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Remote Sensing Solution 

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RESTORE4Cs is a Horizon Europe project led by the **University of Aveiro**, which aims to evaluate the effect of **restoration actions on wetlands' ability to mitigate climate change** and provide various ecosystem services. The project's mission involves **collecting data** on the effectiveness of restoration and land use management, forming a **European Community of Practice (ECOP)** to support **new EU policies**, expanding models and **assessment tools** to broader geographical and ecological contexts, and designing a multi-actor approach for **stakeholder engagement**.

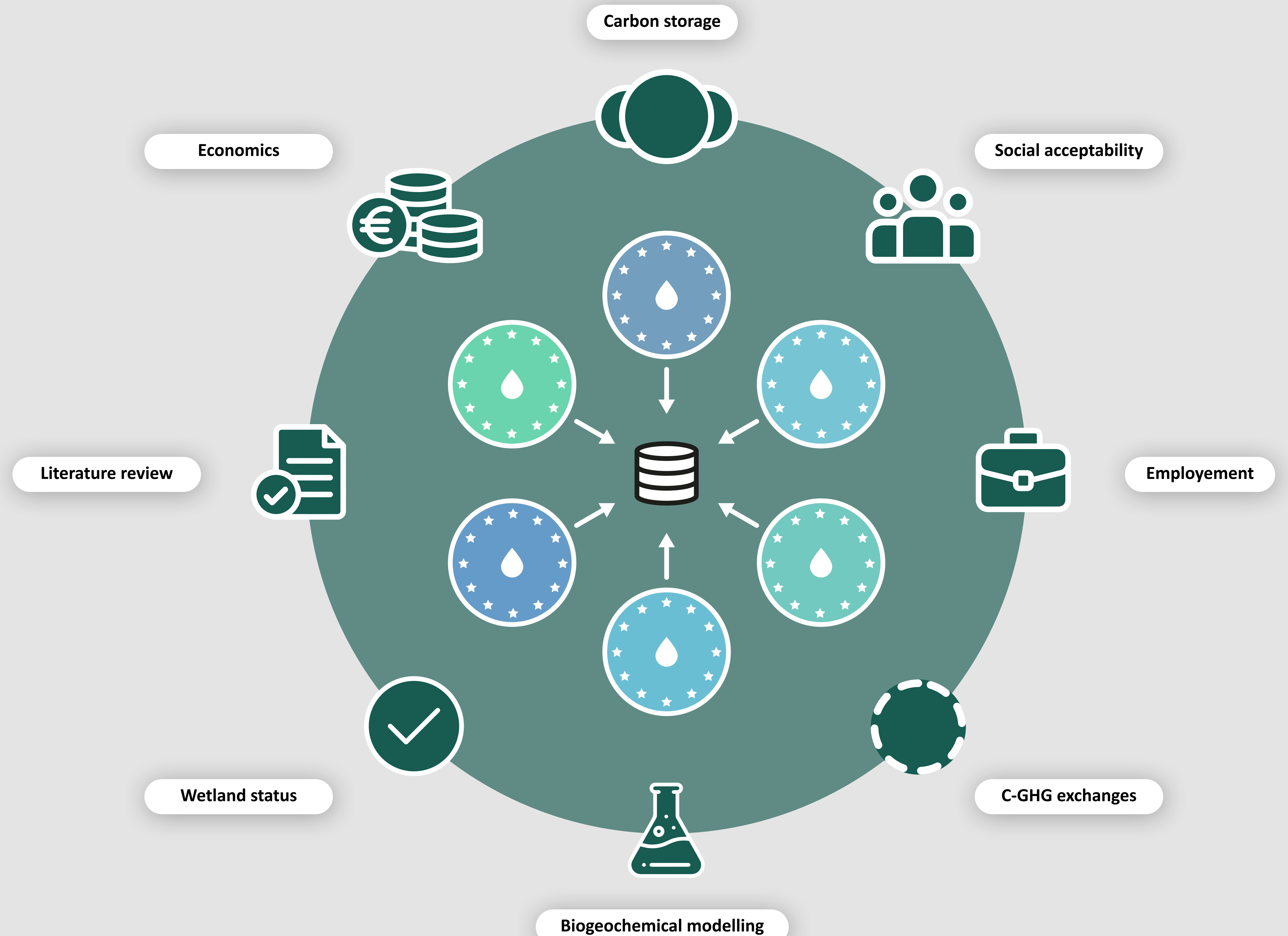
The project hopes to create a digital platform that serves as a **Decision Support System (DSS)** for stakeholders. This platform will provide **more accurate estimates of the costs and benefits of wetland restoration** efforts to help prioritize and promote them. Additionally, the project will investigate the **social acceptability of wetland restoration** to develop a transdisciplinary approach to wetland management that considers long-term sustainability. Overall, the RESTORE4Cs project presents a promising opportunity to preserve the **ecological, environmental, and social values** of wetlands while enhancing the well-being of local communities.

gather



We will analyse the impact of wetland restoration and management initiatives on the environment and socio-economic services in **six European coastal regions**, undertaking a comprehensive literature review, identifying specific sub-sites and collecting data on crucial indicators such as carbon storage and greenhouse gas exchanges. In addition, we will evaluate these wetlands' ecological status and pressure levels, perform biogeochemical modelling, and undertake an economic assessment of restoration efforts to devise financing schemes and gauge social acceptability.

Our approach will be multi-faceted, considering both the long-term impact of these initiatives on the environment and the short-term socio-economic benefits. We will analyse the effects of wetland restoration on biodiversity, water quality, and natural habitats while also considering factors such as employment, tourism, and local economies. Our overarching aim is to provide a comprehensive understanding of the impact of these actions on both the environment and socio-economic factors, thereby enabling us to propose effective and sustainable management strategies for these crucial ecosystems.

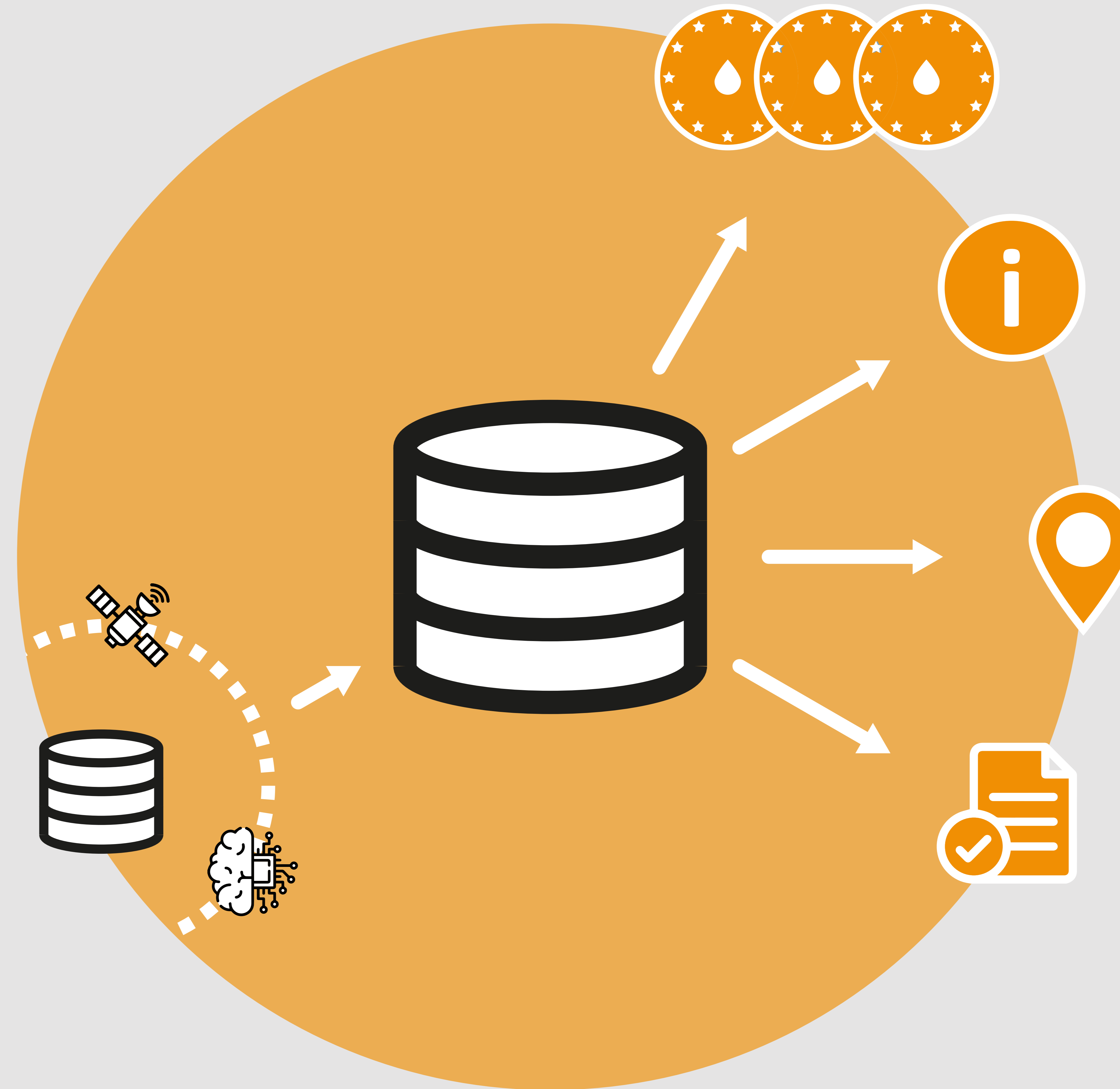


upscale



Our objective is to extend the usage of models and evaluation tools for monitoring wetlands beyond their current limits. We aim to cover a broader range of geographical areas across Europe and various types of wetlands, such as floodplains and peatlands. To accomplish this, we will incorporate **remote sensing and machine learning methodologies**. Our main goal is to develop a comprehensive status assessment of European wetlands that satisfies environmental policies.

To aid in wetland restoration, we will produce informative layer/mapping products and integrate data, including GHG emission profiles, to improve the overall assessment of ecosystem conditions. Additionally, we will map and evaluate the likelihood of wetland occurrence and provide necessary information to support restoration decisions. Finally, we investigate the possibility of replicating RESTORE4Cs methodologies for other types of wetlands.



Replication of RESTORE4Cs methodologies to other wetland types

Information layer/mapping products to support wetland restoration

Map and assess the probability of wetland occurrence to support restoration decisions

Improve the European Wetland ecosystem condition assessment by integrating data and including GHG emission profiles

integrate



Our goal is to create a digital platform that will act as a **Decision Support System (DSS)** for those involved in wetland restoration. This will involve integrating data and models into the platform and developing a repository, including pilot and upscaling data. Users will have access to the data through an interactive online platform, allowing for quick and easy visualization and access to information.

We will also develop an **Integrated Toolbox** for wetland restoration actions that can be adapted to different situations. To ensure the success of this initiative, we will co-design and launch the **European Community of Practice on (coastal) wetland restoration**. Additionally, we will create an Exploitation and Sustainability Plan to ensure the project's longevity.

By supporting the implementation of Climate and Biodiversity policies in the context of the European Green Deal, our project will contribute to the performance of the Land Use, Land Use Change and Forestry (LULUCF) Regulation by including wetland restoration activities.

