, socio-economic opportunities, and community engagement, while recognizing barriers related to labour, maintenance, and funding.

Objective 2. To generate an estimate of the impact of retention technologies (slow hydrology) applications on flood and drought risk, water availability, quality, and biodiversity at the river basin scale in different edaphoclimatic contexts and settings in different future scenarios (linked to WP 3 and 4).

This objective is linked with WP3 - Demonstration in Living Labs and WP4 - Monitoring and Modelling.
Specifically, with Deliverable 3.2 - Baseline report profiling all the four living labs. This deliverable shares the findings of the first research, analysis, categorizations and calculations related to the four Interlayer Living Labs. In a general characteristic the focus is put on the identification of geomorphological aspects (terrain, river network, geology), land use classes, soil specific aspects, the hydrological system. The existing monitoring system in the different living labs is described, and, in the context of slow hydrology, primary objectives were defined and related ecosystem services were collected, ranked and compared.
The objective is also linked to Deliverable 4.1 - Preliminary draft report on future climate at local scale in each LL. A preliminary characterization of the future climate for each LL, which will serve as a basis for project partners to explore the future climate at the local scale and orientate towards identifying NBS for slow hydrology accounting for this information.
Climate models and other project results support the ranking of NBS in cost-benefit analysis.
Nature-based solutions, when evaluated under current and future climate models, can mitigate climate risks while enhancing ecosystem resilience. These measures generate significant economic benefits by reducing adaptation costs, protecting infrastructure, and improving ecosystem services that support agriculture, tourism, and human well-being.

The value of nature-based solutions for society can be described by fostering recreation, improving urban climate through heat island mitigation, and supporting biodiversity and habitats. Restoration measures strengthen ecosystems while delivering co-benefits for communities, demonstrating how environmental improvements directly enhance quality of life and long-term resilience.

Objective 3. To Integrate local, indigenous, scientific, and technological knowledge in the co-production of resilient retention techniques (linked to WP3).

This objective was treated in the same way for each LL, as follows:

Værebro River (Denmark)

The Danish Living Lab has ensured good contact with key stakeholders. Several meetings and workshops have been held among the Danish partners and LL stakeholders, ensuring continued good progress in the living lab. A thorough deep dive into the hydrological characterization of the living lab has been done by University of Copenhagen (UCPH) and GEUS. This has been the point of departure for brainstorming on potential local slow hydrology interventions. Mapping of potential intervention sites within the river catchment has been done, and in June 2025 the Danish partners visited the sites together with municipal stakeholders. In order to characterise specific areas of the LL, the landscape of the living lab has been video recorded, and a film is currently under production by UCPH. The idea is to create a video narrative that can be used to communicate different scenarios and interventions at the sites to be communicated to a wider audience as part of the transition arena work.

Liesing River (Austria)

For the Living Lab Liesing a primary GIS analysis was carried out. Based on the gained information about land use, geological, hydrogeological parameters, existing monitoring infrastructure, among others, the catchment was divided into an upper and a lower part, leading into different research questions. The primary objective of the Austrian Living Lab was defined as: “Transformation of hydrological peaks (slow hydrology) in order to derive flood security and ecologically compatible low flow: Relevant processes for flood security are holding water in the landscape as well as a buffering of run off from extreme events, whereas ecological low flow situations require a certain amount of flow as well as a certain standard of water quality”. Vegetation was classified, and essential input data were gathered for hydrological water temperature modelling. Engagement with key stakeholders was strengthened through: Meetings and site visits with the Municipal Department 45 - Water Management Vienna: Project presentation. A field course with 15 students and representatives of the key stakeholders: soil- and water bioengineering in the Living Lab Liesing was conducted to share gained knowledge about nature-based solutions for hydrological engineering. During the consortium meeting a site visit was organized, to get a better understanding of the local situation.

Guadiana River Watershed – Toutalga sub-basin (Portugal)

The site for the Portuguese Living Lab was decided between UEVORA and the Portuguese Environmental Agency (APA/ARH-Alentejo) in a meeting in the beginning of the project. After a presentation of the objectives of the project, both parts agreed that the Toutalga watershed was the right choice for the INTERLAYER project. The watershed was characterized in term of meteorological conditions, Land Use and Land Cover, historical physico-chemical and aquatic biological communities, mapping the complex natural and man-made structures and processes impacting hydrology and map the slow hydrology techniques already implemented in the watershed. UEVORA has established the dialogue between stakeholders, local population and the project team to collectively build an agenda that supports the phasing and structuring of project results in a participatory process, engaging and mobilizing key stakeholders across the watershed.

Danube River (Romania)

In the Romanian Living Lab at Salcia–Maglavit, extensive GIS and remote sensing analyses have been carried out to characterize land cover, hydrology, vegetation, and climate-related risks. CORINE Land Cover data confirmed a predominantly agricultural landscape with significant patches of wetland and forest, while Sentinel-1 radar imagery and Sentinel-2 optical data provided time series on surface water dynamics and vegetation stability. Additional layers such as fire frequency maps and bluespot screening offered insight into vulnerabilities related to drought, flooding, and land degradation. These spatial datasets form a robust baseline for identifying priority areas where NBS can restore hydrological connectivity and strengthen ecosystem services. Complementing this technical work, GeoEcoMar organized a stakeholder workshop in Cetate in November 2024, gathering local administrations, water authorities, and regional agencies. The event enabled dialogue on monitoring strategies and the integration of slow hydrology measures, ensuring that scientific analyses are aligned with local governance, practical needs, and community perspectives.

Objective 9. To properly communicate and disseminate the results of INTERLAYER and clustering with other initiatives (linked to WP6).

This objective is linked with WP6 - Dissemination, communication and exploitation. Specifically, with the Deliverables already concluded such as: Deliverable 6.1: PDEC - Plan for the dissemination, exploitation, and communication activities written report with Annexes; Deliverable 6.2: Project Website and Deliverable 6.3: Research articles and congress participation.

c. Which Call theme(s) were addressed by the project? How did the project cover the main aims & objectives of the Call?

Please, mark in the list below the theme and subthemes, and elaborate shortly on the contribution of the project to the subthemes.

2022 Joint Transnational Call theme/themes

☐ **Topic 1. Resilience, adaptation and mitigation to hydroclimatic extreme events**

☐ 1.1 Addressing knowledge gaps in our understanding of the causes of water scarcity, drought events, seasonal variability in climate impacts to develop adaptation and mitigation measures, taking climate change into account.

☐ 1.2 Developing and demonstrating innovative (or improved) societally acceptable adaptation and mitigation strategies to cope with hydro-climatic extreme events and their increase in length and duration. This includes floods and droughts, although is not limited to them, adopting a regional or a basin scale wide approach.

☐ 1.3 Improving resilience and adaptation capacity of water infrastructure (e.g., industrial water facilities, urban networks, wastewater treatment facilities, stormwater management systems and rural systems) to hydroclimatic extreme events.

☐ **Topic 2. Tools for water management - in the context of hydroclimatic extreme events**

☐ 2.1 Developing tools (e.g., multi-risk approach, decision support tools, monetary/non- monetary costs valuation) to support the design and implementation of strategies for adaptation and mitigation to hydro-climatic extreme events, especially floods (including “flash-floods”), heat waves and droughts in a catchment to sea perspective.

☐ 2.2 Generating new methodologies, tools and models for water resources assessment/modelling for water bodies in scarcely monitored /data scarce areas. A combination of physical and digital solutions is expected, and opportunities provided by citizen science should be seized.

☐ 2.3 "Smartening the water system" and use of innovative digitalization, including improved/new sensors, models, communications and computing technologies.

☐ **Topic 3. Improved water governance in the context hydroclimatic extreme events and international contexts**

☐ 3.1 Undertaking an analysis and developing robust Governance models for the management of water resources in the context of extreme events, is critical increasing the decision-making capacity of institutions and involvement of citizens. This should include ways of improving coordination between water managers to increase our capacity to reduce vulnerability to extreme events, as well as effectively respond to them.

☐ 3.2 Addressing and encouraging international cooperation in the field of water, including management of transboundary water resources and contribution to Water Diplomacy.

Maximum 2 pages

Topic 1.1 - INTERLAYER addresses knowledge gaps in our understanding on how surface water and groundwater interrelate in the advent of extreme precipitation, water scarcity, drought events and seasonal variability in four European watersheds and contribute to the development of innovation adaptation and mitigation measures taking different climate scenarios into account

Topic 1.2 - INTERLAYER demonstrates improved societally acceptable adaptation and mitigation strategies, as it focusses on the refinement of water retention measures at regional (Denmark, Romania) and watershed scale (Austria, Portugal) to promote slow hydrology to protect against flooding and guarantee the availability and quality of the water (simultaneously at surface and groundwater level)

Topic 1.3 - INTERLAYER contributes to the improvement of adaptation capacity of water infrastructure, particularly related to stormwater management in rural systems

Topic 2.1 - INTERLAYER develops a decision support tool for the adoption of best practices that have additive results in water quantity retention and quality control of surface water and in the aquifers (to be applied in regional or watershed contexts). INTERLAYER results contribute to the validation of the practices versus the results thus contributing to validate future payments for ecosystem services to be adopted

Topic 2.2 - INTERLAYER develops a hydrological (near) real time groundwater-surface water model including scarcely monitored areas (Guadiana Watershed Portugal)

Topic 2.3 - INTERLAYER develops and make use of (near) real time monitoring and modelling to create a digital twin of the shallow and deep groundwater storage for monitoring recharge capacity of surface storage of discharged streamflow and overall water balance

Topic 3.1 - INTERLAYER takes advantage of Danish experience in governance practices involving co-creation and co-design and will ensure that best practices are passed and adopted in other European contexts (Portugal)

Topic 3.2 - INTERLAYER develops and kick-off a living lab in one of the driest transboundary (Portugal) watersheds in Europe – the Guadiana - taking advantage of the Danish experience and governance models. INTERLAYER contributes to the water diplomacy as it integrates technicians, researchers and farmers in the co-creation and co-design for shared transboundary problems. Higher level policy and decision makers will be included in the co-creation and co-design in a later stage to support actions and policies that mitigate "contamination from past management malpractices and litigation".

3. Sustainable Development Goals

Is your project likely to deliver results relevant for the following **UN Sustainable Development Goals** (https://sdgs.un.org/goals)? Declare YES or NO in the following table and explain your choice.

SUSTAINABLE DEVELOPMENT GOAL	YES/NO
1. No Poverty	*No*
2. Zero Hunger	*No*
3. Good Health and Well-being	*Yes*
4. Quality Education	*Yes*
5. Gender Equality	*No*
6. Clean Water and Sanitation	*Yes*
7. Affordable and Clean Energy	*No*
8. Decent Work and Economic Growth	*No*
9. Industry, Innovation and Infrastructure	*Yes*
10. Reduced Inequality	*No*
11. Sustainable Cities and Communities	*Yes*
12. Responsible Consumption and Production	*No*
13. Climate action	*Yes*
14. Life Below Water	*Yes*
15. Life on Land	*Yes*
16. Peace and Justice Strong Institutions	*No*
17. International cooperation	*Yes*

Please explain your choice:	[insert text] Maximum 0,5 page The INTERLAYER project intends to deliver results relevant to: 3. Good Health and Well-being The water retention technologies (slow hydrology) proposed by the project are intended to protect society from floods and droughts and to increase the water availability and quality as well as the biodiversity. 4. Quality Education The policy recommendations of best practices for water retention will contribute to watershed restoration through guidelines and workshops. 6. Clean Water and Sanitation The adaptation measures that will be proposed for the river basin management plans, intend to contribute to safeguarding the availability and quality of the water as well as biodiversity and ecosystem services. 9. Industry, Innovation and Infrastructure Through the creation of an inventory of European techniques including Water Retention Measures, Nature-based Solutions and Bioengineering that combine additive results in surface water retention promoting slow hydrology and groundwater recharge. 11. Sustainable Cities and Communities The water retention technologies (slow hydrology) proposed by the project are intended to generate flood and heat wave protection in urban areas as the water retention will slow the hydrology and water buffering as well as generate cooling and microclimatic effects of watercourses as a measure against the increasing urban heat islands. 13. Climate action The proposed techniques and measures intend to attend and ensure resilience to the expected future local climate. 14. Life Below Water & 15. Life on Land The project is contributing to safeguarding the availability and quality of the water as well as biodiversity and ecosystem services. 17. International cooperation INTERLAYER is studying groundwater and surface water availability and relate it to land use (including specific agricultural practices) and water quality from a synergetic perspective so that available Slow Hydrology techniques are used in future River Basin Management Plans. We set up four Living Labs in four contrasting European watersheds to compare different European edaphoclimatic regions with different geologic characteristics.

1. Stakeholder/Industry Engagement

Elaborate on the added value of the stakeholders' engagement to the project's results during the reporting period.

Maximum 1 page

UEVORA: In the beginning of the project the Portuguese team had a meeting with the Portuguese Water Authorities to discuss and select the site to implement the Portuguese living lab. The authorities responsible for water management within the Alqueva Multifunctional Project (EFMA) participated in flow measurements at reference sections of natural watercourses in order to obtain elevation-discharge curves, using Flowtracker2 velocimeter's. The Portuguese Territorial Authority provided a high-resolution digital elevation model obtained with LiDAR technology (0.5 m) for the PT river basin for testing, as part of a new product to be made publicly available for mainland Portugal. The Portuguese Environment Agency provided high temporal resolution data from a nearby rain gauge within the vicinity of Sobral da Adiça village that was crucial for the calibration and validation of the hydrological model.

Danish team (UCPH, GEUS and RegionH): At the beginning of the project the Danish team contacted the municipalities within the Værebro River catchment of Egedal, Ballerup and Furesoe as well as the water utility company Novafos. Project introduction meetings were held, and since then, additional meetings and an open dialogue have been maintained especially with the Municipality of Egedal and Novafos. In June 2025, the Danish team carried out a field trip to the Værebro River Living Lab. The field trip counted with the participation of two biologists from Egedal municipality, who offered local insights and a deeper understanding of the area's geography and environmental context relevant for the feasibility of slow hydrology solutions.

BOKU: Stakeholder engagement in the Austrian Living Lab focused on combining education, collaboration, and practical river restoration. A one-week field course with 15 postgraduate students introduced soil and water bioengineering measures in cooperation with Habau GmbH and MA 45. Several meetings and a site visit with the Municipal Department MA 45 – Water Management Vienna ensured continuous dialogue, including project presentations, updates, and alignment of scientific and municipal activities. These exchanges strengthened institutional collaboration, supported data sharing, and fostered joint planning, thereby linking research goals with applied water management and restoration practice at the Liesing River.

GeoEcoMar: On 18 November 2024, GeoEcoMar organized the first INTERLAYER workshop dedicated to the Romanian Living Lab in Cetate, Dolj County. The event gathered local administrations from Salcia, Cetate and Maglavit, alongside representatives of the Jiu River Basin Administration, the Jiu Corridor Directorate and the Romanian Water Administration. Discussions focused on innovative approaches to water management, particularly the role of Nature-Based Solutions in advancing the concept of slow hydrology, which aims to moderate water flows and strengthen ecosystem resilience. Participants also addressed strategies for monitoring wetland areas in the Salcia–Maglavit region, exchanging practical ideas for measuring ecological and hydrological benefits. The workshop created an open platform for dialogue, where experiences from different case studies enriched understanding and built momentum for collaborative, sustainable water management solutions.

4. Dissemination to water management stakeholders and policy communities

If relevant, please elaborate on your dissemination actions targeting water management stakeholders and policy communities (such as dedicated seminars, tailored deliverables, strategic guidelines, and policy briefs).

Maximum 0,5 page

University of Copenhagen (UCPH) has presented slow hydrology concept at a DNNK seminar (The National Network for Climate Adaptation) in June 2025. At the beginning of the project a seminar was held at The Capital Region of Denmark (RegionH) on the Interlayer-project.

The University of Évora (UEVORA) has presented the INTERLAYER project in a dedicated Water4All Workshop (https://www.realpamigo2025.uevora.pt/workshops/) organized within a conference dedicated to Sustainable Research of Portuguese speaking Countries that took place in the University of Évora in September 2025.

The Austrian team had made a contact and involvement of Municipal Department MA 45 – Water Management Vienna as Professional Practitioners, policymakers and politicians. Furthermore, BOKU University lead a site visit to the Liesing river in Vienna for representatives of the Turkish State Hydraulic Works (DSİ) – part of a study tour organized by AFRY and supported by the World Bank.

On November 18, 2024, GeoEcoMar hosted the first workshop dedicated to the INTERLAYER Project and the Romanian Living Lab. The workshop was attended by Jiu River Basin Administration and the Romanian Water Administration representatives.

2. Citizen and end-users involvement

Regarding co-design and co-creation through the engagement of citizens, and/or end-user entities, how have citizen and end-user entities contributed to the co-creation of R&I content so far?

CITIZEN ENGAGEMENT	CITIZEN	END-USER ENTITIES
Co-creating R&I visions, agendas, policies or frameworks	☐	☒
Co-creating R&I action plans or technology roadmaps	☐	☒
Collecting data for the project	☐	☒
Analysing data for the project	☐	☐
Providing resources, e.g. computational, space/locations, practical support	☐	☒
Monitoring and/or evaluating R&I results	☐	☐
Testing & experimenting with innovative R&I solutions	☐	☒
Contributing to scientific publications or patent applications	☐	☐
Debating R&I findings and implications for them	☐	☐
Not applicable	☐	☐

Other (please specify):	[insert text]

3. Table of Deliverables

Please indicate whether the planned deliverables were completed, delayed or readjusted. Please explain any changes, difficulties encountered, and new solutions adopted. Please add/suppress rows, if necessary, in the table below.

Work Package	Deliverable number	Deliverable name	Lead partner (country)	Delivery Date (dd/mm/yyyy)	Changes, difficulties encountered, and new solutions adopted	Indicate if **public** or **confidential** deliverable
WP1	1.1	Initial data management plan	UEVORA (Portugal)	30/09/2024	-	Public
WP2	2.1	Inventory of NBS methodologies for surface water retention, slow hydrology and groundwater recharge	GeoEcoMar (Romania)	30/09/2024	-	Public
WP3	3.1	Coordination plan living labs	BOKU (Austria)	30/06/2024	-	Public
WP3	3.2	Baseline report profiling all the four living labs	BOKU (Austria)	30/06/2025	-	Public
WP4	4.1	Preliminary draft report on future climate at local scale in each LL	Meteogrid (Spain)	30/09/2024	-	Public
WP6	6.1	PDEC - Plan for the dissemination, exploitation, and communication activities written report with Annexes	UEVORA (Portugal)	30/09/2024	-	Public
WP6	6.2	Project Website	GeoEcoMar (Romania)	30/09/2024	-	Public
WP6	6.3	Research articles and congress participation	UEVORA (Portugal)	31/03/2025	-	Public

4. Knowledge Output transfer

Please complete the following table ***for each of the knowledge Outputs arising from the project during the reporting period****. Knowledge Outputs are the insights directly resulting from the results of the project, and may come in a form of non-deliverables, milestones or 'grey knowledge'.* ***Publications, communications and dissemination actions are not considered knowledge outputs in this sense and are addressed in other Chapters****.*

Knowledge Output short title *Please provide a short and concise title*	Blue spots analysis tailormade for hydro- and ecological stream protection
Knowledge output description *(Max 500 characters).* *Please give a comprehensive description, making the Knowledge Output fully understandable to a non-expert. Indicate what research is it adding to and what is innovative about the Knowledge Output. Include sectors and subsectors that can uptake it, potential users, and status (transferred, ready to be transferred, more evidence needed, etc.)*	The hydrological GIS analysis identified blue spots with retention capacity and mapped runoff pathways forming a hierarchical network. Under simulated uniform rainfall events (30–100 mm), spillover from these depressions generated downstream flooding risks. The method provides an integrated overview of flood-prone areas, storage potential, and runoff connectivity within the catchment.
Intellectual Property Rights (IPR) *Please indicate whether IPR has been applied to this Knowledge Output (applied for a patent, copyright, etc., or not applied).*	None
Policy-relevance *If the Knowledge Output is relevant to the Water Framework Directive or any other related Directives, please list and explain why.*	A fast method for identifying potential intervention locations.
Audience targeted *Specify the communities targeted by Knowledge Output*	Decision makers for regional planning including municipalities and utilities.

Knowledge Output short title *Please provide a short and concise title*	Soil Erosion Risk Assessment: A Southern Portuguese Case Study
Knowledge output description *(Max 500 characters).* *Please give a comprehensive description, making the Knowledge Output fully understandable to a non-expert. Indicate what research is it adding to and what is innovative about the Knowledge Output. Include sectors and subsectors that can uptake it, potential users, and status (transferred, ready to be transferred, more evidence needed, etc.)*	To evaluate erosion risk, empirical models such as the Revised Universal Soil Loss Equation (RUSLE) are widely used. RUSLE estimates long-term average annual soil loss using five factors: rainfall erosivity, soil erodibility, slope length and steepness, cover-management, and conservation practice. GIS integration allows these parameters to be modeled spatially, producing erosion risk maps that help inform land management decisions.
Intellectual Property Rights (IPR)	None

Please indicate whether IPR has been applied to this Knowledge Output (applied for a patent, copyright, etc., or not applied).	
Policy-relevance *If the Knowledge Output is relevant to the Water Framework Directive or any other related Directives, please list and explain why.*	The main objective of this internship is to evaluate the risk of soil erosion through water, by assessing uniquely the potential detachment of soil particles and loss due to sheet and rill erosion by rainfall and surface runoff and not sediment transport and deposition by the stream network inside the study area.
Audience targeted *Specify the communities targeted by Knowledge Output*	Decision makers for regional planning including municipalities and utilities.

5. Open Access and Open Data

*The funded projects are requested to **develop a Data Management Plan**, according to the provisions of the HE MGA art. 17 and are expected to **appoint FAIR contact points**. Science Europe has developed a Guide for the International Alignment of Research Data Management with helpful information about the Core Requirements for Data Management Plans following the EC recommendations.*

The funded projects may be requested to submit metadata on all the resources directly generated by the project, as well as additional information on how this data will be used, if and how the data will be made accessible for verification and re-use, and how the data will be curated and preserved.

Please answer briefly the following questions about data management:

1.	*How will new data be collected or produced and/or how will existing data be re-used?*
	[insert text] Maximum 8 lines **INTERLAYER New data:** water physico-chemical and biological parameters, based on sample collection and laboratory analysis; weather variables, retrieved from automated weather stations; soil moisture, from soil moisture sensors; model results from the hydrological modelling tasks; qualitative interview data. **Existing data** will be used as input for model development and validation: 1) Copernicus Digital Elevation Models (DEM), from the European Space Agency - Copernicus Program; 2) Meteorological data from the Geosphere Austria and the Danish Meteorological Institute; 3) discharge, water level data, groundwater heads, water temperature, geological model layers from eHYD (https://www.ehyd.gv.at/); 4) GIS input data, from Datafordeleren.dk, dce.au.dk, Geus.dk.
2.	*What data (kind, formats, and volumes), will be collected or produced?*
	[*insert text] Maximum 8 lines* **Collected and produced data**: Qualitative data from stakeholder interviews & meetings; Local future Climate projections of climate indicators and projections; groundwater level and soil moisture; Weather variables as: Solar radiation, Precipitation, Lightning strike count, average distance, Wind speed, direction and maximum, Air temperature, Vapor pressure, Barometric pressure, Relative humidity, internal sensor temperature, Tilt angle, X and Y orientation, North wind speed, east wind speed; Specific model results from the hydrological modelling tasks; water

	physico-chemical and biological characterization. **Type of data**: Text, numeric, Numerical model, maps. Data formats: (.docx); txt; Raster data; vector data. **Volumes:** 73.6GB are already stored.
3.	*What metadata and documentation (for example the methodology of data collection and way of organising data) will accompany the data?*
	[insert text] *Maximum 8 lines* Protocols for field sampling and analysis of physico-chemical and biological characterization will be stored alongside the data; as well as the datasheets and manuals for each equipment used for online monitoring (e.g. soil moisture sensors and meteorological stations). In the case of qualitative data, interviews layout will be also prepared. A document will accompany the datasets with description of each variable.
4.	*How will data and metadata be stored and backed up during the research?*
	[insert text] *Maximum 8 lines* Data and metadata are stored in the Microsoft SharePoint hosted by GEUS. Data are both digitally and physically secured in a data centre. Backups are made of these systems, to external hard disks or other devices. The INTERLAYER webpage is managed and hosted by UEVORA. Backups are regularly created. The connection to the server is SSL encrypted to ensure any messages sent to and from the server can only be read by the intended recipient.

5. List of Publications produced by the project - Open Access

Please include the list of publications in the separate Excel file (to be provided by Follow-up Secretariat).

6. Communication and dissemination actions toward end-users and citizens

Please describe how research outputs have been communicated and disseminated to end-users and citizens (website, social media campaigns, newsletters, outreach activities such as Science Festival, …). If relevant, please provide links.

Maximum 0,5 page

The Danish team has written several articles for the INTERLAYER website describing workshops and activities that have taken place in the Danish living lab. These are available for all to read. University of Copenhagen has presented the concept of slow hydrology at several public forums such as Det Nationale Klimatopmøde (National Climate meeting) in Lemvig August 2024 and The Nature Meeting in Hirtshals 2024.

UEVORA has developed the website (www.interlayer.uevora.pt) that had 1036 views in the last year. It's also responsibly by the LinkedIn public profile (www.linkedin.com/in/interlayer-project-28391a338) that got 1480 impressions in the last year.

BOKU has delivered articles for the Interlayer website. Furthermore, several social media posts were published on the Instagram account (tot: 22.406 views)

[
https://www.instagram.com/reel/DHJJ6R5NraN/?utm_source=ig_web_copy_link&igsh=MTdnZ29nMjNodWNp ,
https://www.instagram.com/p/DJFSb5vIffU/?utm_source=ig_web_copy_link&igsh=bGpyMmp2YzVkZWN1 ,
https://www.instagram.com/p/C5nsQTdsRnU/?utm_source=ig_web_copy_link&igsh=N3IxajY5ZHVrd3Bo …]

GeoEcoMar has provided news articles for the Interlayer website describing workshops and activities that have taken place in the Romanian living lab. Also, a LinkedIn post was made for the larger public: https://www.linkedin.com/posts/activity-7264591799439028225-v4QG/?utm_source=share&utm_medium=member_desktop&rcm=ACoAABlp8AAB701R8y12gD7zdRzKIvWZHWXX39c

6. Consortium Meetings

Please fill in the table below, add/suppress rows as necessary.

N°	*Date*	*Location*	*Attending partners*	*Purpose*
1	8-9th April 2024	GEUS, Øster Voldgade 10, Copenhagen, Denmark	All 7 Partners 18 persons	Kick-off Meeting
2	27-28th April 2025	BOKU University Room: Faculty Club, Schwackhöferhaus (3rd floor), Peter-Jordan-Straße 82/III, 1190 Vienna, Austria	All 7 Partners 16 persons	1st year Consortium Meeting

7. Personnel

Please list all staff participating in the project (add rows if necessary). The information gathered will be used for the purposes of preparing the indicators for the impact assessment of the call and funded R&I projects and for the purposes of reporting to the funding authority (European Commission). The Funding Partner Organisations and the funding authority will have access to this data.

Indicate the cases when staff is contracted specifically for the project and funded under the Water4All 2022 Joint Transnational Call (YES / NO):

	Name	*Gender (Female/ Male/ Other)*	*Degree/PhD*	*Field of expertise*	*Country of affiliation*	*Contracted for the project (Yes/No)*
1	Hans Peter Rauch	Male	Assoc. Prof.	Soil and Water Bioengineering, Ecosystem services, natural hazards	Austria	No
2	Helene Müller	Female	Dipl. Ing.	Soil and water bioengineering, water management, river systems	Austria	No
3	Magdalena Von Der Thannen	Female	Dr.	Soil and water bioengineering, Life cycle assessment, carbon balance	Austria	No
4	Peter Stubkjaer Andersen	Male	Assoc. Prof.	Stakeholder engagement and governance analysis	Denmark	No
	Thomas Balstrøm	Male	Assoc. Prof.	Hydrological GIS analysis	Denmark	No

	Marina Bergen Jensen	Female	Prof.	Integrated hydrological and environmental designs	Denmark	No
	Rikke Munck Petersen	Female	Assoc. Prof.	Landscape analysis and visual communication	Denmark	No
	Arnau Macià Pou	Male	MSc..	Stakeholder engagement and project management	Denmark	No
	Maria Ondracek	Female	PhD	Integrated hydrological modelling	Denmark	No
	Ida Karlsson Seidenfaden	Female	Senior Scientist, PhD	Integrated hydrological modelling	Denmark	No
	Peter van der Keur	Male	Senior Scientist, PhD	Integrated hydrological and environmental designs	Denmark	No
	Amália Oliveira	Female	PhD	Biology	Portugal	No
	Daniele Bortoli	Male	PhD	Atmospheric Physics	Portugal	No
	Diogo Costa	Male	PhD	Environmental Modelling	Portugal	No
	Josué Figueira	Male	12th grade	Limnology	Portugal	No
	Maria Alexandra Penha	Female	PhD	Biochemistry	Portugal	No
	Maria Helena Novais	Female	PhD	Biology	Portugal	No
	Maria João Costa	Female	PhD	Atmospheric Physics	Portugal	No
	Maria Manuela Morais	Female	PhD	Biology	Portugal	No
	Ana Pedro	Female	Licenciate	Limnology and Ecology	Portugal	No
	Miguel Potes	Male	PhD	Meoteorology and hydrology	Portugal	No

	Rui Oliveira	Male	PhD	Geophysics	Portugal	No
	Samuel Bárias	Male	12th grade	Meteorology	Portugal	No
	João Santos	Male	PhD	Hydrology, Hydraulics and GIS analysis	Portugal	No
	Jorge Duque	Male	PhD	Hydrogeology	Portugal	No
	Albert Scrieciu	Male	PhD	Geology, NBS, stakeholder engagement and project management	Romania	No
	Daniela Florea	Female	PhD student	Chemistry and NBS	Romania	No
	Andrei Toma	Male	PhD student	Geomorphology, GIS and remote sensing	Romania	No
	Daniela Vasile	Female	PhD	Project management	Romania	No
	Laura Asensio Martínez	Female	Degree	Natural hazards	Spain	No
	Jaime Ribalaygua Batalla	Male	PhD	Climate change	Spain	No
	Sonia Rubio Hernando	Female	Not finished	Informatics	Spain	No
	Marcos Sánchez Provencio	Male	Not finished	Informatics	Spain	No
	Allinson Borroto Fonseca	Female	Degree	Informatics	Spain	No
	Guillermo Rodríguez Vega	Male	Degree	Modelling	Spain	No
	Sabela Regueiro Sanfiz	Female	PhD	Modelling	Spain	Yes
	Amalie Laursen	Female	MSc. (Cand.Soc.)	Stakeholder engagement and project management	Denmark	No
	Helene Lykke Strøbech	Female	Cand.Scient.	Stakeholder engagement and project management	Denmark	No

	Hanwen Xu	Male	Post-doc	GIS analysis	Denmark	Yes

List all students supported by or affiliated with this project (add rows if necessary):

	Name	*Gender (Female/ Male/ Other)*	*Degree*	*Field of expertise*	*Country of affiliation*	*Contracted for the project (Yes/No)*
1	Soheil Zehsaz	Male	MSc	Hydraulics	Portugal	Yes
2	Juan Lahore	Male	BSc	Biology	The Netherlands	No
3	Astrid Cecilie Aas Staben	Female	MSc	Hydrology	Denmark	No
4	Christine Oersted	Female	MSc	Hydrology	Denmark	No
5	Rae Dunbar	Female	MSc	Climate change	Denmark	No
6	Steffen Rasmussen	Male	MSc	Climate change	Denmark	No
7	Nanna Delfs Mortensen	Female	MSc	Landscape Architecture	Denmark	No
8	Frederik Emil Aunsberg	Male	MSc	Landscape Architecture	Denmark	No
9	Flora Amler	Female	BSc	Civil engineering and water management	Austria	No
10	Anna Ludwiczek	Female	BSc	Civil engineering and water management	Austria	Yes
11	Elias Ferchl	Male	BSc	Civil engineering and water management	Austria	No
12	Veit Zauner	Male	BSc	Civil engineering and water management	Austria	No

8. Problems encountered during the Project Implementation

Please indicate if any problems were encountered during the project implementation.
Did any of the partners find difficulties related to the grant agreement, the availability of funds at national level or other similar issues not specifically related to the technical part of the project?

No page limit
The Portuguese team has been challenged by the fact that a colleague that is actively participating in the activities could not be paid from INTERLAYER funds due to restrictions by the national funding agency. These

difficulties meant that the budget allocated for human resources had to be transferred, since no researcher could be hired for the project.
For the Danish team there has been some changes as one partner (The Capital Region of Denmark - RegionH) has had to withdraw from the Interlayer project. This is due to the "Agreement about Healthcare Reform" of November 15th, 2024, by the Danish Government, in which the regional mandate to work with climate development projects is removed as of December 2025. This has forced The Capital Region of Denmark to revise its work on climate-related activities and consequently, The Capital Region of Denmark has had to withdraw from Interlayer as of 31st of July 2025. The obligations of The Capital Region of Denmark within the project have been taken over by University of Copenhagen as of 1st of August 2025, and the funding from the national funder: Innovation Fund Denmark has been transferred from The Capital Region to the University of Copenhagen. The transfer from one partner to another has been smooth and ensured that all ongoing work can continue without further disruption. A former regional employee has now been employed by the University of Copenhagen which also ensures minimal consequences for the consortium, by ensuring that stakeholder contact and engagement within the Danish living lab is maintained.
For the Austrian team there was challenge in project management arose regarding staffing and funding structures. One colleague actively contributed to the project but could not be paid from project funds due to restrictions in the national grant scheme. This created administrative complexity and required internal adjustments to ensure continued involvement. The situation underlined the need for clearer alignment between project tasks and eligible funding mechanisms.

9. Ethics issues

Please provide a detailed analysis of the ethical aspects of the project. Focus on how ethical issues were addressed (no page limit).

1.	*Have the ethics issues identified in the Ethics Issues Table and Ethics Self-Assessment submitted in the proposal been adequately addressed and in compliance to ethical principles and applicable legal requirements?*
	Please highlight key points: *(this box has no space limit, expand as needed)* There are no major ethical issues to address in the INTERLAYER project, as submitted in the proposal, and further considering also the Ethics Self-Assessment (retrieved from https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment_en.pdf). Furthermore, in the proposal, the only identified ethical aspect was that the Portuguese case-study is being carried out in the Guadiana River basin, which includes the Guadiana Valley Natural Park, where several endangered species can be found. To address this issue, no protected fauna or flora will be handled, and the assessment activities on the protected area will be based on existing datasets, on non-invasive techniques, as eDNA and camera traps, and only microalgae and invertebrates will be sampled for laboratory analysis. (collected only in the two sites). Furthermore, the only animals to be collected in the field are invertebrates, following the protocols for the ecological status assessment according to the Water Framework Directive (Directive 2000/60/EC), but no endangered species will be sampled.
2.	*Have any further ethics issues been raised during the project, that were not initially identified at the beginning of the project, and if so, how were they addressed (e.g., informed consent procedures, developed an unexpected finding policy, conducting a risk assessment)?*
	Please highlight key points: *(this box has no space limit, expand as needed)* No further ethics issues have been raised during the project.

	However, we would like to clarify that INTERLAYER also properly addresses the environment, health and safety issues i) fieldwork, to be carried out in the four Living Labs, for water and biological quality elements sampling, meteorological, hydromorphological, hydrological, hydraulics and geological characterization. To minimize the risks of the fieldwork, procedures to keep the staff safe will be implemented, such as: keeping careful notes of all work engagements; ensuring that the project is adequately staffed; using mobile phones to keep in touch with the home base; conducting full risk assessments of fieldwork sites; carrying authorised identification; ii) all laboratory analysis, in which chemicals/dangerous materials are handled, will be carried out by trained and experienced personnel, following the laboratory safety rules; iii) laboratory analysis will not adversely affect the environment, since all waste will be discarded following the safety rules in place in the laboratories, being collected and disposed following the appropriate measures in certified laboratories.
3.	*Have the necessary authorisations been collected (e.g., MTA agreement, Ethics Approval for research with human participants)?*
	Please highlight key points: *(this box has no space limit, expand as needed)* No authorisations are needed to carry out INTERLAYER activities.
4.	*Are measures that safeguard the rights and freedoms of the research participants adequately described in your data management documentation for processing personal data, if applicable (e.g., anonymisation/pseudonymisation techniques, appropriate technical and organisational measures)?*
	Please highlight key points: *(this box has no space limit, expand as needed)* INTERLAYER activities involve human beings that are not part of the staff of the participants (e.g., participants in events organized by the consortium, such as workshops, symposia, or stakeholder meetings). In this case, it is expected to have personal information (as minimum as possible, most probably only the name, institution and professional email address and some general photos of the events). Even though, since personal information will be gathered and stored, attention will be devoted to privacy, data protection, and data management, in accordance with the General Data Protection Regulation (GDPR), as depicted in the Data Management Plan. Thus, no information about the participants in the events (e.g., list of participants, photographs or videos) will be published without their consent, so, data processing will be subject to free and fully informed consent of the persons concerned.

End of document