

Restoring Coastal Wetlands in Europe

Pilot roadmap on coastal wetland
restoration in Romania

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Addressing climate change,
biodiversity loss and habitat degradation
towards a sustainable management
of European wetlands.



Partners



Executive Summary

Planning the restoration of coastal wetland habitats is a key element for National Restoration Plans under the EU Nature Restoration Regulation, national commitments under the Ramsar Convention as well as reporting requirements on wetlands emissions and removals under the EU Regulation on Land Use, Land Use Change and Forestry.

This pilot roadmap is designed to support national authorities and stakeholders in Romania in developing a strategic framework for planning coastal wetland restoration, for example in the context of National Restoration Plans. It draws on the latest scientific data, tools and methods developed by the EU-funded project RESTORE4Cs. The roadmap follows the step-wise approach set out in the [RESTORE4Cs Implementation Roadmap to Guide National Action](#) for coastal wetland restoration, thereby contributing to the achievement of key policy targets for climate and biodiversity.



About the project

RESTORE4Cs (Modelling **RESTOR**ation of **wEt**lands for **Car**bon pathways, **Cl**imate **Ch**ange mitigation and adaptation, ecosystem services, and biodiversity, **Co**-benefits) is a Horizon Europe project led by the University of Aveiro, which evaluated the effect of restoration actions on wetlands' ability to mitigate climate change and provide various ecosystem services. Its mission is to support the implementation of EU climate and biodiversity policies, by:

- gathering effectiveness data on restoration and land use management actions;
- structuring a European Community of Practice;
- upscaling models and integrative assessment tools;
- designing a multi-actor approach for stakeholder engagement.

RESTORE4Cs identified six Case Pilots for its activities. These comprise coastal wetland ecosystems in different states of preservation, with various alterations, and offering a range of restoration measure types already in place.

The six Case Pilot sites provide a good geographical representation within Europe and its biogeographical regions: Mediterranean (Valencian Wetlands in Spain and Camargue in France), Atlantic (Ria de Aveiro in Portugal and South-West Dutch Delta in the Netherlands), Baltic (Curoonian Lagoon in Lithuania) and the Black Sea (Danube Delta in Romania).

Project's results are available through a [digital platform](#) serving as a Decision Support System (DSS) for stakeholders and wetland practitioners and providing more reliable information to drive and prioritise wetlands restoration actions.



Table of Contents

GLOSSARY	10
1. INTRODUCTION	13
Aim of implementation roadmap on coastal wetland restoration	13
Key implementation challenges for coastal wetlands restoration.....	14
2. PRIORITY TOPICS IN THIS ROADMAP	17
3. BASELINE ASSESSMENT	19
Define main characteristics of coastal wetlands.....	19
Assess current conditions of coastal wetlands	23
Map policy targets for coastal wetland restoration for climate change mitigation and other co-benefits.....	27
4. OPERATIONALISE TARGETS AND PRIORITISE	34
Select clear, measurable and policy-relevant indicators and metrics to track progress of coastal wetland restoration and its impact on climate mitigation	34
Identify potential restoration sites for coastal wetlands.....	38
5. PLAN RESTORATION ACTIVITIES	43
Assess the benefits and costs of coastal wetland restoration actions.....	43
6. STAKEHOLDER COLLABORATION AND PARTNERSHIPS	49
Establish clear competences of public authorities on coastal wetland restoration	49
Establish a governance structure that enables collaboration and trust between stakeholder and builds long-term commitment towards restoring wetlands	52
7. ENABLING CAPACITIES AND RAISING AWARENESS	57
8. SUMMARY OF KEY RECOMMENDATIONS TO PROGRESS COASTAL WETLAND RESTORATION FOR CLIMATE	60
REFERENCES	61

List of Figures

Figure 1	Structure of pilot roadmap for Romania	17
Figure 2	Map on extent of coastal wetlands in Romania.	21
Figure 3	Surface water dynamics extracted from satellite imagery 2022-2024 (values show the occurrence of inundation in a pixel over a given period, where 100% refers to a permanent water body, and medium to high values indicate areas with temporal water coverage).....	24
Figure 4	Coastal wetlands area covered by Nationally Designated protected areas (Green colour (Good)=Wetland protected by national designated areas; Red colour (Bad)=Wetland not protected by national designated areas).....	25
Figure 5	Potential Wetland Occurrence Areas.	38
Figure 6	Potentially Restorable Wetlands.	39
Figure 7	MCA Methodology steps applied to RESTORE4Cs case pilot sites.	44

List of Tables

Table 1	Key challenges for implementing coastal wetland restoration in Romania (dark orange - most important implementation challenges; light orange - other important challenges to coastal wetland restoration)	14
Table 2	Coastal wetland extent in Romania (2018)	21
Table 3	Conditions and Drivers indicators available in the Indicators Tool on the European Coastal Wetlands Interactive Platform.....	26
Table 4	Overview of the most wetland-relevant policy targets and objectives and their connection to EU and/or global policies.	30
Table 5	Policy outcome indicators and metrics proposed by RESTORE4Cs to build evidence and foster greater integration between national and EU policies to streamline reporting processes. Indicators can be disaggregated per country and EU level.	35
Table 6	Policy indicator values in Romania on “Extension of coastal wetlands protected and strictly protected” (December 2025).	37
Table 7	Example of criteria used and their weight when considering restoration projects, according to stakeholders (9 respondents) in the RESTORE4Cs Danube Delta case pilot site.....	46
Table 8	Overview of Romania’s public authorities responsible for various aspects of coastal wetland restoration (Danube Delta) and their respective responsibilities	50
Table 9	Key stakeholder groups in the Danube Delta for a collaborative governance structure.	53

List of Abbreviations

CAP	Common Agricultural Policy
CEE	Central and Eastern Europe
CH₄	Methane
CLC	CORINE Land Cover
CO₂	Carbon Dioxide
CORINE	Coordination of Information on the Environment
CRCF Regulation	Carbon Removal and Carbon Farming Regulation
DDBRA	Danube Delta Biosphere Reserve Administration
DDNI	Danube Delta National Institute for Research and Development
EC	European Commission
ECoP	European Community of Practice
EEA	European Environment Agency
EU	European Union
FRMP	Flood Risk Management Plan
GAEC	Good Agricultural and Environmental Conditions
GHG	Greenhouse Gas
GIS	Geographic Information System
ICPDR	International Commission for the Protection of the Danube River
LULC	Land-Use/Land-Cover
LULUCF	Land Use, Land-Use Change and Forestry
MCA	Multi-Criteria Analysis
MSFD	Marine Strategy Framework Directive
N₂O	Nitrous Oxide
NBASP	National Strategy and Action Plan for Biodiversity Conservation 2014–2020
NbS	Nature-based Solutions
NECP	National Energy and Climate Plans
NGO	Non-Governmental Organisation
NIMRD	National Institute for Marine Research and Development “Grigore Antipa”
NRR	Nature Restoration Regulation

NUTS	Nomenclature of Territorial Units for Statistics
PES	Payment for Ecosystem Services
PNRR	National Recovery and Resilience Plan
PRW	Potentially Restorable Wetlands
PSU	Practical Salinity Unit
PWA	Potential Wetland Areas
RBMP	River Basin Management Plan
SOR	Romanian Ontological Society
UAA	Utilised Agricultural Area
UNEA	United Nations Environment Assembly
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WEI	Water Exploitation Index
WFD	Water Framework Directive
WP	Work Package

Glossary

Active restoration	Process that eliminates the source of degradation and disturbance of an ecosystem and implements measures to accelerate its recovery and overcome obstacles to that recovery.
Coastal wetlands	Coastal wetlands are areas along coastlines that are temporarily or permanently flooded by salt, brackish or fresh water. These ecosystems are characterised by phreatophytic and submerged vegetation. According to the Ramsar Convention, coastal wetlands include “water that is static or flowing, fresh, brackish or salty, including areas of marine water the depth of which at low tide does not exceed six meters” ¹ . European coastal wetlands include seagrass, tidal and freshwater marshes as well as tidal and non-tidal flats and creeks. These habitats can be found in coastal lagoons, estuaries, and other transitional waters, as well as in fjords, sea lochs, and embayments ² . This harmonised definition of coastal wetlands was developed based on the work conducted in the RESTORE4Cs Horizon Europe project. It is aligned with the Ramsar Convention and captures the full land-sea-continuum.
Index	An index is a composite measure that combines multiple variables to provide a comprehensive overview of a specific issue or performance area. Indexes are often used to simplify complex data sets and present a broad picture of trends and changes over time. An example of an index could be the Coastal Wetland Health Condition Index, which might include indicators related to water quality, biodiversity, and habitat extent.
Metric	A metric is a quantifiable measure used to track and assess the status of a specific process or activity. Metrics are usually more granular and detailed than indicators and can be used to support the calculation of indicators and indexes. For example, a metric for coastal wetland health might be the number of bird species observed in a wetland area or the concentration of pollutants in wetland water.
Nature-based solution	Nature-based solutions are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits ³ .
Passive restoration	Process that eliminates the factors of degradation and disturbance and permits the natural regeneration of the ecosystem.

1 Ramsar Convention. (1971). *Convention on Wetlands of International Importance especially as Waterfowl Habitat*. Ramsar Secretariat, Ramsar, Iran. Available at: https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf.

2 Otero, M. et al. (2024). *How can coastal wetlands help achieve EU climate goals?* Policy Brief. RESTORE4Cs project. Available at: https://www.restore4cs.eu/wp-content/uploads/2025/09/RESTORE4Cs_Policy-Brief-1_EN.pdf.

3 United Nations Environment Assembly (UNEA). (2022). *Nature-based solutions for supporting sustainable development*. United Nations Environment Resolution UNEP/EA.5/Res.5. Available at: <https://wedocs.unep.org/rest/api/core/bitstreams/4caa2911-37ea-4915-b378-d2c2d525ee35/content>.

Policy indicator	A policy indicator is a specific, measurable element used to assess and track progress towards achieving policy goals and objectives, focusing on inputs, output and outcome measures. These indicators are designed to provide timely, relevant information that informs decision-makers about the effectiveness of policies. They are based on criteria that aim to capture the relevance for the targeted (policy) questions by providing timely, relevant information on the coastal wetlands and data characteristics, which require spatially explicit and quantity-specific data and metrics, e.g. descriptive statistics, coverage, type, scale and/or year. For example, a policy indicator for coastal wetland restoration might be the percentage increase in restored wetland areas.
Stakeholder	Any group or individual who can affect or is affected by wetland management.
Wetland management	Refers to the policies, practices and actions taken to maintain or restore the natural state and functions of wetland ecosystems. This involves a balance between the conservation of wetlands for their ecological benefits and the sustainable use of these areas for human needs. The goal is to ensure that wetlands continue to provide their essential services to humans and nature. Effective wetlands management strategies may include protecting wetlands from anthropogenic threats, regulating water levels to mimic natural cycles and prevent degradation, restoring wetland habitats that have been lost, damaged or degraded, implementing policies that encourage sustainable use and conservation efforts.
Wetland restoration	A key aspect of wetlands management is the restoration of lost or altered wetlands. This process often involves re-establishing the natural water flow, removing pollutants, replanting native vegetation or re-creating lost wetland habitats. Restoration projects have been shown to not only bring back lost wetland functions but also to enhance resilience against climate change impacts. Successful wetland restoration efforts can also lead to significant environmental and social benefits.



01

Introduction

1. Introduction

Aim of implementation roadmap on coastal wetland restoration

Romania is home to the Danube Delta, one of Europe's largest and most ecologically significant wetlands, recognised as a UNESCO World Heritage Site and a Ramsar site. This area supports exceptional biodiversity and provides important ecosystem services, but it faces pressures from land-use changes, agriculture, and economic development. Conservation efforts have included the establishment of the protected area, international cooperation works for conservation and knowledge and pilot restoration projects aimed at reversing habitat degradation. However, challenges such as fragmented land-ownership, limited enforcement of environmental regulations, and competing economic interests continue to hinder large-scale restoration.

At the same time, in Romania, it is necessary to promote the initiation and development of national policy on the ecological restoration of wetlands, taking into account the existence of the Danube Delta, a wetland of global interest on its territory that requires restoration. This document presents a pilot roadmap for implementing coastal wetland restoration in Romania, aiming to support authorities in planning restoration in the context of the new EU Nature Restoration Regulation (NRR). By developing and implementing a comprehensive roadmap, national and local authorities can address multiple environmental, social, and economic challenges simultaneously, fostering a sustainable and resilient future.

In particular, the goal and scope of this roadmap is to:

- Provide **insights and guidance for national authorities & practitioners in Romania on how to use the tools and results of the RESTORE4Cs Horizon Europe project** to improve the planning of coastal wetland restoration.
- Support national authorities in **defining priorities for coastal wetland restoration** to contribute to the achievement of key policy targets for climate and biodiversity.

Europe's coastal wetlands are critical ecosystems which can play a crucial role in climate change mitigation and adaptation⁴. When restored, they act as nature-based solutions: reducing greenhouse gas emissions (GHG), removing CO₂ from the atmosphere⁵, and acting as natural sponges in the landscape that buffer the impacts of both floods and droughts.

Since 2023, the EU-funded RESTORE4Cs project has been working on the evaluation of the effects of restoration actions on coastal wetlands' ability to mitigate climate change and on the development of methods and tools to support decision-making on coastal wetland restoration. The Danube Delta was selected as one of the case pilots of RESTORE4Cs to gather data and information on GHG fluxes (CO₂, CH₄) under different conservation and use scenarios⁶. This data and information together with data from other case pilots have contributed to improving the knowledge on wetlands' status, their restoration potential and their capacity as carbon sinks or GHG sources.

4 Otero, M. et al. (2024). How can coastal wetlands help achieve EU climate goals? Policy Brief. RESTORE4Cs project. Available at: https://www.restore4cs.eu/wp-content/uploads/2025/09/RESTORE4Cs_Policy-Brief-1_EN.pdf.

5 Ibid.

6 RESTORE4Cs. (2025). Danube Delta. RESTORE4Cs project. Available at: <https://www.restore4cs.eu/case-pilots/danube-delta/>.

RESTORE4Cs is a Horizon Europe project that aims to evaluate the effects of restoration actions on wetlands' ability to mitigate climate change and deliver a range of ecosystem services, using an integrative socio-ecological systems approach. More information is available at:

<https://www.restore4cs.eu/>

Key implementation challenges for coastal wetlands restoration

Coastal wetland restoration in Romania faces a number of implementation challenges, which relate to policy and governance issues, data gaps, planning difficulties and lack of engagement and awareness activities. The table below elaborates the most important implementation challenges (dark orange cells) and other important challenges (light orange) to coastal wetland restoration in Romania. These challenges were identified using expert knowledge of RESTORE4Cs project partners, the analysis of national policies, as well as feedback from stakeholders in the RESTORE4Cs workshops and consultations relevant to the roadmap development.

Most important implementation challenges are summarised as follows:

- Lack of legally binding restoration targets and weak institutional coordination, including unclear and overlapping competences of public authorities, hinder restoration efforts.
- Lack of standardised monitoring system and a system of national indicators to measure wetland health and progress of restoration.
- Competing land-use and economic interests such as agricultural expansion, even in the Danube Delta, conflict with restoration goals. At the same time, the local population begins to realise that current land use practices (e.g., agriculture) are not highly efficient in terms of benefits they are receiving, in contrast with traditional practices (fishing and aquaculture). There is growing awareness that eco-tourism offers greater long-term benefits. Consequently, local perceptions are shifting, and restoration programs are increasingly seen as beneficial for all stakeholders, including local residents and economic agencies.
- Effective participation in wetland restoration planning remains limited due to the absence of structured participatory frameworks and clear incentives targeted at low impact aquaculture and sustainable conservation practices. Existing incentives for agriculture under the CAP are encouraging intensive agricultural practices.

Table 1: Key challenges for implementing coastal wetland restoration in Romania (dark orange – most important implementation challenges; light orange - other important challenges to coastal wetland restoration).

Key challenges for implementing coastal wetland restoration in Romania

Policy and governance

Currently no national strategy for wetland conservation and sustainable development, that integrates binding restoration targets. The lack of legally binding restoration goals results in a limited number of restoration projects being initiated

Insufficient coordination among institutions. No single authority has a clear mandate for coastal wetlands. Cross-sectoral coordination is weak

Fragmented system of land property and management of water infrastructure (e.g. dykes), riparian land and water bodies. This fragmentation leads to overlapping responsibilities and unclear competences.

	Lack of coherence between environmental and sectoral priorities: Contradicting sectoral priorities mainly from agriculture
	While the Danube Delta is a key focus for restoration, upstream impacts and management practices also play a critical role. Transboundary cooperation in the Danube basin is complex. Danube River Basin spans 19 countries, making coordination and overcoming technical challenges for restoration projects extremely difficult
	Lack of political attention
Data	No national agreement on monitoring indicators on coastal wetland health, status and restoration to be measured; lack of uniform indicators
	No national system for monitoring and classification of wetland health (lack of standardised monitoring methods)
	Lack of public data on GHG-fluxes and carbon storage of coastal wetlands: Wetlands are missing from Romania's LULUCF accounting and NECP. Their potential on restoration actions for GHG mitigation and climate adaptation is underutilised. GHG flux data and technical expertise are limited to a few institutions
Planning and prioritisation for restoration	Conflicting land uses and focus on infrastructure development. Restoring wetlands often requires aligning the interests of multiple local landowners and stakeholders (agricultural, aquaculture, and tourism), which can be a complex process
	Lack of procedure to determine which areas are most important for implementing restoration projects. So far, only projects related to dredging have been carried out
Stakeholder engagement and awareness	Without adequate compensation mechanisms (e.g., subsidies, payments for ecosystem services), incentives for restoration on privately owned land remain limited (as local communities often depend on economic activities for their livelihood, making it difficult to reconcile economic interests and conservation goals). On public land, insufficient stakeholder engagement and long-term governance can constrain restoration success. Consequently, restoration efforts that rely mainly on voluntary commitment often face implementation challenges.
	Lack of awareness-raising activities: Not many disseminations and awareness raising activities done by NGOs or by academia targeted at local population and public. There is low public awareness of the climate and biodiversity benefits of wetland restoration
	Lack of stakeholder participation and institutional action to facilitate it: Stakeholder participation is inconsistent and often ad hoc. There is no standardised or consistent framework to ensure meaningful stakeholder involvement.
	Communication challenges between stakeholders: Difficulty in disseminating information from research projects which highlight the benefits of wetland restoration
Funding	Restoration relies on short-term EU project funding. Romania lacks long-term, dedicated financing tools, such as carbon credit schemes or national co-financing mechanisms. Although EU funding is available, it can be problematic to access it due to strict selection criteria, lack of capacity of the Danube Delta administration to become involved and excessive bureaucracy (e.g. for CAP measures relevant to farmers).



02

**Priority topics in
this roadmap**

2. Priority topics in this roadmap

This pilot roadmap on coastal wetland restoration in Romania is structured in a stepwise approach which follows a decision-making logic:

- It starts with a baseline assessment at national level, with key information on the main characteristics and conditions of coastal wetlands in Romania and alignment of roadmap with national policies and targets
- It then moves to the operationalisation of relevant policy targets with appropriate indicators, and the identification of potentially restorable wetlands.
- It then proceeds to the assessment of benefits and costs as key aspect in planning suitable restoration actions at the site level.

The roadmap elaborates on decision-making steps which have been identified as priority needs for further development in Romania and which can benefit from the knowledge gathered in RESTORE4Cs on restoring coastal wetlands.

In two further sections, the roadmap underlines the importance of:

- a good governance structure and stakeholder participation to support coastal wetland restoration, focusing on key stakeholders and their roles and strategies for involving local communities and stakeholders
- enabling capacities and increasing awareness

Each thematic block of the roadmap is elaborated in more detailed steps which outline the main results, methods or tools from RESTORE4Cs which can be used to support authorities and practitioners in the specific step of the process.

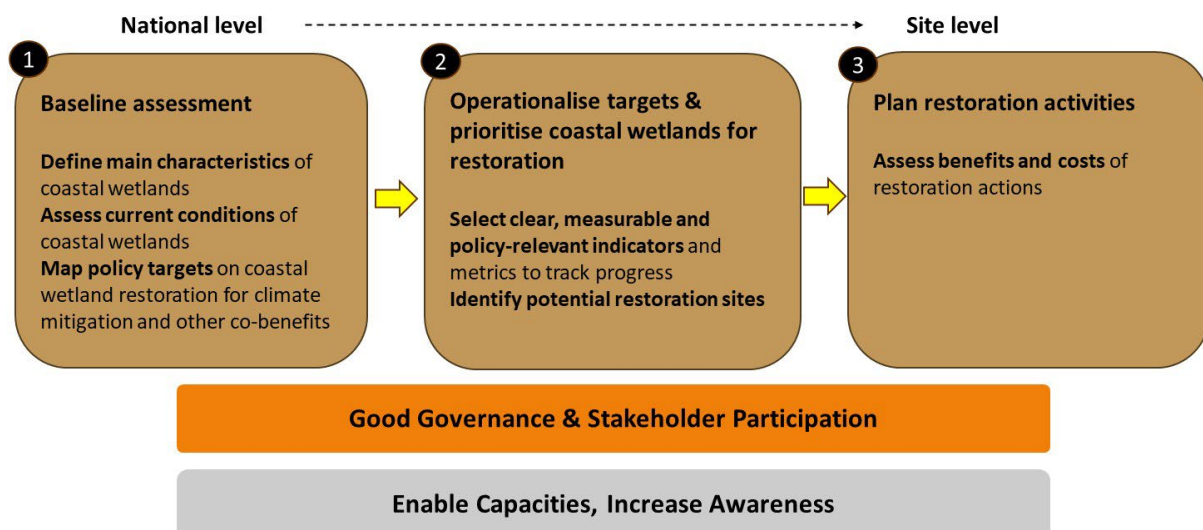
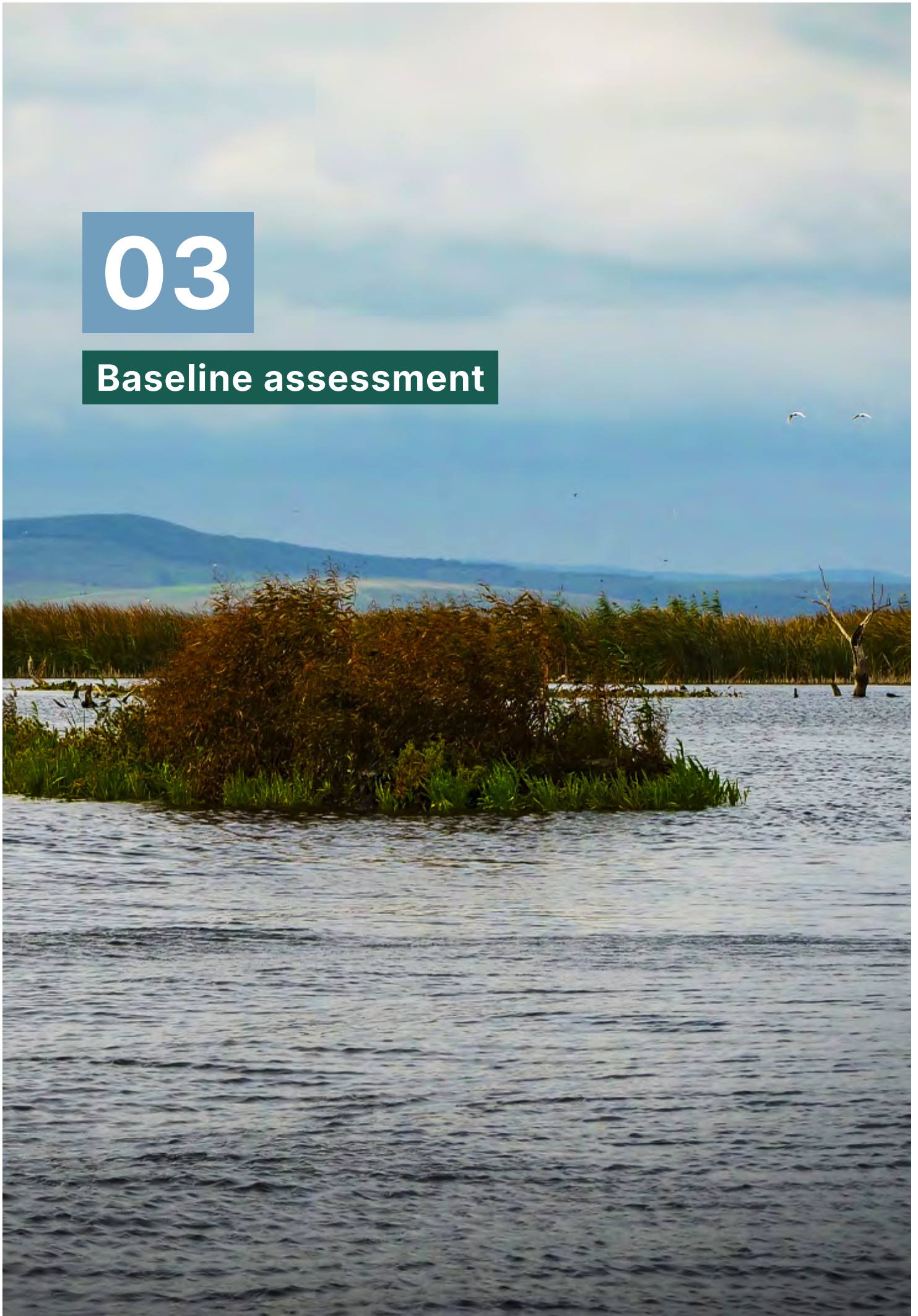


Figure 1: Structure of pilot roadmap for Romania.

03

Baseline assessment



3. Baseline assessment

Define main characteristics of coastal wetlands

- **Determine whether a definition of coastal wetlands exists within the national policy framework and identify if improvements are needed.**
- **Establish the criteria for delimiting coastal areas for baseline assessment and mapping activities.**
- **Identify the current extent of coastal wetlands and describe the habitat types present.**

According to data from 2022, wetlands occupied around 5% of Romania's territory, covering approximately 1,1 million ha⁷. Most of Romania's wetlands are inland freshwater wetlands, including marshes, peat bogs, and floodplains along major rivers like the Danube. However, Romania also has significant coastal wetlands along the Black Sea shoreline. Coastal wetlands in Romania are predominantly located in the Danube Delta with the Danube Delta Biosphere Reserve as the dominant system, representing one of Europe's largest coastal wetland complexes. Additional important wetlands include the Razim–Sinoe lagoon system and several coastal lakes along the Black Sea shoreline (e.g., Techirghiol, Nuntași, Tasaul). These wetlands represent transitional environments between freshwater systems (e.g., Danube tributaries) and marine environments (e.g., Black Sea and its coastal lagoons), shaped by fluvial dynamics, saline intrusion, and seasonal water-level fluctuations rather than true tidal processes, as the Black Sea is microtidal.

Wetland habitat types comprise freshwater and brackish marshes, extensive reedbeds, saline and brackish lagoons, mudflats, coastal wet meadows and grasslands, dune-marsh complexes, and shallow marine vegetated areas. More specifically, the main habitat types include:

- **Freshwater marshes and reedbeds** (extensive in the Danube Delta)
- **Brackish and saline lagoons** (Razim, Sinoe, Zmeica, Golovița)
- **Salt marshes and coastal wet meadows** (often seasonal and low-lying)
- **Mud flats and sandbanks** (limited presence, mostly in deltaic outflows)
- **Aquatic vegetation zones**, including submerged macrophytes
- **Artificial or semi-natural wetlands**, such as fishponds and drainage canals, which retain ecological value

These wetlands are influenced by a mix of freshwater inflows (from the Danube and its tributaries) and brackish conditions from the Black Sea, which has an average salinity of around 17-18 PSU. This mix creates saline and brackish environments in coastal lagoons and deltaic areas. The ecosystem structure is shaped by seasonal water level fluctuations, sediment dynamics, and land-use changes. Coastal wetlands provide key ecosystem services including flood buffering, biodiversity habitat, nutrient cycling, and carbon storage.

While **no precise national inventory** or official classification exists for “coastal wetlands” in Romania, the largest and most prominent area is the **Danube Delta Biosphere Reserve**, covering approximately

⁷ Kampa, E. et al. (2024). Policy analysis and policy demands for data, methods, and tools (Part A). Deliverable. RESTORE4Cs project. Available at: <https://www.restore4cs.eu/about/workplan/> (under WP1 – Policy Relevance).

580,000 ha total surface, of which over **400,000 ha** includes wetland habitats (both coastal and inland types). The **Razim-Sinoe lagoon complex** adds another significant area (estimated **~100,000 ha**, depending on classification criteria). Altogether, coastal wetlands in Romania likely exceed **500,000 ha** in extent, an official delineation is lacking, and the term “coastal wetland” is **not consistently defined in national policy** documents^{8,9}.

The lack of an **official national definition** of coastal wetlands creates inconsistencies in management, monitoring, and restoration planning. Different national policies refer to wetlands broadly, without distinguishing between inland and coastal systems.

Furthermore, according to estimates of the Danube Delta Biosphere Reserve Administration, less than 10% of the country’s coastal wetland area is currently protected under the Romanian Water Law and the Government Emergency Ordinance on the regime of protected natural areas, conservation of natural habitats, wild flora and fauna¹⁰. Most of the protected coastal wetlands is public property¹¹.

In practice, conservation and restoration efforts in Romania are strongly focused on the Danube Delta, which benefits from a dedicated administrative authority, long-term management planning, and sustained access to national and EU funding. By contrast, smaller coastal wetlands outside the Delta, such as lagoons, coastal lakes, marshes, and transitional wetland systems along the Black Sea coast, are often addressed only through broad designation frameworks, with limited site-specific planning, monitoring, or restoration investment. As a result, these wetlands are formally recognised but remain underrepresented in strategic conservation and restoration initiatives¹². These ecosystems are recognised under Natura 2000, the Ramsar Convention, and several national protected area designations, but coverage remains incomplete.

Support from RESTORE4Cs

A more precise and improved definition of coastal wetlands in Romania can be adapted from the Ramsar Convention and the EU NRR, as follows: *Coastal wetlands are wetland ecosystems located within Romania’s coastal and deltaic zones, influenced by the interactions between the Black Sea marine environment and the freshwater systems of the Danube and its distributaries. They include freshwater, brackish, and saline habitats such as lagoons, marshes, reedbeds, tidal flats, sandbanks, coastal meadows, salt marshes, and shallow marine waters up to 6 m depth.*

Moreover, based on the definition by RAMSAR combined with CORINE Land Cover data and supported by the Ramsar Wetland Inventory and the Natura 2000 database, the [Extent and Condition Indicators Tool](#) developed by RESTORE4Cs in the European Coastal Wetlands Interactive Platform provides a national summary and visualisation of coastal wetlands in Romania, including coastal wetlands extent, distribution of habitat types (e.g., saltmarsh, lagoon, seagrass, tidal flat) (Figure 2 and Table 2), and wetland area under protection in nationally designated protected areas (Figure 4 in the next section).

8 Török, Z. (2002). The Romanian wetland inventory project. *Scientific Annals* 9, 161-173.

9 Gâştescu, P. & Ştiucă, R. (2008). *Delta Dunării. Rezervație a Biosferei*, Edit. CDPRESS, Bucureşti.

10 DDBRA. (2025). Functional Zoning. DDBRA. Available at: <https://ddbra.ro/zonare-functionala>.

11 Ibid.

12 European Commission & Ministry of Environment (Romania). (2019). *Prioritised action framework for the Natura 2000 network in Romania 2021-2027*. Available at: <https://www.mmediu.ro/app/webroot/uploads/files/RO%20PAF.pdf>.

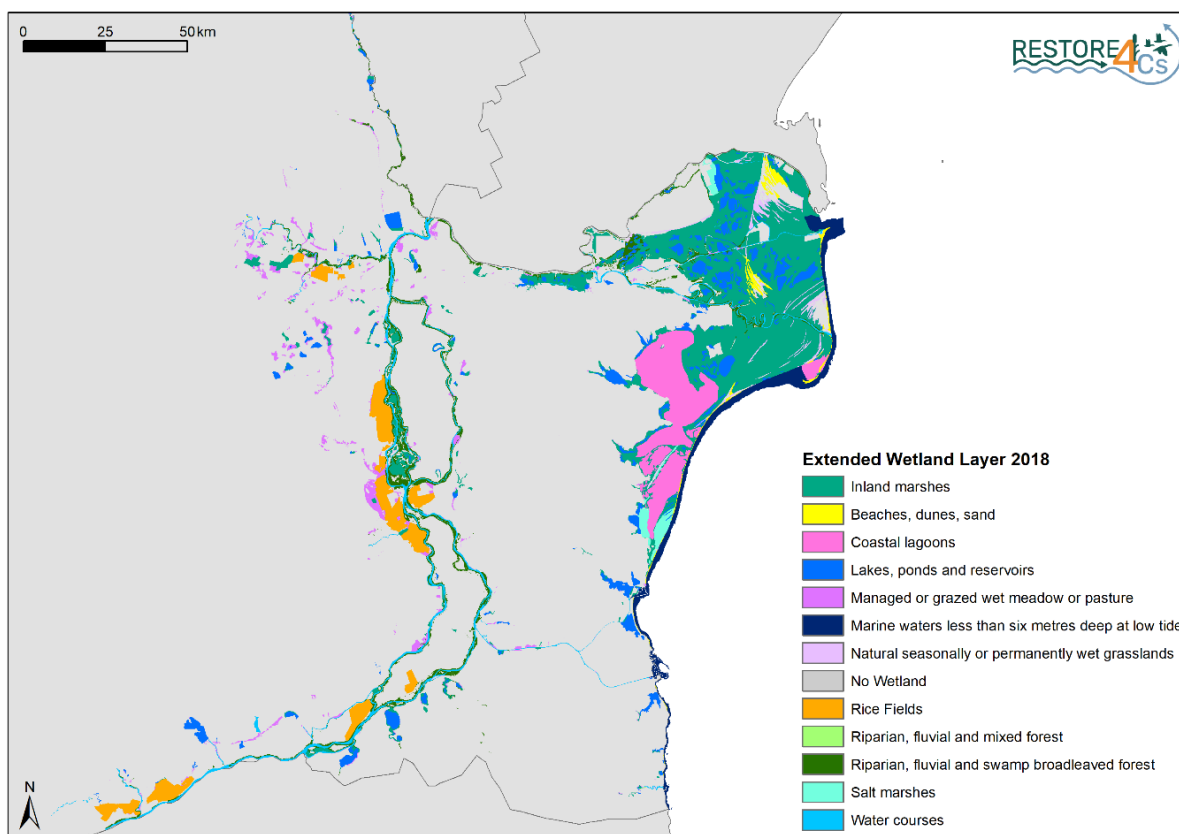


Figure 2: Map on extent of coastal wetlands in Romania. Source: *Policy Progress tracking tool on the European Coastal Wetlands Interactive Platform* (based on *extended Wetland Layer*).

Table 2: Coastal wetland extent in Romania (2018).

Coastal Wetland Habitat Type	Area (km ²)
Rice Fields	448,10
Riparian, fluvial and swamp broadleaved forest	480,52
Riparian, fluvial and mixed forest	0,47
Managed or grazed wet meadow or pasture	273,39
Natural seasonally or permanently wet grasslands	95,04
Beaches, dunes, sand ¹³	89,84
Inland marshes	2372,13
Salt marshes	88,60
Coastal lagoons	694,21
Water courses	351,87
Lakes, ponds and reservoirs	647,89
Marine waters less than six metres deep at low tide	340,20

Source: *Policy Progress tracking tool on the European Coastal Wetlands Interactive Platform*.

¹³ Beaches, dunes, and sand formations are generally not considered wetlands under the Ramsar Convention. Their inclusion here reflects their ecological connection to coastal wetland systems, as they often form part of transitional zones that influence hydrology, sediment dynamics, and habitat connectivity. However, they do not typically meet the hydrological criteria for wetlands.

The map in Figure 2 illustrates the spatial distribution and diversity of coastal wetlands in Romania, with a clear concentration along the Danube Delta and the Black Sea coastline. The Danube Delta appears as the largest and most complex wetland system, characterised by an extensive mosaic of habitat types, including **inland marshes (dark green)**, **coastal lagoons (pink)**, **salt marshes (light blue)**, **riparian forests (various greens)**, and **shallow marine waters (dark blue)**. These habitats reflect the strong interaction between riverine, lagoonal, and marine transition processes.

South of the Delta, the coastline includes smaller but ecologically important wetland areas, such as dune systems (yellow), lakes and ponds (blue), and patches of natural wet grasslands (light purple). The Razim-Sinoe lagoon complex is clearly visible as a large area dominated by coastal lagoons and wet grassland habitats, showing its role as a major brackish wetland region.

Inland extensions of the Delta system, following the Danube and its distributaries, are riparian marshes, meadows, and floodplain forests that form ecological corridors linking inland wetlands to the coastal zone.

Overall, **Romania's coastal wetlands are extensive, diverse, and primarily clustered in the Danube Delta and Razim-Sinoe areas**, with smaller wetland fragments distributed along the southern Black Sea coast. This spatial pattern confirms the ecological significance of the Danube Delta as the core of Romania's coastal wetland network and underscores the need for targeted passive or active restoration actions and integrated management of these interconnected habitats.

Assess current conditions of coastal wetlands

- **Determine the overall status of coastal wetlands.**
- **Identify the area of coastal wetlands that is currently under protection.**
- **Describe the main threats and pressures affecting coastal wetlands.**
- **Verify whether a classification system exists for coastal wetlands based on their health condition.**

Romania's coastal wetlands, centred in the Danube Delta and Razim-Sinoe lagoon system, are ecologically vital transition zones between freshwater and marine environments. These wetlands support biodiversity, water regulation, and carbon storage but face significant degradation. This section provides the current status, vulnerabilities, and knowledge gaps on coastal wetlands conditions.

While protected areas along the Romanian coast, most notably the Danube Delta Biosphere Reserve, generally maintain relatively good ecological conditions, the status of coastal wetlands outside this core area is more variable, with site-specific information on smaller coastal wetlands remaining limited. Moreover, available assessments indicate that **several coastal wetland systems are subject to ongoing pressures, including eutrophication, hydrological alteration, land-use change, and climate- or hydrology-driven salinisation and drought**, which can lead to local degradation even within designated protected areas^{14,15}.

Salinisation occurs when reduced freshwater inflows allow brackish water from the Black Sea to intrude into lagoons and deltaic zones, altering habitat conditions. The Danube Delta remains the healthiest coastal wetland system but faces cumulative stressors. In contrast, the Razim-Sinoe complex shows signs of declining biodiversity, increased sedimentation, and partial habitat loss^{16,17,18}.

There is currently no national estimate for the area of coastal wetlands covered by Annex I (terrestrial ecosystems e.g., coastal lagoons, salt marshes, dune-marsh complexes) or Annex II (marine ecosystems, e.g. shallow marine waters, submerged macrophyte beds) of the EU NRR that are in 'not good' condition. This reflects Romania's **lack of a national wetland classification system aligned with EU NRR definitions**.

14 Ciobotaru, N. et al. (2016). Mapping Romanian wetlands – A geographical analysis. 3rd International Conference Water resources and wetlands 3. 220-227. Available at: https://www.researchgate.net/publication/305277994_MAPPING_ROMANIAN_WETLANDS_-_A_GEOGRAPHICAL_APPROACH.

15 Matei, M. et al. (2016). Assessment of pressures caused by climate change on wetlands in Romania based on the MAES framework.

16 Seceleanu-Odor, D. et al. (2018). Time evolution of water quality parameters in the Razim-Sinoe aquatic complex (Romania) 1991–2017. In *Deltas and Wetlands Book of Abstracts*. Danube Delta National Institute for Research and Development.

17 European Commission & Ministry of Environment (Romania). (2019). Prioritised action framework for the Natura 2000 network in Romania 2021–2027. <https://www.mmediu.ro/app/webroot/uploads/files/RO%20PAF.pdf>.

18 DDBRA. (n.d.). Despre rezervatie. DDBRA. Available at: <https://ddbra.ro/prezentare-general/>.

Support from RESTORE4Cs

Water scarcity is a critical stressor in the Danube Delta because reduced freshwater inflows disrupt hydrological balance, degrade wetland habitats, and threaten the biodiversity and ecosystem services that depend on stable water levels. Further, **the Danube Delta is increasingly affected by climate change, resulting in droughts and very low levels of water** which pose significant challenges to ecosystems, water availability to sustain biodiversity and restoration efforts. The map in Figure 3 produced in RESTORE4Cs project illustrates the spatial variability of surface water dynamics across Romania’s coastal wetlands, with darker blue areas indicating sites that experience frequent or persistent flooding. These zones of high water mobility correspond to the most hydrologically active wetland habitats, such as lakes, lagoon edges, and river channels, which play a critical role in sustaining ecological functions. Stable and dynamic surface water areas are essential for maintaining wetland biodiversity, particularly for waterbirds that depend on shallow, fluctuating waters for feeding, breeding, and migration stopovers. In addition, these hydrologically active wetlands provide key ecosystem services, including water purification, nutrient retention, and natural flood buffering, making the understanding of surface water dynamics crucial for effective conservation and restoration planning.

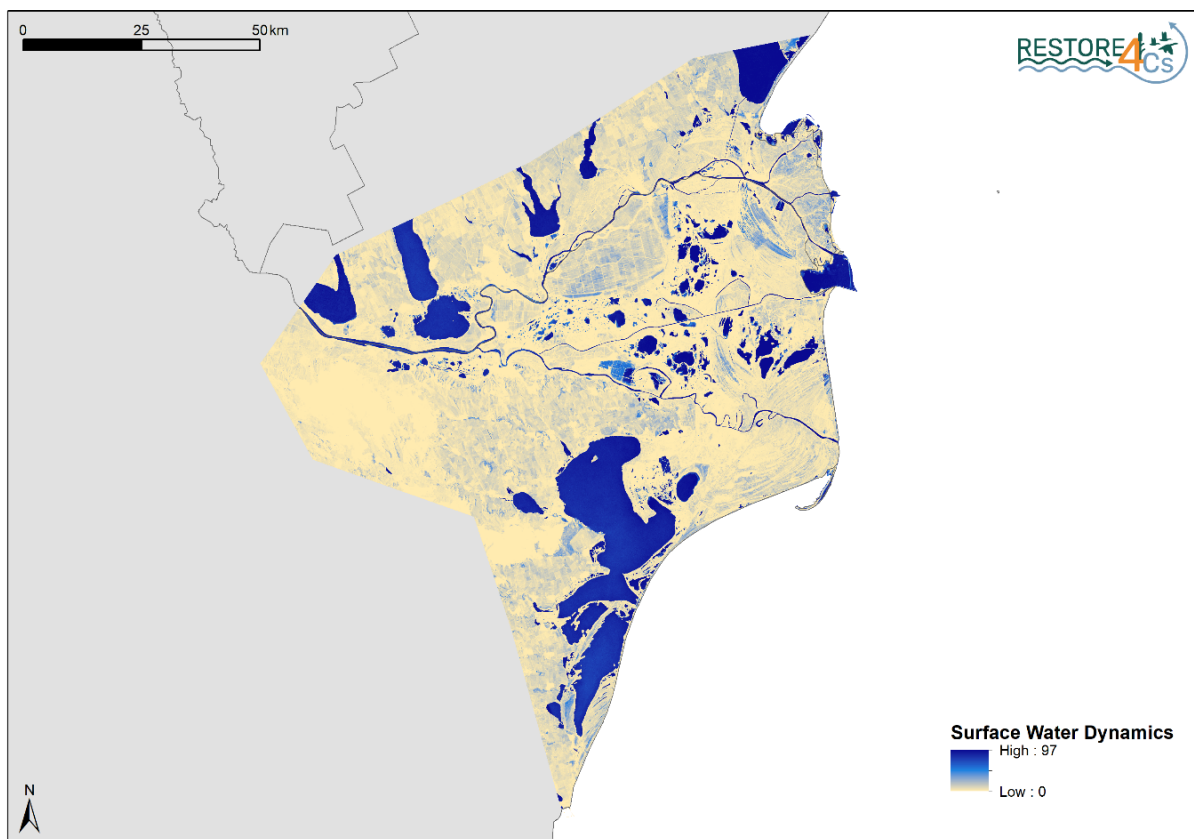


Figure 3: Surface water dynamics extracted from satellite imagery 2022-2024 (values show the occurrence of inundation in a pixel over a given period, where 100% refers to a permanent water body, and medium to high values indicate areas with temporal water coverage). Source: University of Malaga.

The map in Figure 4 shows that **only a small share of Romania’s coastal wetlands falls within nationally designated protected areas** (highlighted in green), while **most of the coastal wetland extent, especially across the Danube Delta and the Razim-Sinoe lagoon system, lies in areas lacking adequate legal protection** (shown in red). This illustrates a **significant protection gap**, where ecologically valuable wetland habitats remain outside strong national conservation frameworks. National monitoring of wetland health remains fragmented and lacks a unified typology. **Romania**

lacks a national system for monitoring wetland health, classifying the condition of coastal wetland habitats, and mapping restoration potential. Support can be provided by the RESTORE4Cs [Indicators Tool](#) on the European Coastal Wetlands Interactive Platform which provides information on coastal wetlands conditions and direct drivers of land use change, climate change, pollution, water exploitation and invasive alien species, based on latest available EU data (see Table 3).

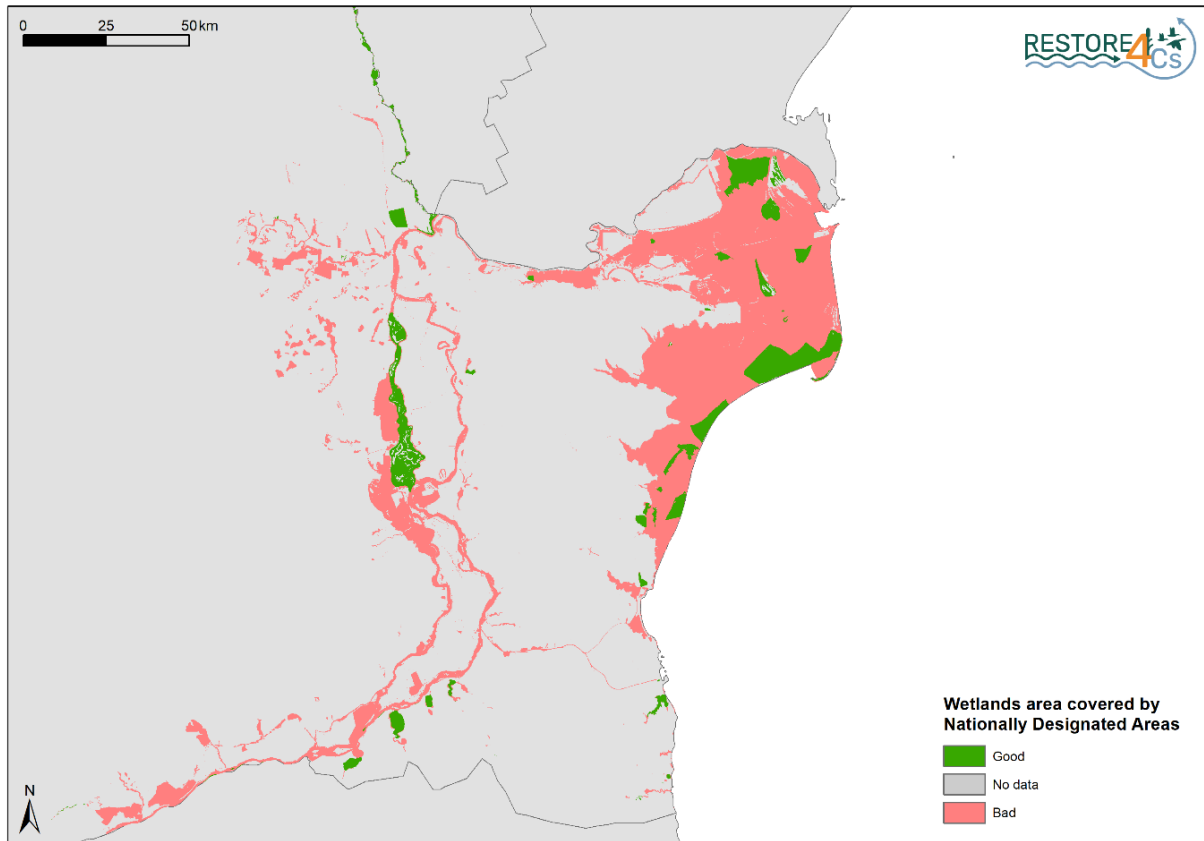


Figure 4: Coastal wetlands area covered by Nationally Designated protected areas (Green colour (Good)=Wetland protected by national designated areas; Red colour (Bad)=Wetland not protected by national designated areas). Source: Extent and Condition Indicators Tool on the European Coastal Wetlands Interactive Platform.

Romania also lacks comprehensive national data on the carbon storage or GHG emissions from its coastal wetlands. Although wetlands are acknowledged as key adaptation measures in national climate strategies, **no quantified assessments have been conducted to date on carbon stocks, GHG (CH₄/CO₂) fluxes, or mitigation benefits from restoration efforts.** Emission reductions and restoration gains from coastal wetland management are neither monitored nor reported. Further, coastal wetlands are not yet included in LULUCF reporting, which until 2025 has focused primarily on forests, cropland, and inland wetlands. As a result, the GHG fluxes and carbon sequestration potential of coastal wetlands remain unaccounted for.

Table 3: Conditions and Drivers indicators available in the Indicators Tool on the European Coastal Wetlands Interactive Platform.

Ecosystem condition	Direct drivers
<ul style="list-style-type: none"> • Physical state (including soil moisture deficit during the vegetation growing season, and sea water salinity) • Chemical state (including percentage of samples classified as “good” or “excellent” state of bathing water) • Compositional state (including percentage of wetland species with good population status, richness of wetland species, and percentage of wetland birds with increasing or stable population trends) • Structural state (including annual mean Normalised Difference Vegetation Index (NDVI), and water occurrence decrease intensity) • Landscape and seascape (including connectivity, and fragmentation) 	<ul style="list-style-type: none"> • Land-use change (including the percentage of wetland area covered by nationally designated areas and Natura 2000, the extent of agricultural area around wetlands (see Figure 6 as an example), and the imperviousness of the local drainage basin), • Climate change (including drought event frequency, extreme drought frequency, trends in sea level, and surface air temperature anomalies), • Pollution (including exceedance of critical loads for eutrophication and non-atmospheric nitrogen inputs to soil), • Direct exploitation (water exploitation index (WEI+)), and • Invasive alien species.

Map policy targets for coastal wetland restoration for climate change mitigation and other co-benefits

- Identify relevant national policies that address the restoration and conservation of coastal wetlands and specify any embedded restoration targets.
- Assess the degree of alignment between national policy targets and EU/global commitments on wetland restoration and climate mitigation.
- Evaluate opportunities to operationalise higher-level policy targets into actionable measures that support coastal wetland restoration.

With the Danube Delta as a major European coastal wetland, several national policies exist in Romania that are relevant to coastal wetland restoration and conservation. However, Romania does not currently have a dedicated national wetland strategy as a standalone policy. Instead, wetland conservation and restoration objectives are embedded within broader national strategies and action plans, presented below.

Support from RESTORE4Cs

Nature and Biodiversity

The **Romanian National Strategy and Action plan for Biodiversity Conservation 2014-2020 (NBASP)**¹⁹ aims to ensure the coherence and efficient management of the national network of protected areas, including wetlands of international importance as defined under the Ramsar Convention. One of the major objectives of the National Strategy is the maintenance and restoration of ecosystems and their services through the creation of green infrastructures and **the restoration of at least 15% of degraded ecosystems**. The plan encourages, *i.a.*, the development and implementation of policies for biodiversity-rich areas which are, however, located outside protected natural areas, including wetlands. Wetlands are mentioned in the Strategy in the context of their importance for the migration and dispersion of wild species as well as for ensuring connectivity between populations of the same species. **The NBASP explicitly aims to support the management of both Natura 2000 and Ramsar sites.**

The **National Sustainable Development Strategy 2030 (2018)**²⁰ integrates environmental considerations into broader socio-economic planning, emphasising the sustainable use of natural resources and the importance of ecosystem services provided by wetlands. Two of its targets are directly related to wetlands:

- **“Develop green infrastructure** and make use of the services offered by natural ecosystems (in particular the Danube floodplains, its tributaries and the Danube Delta) **through** the integrated management of river basins and **wetlands.**”
- **“Conserve and protect wetland areas**, which also include the Danube Delta Biosphere Reserve, a unique wetland in Romania and part of European and world natural heritage.”

19 Government Decision 1081/2013 of December 11, 2013, introducing National Strategy and Action Plan for Biodiversity Conservation 2014-2020. Available at: <https://faolex.fao.org/docs/pdf/rom203463.pdf>.

20 Government Decision 877/2018 of November 9, 2018, introducing Romania’s Sustainable Development Strategy 2030. Available at: <https://faolex.fao.org/docs/pdf/rom195029.pdf>.

Wetlands are also addressed under other sectoral strategies, such as **the Territorial Development Strategy of Romania 2035 (2016)** which highlight that “developing green infrastructure, avoiding landscape fragmentation and reducing the impact of fragmentation through ecological networks, especially Natura 2000, is key to maintaining a sustainable environment”. Through promoting green infrastructure, inter alia as a climate adaptation measure, the policy lays the basis for wetland restoration efforts.

The **Large Infrastructure Operational Programme** aimed at promoting sustainable economic growth while ensuring safe and efficient use of natural resources. It allocated funding for restoration of ecosystems (e.g., stream and lacustrine ones), coastal erosion and flood risk management, biodiversity protection, which may include measures on wetland restoration.

The **Government Emergency Ordinance on the regime of protected natural areas, conservation of natural habitats, wild flora and fauna (2007)**²¹ aims to maintain or restore natural habitats and species of wild flora and fauna to a favourable conservation status (Art. 2). The Ordinance specifically emphasises the need to ensure appropriate protection, conservation and use of the most representative natural habitats within Romania’s biogeographical space. These cover areas with specific biological floristic and faunal diversity, including marine, littoral, and coastal areas, plain, hill and mountain, wetlands, arid and ecotone areas, watercourses with meadow areas and natural lakes. As such, the Ordinance provides an important framework for fulfilling Romania’s obligations under the EU Nature Directives.

Law 5/2000 (2000)²² and **Decision HG 1.581/2005 (2005)**²³ provide the legal framework for **protecting Romania’s natural heritage**. The law defines protected areas as natural or built areas, delimited geographically and/or topographically, which include natural and/or cultural heritage values and are declared as such to achieve the specific objectives of conservation of heritage values. It establishes the types of protected areas designations located both inside and outside the Danube Delta Biosphere Reserve. The primary objective of these protected areas is the conservation of marine biodiversity. Additionally, the framework seeks to eliminate and prevent activities involving the exploitation or use of resources that conflict with conservation goals, while also supporting conditions for scientific research, education, and recreation. In certain sub-areas of these protected areas, traditional, permanent, or temporary activities are allowed.

Water, marine, and coastal protection

In the field of water management, a central piece of legislation is **the Water Law (1996)**²⁴, which provides the general framework for the exploitation, conservation, and protection of water resources. The law mandates the development of planning and management frameworks for individual basins or groups of hydrographic basins, with the goal of achieving sustainable management of water resources, aquatic ecosystems, and wetlands. Two main planning instruments are foreseen: the Hydrographic Basin Development Plan and **the Hydrographic Basin Management Plan**. Both instruments establish measures for **wetland restoration and conservation**.

21 Ordinance No. 57/2007 of June 20, 2007, Official Gazette No. 442 of June 29, 2007. Available at: <https://legislatie.just.ro/Public/DetaliiDocument/83289>.

22 Law No. 5/2000 of March 6, 2000. <https://legislatie.just.ro/Public/DetaliiDocument/21860>.

23 Decision No. 1581 of December 8, 2005, Official Gazette No. 24 of January 11, 2006. <https://legislatie.just.ro/Public/DetaliiDocument/67794>.

24 Law No. 107/1996 of September 25, 1996, Official Gazette No. 244, October 8, 1996. <https://legislatie.just.ro/Public/DetaliiDocumentAfis/8565>.

In the marine policy field, two laws are of particular relevance. **Law no. 98 /1992 (1992)**²⁵ ratifies the **Convention on the Protection of the Black Sea against Pollution**. It aims at the reduction of pollution from rivers, as well as the conservation of biodiversity and the expansion of protected territories. In addition, **Law no. 158/2014 (2014)**²⁶ ratifies the **Protocol on the Protection of the Marine Environment of the Black Sea against Pollution from Land-Based Sources and Activities**. Both acts establish conditions to prevent environmental degradation, affecting, *i.a.*, coastal wetlands.

In addition, the **Integrated Sustainable Development Strategy of the Danube Delta**²⁷, adopted in 2016, provides an overarching strategic framework for balancing environmental protection with socio-economic development in the Danube Delta region. The Strategy recognises the Danube Delta as a unique natural asset of European and global importance and explicitly highlights the role of wetlands in supporting biodiversity conservation, climate resilience, water regulation, and sustainable livelihoods. It promotes an integrated, place-based approach that combines ecosystem restoration, sustainable use of natural resources, and improved quality of life for local communities. Wetland restoration and the maintenance of natural hydrological processes are identified as key priorities to reduce vulnerability to climate change, support fisheries and eco-tourism, and enhance ecosystem services. The Strategy also emphasises participatory governance, cross-sectoral coordination, and alignment with EU environmental and regional development policies, thereby providing an important policy foundation for coastal wetland restoration initiatives in the Danube Delta.

Climate change mitigation and adaptation

The **Integrated National Energy and Climate Change Plan (NECP) 2025-2030 Update (2024)**²⁸ sets out Romania's national goals and objectives in line with EU targets and the Paris Agreement. To achieve national GHG reduction targets and combat climate change, the policy proposes several sectoral measures. Unlike the 2021 edition of the Plan which proposed "protecting, **restoring** and ensuring sustainable use of **Natura 2000 sites**", the current document does not refer to wetland or ecosystem restoration as part of the decarbonisation and climate resilience measures.

The **National Strategy on Adaptation to Climate Change 2024-2030**²⁹ (2024) aims to improve the adaptive capacity and increase resilience of socio-economic and natural systems to the impacts of climate variability across sectors. The most relevant strategic objectives focus on:

- Reducing the risk of scarcity regarding water resources (OS.1.1);
- Supporting **the conservation, restoration** and strengthening of the **continuity of habitats and ecological networks, relying on green-blue infrastructure** and afro-ecological infrastructure (OS.3.2);

25 Law No. 98/1992 of September 16, 1992, Official Gazette No. 242, September 29, 1992. <https://legislatie.just.ro/Public/DetaliuDocumentAfis/2372>.

26 Law No. 158/2014 of December 3, 2014, Official Gazette No. 894, December 9, 2014. <https://legislatie.just.ro/Public/DetaliuDocument/163678>.

27 Romania's Ministry of Regional Development and Public Administration. (2016). Integrated Sustainable Development Strategy for the Danube Delta. Ministry of Regional Development and Public Administration. Available at: <https://www.mdpa.ro/uploads/articole/attachments/5dc54f4615388605628193.pdf>.

28 European Commission. (2024). Romania – Final Updated NECP 2021-2030 (submitted in 2024). European Commission. https://commission.europa.eu/document/download/75df0ac2-ecf9-4212-89ac-2a603bd43e36_en?filename=RO_FINAL%20UPDATED%20NECP%202021-2030%20%28English%29.pdf.

29 Decision No. 529 of July 24, 2013, Official Gazette No. 536, August 28, 2013. <https://faolex.fao.org/docs/pdf/rom202404.pdf>.

- Supporting/promoting the use of best practices in sustainable and climate-smart agriculture, aquaculture and forest management (OS.3.3);
- Supporting the development of a coherent, connected and representative network of protected areas and strictly protected areas implementing adaptive management (OS.3.4);
- Integrating ecosystem resilience issue into all relevant public policies and sectoral patterns of economic activities (OS.3.5).

Also, the National Strategy and its corresponding Action Plan encourage the restoration and recovery of areas with a potential for carbon storage, such as forest ecosystems and wetlands, and include specific measures, such as: avoiding afforestation of wetlands and peatlands (P.3.3.5); protecting organic matter in the soil, especially carbon-rich soils, such as marshes, peatlands, etc., **restoring marshes and peatlands** and carbon in degraded soils with high risk of erosion or desertification (P.8.2.1.). Additionally, the Action Plan promotes measures, including financial ones, to support the increase in carbon sequestration on agricultural land (M.8.1.1.2), including by maintaining wetlands and peatlands.

Table 4 gives an overview of Romanian policy targets and objectives with the highest relevance for coastal wetland restoration.

Table 4: Overview of the most wetland-relevant policy targets and objectives and their connection to EU and/or global policies.

Policy	Targets (objectives)	Link to EU or Global Policy
Nature and Biodiversity		
National Strategy and Action Plan for Biodiversity Conservation 2014–2020 (NBASP)	<ul style="list-style-type: none"> - Maintain and restore ecosystems and their services - Restore at least 15% of degraded ecosystems - Support Natura 2000 and Ramsar sites 	<ul style="list-style-type: none"> - EU Biodiversity Strategy for 2020 - Ramsar Convention
National Sustainable Development Strategy	<ul style="list-style-type: none"> - Develop green infrastructure - Conserve and protect wetland areas (e.g., Danube Delta Biosphere Reserve) - Integrate wetland ecosystem services into planning 	<ul style="list-style-type: none"> - UN Sustainable Development Goals (SDGs)
Large Infrastructure Operational Programme	<ul style="list-style-type: none"> - Maintain and restore degraded ecosystems and the services provided located outside protected natural areas, including lacustrine and stream ecosystems 	<ul style="list-style-type: none"> - EU Cohesion Policy - EU Biodiversity Strategy
Government Emergency Ordinance on Protected Natural Areas	<ul style="list-style-type: none"> - Restore and maintain natural habitats including wetlands - Ensure protection and sustainable use of diverse habitats 	<ul style="list-style-type: none"> - EU Habitats and Birds Directives (Nature Directives) - Natura 2000
Law No. 5/2000 & Decision HG 1581/2005	<ul style="list-style-type: none"> - Conserve marine biodiversity - Restrict harmful resource use 	<ul style="list-style-type: none"> - Natura 2000 - EU environmental protection framework

Water, marine and coastal protection		
Water Law	<ul style="list-style-type: none"> - Sustainably manage water resources and wetlands - Implement Hydrographic Basin Development and Management Plans including wetland restoration 	<ul style="list-style-type: none"> - EU WFD - EU Biodiversity Strategy
Law No. 98/1992 (Black Sea Protection Convention)	<ul style="list-style-type: none"> - Reduce river-based pollution - Expand protected areas - Conserve coastal biodiversity 	<ul style="list-style-type: none"> - Convention on the Protection of the Black Sea Against Pollution
Law No. 158/2014 (Black Sea Protocol)	<ul style="list-style-type: none"> - Prevent land-based pollution of marine and coastal ecosystems (with Danube Delta specifications) 	<ul style="list-style-type: none"> - Protocol on the Protection of the Marine Environment of the Black Sea Against Pollution
Integrated Sustainable Development Strategy of the Danube Delta (SIDDD)	<ul style="list-style-type: none"> - Wetland restoration and the maintenance of natural hydrological processes are key priorities for reducing vulnerability to climate change, support fisheries and eco-tourism, and enhance ecosystem services 	<ul style="list-style-type: none"> - Ramsar Convention
Climate change mitigation and adaptation		
National Strategy on Adaptation to Climate Change 2024–2030	<ul style="list-style-type: none"> - Supporting the conservation, restoration and strengthening of the continuity of habitats and ecological networks, relying on green-blue infrastructure and afro-ecological infrastructure - Supporting the development of a coherent, connected and representative network of protected areas and strictly protected areas implementing adaptive management - Protecting organic matter in the soil, especially carbon-rich soils, such as marshes, peatlands, etc., restoring marshes and peatlands and restoring carbon in degraded - Supporting the increase in carbon sequestration on agricultural land, including by maintaining wetlands and peatlands. 	<ul style="list-style-type: none"> - UNFCCC, Paris Agreement

Conclusions

→ There is **no national wetland strategy** covering all types of wetland ecosystems. The existing national policy framework primarily focuses on the Danube Delta, Romania's largest and most prominent wetland. As a result, smaller wetland areas may be overlooked or insufficiently addressed. In addition, there is no formal definition of coastal wetlands at the national level. This gap creates uncertainty regarding the scope and applicability of proposed wetland-related measures for wetlands on coastal and marine transition habitats.

→ Some policies contain coastal wetland-related targets that are aligned with relevant EU and global targets. However, they mainly remain high-level, generic and often outdated. There is the **need to align national targets more strongly with recent developments at EU level, in particular with those under the EU NRR**. The target of restoring at least 15% of degraded ecosystems set in the National Strategy and Action plan for Biodiversity Conservation 2014–2020 remains below the target of restoring at least 20% of the EU's land and sea ecosystems by 2030, and ultimately all ecosystems in need of restoration by 2050 defined in the EU NRR.

- While Romania does not yet have a dedicated national wetland strategy, the EU NRR requires the **development of a National Restoration Plan by 2026**, which will likely trigger updates to Romania’s biodiversity and climate strategies.
- Implementing **obligations under the EU NRR to restore a specific percentage of wetlands** is an opportunity that can significantly improve coastal restoration efforts. This should be combined with other priority policy efforts in particular implementing a policy of delineation and accounting of coastal wetlands under different levels of threat for restoration efforts to be better targeted, prioritised, and managed.
- Additionally, the **National Climate Adaptation Strategy (2024-2030)** is expected to further **institutionalise the role of wetland restoration** in adaptation planning.
- **Benefits of coastal wetland restoration should be more explicitly recognised in national legislation**, particularly in relation to climate mitigation and adaptation. Currently, the focus is placed on wetlands in general, with a strong emphasis on their connection to agricultural activities, while the climate-related potential and benefits of coastal wetlands are not directly addressed. Acknowledging their climate regulation functions would help ensure their protection and support prioritising their restoration in national programmes.

Key recommendations

To address current data gaps and strengthen climate and restoration planning for coastal wetlands in Romania, the following actions are recommended:

- Adopt a **consistent definition of wetlands**, including coastal wetlands, in national policies to eliminate inconsistencies in management, monitoring and restoration planning.
- Develop a **national wetland strategy** to create a legal and policy framework for restoration and conservation.
- Establish a **coastal wetland typology** aligned with Annex I/II definitions of the EU NRR.
- Develop a national system for wetland health condition assessments and restoration planning.
- Define **restoration targets for coastal and freshwater wetlands** under the EU NRR, including reporting and monitoring indicators.
- Continue building **GHG fluxes and carbon storage studies** to quantify climate mitigation potential from restoration and conservation actions.
- Integrate **coastal wetlands into future LULUCF reporting** and restoration planning.



04

**Operationalise targets
and prioritise**

4. Operationalise targets and prioritise

Select clear, measurable and policy-relevant indicators and metrics to track progress of coastal wetland restoration and its impact on climate mitigation

- **Identify indicators suitable for assessing changes in the status of coastal wetlands over time and for monitoring progress toward key policy targets.**
- **Determine approaches to operationalise policy-related metrics and indices, including methods for mapping them at different scales using spatial indicators and data layers.**

To effectively operationalise coastal wetland-relevant policy targets, it is necessary to:

- **Use clear, measurable indicators and metrics** to accurately assess the baseline of wetland ecological status and resilience. These indicators must also assess changes in the status of coastal wetlands over time and answer what is required to be monitored to track progress and measure it against national, EU and international commitments and targets for climate and biodiversity.
- **Integrate advanced technologies** like remote sensing, GIS, data analytics, and machine learning with in-situ measures which enhances the ability to monitor trends, assess interventions, and support evidence-based decisions for sustainable wetland management and restoration.

In this context, it is important to balance the need for robust indicators providing clear evidence of the contribution of coastal wetland restoration efforts to various policy objectives without creating more administrative complexity.

In Romania, there is lack of standardised and uniform indicators at national level to assess changes in wetland status over time and monitor progress against key policy targets. Existing monitoring focuses mainly on **water status** (e.g., chemical and ecological quality) and **Natura 2000 reporting**. However, key dimensions needed for restoration planning, such as **wetland extent and condition**, **GHG fluxes**, **hydrological connectivity**, **soil moisture trends**, and **pressure indicators** (e.g., land-use change, invasive species), are not monitored consistently at national level.

Support from RESTORE4Cs




RESTORE4Cs proposes eight policy outcome indicators to evaluate the status, trends, and targets for coastal wetlands in alignment with EU policies (Table 5). The description of each indicator also outlines how it links to existing policies such as the Habitats Directive, the WFD, and EU NRR as well as international agreements.




The results of these indicators can be filtered and displayed for Romania in the [Policy Progress tracking tool](#) on the European Coastal Wetlands Interactive Platform.



The goal is to use already available data sources to provide information on these indicators, including in-situ and remote sensing data. The use of the proposed indicators should not create additional burden to competent authorities but help provide the evidence needed on the contribution of coastal wetlands restoration efforts to various policy targets.

An example of indicator application for Romania is illustrated in Table 6, according to which only 0.05% of Romanian coastal wetlands are in strict protection but up to 65% are designated as Ramsar and in Natura 2000 sites.

Table 5: Policy outcome indicators and metrics proposed by RESTORE4Cs to build evidence and foster greater integration between national and EU policies to streamline reporting processes. Indicators can be disaggregated per country and EU level.

Policy Indicator Output	Metric title	Units	Description
Extension of Coastal Wetlands Protected and Strictly Protected 	Total Coastal Wetland Extent in Protected Areas and in Strict Protected Areas	Area Coverage (km ²)	Percentage change on spatial cover of total coastal wetlands protected and strictly protected from total protected areas.
	Total Coastal Wetland Extent in Natura 2000 sites	Area Coverage (km ²)	Extent of coastal wetlands within the Natura 2000 network.
	Total Coastal Wetland Extent designated as Ramsar and/in Natura 2000	Area Coverage (km ²)	Total area of coastal wetlands designated as Ramsar sites within the Natura 2000 network.
	Total Coastal Wetland Protected as a Proportion of Coastal Wetlands	Percentage of area coverage (km ²)	Extent of coastal wetlands protected within designated areas as a percentage of the total coastal wetland extent. It offers a measure of the overall conservation coverage of coastal wetlands.
Representativity of Coastal Wetland Habitats in Protected Areas 	Spatial Cover of Different Coastal Wetland Habitats in Protected Areas	Percentage of area coverage (km ²)	Coastal wetland extent data by habitat type (e.g., salt marshes, mudflats).
	Individual Coastal Wetland Habitat Extent in Natura 2000	Area Coverage (km ²)	Specific coastal wetland habitat types within the Natura 2000 network.
Improved Coastal Wetland Health 	Coastal Wetland Knowledge	Proportion of data available where habitat condition is known.	Measures the extent of knowledge available regarding the habitat condition of coastal wetlands, as outlined in Annex I of the NRR.
	Coastal Wetland Habitat Condition	Percentage change in good condition of different coastal wetland habitats	Measures changes in the quality of various coastal wetland habitats (Annex I of Habitats Directive and those in Annexes I, II, IV and V of the Habitats Directive and the EU NRR) over time and per each biogeographic region. It includes factors such as vegetation health, soil quality, and water clarity.
	Coastal Wetland Biodiversity (Species) Condition	Percentage change in good condition of different coastal wetland species	Tracks changes in the condition of species diversity and abundance (referred to in Annexes II, IV and V to Directive 92/43/EEC and of the species covered by Directive 2009/147/EC.) within different coastal wetland habitats.
	Deterioration Status	Area Coverage (km ²) of deteriorated coastal wetlands; Level of deterioration of different types; Area Coverage (km ²) of drained Coastal Wetlands and organic soils	Assesses the extension of total deterioration of coastal wetlands based on parameters such as pollution levels, Invasive species presence, drainage, and physical alterations.
	Risk Posed by Invasive Species	Area Coverage (km ²); Population size; Number of Invasive species	Assesses the size of populations and extension risk posed by invasive species (species strictly regulated + species of concern) to natural coastal wetland ecosystems.

Coastal Wetland Restoration Rate 	Hydrological Connectivity	Km of free-flowing rivers connected to coastal wetlands being restored	Evaluates changes in water flow patterns and connectivity between wetland areas
	Surface and Groundwater Restoration	Threshold values	Based on the WFD, it examines trends on water restoration efforts from multiple dimensions of surface and groundwater status, particularly quality and quantitative.
	Pollutant Reduction Effectiveness	Percentage decrease in concentrations of key pollutants	Evaluates the trend reductions in pollutant levels to meet the targets set by the Zero Pollution Action Plan, the MSFD and the WFD.
	Barrier Impact Index	% change in natural water flow patterns due to the elimination of barriers	Assesses the impact of physical barriers (e.g., roads, dams, levees, dikes, ports) on the ecological connectivity, hydrological flow (marine and coastal).
	Restoration Potential	National plans that prioritize coastal wetland restoration Area Coverage (km ²) of potential restored habitats from the proportion deteriorated	Assesses efforts to help identify and prioritise areas for coastal wetland restoration.
	Restoration Progress	Area Coverage (km ²) of habitats of coastal wetlands restored and under restoration Number of Countries Area Coverage (km ²) of coastal wetlands with restored drainage systems	Percentage change in condition or extent specifically attributable to coastal wetland areas under active restoration or restored from the percentage of area deteriorated. Habitats refers to habitat types listed in Annex I and II to the Habitats Directive and Annex II to the EU NRR.
Vulnerability to Climate-Related and Natural Disasters 	Coastal Wetland Vulnerability	Index score	Assesses the vulnerability of coastal wetlands to various environmental stressors, particularly climate change impacts such as sea-level rise, storm surge, and increased frequency of extreme weather events.
GHG Emissions and Abatement from Coastal Wetland Land Use Conversion and Restoration 	Land Use Conversion Area	Percentage Change of converted coastal wetland area	Proportion at which coastal wetlands are converted to other land uses over time (from reference reporting period) to assess the effectiveness of land use policies to conserve natural carbon sinks such as wetlands.
	Extended Coastal Wetland Habitat Loss/Gain Ratio	Area Coverage (km ²) of total coastal wetlands	Compares the area of wetland habitats lost to development or other uses against the area gained through conservation and restoration activities.
	GHG Emissions and Removals from Land Converted Wetlands	GHG emissions and removals /ha/year following wetland conversion	Tracks losses and emissions of CO ₂ , methane, and nitrous oxide resulting from the conversion of coastal wetlands to other land uses.
	GHG from Coastal Wetland Restoration	GHG emissions/ha/year following wetland restoration	Tracks the net balance of CO ₂ , methane, and nitrous oxide from coastal wetland restoration.

<p>Share of Utilised Agricultural Area (UAA) under Common Agricultural Policy (CAP)– Supported Commitments in Coastal Wetlands</p>	<p>Share of Agricultural Area in Coastal Wetlands</p>	<p>Ha of land used for agriculture within coastal wetlands.</p> <p>Ha of UAA within coastal wetlands that are managed under CAP-supported initiatives.</p>	<p>Tracks the adoption of sustainable agricultural practices and helps evaluate the impact of CAP policies on emission reduction and carbon storage.</p>
	<p>Agricultural Carbon Sequestration and GHG Reduction Index in Coastal Wetlands</p>	<p>Carbon Sequestration Rate and GHG emissions/ ha/year from CAP Agriculture land in coastal wetlands</p>	<p>Tracks the adoption of agriculture lands to reduce emissions or to maintain or enhance carbon storage on agricultural land in coastal wetlands.</p>
<p>Overall Funding Sources for Coastal Wetlands</p> 	<p>Coastal Wetland Funding</p>	<p>Euros per reporting period</p>	<p>Evaluates the overall funding landscape for coastal wetlands, assesses the availability, from various sources, including government agencies, non-governmental organisations, international bodies, and private sector contribution.</p>

Source: RESTORE4Cs Policy Brief *“European Coastal Wetland Indicators: A proposal for monitoring policy process across space and time”*.

Table 6: Policy indicator values in Romania on “Extension of coastal wetlands protected and strictly protected” (December 2025).

Policy Outcome Indicator	Metric title	Units	Indicator value in Romania
<p>Extension of Coastal Wetlands Protected and Strictly Protected</p>	<p>Total coastal wetland extent under strict protection</p>	<p>% / km²</p>	<p>0.05% Area: 3.06 km² (Reference year: 2025)</p>
	<p>Total coastal wetland extent in Natura 2000 sites</p>	<p>% / km²</p>	<p>87.42% Area: 5,170.89 km² (Reference year: 2023)</p>
	<p>Total coastal wetland extent designated as Ramsar and part of the Natura 2000 network</p>	<p>% / km²</p>	<p>65.64% Area: 3,882.75 km² (Reference year: 2025)</p>
	<p>Total coastal wetland protected as Nationally Designated Area</p>	<p>% / km²</p>	<p>13.62% Area: 805.72 km² (Reference year: 2024)</p>

Source: *Policy Progress tracking tool on the European Coastal Wetlands Interactive Platform*.

Key recommendations

- Complement **reporting metrics for wetlands and spatial data layers** which are already used at national level with the policy outcome indicators of the [Policy Progress tracking tool](#).
- Include **policy outcome indicators in national strategies** or actions plans (e.g. National Restoration Plan) to monitor progress in wetland restoration.

Identify potential restoration sites for coastal wetlands

- **Map areas of historical wetland loss resulting from past land-use conversion and infrastructure development.**
- **Assess wetlands with the highest potential for regeneration, focusing on habitat restoration and recovery of hydrological processes.**

The systematic identification of areas suitable for wetland restoration gives the foundation for setting more specific restoration targets and optimising investment of limited resources for restoration within a country.

Support from RESTORE4Cs

The approach for locating and prioritising potentially restorable wetlands in Romania is based on work of the RESTORE4Cs project, taking into account historical wetland distribution, current land cover and land use and ecological benefits.

The *Potential Wetland Areas (PWA)* map in Figure 5 shows the intrinsic likelihood of wetland occurrence across Romania, independent of current land use or degradation. The spatial pattern is dominated by **very high and high probabilities** (dark and light blue shades) concentrated in the **Danube Delta, lower Danube floodplain, and coastal plains**, as clearly illustrated in the map. Smaller but distinct corridors of medium probability follow major river valleys such as the Siret, Prut, Olt, Mureş and Tisza, hinting at historical floodplains and hydrologic depressions.

By contrast, the **Carpathian Mountains and the higher hill regions** show predominantly *very low to low probability* (brown to light brown areas). These areas, although containing pockets of peatlands or riparian wetlands, are generally less conducive to extensive wetland formation due to steep terrain, rapid drainage, and lower floodplain development.

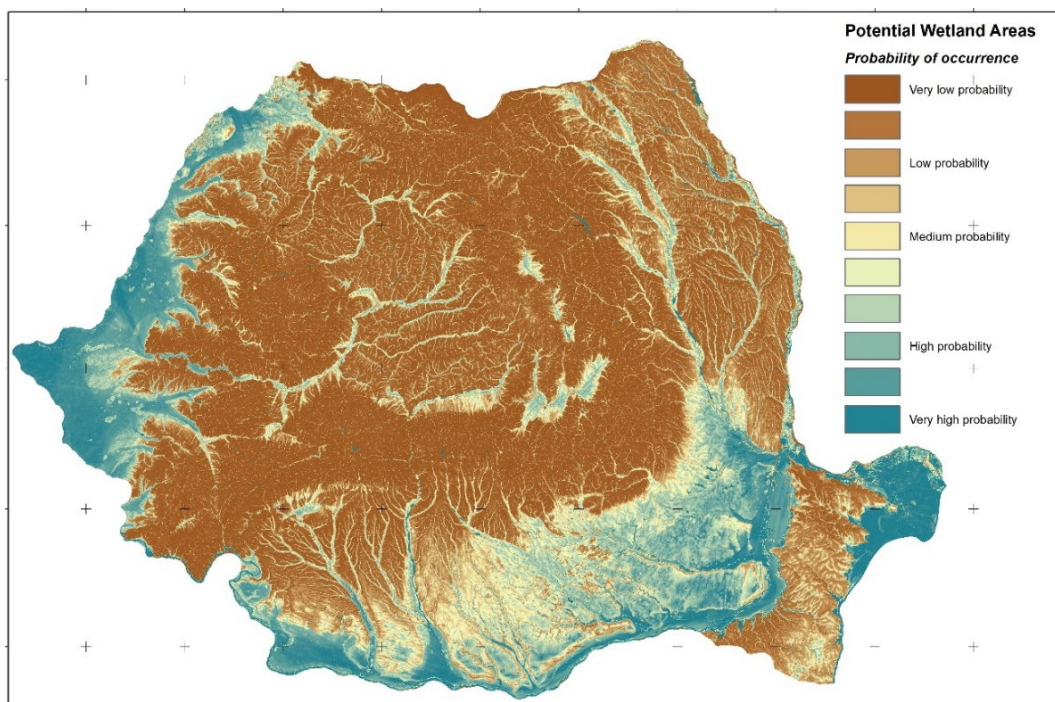


Figure 5: Potential Wetland Occurrence Areas. Source: *Spatial Decision-Support Toolbox on the European Coastal Wetlands Interactive Platform*.

Taken together, the PWA map, represents a kind of **hydrogeomorphic template**, a depiction of where wetlands *would naturally occur* if left to environmental processes. It underscores the strong alignment between wetland potential and Romania's major lowland hydrological systems.

The *Potentially Restorable Wetlands* (PWR) map in Figure 6 offers a more pragmatic perspective: it identifies areas where wetland restoration is feasible given current land conditions, degradation patterns, and hydrological constraints. As shown, a large portion of Romania appears in **red (not suitable)** for restoration, mostly uplands, intensively modified agricultural plateaus, or areas with substantial hydrological alteration.

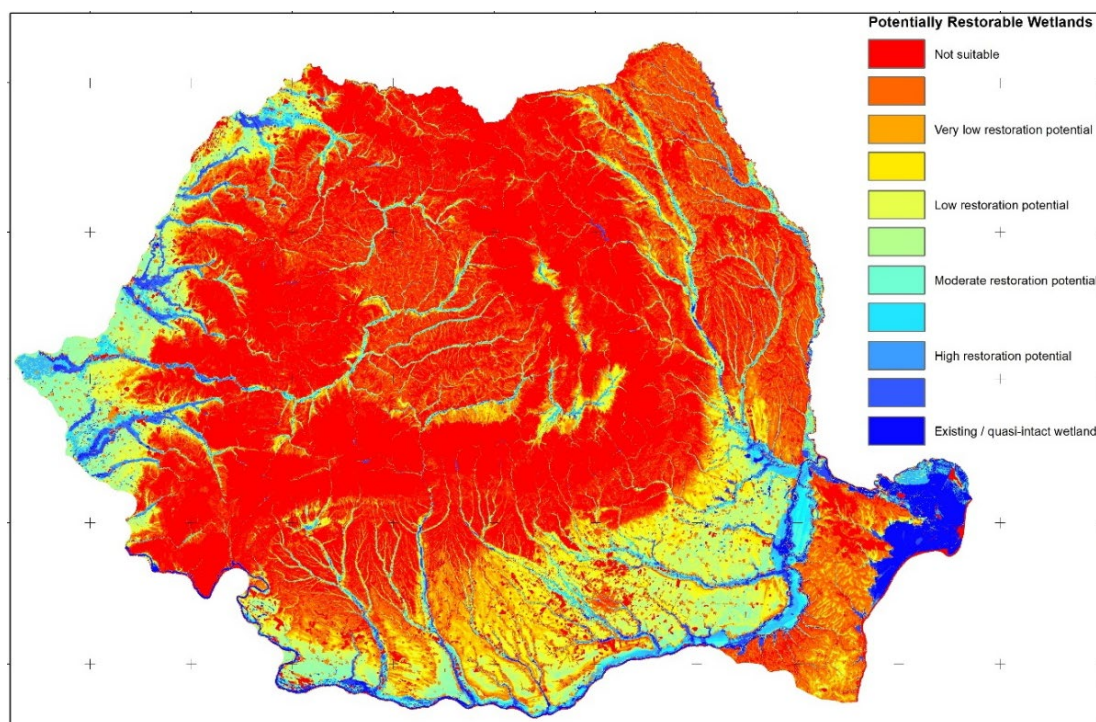


Figure 6: Potentially Restorable Wetlands. Source: Spatial Decision-Support Toolbox on the [European Coastal Wetlands Interactive Platform](#).

Note: The accuracy of the PRW map is highly dependent on the quality of the Land Use Land Cover and wetland extent maps used as input data. In this case, input data included CLC 2018 for Land Use Land Cover and the European Wetland Map produced by the ALFA-Wetland / WET-Horizon projects. Final PRW outputs could be significantly improved if more accurate and robust national datasets on Land Use Land Cover and wetland inventories become available.

However, the Potential Restorable Wetland map reveals a set of key restoration opportunity zones:

- **High to very high restoration potential (blue and dark blue)** is concentrated in the **Danube Delta, coastal lagoon complex, and lower Danube floodplain**, corresponding well to the areas identified as having very high wetland potential in the PWA map.
- **Moderate restoration potential (green-cyan)** follows the **middle and lower stretches of major rivers**, especially the Siret, Prut, Olt, and Mureş valleys, indicating hydrologic contexts where partial restoration (e.g., reconnecting floodplains, rewetting depressions) is feasible.
- **Existing or quasi-intact wetlands (deep blue)** are primarily located in the Danube Delta and adjacent lagoon systems, confirming their status as Romania's most extensive intact wetland complex.

This map suggests that while Romania has a wide natural potential for wetlands, **actual restoration feasibility is constrained** by land conversion, hydrological separation, and intensive agriculture in many regions.

When examined together, the two maps on PWA and PRW reveal a narrative of **opportunity, constraint, and priority**:

a. Areas where Potential Wetland Areas and Potential Restorable Wetland overlap strongly

In the **Danube Delta, lower Danube corridor, and coastal lowlands**, both maps identify:

- High natural wetland potential
- High restoration potential or existing wetland integrity

These zones represent the **core of Romania's wetland restoration value**, combining ecological suitability, hydrological coherence, and feasibility.

b. Areas with high natural potential but low restoration feasibility

Several interior river valleys show **medium potential in the Potential Wetland Areas** but **low to very low restoration potential** in the **Potential Restorable Wetland map**. These areas likely correspond to regions where:

- Agricultural or industrial conversion is extensive,
- Drainage infrastructure is entrenched,
- Settlements or transport networks limit hydrological reconstruction.

This discrepancy highlights places where restoration is either cost-prohibitive or where trade-offs with existing land uses are substantial.

c. Areas with low natural potential and low restoration feasibility

The **Carpathians and sub-Carpathian hills** consistently appear unsuitable in both datasets. Wetland presence here is limited to isolated peatlands, riparian strips, or small depressions, meaning that restoration efforts would not yield extensive wetland landscapes. However, given the high carbon mitigation capacity of peatlands, targeted local restoration of these isolated peatland areas should be considered to maximise climate benefits despite their limited spatial extent.

These maps collectively guide strategic restoration planning:

- The **Danube Delta and lower Danube floodplain** remain the unrivalled hotspot for wetland conservation, enhancement, and carbon-related restoration actions—supported simultaneously by natural potential and restoration feasibility.
- **Major river corridors** (Siret, Prut, Olt, Mureş) provide opportunities for targeted, site-specific interventions aimed at re-establishing hydrological connectivity and riparian wetland functions.
- Restoration in heavily modified lowlands requires **innovative approaches**—such as controlled flooding, reconnection of abandoned meanders, and nature-based retention structures—to navigate the gap between natural suitability (high **Potential Wetland Areas**) and feasibility (low **Potential Restorable Wetland**).
- The maps highlight the importance of **prioritisation frameworks**: not all theoretically suitable areas can be restored, but the intersection of **Potential Wetland Areas** and **Potential Restorable Wetland** pinpoints interventions with the highest ecological return on investment.

Key recommendations

→ **Prioritise restoration in areas where natural wetland potential and restoration feasibility overlap**

Both maps indicate a strong convergence of high suitability and high feasibility in the Danube Delta, lower Danube floodplain, and Black Sea coastal wetlands. Authorities should designate these as national priority zones for wetland restoration, carbon sequestration, biodiversity enhancement, and climate resilience under programmes such as the National Recovery and Resilience Plan (PNRR) and EU Green Deal funding.

→ **Strengthen legal protection and land-use planning in high-potential floodplains**

Many river valleys (Siret, Prut, Olt, Mureş, Tisza) show medium natural potential yet limited feasibility, reflecting intense land conversion. Authorities should:

- integrate Potential Wetland Areas zones into county-level spatial plans,
- restrict further drainage and conversion,
- introduce ecological corridors that reconnect floodplain elements.

This helps avoid further loss of restorable wetlands and maintains long-term options for nature-based solutions.

→ **Accelerate restoration actions in the Danube Delta and coastal systems**

Given the concentration of high and very high restoration potential, authorities should:

- expand rewetting and hydrological reconnection projects,
- simplify permitting for ecological restoration interventions,
- facilitate cross-sector coordination between fisheries, tourism, water management, and conservation bodies.

→ **Develop site-specific restoration strategies for moderate-potential river corridors**

In central and eastern lowlands, moderate restoration potential suggests opportunities for targeted measures such as:

- controlled flooding in agricultural polders,
- reactivation of abandoned meanders,
- riparian buffer establishment,
- floodplain reconnection during high-flow periods.

Authorities should provide guidance to water basin administrations for river-specific restoration plans aligned with hydrological realities.

→ **Create financial incentives for landowners in feasible restoration zones**

Restoration often competes with agriculture. Authorities should explore:

- compensation mechanisms for land set-aside,
- payments for ecosystem services (PES),
- carbon credit frameworks for peatland and floodplain rewetting.

→ **Support community involvement in high-feasibility areas**

- establish Local Advisory Groups during planning,
- integrate local knowledge into target-setting,
- support rural development projects tied to wetlands (e.g., eco-tourism, sustainable fisheries).

05

Plan restoration
activities



5. Plan restoration activities

While the identification of priority areas for restoration of coastal wetlands is an exercise which can take place at national and regional level, the planning of suitable restoration actions takes place for specific selected sites requiring the identification of specific restoration techniques which are cost-effective and also socially acceptable in the specific site context.

The following section of this roadmap proposes an approach for the assessment of benefits and costs of coastal wetland restoration actions which has been tested in the case pilot of RESTORE4Cs at the Danube Delta and can be replicated for restoration planning in other sites.

Assess the benefits and costs of coastal wetland restoration actions

- **Identify the most cost-effective restoration actions for coastal wetlands based on available evidence and resource constraints.**
- **Evaluate the performance of different restoration options across multiple dimensions, including social, environmental, and economic benefits.**
- **Assess the level of social acceptability of various restoration actions within the relevant local and regional contexts.**

Restoring coastal wetlands is a multidimensional planning challenge involving trade-offs between ecological, social, and economic priorities. Restoration actions can yield substantial benefits, such as carbon sequestration, biodiversity recovery, and flood regulation. However, they also come with costs, namely financial, social, and sometimes political. To be successful, restoration planning must evaluate both the cost-effectiveness of interventions and their social acceptability. The latter is necessary to reflect the local needs and values, ensure support at the level where implementation and maintenance efforts take place. Restoration scenarios that ignore local preferences or undervalue societal co-benefits risk resistance, failure, or unintended harm. For this reason, transparent, evidence-based evaluation of benefits, costs, and stakeholder values is essential to ensure long-term impact, sustainability and legitimacy of restoration actions.

In Romania, particularly in the Danube Delta, costs and benefits assessments of coastal wetland restoration are a key priority. Some areas, such as those near Mahmudia in Tulcea County, where the Carasuhat wetland restoration project was implemented, local livelihoods are often perceived as being linked to agricultural land use. In practice, however, the local community did not directly benefit from agriculture, as residents were not employed by the company exploiting the agricultural land, nor were profits redistributed locally. Instead, local communities have historically derived greater benefits from the presence of water and functioning wetland ecosystems, including fisheries, tourism, and improved environmental conditions. Nevertheless, transitions from agricultural use to conservation-oriented land management can initially raise concerns related to employment, land value, and governance arrangements.

The Carasuhat case therefore shows that participatory planning and strong stakeholder engagement can build local support by highlighting opportunities for sustainable tourism and improved living conditions. In this context, costs and benefits assessments help estimate these expenses and opportunities, resulting from restoration actions, making them more visible.

Support from RESTORE4Cs

RESTORE4Cs applied a participatory **Multi-Criteria Analysis (MCA)** framework to assess stakeholders' preferences for multiple restoration options in six case pilot sites, including Danube Delta, for coastal wetland restoration, integrating ecological, socio-economic, and socio-cultural indicators.

The MCA framework is highly applicable to wetlands restoration decision-making as a multidimensional analysis tool which integrates social perception of criteria importance. It is suitable for the evaluation and comparison of alternatives based on more than one criterion or objective which are difficult to quantify or express in monetary terms. In comparison, other economic evaluation tools like cost-effectiveness analysis and cost-benefit analysis tend to be applicable for monetised or single variables, while by definition wetlands restoration requires to consider a set of different factors.

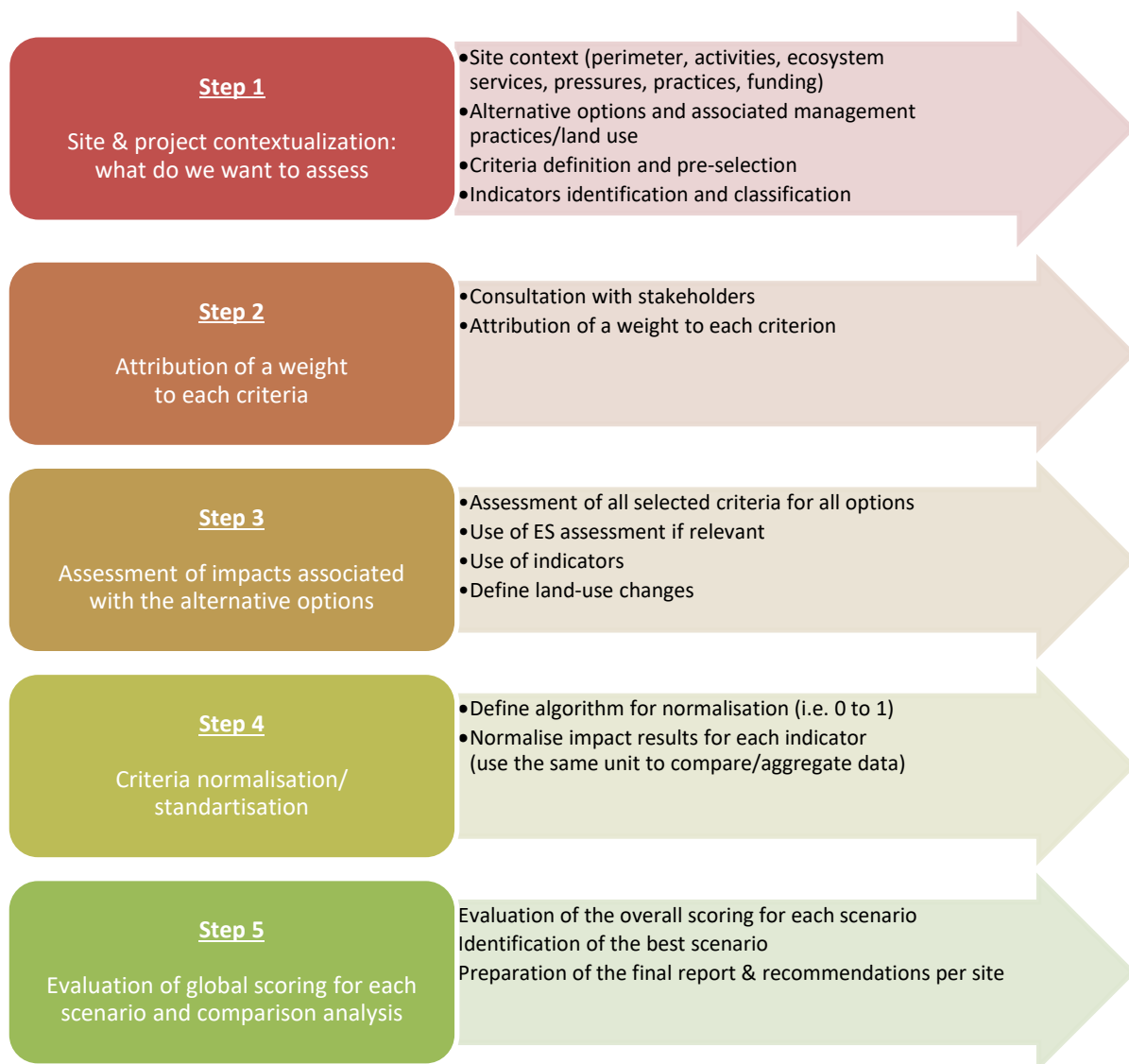


Figure 7: MCA Methodology steps applied to RESTORE4Cs case pilot sites. Source: RESTORE4Cs Deliverable "Report on cost/benefit analysis of wetland restoration options and on financing tools" (2025).

Following the methodological steps for conducting an MCA of coastal wetland restoration in the RESTORE4Cs case pilot sites (Figure 7), costs and benefits of the pilot site in the Danube Delta were assessed.

As part of Step 1, two options or scenarios were defined:

- 1) **Limited restoration (Business as Usual)**, characterised by limited quantity and quality of restored wetlands, unlikely to contribute to a favourable conservation status and related role of wetlands for climate change mitigation;
- 2) **Active restoration of wetlands**, defined by improvement of wetlands state in quality and quantity, contributing to delivering social benefits and climate change mitigation.

In Step 2 and 3, a round of interviews³⁰ with four stakeholders took place to collect more information about the context and issues of the Danube Delta, which was followed by a workshop³¹ with nine local stakeholders³² to rate criteria, pre-selected by project partners and approved by the local case pilot leaders, across **socio-economical** (agriculture, fishing, tourism/recreational activities, jobs created or lost following restoration, investment costs, maintenance costs), **environmental** (aquatic habitats created/preserved or lost, species richness, global climate regulation, water quality improvement, water flow improvement), and **socio-cultural** (accessibility to public green areas, aesthetic, disturbance following restoration, scientific research, education and recreative interest) themes. For each criterion, an associated indicator was selected to assess the intensity of importance of the criterion in decision-making.

As a result of a weighing exercise, the categories considered in priority by local stakeholders when implementing a restoration project are the '**Socio-economic**' activities (agriculture, fishing, tourism) and '**Costs of the restoration project**' (investment and maintenance costs) categories (see Table 7). Notably, tourism and recreational activities were not perceived negatively by local stakeholders and received higher ranking than agriculture, for example. Additionally, local stakeholders selected the topic of maintenance costs as a priority, highlighting the need to attract additional funding to sustain restoration outcomes after the project ends.

30 RESTORE4Cs Guidance for Step 1 of the MCA – interviews can be accessed in Annex 7.2 of the Report on cost/benefit analysis of wetland restoration options and on financing tools. Available at: <https://www.restore4cs.eu/about/workplan/> (WP5 – Social, ecologic, and economic valuation for enhanced co-benefits from wetland restoration).

31 RESTORE4Cs Guidance for Step 2 of the MCA – Workshop can be accessed in Annex 7.3 of the Report on cost/benefit analysis of wetland restoration options and on financing tools. Available at: <https://www.restore4cs.eu/about/workplan/> (WP5 – Social, ecologic, and economic valuation for enhanced co-benefits from wetland restoration).

32 The list of stakeholders involved: Danube Delta Biosphere Reserve Authority, Tulcea County Environmental Protection Agency, "Danube Delta" National Institute for Research and Development, Tulcea County Council, WWF Romania, Dobrogea-Litoral water management authority, Mahmudia village local authority, "Danube Delta" federation of fisheries organisations, and "Euro Pesca" organisation.

Table 7: Example of criteria used and their weight when considering restoration projects, according to stakeholders (9 respondents) in the RESTORE4Cs Danube Delta case pilot site.

Level 1 (Themes)	Weight	Level 2 (Categories)	Weight	Level 3 (Criteria)	Weight
Socio-economics	34%	Socio-economics activities	12%	Agriculture	29%
				Fishing	36%
				Tourism / Recreational activities	35%
		Employment	11%	Jobs created or lost following restoration	
		Costs of the restoration project	12%	Investment costs	52%
				Maintenance costs	48%
Environment	39%	Habitats	11%	Aquatic habitats created/preserved or lost	
		Biodiversity	11%	Species richness	
		Climate	9%	Global climate regulation	
		Water cycle	8%	Water quality improvement	53%
				Water flow improvement	47%
Socio-cultural	27%	Cultural landscape and land uses	7%	Accessibility to public blue green areas	
		Values and beliefs	6%	Aesthetic	
		Perceived risks and uncertainties	6%	Disturbance following restoration	
		Local awareness and knowledge	7%	Scientific research	51%
				Education & recreative interest	49%

Source: RESTORE4Cs Deliverable “Report on cost/benefit analysis of wetland restoration options and on financing tools” (2025).

The categories’ weights that do not reach 10% are considered less important to the local stakeholders but still should not be disregarded. In particular, the socio-cultural categories’ weights are much lower compared to the environmental and socio-economic categories.

In Steps 4 and 5, using the ‘Min-Max’ normalisation method, both scenarios were assessed, with **the scenario Active restoration of wetlands obtaining a significantly higher value**, making it the **best alternative** for the Danube Delta context. This result indicates that the Active restoration scenario makes a positive contribution to a greater number of indicators than the other scenario.

Furthermore, analysing the results of the MCA using the ‘Max’ normalisation method also showed that the Active restoration of wetlands scenario supports greater number of indicators in terms of weightings. Notably, despite requiring the **highest investment and maintenance costs**, the **Active restoration scenario still emerges as the most favourable overall**.

Based on the results of the MCA model, actively restoring wetlands by improving their surface and condition could help achieve a balanced set of socio-economic, environmental, and socio-cultural functions in the Danube Delta by 2050. At the same time, it would generate the greatest reduction in the area’s global warming potential, strengthening climate resilience, and remain socially acceptable to local stakeholders.

Risks and uncertainty associated with this assessment:

- Not all socio-economic interests were represented, which may introduce a bias toward environmental criteria;
- The accuracy of the weighting exercise completed by local stakeholders needs to be verified before using this data for further assessments;
- This model, though providing additional elements to keep in mind, cannot be used to predict an exact tipping point at which a scenario will cease to be the best alternative, simply based on costs.

Replicability

The methodology used to assess the costs and benefits of restoration in the Danube Delta can be applied to other sites within this wetland complex. The indicator list specifically developed for the MCA in the Danube Delta context can serve as a starting point and be adapted to the specific characteristics of other coastal wetland types and restoration sites within the Delta or across other coastal wetlands in Romania. Likewise, the preliminary selection of stakeholders, procedures for gathering stakeholder insights and preferences, such as questionnaires, interviews, workshops, and the overall step-by-step approach to implementing the MCA can be applied to other Danube Delta sites. This flexibility makes the methodology suitable for replication across different wetland sites.

Key recommendations

- **Multi-Criteria Analysis (MCA)** is recommended to assess restoration options beyond just cost or climate benefits, including social and ecological aspects. In doing so, it is necessary to engage stakeholders early to reflect local values, capture their preferences and ensure for the social acceptance of restoration plans. A pre-analysis of the socio-cultural and socio-economic background is important to prepare the ground in the most efficient way.
- Ensure **balanced stakeholder representation in the MCA**. Promote strong stakeholder participation and ensure the weighting exercise is completed accurately.
- Use the results of this case study MCA as a foundation for conducting **further analysis with higher stakeholder participation and representativeness** and strengthening social acceptance of restoration measures in the identified proposed sites.
- Consider carrying out a **“willingness to pay” assessment** with local stakeholders and compare the results with the MCA to identify a realistic tipping point at which the business-as-usual scenario becomes as favourable as the active restoration scenario.
- To ensure coverage of maintenance costs, identified as a priority in the Danube Delta context, and, hence, long-term sustainability of restoration benefits, consider applying **innovative financing solutions**, such as payment for ecosystem services mechanisms, linked to carbon storage, biodiversity credits, or nutrient offsets; blended finance instruments, combining public seed funding with private investments; environmental trust funds or revolving funds. Use a financial plan developed by RESTORE4Cs for the Danube Delta restoration³³.

33 Anglada, C. et al. (2025). Report on cost/benefit analysis of wetland restoration options and on financing tools. Deliverable. RESTORE4Cs project. Available at: <https://www.restore4cs.eu/about/workplan/> (under WP5 – Social, ecologic, and economic valuation for enhanced co-benefits from wetland restoration).



06

**Stakeholder collaboration
and partnerships**

6. Stakeholder collaboration and partnerships

Establish clear competences of public authorities on coastal wetland restoration

- **Identify public authorities with competences for coastal wetland restoration and conservation at national and regional levels.**
- **Map institutional responsibilities across policy fields, including climate, nature, water, and coastal/marine protection and management.**
- **Assess roles in policy development, planning, monitoring, and enforcement related to coastal wetland restoration and conservation.**
- **Evaluate overlaps and gaps in competences to identify opportunities for improved coordination and conflict avoidance.**

Coastal wetlands are usually subject to the jurisdiction of multiple bodies and administrations. In Romania, the system of land ownership and the management of water infrastructure (e.g., dykes), riparian land, and water bodies is highly fragmented. This fragmentation results in overlapping responsibilities and unclear competences. The transboundary nature of the Danube Delta further complicates the governance of coastal wetland restoration. It is therefore important to clearly define the public authorities responsible for coastal wetland conservation and restoration and to establish well-defined competences.

To identify needs for improvement in the governance setting, as a first step, the roles and duties on coastal wetland conservation and restoration across different governance levels and policy fields should be described and clarified:

- Both authorities in the national government and regional governments should be considered. At national level, the lead authority responsible for policy on coastal wetland restoration and conservation should be defined, and if there is more than one, the respective responsibilities clarified. At regional (sub-national) level, institutions responsible for restoration and conservation programmes on coastal wetlands should be identified. Furthermore, the general scope of responsibilities of coastal municipalities as local level stakeholders should also be defined.
- Authorities in the main relevant policy fields should be taken into account, namely authorities with competence in climate change mitigation & adaptation, nature & biodiversity, water management, as well as coastal/marine planning and management. Often wetlands are effectively represented within nature restoration and water management policy fields, but their climate mitigation role is less adequately captured in the governance setting where no public bodies are specifically responsible for coastal wetlands.
- It should be clarified which public authorities at national, regional (sub-national), and, if relevant, local level are responsible for policy, planning, monitoring, enforcement in the field of coastal wetland restoration and conservation.

Support from RESTORE4Cs

A mapping exercise was conducted to identify Romania’s public authorities responsible for various aspects of coastal wetland restoration³⁴. The results are presented in Table 8.

Table 8: Overview of Romania’s public authorities responsible for various aspects of coastal wetland restoration (Danube Delta) and their respective responsibilities.

National level	
Name	Competences with relevance for coastal wetland conservation and restoration
Ministry of Environment, Waters and Forests	<ul style="list-style-type: none"> • “Organised and functions as a specialised body of the central public administration, with legal personality, subordinate to the Government”; responsible for ecological resilience, climate change, protecting, conserving and improving natural capital in the field of water and forests; protected natural areas; biodiversity protection, conservation and restoration (Art. 1 of law H.G. no. 43/2020³⁵). It is, therefore, responsible for regulating the conservation to coastal wetlands. • Administers waters in public domain of the state and the infrastructure of the National Water Management System together with the National Administration “Romanian Waters” • enforces wetland restoration regulations through its local Environmental Protection Agencies and the National Administration “Romanian Waters”.
National Environmental Protection Agency (EPA)	Together with local environmental protection agencies and the National Administration “ Romanian Waters ” are responsible for wetland monitoring.
National Administration “Romanian Waters”	<ul style="list-style-type: none"> • has responsibilities for regulating and monitoring the use of beaches on the Black Sea coast. • Supports the Ministry and the EPA in administration, enforcement, and monitoring (see above).
National Ramsar Committee	Responsible for the development of proactive management strategies aimed at preserving, restoring, or ecologically reconstructing wetlands of international significance, particularly those serving as habitats for waterfowl, especially the Danube Delta.
Sub-national (county) level	
County’s EPAs (especially in Constanta and Tulcea)	<ul style="list-style-type: none"> • Responsible for policy implementation regarding wetland restoration. • Monitoring of wetland restoration efforts
Dobrogea Litoral Water Division (Romanian Waters)	<ul style="list-style-type: none"> • Planning for wetland restoration
Danube Delta Biosphere Reserve Administration	<ul style="list-style-type: none"> • Planning for wetland restoration • Drafting and implementation of the management plans for the Danube Delta Biosphere Reserve

34 Kampa, E. et al. (2024). Policy analysis and policy demands for data, methods, and tools (Part A). Deliverable. RESTORE4Cs project. Available at: <https://www.restore4cs.eu/about/workplan/> (under WP1 – Policy Relevance).

35 Government Decision No. 43 of January 16, 2020, Official Gazette No. 55 of January 28, 2020. <https://legislatie.just.ro/Public/DetaliuDocumentAfis/222504>.

	<ul style="list-style-type: none"> • Monitoring of wetland restoration efforts • Enforcement of wetland restoration policies
Environmental Guard Commissariats	<ul style="list-style-type: none"> • Enforcement of wetland restoration policies
Coastal Guard (Constanta and Tulcea Counties)	<ul style="list-style-type: none"> • Enforcement of wetland restoration policies
Public authorities at NUTS level 3 (Constanta and Tulcea County Councils)	<ul style="list-style-type: none"> • Planning for wetland restoration
Local level	
Authorities at LAU level (Municipalities, Communes)	<ul style="list-style-type: none"> • Planning for wetland restoration

It was found that institutional coordination for coastal wetlands remains weak, as multiple agencies operate with limited communication and overlapping responsibilities. No single authority holds a clear mandate for managing coastal wetlands, resulting in gaps in enforcement, planning, and resource allocation. Cross-sectoral cooperation is also limited, with policies in water management, agriculture, fisheries, and local development often developed in isolation. This fragmented governance structure hinders coherent decision-making and slows progress on effective conservation and restoration efforts.

Key recommendations

- Consider establishing a **dedicated authority responsible for coastal wetland ecosystems** as a whole (see the example of the new Authority for the Venice Lagoon, Italy³⁶, intended as a unique body, “able to assume all competences presently distributed among various different actors”) or at least start with a dedicated role within an existing public authority body. Enable knowledge and practice exchange with existing Member States’ authorities solely or primarily responsible for coastal wetland conservation and restoration to support the establishment of a specialised national body. The public authority body should have competences covering the variety of coastal wetland habitats based on their hydro-ecological characteristics and not limited by the official Ramsar borders of the Danube Delta or Natura 2000 borders.
- Strengthen coordination and communication among responsible public authorities by establishing **inter-ministerial working groups** that reflect the multifunctionality of coastal wetlands. Implement formal cooperation procedures, such as shared work programmes and joint consultation rounds, supported by an agreed timeline and a coherent, cross-sectoral internal strategy.
- Use the present assessment as a foundation for identifying more substantial overlaps or gaps in institutional competences. Build on this assessment to take stock of existing roles, clarify mandates, and **ensure that responsibilities are clearly defined and mutually coherent** across all relevant authorities.
- Develop structured procedures to ensure involvement of local authorities in the decision-making process regarding coastal wetland conservation and restoration.

36 Terisse, A. et al. (2023). Characterising supportive governance and policy. Deliverable. WaterLands. Available at: <https://cdn.sanity.io/files/34jdpbeg/production/5998e2ff94dad02b23da477813737a84c763070a.pdf>

Establish a governance structure that enables collaboration and trust between stakeholder and builds long-term commitment towards restoring wetlands

- **Identify key stakeholders to be included in a governance structure that facilitates collaboration among government agencies, scientific institutions, NGOs, and local communities, and define their respective roles and responsibilities.**
- **Assess mechanisms for incorporating local community interests into decision-making processes to ensure inclusivity and social acceptance of restoration actions.**

Large-scale restoration of coastal wetlands may often imply changes in land uses and in the spatial distribution of socioeconomic activities. Landscape modification also touches many socio-cultural dimensions such as the identity, history, values, cultural knowledge and beliefs of local communities. Restoration may therefore face opposition or be blocked by influential societal actors.

Moreover, the sustainability of the restoration results over time often depends on the engagement and stewardship of local communities. For this reason, a sustainable process to restore and re-shape the territory should foresee an inclusive participatory process, covering consultations with key stakeholders, informative meetings that are open to the public and an assessment of sectoral needs, besides ensuring public access to information on the state of natural resources. This process should build trust among actors, foresee conflict resolution procedures, and support coordination and cooperation among stakeholders³⁷.

Restoring coastal wetlands in the Danube Delta and along Romania's Black Sea shoreline requires a governance structure capable of weaving together policy, scientific evidence, local experience and on-the-ground implementation. The RESTOR4Cs project offered an opportunity to bring together and align national and local stakeholders around shared climate, biodiversity, and socio-economic objectives. However, such alignment depends on a governance model that deliberately cultivates collaboration between various stakeholder groups and ensures its maintenance in the long term. This structure must not only coordinate actions across disciplines and jurisdictions but also create an environment in which each actor's knowledge, interests and capacities can shape restoration pathways.

Within this governance model:

- **national and regional public authorities** provide the regulatory backbone, ensuring that restoration interventions comply with national legislation and EU directives, integrate with land-use planning, and contribute to broader basin-level strategies such as those defined under the WFD and the MSFD.
- **Romanian research institutions** supply the analytical and monitoring foundations. Their work enables evidence-based scenario development, assessment of climate mitigation co-benefits, and the evaluation of long-term ecological outcomes.
- **Non-governmental organisations (NGOs)** play an essential bridging role, connecting institutional processes with societal expectations and ecological realities on the ground.

³⁷ De Oliveira, M. et al. (2024). Governance of coastal wetlands: Beyond the community conservation paradigm. *Ocean & Coastal Management*, 255, 107253. <https://doi.org/10.1016/j.ocecoaman.2024.107253>.

- **Private-sector actors**, particularly those in eco-tourism, sustainable fisheries, agriculture and restoration-related engineering, support implementation and help translate restoration strategies into economically viable local opportunities.
- The deliberate and meaningful inclusion of **local communities** should be placed at the core. The Danube Delta’s residents, fishers, reed harvesters, farmers, and minority groups carry generations of knowledge about hydrological dynamics, species movements and resource cycles. Their perspectives are indispensable in designing interventions that respect cultural practices, safeguard livelihoods, and generate shared economic benefits. Community involvement should extend beyond consultation to active participation in co-design, co-creating monitoring and stewardship.

Support from RESTORE4Cs

Through a multi-layered approach presented above, the governance structure becomes both a coordination mechanism and a platform for joint learning. This approach demonstrates how climate-smart coastal restoration can succeed when scientific insight, public policy, community experience and economic interests are held together in a cohesive, collaborative framework.

Table 9 presents the key stakeholder groups, examples of key actors to be engaged, as well as their respective roles in a collaborative governance structure to be established for coastal wetlands restoration in Romania. The Danube Delta was selected as an example restoration site, being the main coastal wetland complex in Romania.

Table 9: Key stakeholder groups in the Danube Delta for a collaborative governance structure.

Stakeholder Group	Key Actors (Examples)	Roles in Governance & Restoration	Primary Interactions
National Government Agencies	Ministry of Environment, Waters and Forests; National Agency for Protected Natural Areas; National Ramsar Committee	Policy making, permitting, alignment with EU directives, national monitoring	Work with regional authorities, researchers, NGOs; approve restoration plans; share data
Regional & Local Public Authorities	Danube Delta Biosphere Reserve Authority (DDBRA); Tulcea & Constanța County Councils; River Basin Authorities	Spatial planning, local regulation, coordination across municipalities, site management	Coordinate with national agencies; engage communities; collaborate with NGOs and scientists
Scientific Institutions & Researchers	Danube Delta National Institute for Research and Development (DDNI); National Institute for Marine Research and Development “Grigore Antipa” (NIMRD); University of Bucharest	Ecological modelling, climate assessments, monitoring design, scenario development	Provide analyses to authorities; collaborate with NGOs; support communities with technical info
NGOs & Civil Society	WWF Romania; WWF Central and Eastern Europe (CEE); Romanian Ornithological Society (SOR); Rewilding Romania; local conservation groups (e.g., Eco-Dobrogea, Mare Nostrum)	Public outreach, advocacy, participatory facilitation, biodiversity expertise	Support community engagement; communicate with authorities; collaborate with scientists

Local Communities	Fishers (e.g., Traditional Fishermen’s Village in Tulcea), farmers, reed harvesters, tourism operators, minority groups, local councils	Traditional knowledge input, co-design of interventions, stewardship, local monitoring	Interact with authorities, NGOs and researchers; participate in advisory groups; co-manage sites
Private Sector Actors	Eco-tourism operators; sustainable fisheries; engineering firms	Implementation of restoration works, innovation, co-financing opportunities	Work with authorities on permits; partner with NGOs; collaborate with communities for local benefits
International / Cross-Border Bodies	The International Commission for the Protection of the Danube River (ICPDR); Ramsar networks; EU agencies	Provide standards, guidance, transboundary coordination, best practices	Exchange data with national agencies; support scientists; ensure cross-border alignment

The box below presents key learnings from the RESTORE4Cs project that will support the development of inclusive participatory structures for coastal wetland restoration in Romania, involving actors presented above in Table 9.

Learnings from the RESTORE4Cs for developing inclusive participatory structures:

- Ensure a balanced representation of sectors, ensuring underrepresented groups are involved³⁸.
- Involve a 'neutral' actor or facilitator to build trust and value, to overcome intersectoral conflicts.
- Discuss real-life needs, use a direct and easy understandable language³⁹.
- Rather than treating stakeholders as passive receptors of information, engage them in decision-making through meaningful interactions and by assigning responsibilities.
- Identify leaders, entrepreneurs and personalities who can mobilise the community around environmental issues⁴⁰.
- Build on existing projects, events and opportunities allowing to sustain interactions as part of a consistent framework or vision, supported by short but regular interactions.
- Recognise and integrate 'tacit knowledge' (experience-based expertise developed by practitioners over generations).
- Develop new governance structures that sustain stakeholder and institutional commitment, while helping mobilise existing resources, raise new funds and communicate clear goals towards the local communities.

38 Conway, S. F. (2025). Multi-Actor Inclusion and Stakeholder Engagement Checklist – PREMIERE Toolsheet (Technical note). Zenodo. <https://doi.org/10.5281/zenodo.15281085>.

39 EC, Directorate-General for Agriculture and Rural Development. (n.d.). How can participatory methods enable communication and the embedding of the output from a multi-actor project? EU CAP Network. Available at: https://eu-cap-network.ec.europa.eu/projects/practice-abstracts/how-can-participatory-methods-enable-communication-and-embedding-output_en?

40 Ostrom, E. (2011). Background on the institutional analysis and development framework. In M. Poteete, A. Janssen, & E. Ostrom, Working together: Collective action, the commons, and multiple methods in practice (pp. 7–27). Princeton University Press. Available at: https://idahoeosystems.org/sites/default/files/literature_resource/sustainable_social-ecological_systems_ostrom_2011.pdf.

Key recommendations

- Conduct an extensive **stakeholder mapping** in the restoration sites like Danube Delta which involves identifying all relevant actors (governmental institutions, NGOs, scientists, private companies, local communities, and international bodies) and clarifying their roles in coastal wetland restoration. By assessing each stakeholder's interest in and influence on restoration, a targeted communication and involvement strategy can be developed to ensure that high-influence actors are involved while high-interest groups are empowered through participation and capacity building.
- Establish a **participatory committee** for the restoration areas such as the Danube Delta, creating an inclusive platform for dialogue, enabling different stakeholder groups to contribute to planning, implementation, and monitoring of restoration activities. These committees should include clear conflict-resolution procedures, topic-specific working groups such as for climate change mitigation and carbon storage, and transparent communication to maintain trust and accountability.
- Build partnerships with **European Community of Practice for Coastal Wetland Restoration (ECoP)**⁴¹ to facilitate the exchange of knowledge, innovative methodologies, and best practices, connecting local restoration work with international expertise.
- Form a **Local Advisory Board** within a dedicated participation committee to ensure a meaningful local involvement, providing residents and community representatives with a formal role in shaping restoration actions. The board should establish regular review procedures to evaluate progress, identify potential impacts on daily activities, and propose locally grounded solutions. Complementary mechanisms such as socio-economic impact assessments, benefit-sharing arrangements, citizen-science monitoring, and transparent communication channels strengthen trust and ensure long-term support for restoration outcomes.

41 The European Community of Practice for Coastal Wetland Restoration (ECoP) was initiated during the RESTORE4Cs project and aims to mobilise a wide range of stakeholders to accelerate joint action for restoring and conserving wetlands across Europe and beyond. See [Section 7](#) for more details.

A landscape photograph showing a wide river or lake in the middle ground. The foreground is dominated by dense, tall reeds and grasses, some green and some turning brown. The water is calm with some lily pads. In the background, there is a dense line of green trees under a clear sky. The overall scene is a natural, wetland environment.

07

**Enabling capacities
and raising awareness**

7. Enabling capacities and raising awareness

The planning of coastal wetland restoration depends not only on sound science and policy, but also on the capacity of institutions, stakeholders, and the wider public to support these efforts. Often, the understanding of values that coastal wetlands and their restoration deliver is lacking among the broader public and decision-makers. This gap often leads to undervaluing wetlands compared with competing land uses, making restoration projects more difficult to justify, fund, or implement.

RESTORE4Cs research identified a low awareness and limited knowledge of climate change mitigation potential and benefits of restored coastal wetlands among local stakeholders. This affects the social acceptance of restoration actions and, hence, their overall viability⁴². These findings indicate the need for stronger engagement, trainings opportunities, and wider information dissemination among local actors. In this context, it is important to provide a broader perspective and to communicate about benefits of restoration holistically, rather than focusing solely on climate change mitigation, to achieve a higher level of stakeholder mobilisation. Specifically, as in the Danube Delta context, stakeholders have identified water quality and flow improvement as essential topics to consider while planning and implementing a restoration project, it would be important to show an interlinkage between climate regulation and water cycle benefits of coastal wetland restoration in the region.

Strengthening capacity and local skills, e.g., through training or dedicated allocation of resources (money, time, personnel), helps ensure that organisations can plan, manage, and monitor restoration effectively. Training sessions, built on the latest scientific knowledge and addressing key knowledge gaps in a clear and structured way, serve as another important communication tool in coastal wetland restoration, creating opportunities for knowledge exchange, capacity building, and collaborative learning among stakeholders. Likewise, raising awareness, including among local communities, landowners, industry, decision-makers, builds trust and encourages shared stewardship of restored areas. Building such capacities and raising awareness is a key pillar of roadmap and strategy for coastal wetland restoration.

Communication and dissemination activities play an important role in increasing the visibility of the restoration project results, using clear and accessible language, raising awareness and supporting engagement of stakeholders and creation of new partnerships. When tailored to the specifics of each target audience, communication helps connect science with the broader public, building social license, and support evidence-based policy.

European Community of Practice for Coastal Wetland Restoration (ECoP)

The ECoP initiated during the RESTORE4Cs project seeks to mobilise a wide range of stakeholders to accelerate joint action for restoring and conserving wetlands across Europe and beyond. By involving site managers, private businesses, researchers, decision-makers, civil society organisations and other restoration champions, this Community aims to:

- **Act as a knowledge hub** for practitioners and experts seeking guidance on implementing wetland restoration strategies that optimise carbon sequestration and reduce greenhouse gas emissions.

42 Sella, L. et al. (2025). Social acceptability of wetland restoration and management. Deliverable. RESTORE4Cs Project. Available at: <https://www.restore4cs.eu/about/workplan/> (under WP5 – Social, ecologic, and economic valuation for enhanced co-benefits from wetland restoration).

- **Promote cross-regional learning and the replication of successful restoration approaches** by facilitating exchanges between experts working in different ecological, cultural, and regulatory contexts. By showcasing best management practices and proven restoration techniques, the Community encourages members to adapt, adopt, and scale up effective solutions in their own regions.

This community seeks to cultivate a collaborative and respectful environment for learning and growth, where members can:

- build knowledge and skills collectively;
- identify training needs from different actors;
- co-design new training materials and initiatives.

The RESTORE4Cs Community of Practice is hosted on the Wetland-based Solutions platform (<https://www.wetlandbasedsolutions.org/>). Joining and participating in the Community is possible via <https://www.wetlandbasedsolutions.org/community-of-practice-wetlands/>.

Where to find more information

- **RESTORE4Cs Deliverable: Social acceptability of wetland restoration and management (2025)**⁴³. Available at: <https://www.restore4cs.eu/about/workplan/> (under WP5 – Social, ecologic, and economic valuation for enhanced co-benefits from wetland restoration).

Key recommendations

- Improve communication on and raise awareness of the **ecological importance of coastal wetlands, their value in ensuring social and economic sustainability of local communities and their role in biodiversity conservation, food provision, carbon storage, disaster risk reduction and climate adaptation** (wetland restoration as key investment in resilience).
- **Demonstrate effectiveness** of coastal wetlands in addressing societal challenges and their **value for money**.
- **Involve communities, engage local actors directly** and show case real-world examples of co-benefits.
- **Link coastal wetlands recovery to improvements in life quality** of general public.
- Organise **targeted trainings** to build capacities and improve the understanding and knowledge of benefits of coastal wetland restoration, especially with relation to climate mitigation potential and benefits of restoration.

43 Authors: Sella, L., Rota, F. S., Pollo, N., Vivaldo, G., Anglada, C., De Fusco, G., Ciravegna, E., Massoutier, J., Bodivit, A., Khavandgaran, S., Omidmand, M., Ronse, M., Guelmami, A., Vaičiūtė, D., Petkuvienė, J., Kataržytė, M., Beekman, V., Polman, N., Raoult, J., Giuca, R. C., Geamana, N., Cazacu, C., Suarez, S., Rochera, C., Picó Garcés, M. J., Morant, D., Štrbenac, A., Lillebø, A., Sousa, A., Coelho, P., Oliveira, B.

A photograph of a coastal wetland. In the foreground, there are large, green water lily leaves floating on the water. Behind them, tall, thin grasses stand upright. In the background, a dense thicket of taller, brownish grasses or reeds is visible against a clear blue sky. The water is calm with gentle ripples.

08

**Summary of Key Recommendations
to Progress Coastal Wetland
Restoration for Climate**

8. Summary of Key Recommendations to Progress Coastal Wetland Restoration for Climate

The pilot roadmap presented in this document is intended to help national authorities and stakeholders in Romania in developing a national strategy on coastal wetland restoration. The pilot roadmap gives guidance on how to use tools and results of the EU-funded RESTORE4Cs project to improve the planning of coastal wetland restoration. The recommendations formulated throughout this roadmap aim to target specific actions that can be undertaken to define priorities for coastal wetland restoration and contribute to the achievement of key policy targets for climate and biodiversity.

The main recommendations can be summarised as follows:

- **Establish a clear national framework for coastal wetlands** – Adopt a consistent national definition and typology of coastal wetlands aligned with Ramsar and the EU NRR to improve coherence in monitoring, planning, and reporting.
- **Develop a national wetland strategy with restoration targets** – Move beyond site-specific protection by adopting a national wetland strategy that integrates binding conservation and restoration targets, including for coastal and transitional wetland systems. Use the momentum of the EU NRR.
- **Strengthen condition assessment and monitoring** – Establish a national system for assessing wetland ecological condition, building on RESTORE4Cs indicators and remote sensing tools, to move from designation-based protection to condition-based management.
- **Prioritise restoration where ecological potential, feasibility, and priority benefits overlap** in the coastal and lower floodplain areas.
- **Address key pressures through integrated water and land management** – Tackle eutrophication, hydrological alteration, and climate-related salinisation and drought through coordinated water management, pollution reduction, and nature-based solutions.
- **Integrate climate change mitigation into wetland policy** - Explicitly recognise coastal wetlands as climate change mitigation and adaptation assets by improving data on carbon storage and GHG fluxes and integrating wetlands into national LULUCF accounting and climate strategies.
- **Capture restoration benefits beyond climate impacts**, including social benefits. Based on the RESTORE4Cs results from MCA, assess the costs and benefits of restoring the other wetland types within the Danube Delta and beyond while taking into account applied stakeholder selection, preference-identification approaches, and selected assessment criteria, adapting them to each context.
- **Develop a long-term financing plan** that secures both investment and maintenance funding for restoration actions in the Danube Delta and other coastal wetland sites. Integrate blended finance mechanisms, such as PES, carbon or biodiversity markets, environmental funds, or revolving funds, to engage private stakeholders.
- **Strengthen institutional competences** by establishing a dedicated authority for coastal wetlands and creating interministerial working groups to coordinate regulatory, ecological, and financial aspects of coastal wetland restoration.
- **Adopt a participatory governance model** for coastal wetland restoration that includes a site-specific participatory committee and structured cooperation with ECoP to ensure inclusive decision-making grounded in best available scientific expertise and best practice exchange.

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