

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



ARCACHON BAY

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Mathis Cognat, Julien Dalle

THE PILOT AND THE RESTORATION ACTIONS

Interventions focus on restoring intertidal seagrass meadows (*Zostera noltei*) affected by hydrodynamic stress, sediment instability, and climate pressures. This highly productive coastal system provides key ecosystem services, while sustaining economic activities. The Pilot implements a biomimetic Nature-based Solution using permeable structures (Roselière®) that reduce wave and current energy, enhance sediment deposition, and promote natural seagrass recovery. Through monitoring of hydrodynamics, sediments, and ecological indicators, the intervention aims to strengthen ecosystem resilience, shoreline protection, and blue carbon sequestration.

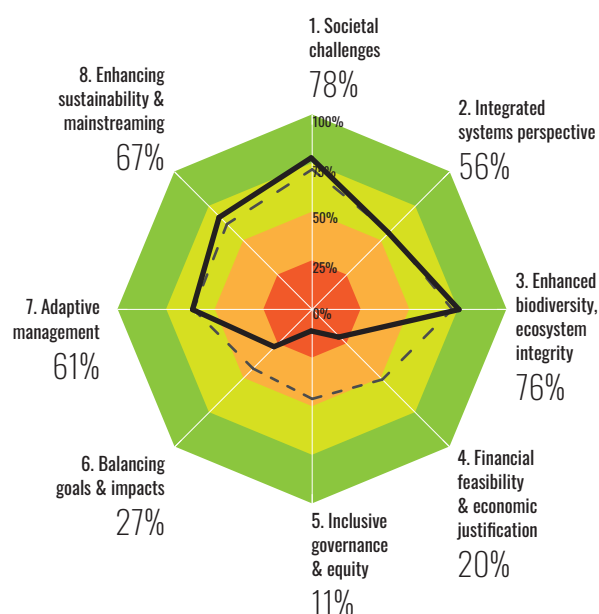
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Pilot's assessment under the NbS Standard shows mixed performance. It is strong in understanding societal challenges and establishing a solid ecological baseline (Criteria 1 and 3), with adequate progress in integration, learning, and scaling potential (Criteria 2, 7, and 8), though limited by gaps in documentation and operational use of knowledge. However, major weaknesses persist in socio-economic equity and

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE
SCORE
REST-COAST
AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Partial 25–49%
- Adequate 50–74%
- Insufficient 0–24%

PILOT
OVERALL
SCORE

48%

PARTIAL

ALIGNMENT WITH THE NbS STANDARD

inclusive governance (Criteria 4 and 5), where economic analysis, financial planning, and structured stakeholder participation are insufficient. Risk management (Criterion 6) is also only partially developed. Overall, while scientifically robust and promising for replication, the Pilot requires significant improvements in governance, financing, documentation, and adaptive management to fully align with the NbS Standard.



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Understanding Challenges (C1): Excellent identification of social challenges and their causes. Expected outcomes are scientifically modelled to anticipate long-term impacts and facilitate scaling up.

Solid Ecological Basis (C3): Very robust baseline assessment supported by scientific and academic data. SMART targets for biodiversity have been defined, and there is a good understanding of what degrades the ecosystem.

Lessons Learnt (C8): Adequate capacity to document lessons learnt during design and implementation to inform future projects.

Use of Knowledge (C7): Outcomes are based on a combination of science and local/traditional knowledge, integrated into the Natural Park's management plan.

WEAKNESSES

Inclusive Governance (C5): This is the greatest weakness. The Pilot operates outside of formal decision-making bodies, lacks conflict resolution mechanisms (despite tensions with oyster farmers), and stakeholder participation is fragmented.

Economic Viability (C4): Funding for long-term maintenance has not been identified or secured. A cost-effectiveness analysis comparing this solution with traditional alternatives is lacking.

Risk Management and Safeguards (C2 and C6): Although risks have been identified, there is no formalised risk management plan. Safeguards exist in theory within the Natural Park, but there is no evidence that they are monitored, documented, or shared with those affected.

Documentation Gaps: Despite the positive technical results (C1, C2, C3), information and intersectoral synergies need to be systematised, leading to knowledge gaps that affect transparency.

GENERAL VIEW DURING DEPLOYMENT (OCTOBER 2023) AND SPATIAL PROGRESSION OF VEGETATION FROM THE TRANSPLANT AREAS (2025) AT THE ARCACHON BAY PILOT SITE. ©SEABOOST



2023



2025



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



EBRO DELTA

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Pep Cabanes, Judith Molero, Agustín Sánchez-Arcilla

THE PILOT AND THE RESTORATION ACTIONS

The area includes diverse habitats such as beaches, dunes, lagoons, wetlands, and saltmarshes that support high biodiversity and essential ecosystem services. The interventions aim to restore natural hydro-morphological processes by reconnecting the sea with lagoons and marshes, removing barriers, and enhancing sediment transport, including river pulses linking the river to the delta. Implemented in a complex governance setting, the pilot engages multiple stakeholders through participatory platforms to manage trade-offs and balance conservation with economic activities such as agriculture, fisheries, and aquaculture.

ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



COASTAL WETLAND RESTORATION



SEDIMENT MANAGEMENT

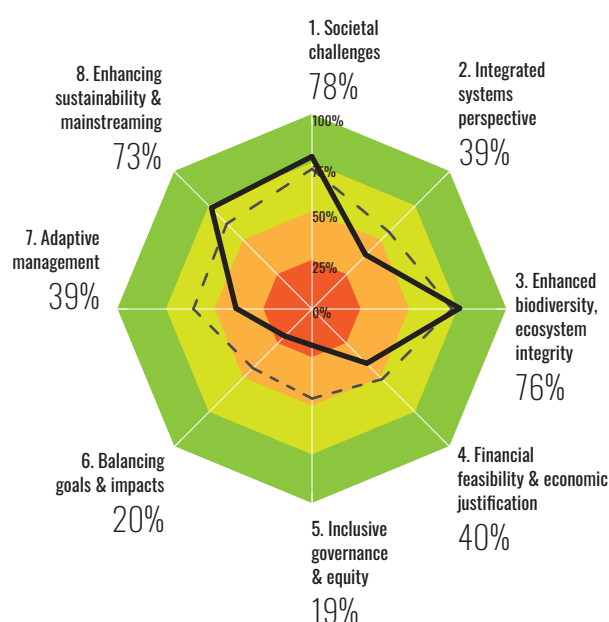


CLIMATE-RESILIENT FOOD PRODUCTION

ASSESSMENT OVERVIEW

The Pilot shows mixed performance under the NbS Standard. It demonstrates adequate understanding of societal challenges and strong ecological baseline and monitoring frameworks (Criteria 1 and 3), with structured stakeholder dialogue supporting prioritisation. However, gaps remain in comprehensive outcome assessment, risk management, and cross-sectoral integration (Criteria 2 and 6). Economic analysis and long-term

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE SCORE
REST-COAST AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Adequate 50–74%
- Partial 25–49%
- Insufficient 0–24%

PILOT OVERALL SCORE

47%

PARTIAL

ALIGNMENT WITH THE NbS STANDARD

financial planning are only partially developed (Criterion 4). Governance is a key weakness, with limited formal mechanisms for inclusive participation, transparency, and conflict resolution (Criterion 5). Adaptive management is only partially operational (Criterion 7). Despite these limitations, the Pilot shows good potential for replication and upscaling, supported by transferable knowledge and practical restoration experience (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Knowledge Management and Science (C1): Excellent identification and prioritisation of societal challenges. Monitoring data is stored in institutional repositories and published in scientific articles, ensuring transparency.

Rigorous Ecological Monitoring (C3): Use of a sound scientific approach (BACI: Before-After, Control-Impact). A long-term monitoring programme is in place to assess changes in ecosystem integrity and connectivity.

Scalability and Replication (C8): Lessons learnt have already been used to successfully replicate the solution in two other coastal areas, demonstrating strong scalability.

Process Sustainability (C4): The approach based on natural processes (self-regulation) reduces the need for continuous technical maintenance, improving long-term economic viability by minimising recurring costs.

WEAKNESSES

Safeguards and Impacts (C6): Uneven monitoring and only partial safeguards or corrective actions are in place. This limits the potential to curb negative impacts and reduce risks, which could be greatly enhanced by more systemic and regular observation and analyses, leading to an informed balancing of goals.

Governance and Inclusion (C5): Low inclusive participation, although with a strong positive gradient compared to the former situation. There are not yet structured conflict resolution mechanisms or documented decision-making protocols for stakeholders.

Risk Management (C2): Although it acknowledges systemic interconnections, the Pilot has provided a partial identification of the risks associated with the intervention and lacks a formal risk management plan.

Adaptive Management (C7): Despite having a monitoring plan, corrective actions could be improved by a continuous learning process, integrating all available data and knowledge to support adaptive decisions. The Pilot is currently working on aggregating social-ecological data, new corrective actions are being designed and implemented, following a set of adaptation pathways that are being discussed with all competent authorities and stakeholders. This continuous adaptation process builds on the established CORE-PLAT, integrating all available data and knowledge to support adaptive decisions that evolve with climate and human pressures.

Economic Analysis (C4): There is a significant gap due to the lack of a cost-effectiveness analysis compared to other solutions, making it difficult to demonstrate the actual positive economic impact of the restoration.



HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS? MAY 2026

UPSCALING AREA AT THE EBRO DELTA PILOT SITE BEFORE AND AFTER RESTORATION.

© GOOGLE (2023); FERRAN VALERO GILS/MITECO (2025)



2023



2025



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



MAY 2026

FOROS BAY

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Nikolay Valchev, Bogdan Prodanov, Petya Eftimova, Nina Dzhembekova, Elitsa Hineva, Nataliya Andreeva

THE PILOT AND THE RESTORATION ACTIONS

The area hosts valuable habitats and biodiversity although heavily altered by long-term human pressures such as coastal infrastructure, wetland drainage and eutrophication. Restoration efforts aim to stabilise conditions and recover key habitats, notably through a pilot seagrass transplantation intervention that supports biodiversity and blue carbon. Implemented in a complex governance context, the Pilot has also generated valuable knowledge to support adaptive management and future large-scale restoration and connectivity measures.

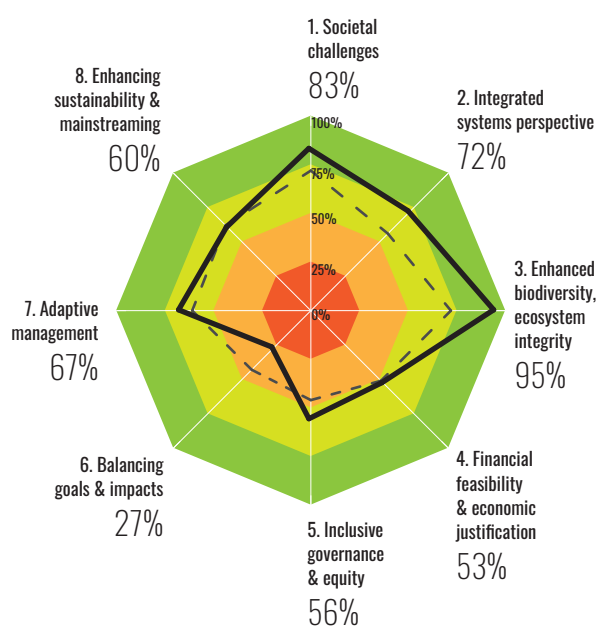
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Foros Bay Pilot shows overall good performance under the NbS Standard, with strong results in identifying societal challenges and achieving biodiversity outcomes (Criteria 1 and 3). It demonstrates a solid understanding of system interactions and ecosystem processes (Criterion 2), and has adequately assessed economic feasibility and stakeholder engagement (Criteria 4 and 5), although some

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE
SCORE
REST-COAST
AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Partial 25–49%
- Adequate 50–74%
- Insufficient 0–24%

PILOT
OVERALL
SCORE

65%

ADEQUATE

ALIGNMENT WITH THE NbS STANDARD

governance mechanisms are still under development. However, safeguards and risk management remain at an early stage (Criterion 6), and adaptive management frameworks are not yet fully operational (Criterion 7). While learning and upscaling processes are still emerging (Criterion 8), the Pilot shows clear potential to strengthen long-term sustainability and impact.



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Excellence in Biodiversity (C3): This is one of the two highest scores across the REST-COAST Pilots. It features an exceptional baseline assessment, measurable indicators evaluated regularly, and a structured monitoring plan with clear response mechanisms.

Managing Social Challenges (C1): Outstanding identification and prioritisation of challenges. Communication is very active and transparent through multiple channels (CORE-PLAT, articles, interviews, and workshops).

Systems Approach and Synergies (C2): Strong justification of the interconnections between the economy and ecosystems. It has clearly defined the synergies between sectors and the necessary complementary interventions.

Inclusive Governance and Equity (C5): The design is based on mutual respect and non-discrimination. It highlights the special attention given to the rights of small resource users and local communities in spatial planning.

WEAKNESSES

Safeguards and Impacts (C6): This is the main weakness. Safeguards and corrective actions are in a very early stage of development: they have not been implemented, monitored, or shared with stakeholders.

Risk Management (C2): Although most risks have been identified, the pilot lacks a formalised risk management plan, which weakens its systems perspective.

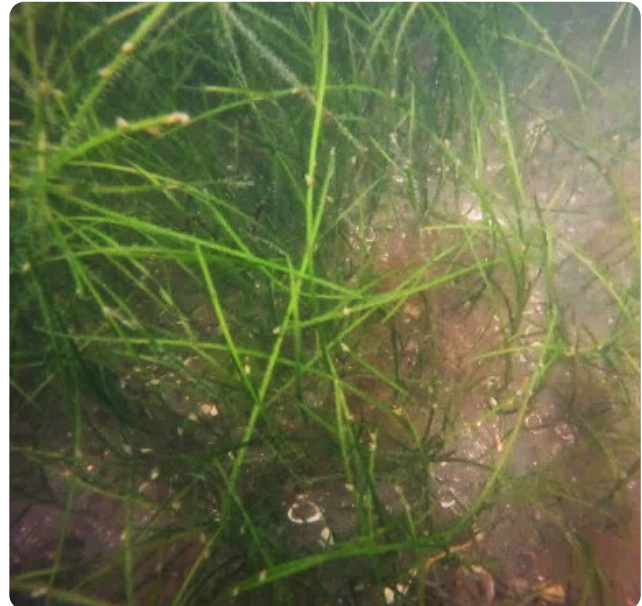
Economic Viability (C4): Despite having optimistic and pessimistic cost analyses, they are still working on securing resource packages to cover risks and returns, which creates gaps in economic feasibility.

Process Documentation (C5, C7, and C8): Several critical aspects, such as the conflict resolution mechanism, the decision-making document, and the capture of lessons learnt for public policy, are still in development or early phase.

BEFORE-AND-AFTER SEAGRASS RESTORATION AT THE FOROS BAY PILOT SITE. © IO-BAS



SEPT. 2024



JUNE 2025

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



NAHAL DALIA

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Shylee Eigner Berg, Avi Uzan, Shiri Tzemah Shamir

THE PILOT AND THE RESTORATION ACTIONS

The Nahal Dalia Pilot Site focuses on restoring hydrological connectivity and enhancing ecosystem functioning in a highly valuable estuarine and saltmarsh system that supports rich biodiversity, including diverse vegetation, aquatic species, and important breeding and migratory waterbirds. The ecosystem has been degraded by altered water regimes, dams, and pollution from fishponds. Restoration actions include converting intensive fishponds into semi-natural wetlands, creating a nature-based flood reservoir, and increasing habitat diversity. Proposed dam modifications aim to restore river-sea connectivity. Additional measures, such as levees and artificial islands, further support biodiversity. Implemented within a multi-level governance framework, the Pilot balances ecological restoration with competing water and land-use demand.

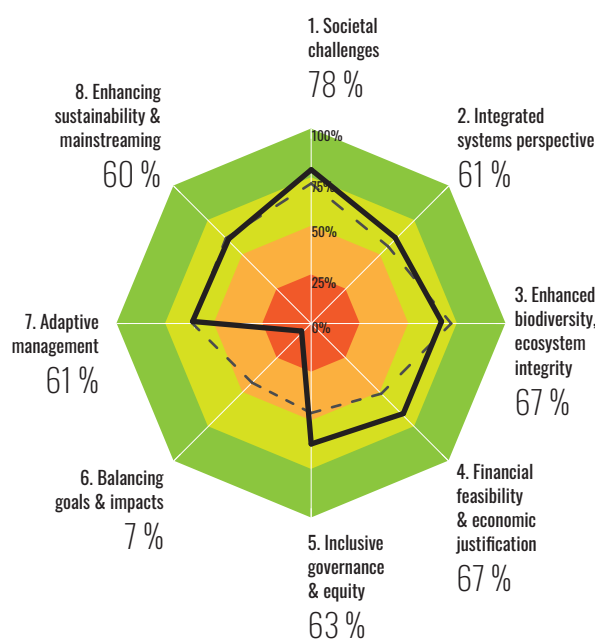
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Nahal Dalia Pilot shows overall adequate performance under the NbS Standard, with strong progress in identifying societal challenges and fostering stakeholder collaboration (Criterion 1). It demonstrates a good understanding of system interactions and has established a solid ecological baseline with defined biodiversity targets (Criteria 2 and 3), though further documentation and monitoring are needed. Economic

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE SCORE

REST-COAST AVERAGE

LEVEL OF ADHERENCE

Strong 75–100%

Adequate 50–74%

Partial 25–49%

Insufficient 0–24%

PILOT OVERALL SCORE

59%

ADEQUATE

ALIGNMENT WITH THE NbS STANDARD

feasibility is relatively well addressed, including cost-effectiveness and funding mechanisms (Criterion 4), while stakeholder engagement is active but not fully inclusive or institutionalised (Criterion 5). Major gaps remain in safeguards and trade-off management (Criterion 6). Adaptive management and learning are developing but not fully operational (Criterion 7), while upscaling potential is promising (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Management of Social Challenges (C1): Strong identification of problems and commitment to transparency, highlighting the water allocation plan agreed upon with local stakeholders.

Systems Approach (C2): Good understanding of the interactions between the economy, society, and ecosystems, with coherent integration into broader management strategies.

Robust Ecological Base (C3): Clear diagnosis of the state of biodiversity and degradation factors, with established objectives and monitoring plans.

Economic Viability and Equity (C4): Identification of social costs and benefits, performance of cost-effectiveness analyses, and securing of long-term financial mechanisms.

Knowledge and Learning (C7 and C8): Definition of results based on scientific and local knowledge, with active efforts to capture lessons learnt to scale up the project.

WEAKNESSES

Safeguards and Impacts (C6): This is the weakest Criterion (13%). There are no formalised safeguards or corrective actions to manage potential negative effects or trade-offs.

Documentation and Formalisation (C2, C3, C8): In several Criteria key information or successes achieved are not properly documented, hindering their validation and replicability.

Participation and Governance (C5): Although grievance mechanisms exist, there is a lack of identification of indirectly affected stakeholders and an improvement in the quality of information to ensure truly effective participation in decision-making.

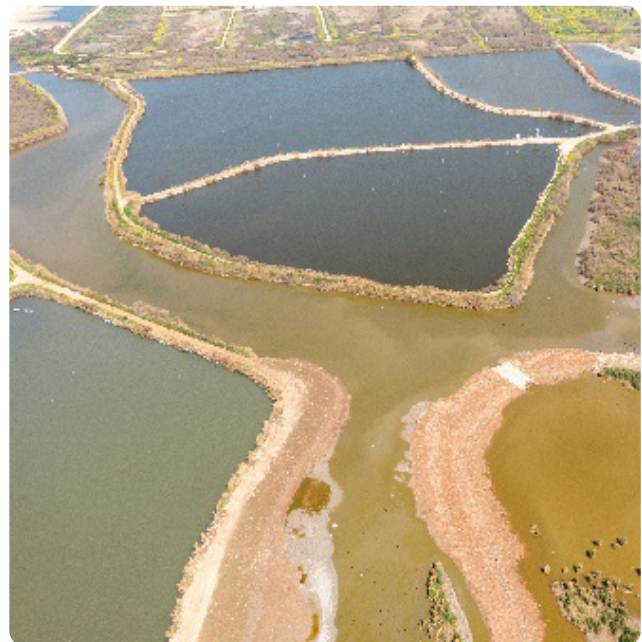
Adaptive Management (C7): Despite having a monitoring plan, its results are not yet systematically used to adjust project management in real time.

Risk Analysis (C2): The risk management plan is incomplete and lacks a systematic assessment, especially for risks that extend beyond the immediate area of intervention.

BEFORE-AND-AFTER RESTORATION AT THE NAHAL DALIA PILOT SITE. © AVIV KURT



2023



2025

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



RHONE DELTA

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Morgane Jolivet, Lisa Ernoul

THE PILOT AND THE RESTORATION ACTIONS

This Pilot Site, located in the south-eastern part of the delta, aims to address coastal inundation risks and restore natural hydrological and coastal dynamics in a low-lying, highly modified system. It contains a valuable mosaic of habitats including coastal lagoons, beaches, saltmarshes, and Mediterranean halophilous vegetation that support biodiversity and provide key services such as flood buffering and erosion control. The restoration strategy is based on managed realignment, abandoning coastal dikes and reinforcing inland protection to allow natural processes to recover. Restoration measures reconnect the sea and lagoons through passive and active interventions, improving water exchange, habitat quality, and ecosystem resilience within a complex, multi-level governance framework.

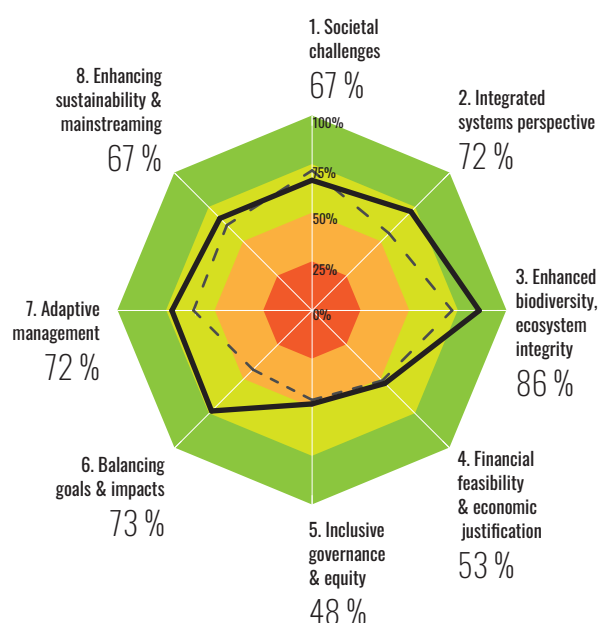
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Rhone Delta Pilot shows overall adequate to strong performance under the NbS Standard. It demonstrates a solid understanding of societal challenges and system interconnections (Criteria 1 and 2), supported by structured planning and stakeholder processes. Ecological baseline, biodiversity goals, and monitoring are well developed, indicating strong performance in ecosystem integrity (Criterion 3). Economic feasibility is partially addressed, with some cost analyses and

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE
SCORE
REST-COAST
AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Adequate 50–74%
- Partial 25–49%
- Insufficient 0–24%

PILOT
OVERALL
SCORE

67%

ADEQUATE

ALIGNMENT WITH THE NbS STANDARD

financial mechanisms in place but gaps in long-term planning and equity (Criterion 4). Governance structures exist but show limitations in inclusiveness and sustained participation (Criterion 5). Risk management and adaptive learning are progressing but not fully operational (Criteria 6 and 7). The Pilot shows good potential for knowledge transfer and upscaling (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Ecological Integrity (C3): This is the strongest point. It has a solid baseline, clear identification of degradation drivers (salinity, evapotranspiration), and a robust monitoring plan with defined response mechanisms.

Systemic Design and Synergies (C2): Excellent understanding of the interactions between ecological processes and socio-economic activities. The Pilot successfully aligns hydraulic restoration with flood protection and land-use planning.

Transparency and Safeguards (C6): Good performance in balancing objectives. Safeguards and corrective actions are documented, accessible, and reviewed through annual reports to stakeholders.

Financial Viability and Effectiveness (C4): The pilot project has a defined financial plan and secured funding mechanisms, as well as a cost-effectiveness analysis that demonstrates the superiority of the restoration interventions compared to other solutions.

Knowledge Management (C7 and C8): The 2022 management plan integrates socio-economic diagnoses and cultural heritage, capturing lessons learnt for scaling up and improving knowledge.

WEAKNESSES

Inclusive Governance (C5): Although a conflict resolution mechanism exists, participation is heavily concentrated among large managers (SYMADREM, Conservatoire du Littoral). The decision-making process is not sufficiently transparent or accessible to all stakeholders.

Risk Management (C2): Despite identifying key risks such as climate change, there is no comprehensive risk management plan, representing a significant operational gap.

Documentation Gaps (C1 and C4): There is a persistent lack of systematic documentation on how social challenges are addressed and an absence of concrete data on future financial and social costs and benefits.

Risk Sharing (C4): The financial plan does not address the equitable distribution of risks and returns among different stakeholders, which affects the perception of the project's fairness.

Safeguard Implementation (C6): Although the safeguards are well documented and reviewed, they have not yet been fully implemented.

BEFORE-AND-AFTER RESTORATION AERIAL VIEW AT THE RHONE DELTA PILOT SITE. IMAGES SHOW THE ABANDONMENT AND GRADUAL COLLAPSE OF THE SEAFRONT DIKE, CREATING A NEW INLET CONNECTING THE SEA TO THE LAGOON. © MICHEL GAUTHIER-CLERC (2011) AND LOIC WILLM (2024)



2011



2024

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



SICILY LAGOONS

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Enrico Foti, Luca Cavallaro, Massimiliano Marino, Ahmad Alkharoubi, Agata Distefano, Saverio Sciandrello, Laura Borzi

THE PILOT AND THE RESTORATION ACTIONS

The Sicily Lagoons Pilot Site, located in the Cuba-Longarini system in south-eastern Sicily, focuses on restoring hydraulic connectivity, habitat diversity, and ecological functioning in a dynamic coastal lagoon environment. The area hosts a mosaic of lagoons, saltmarshes, reedbeds, dunes, and beaches, supporting high biodiversity, especially migratory and breeding birds, and providing key ecosystem services such as water regulation and coastal protection. Affected by pressures like habitat fragmentation and reduced connectivity, the Pilot implements measures including bird islands, saltmarsh restoration, and channel reopening to improve water circulation. Supported by a multi-actor governance framework, the approach combines practical restoration with adaptive management and future intervention planning.

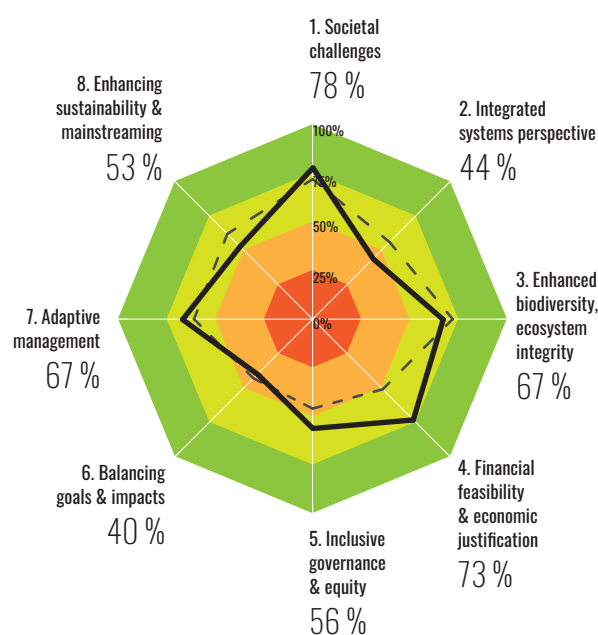
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Sicily Lagoons Pilot shows overall adequate performance under the NbS Standard, with strong identification of societal challenges and clear prioritisation supported by monitoring (Criterion 1). It demonstrates moderate ecological performance, with a defined baseline and biodiversity targets, but lacks a comprehensive monitoring framework to track outcomes systematically (Criterion 3). Economic feasibility is relatively well developed, including cost

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE SCORE

REST-COAST AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Adequate 50–74%
- Partial 25–49%
- Insufficient 0–24%

PILOT OVERALL SCORE

60%

ADEQUATE

ALIGNMENT WITH THE NbS STANDARD

assessments and financial planning, though long-term funding remains uncertain (Criterion 4). Governance is partially effective, with stakeholder mapping in place but limited inclusive participation and no formal grievance mechanism (Criterion 5). Risk management and adaptive management are still developing (Criteria 6 and 7), while upscaling potential remains promising but requires stronger documentation (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Social Challenges and Monitoring (C1): Excellent performance in identifying and prioritising social challenges, supported by robust monitoring data and regular reporting.

Economic Viability and Planning (C4): The Pilot has developed a cost-effectiveness analysis and a detailed business plan that estimates the life cycle costs of the restoration interventions, linking them to socio economic benefits and ecosystem services.

Ecological Basis and Objectives (C3): The Pilot has a robust habitat mapping and has established measurable indicators for biodiversity recovery and ecosystem integrity.

Adaptive Management (C7): The Pilot uses scientific and local knowledge to define outcomes and allows for corrective actions over time through a continuous learning framework.

WEAKNESSES

Systems Perspective (C2): The Pilot fails to identify the interconnections between the economy, society, and ecosystems. Furthermore, it lacks a formalised risk management plan, relying instead on flood and erosion modelling.

Safeguards and Impacts (C6): Although agreements exist with local foundations to define safeguards, these have not been implemented, monitored, or documented in a structured manner and/or a way that is accessible to stakeholders.

Long-Term Financial Sustainability (C4): Despite securing funding for new short-term projects, the Pilot lacks long-term financial mechanisms to ensure its continuity.

Monitoring and Scaling Up (C3, C7, and C8): Systematic and formal monitoring plans are lacking. Furthermore, there are gaps in the documentation of lessons learnt and how the project specifically contributes to national sustainability frameworks and goals.

BEFORE-AND-AFTER RESTORATION (2023 VS 2026) AT THE SICILY LAGOONS PILOT SITE. © STIFTUNG PRO ARTENVIELFALT (2023) AND UNIVERSITY OF CATANIA (2026).



2023



2026

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



VENICE LAGOON

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Francesca Coccon, Fabienne Horneman, Caterina Dabalà, Silvia Torresan, Angela Mandarà

THE PILOT AND THE RESTORATION ACTIONS

The Venice Lagoon Pilot Site focuses on the restoration and ecological enhancement of artificial saltmarshes in a highly modified coastal system of high ecological and cultural value. These habitats support rich biodiversity, particularly bird species, and provide key ecosystem services while facing pressures from erosion, sea-level rise, and habitat loss. The intervention combines engineering and nature-based approaches, including reinforcing marsh boundaries and restoring elevation using dredged sediments, followed by natural vegetation recovery. Supported by a complex governance framework and strong protection status, the Pilot integrates restoration, monitoring, and modelling to improve ecosystem resilience and guide adaptive management in the lagoon.

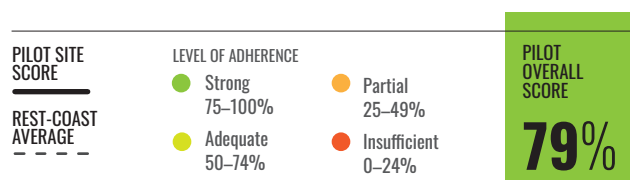
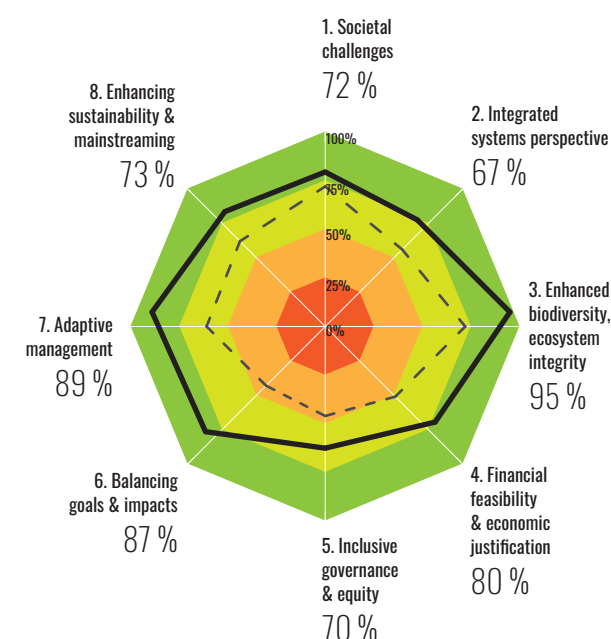
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Venice Lagoon Pilot demonstrates overall strong performance under the NbS Standard, with solid results across most criteria. It effectively addresses societal challenges and system interactions (Criteria 1 and 2), supported by stakeholder engagement and analytical work. Ecological performance is particularly strong, with a robust baseline, clear biodiversity targets, and adaptive monitoring (Criterion 3). Financial feasibility is

Pilot performance against the IUCN NbS Global Standard criteria.



STRONG

ALIGNMENT WITH THE NbS STANDARD

well developed, including cost-effectiveness analysis and consideration of equity, although long-term funding needs strengthening (Criterion 4). Governance mechanisms are well established but could be further consolidated (Criterion 5). Risk management and adaptive management are strong (Criteria 6 and 7). The Pilot shows good potential for upscaling and mainstreaming (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Excellence in Biodiversity (C3): The near-perfect score stands out for its consistent habitat map, regularly assessed biodiversity indicators, and clear response mechanisms.

Adaptive Management and Science (C7): The restoration is based on sound historical and scientific studies. The monitoring plan allows for continuous learning and has already generated sustainability recommendations adopted in a formal restoration agreement signed by the authorities.

Balanced Objectives and Safeguards (C6): Very high performance in mitigating negative impacts. Related to Phase 1 of the works, ex ante and ex post impact assessments are conducted, with structured decision-making involving the scientific community and authorities.

Economic Viability (C4): It developed an innovative business plan and performed a cost-effectiveness analysis. It stands out for its focus on an equitable distribution of risks and returns, an area where other Pilot Sites fall short.

Inclusive Governance (C5): The CORE-PLAT has identified 73 key actors and more than 30 were successfully engaged in the CORE-PLAT that has culminated in a "Restoration Contract", guaranteeing a continuous, open and formal dialogue, and information exchange.

WEAKNESSES

Synergy Search (C2): Although overall performance is good and complementary actions have been implemented, the Pilot acknowledges that it has not actively sought synergies with other sectors, which limits its systemic perspective.

Future Financial Security (C4): Despite sound planning, future funding sources have been identified but are not yet secured, posing a risk to long-term sustainability.

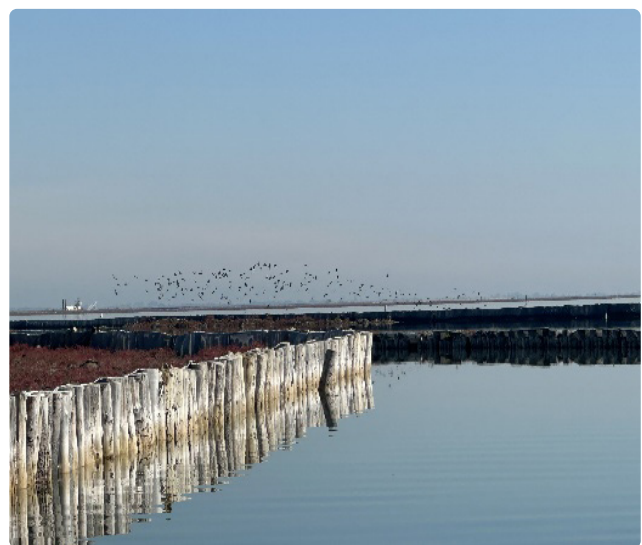
Public Access to Reports (C6): Official technical reports from the lagoon authorities are not directly publicly accessible (only upon request), although the CORE-PLAT platform mitigates this by sharing information transparently.

Limitation of Results (C6): Reported successes are currently limited to Phase 1 (restoration of the marsh perimeter), so the performance of subsequent Phase 2 remains to be validated

BEFORE-AND-AFTER RESTORATION AT THE VENICE LAGOON PILOT SITE. © ENG. GIOVANNI ASSALONE, DIRECTOR OF WORKS. PROVVEDITORATO INTERREGIONALE PER IL VENETO, TRENTINO AA, FRIULI VENEZIA GIULIA



2023



2025

HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



VISTULA LAGOON

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Grzegorz Różyński, Piotr Szmytkiewicz, Rafał Ostrowski, Barbara Świątała, Marcin Smyczyński

THE PILOT AND THE RESTORATION ACTIONS

The Vistula Lagoon Pilot Site on the Polish Baltic coast focuses on the development of an artificial island created from dredged sediments, combining sediment management with habitat creation for bird species. Located within a Natura 2000 area, the lagoon hosts valuable habitats that support important breeding, resting, and wintering bird populations. The intervention responds to pressures from a major navigation project that altered the ecosystem. Using a “building with nature” approach, the island aims to compensate environmental impacts while enhancing biodiversity. Implemented in a challenging governance context, the Pilot also addresses regional socio-economic disparities and low stakeholder engagement.

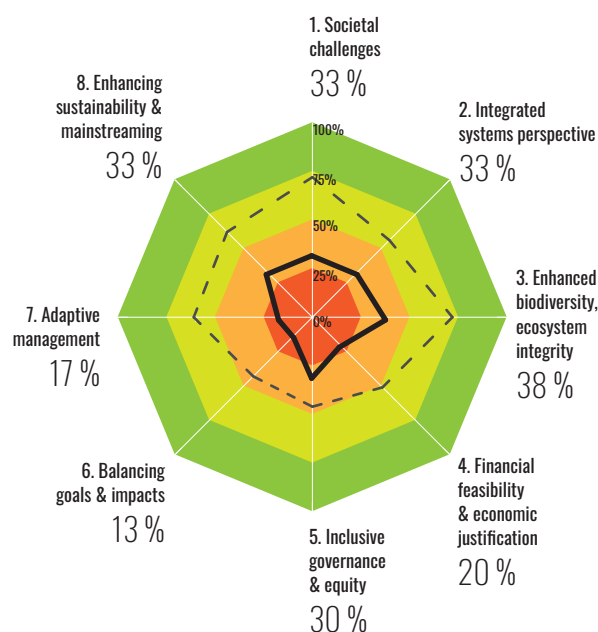
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Vistula Lagoon Pilot shows overall weak to partial performance under the NbS Standard, largely constrained by its strong reliance on external institutions. While societal challenges and system interactions have been identified, the Pilot has limited autonomy to update, validate, or manage them (Criteria 1 and 2). Ecological performance is restricted by the lack of a Pilot-specific baseline, clear biodiversity targets, and dedicated monitoring (Criterion 3).

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE
SCORE
REST-COAST
AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Adequate 50–74%
- Partial 25–49%
- Insufficient 0–24%

PILOT
OVERALL
SCORE

28%

PARTIAL

ALIGNMENT WITH THE NbS STANDARD

Economic feasibility and long-term financing are insufficiently addressed (Criterion 4), and stakeholder engagement remains limited and dependent on external governance structures (Criterion 5). Safeguards, adaptive management, and learning processes are largely absent (Criteria 6 and 7). Upscaling potential remains uncertain due to weak documentation and limited policy integration (Criterion 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Identification of Ecological Benefits (C3): Potential benefits for biodiversity and connectivity have been identified, supported by existing regulatory frameworks (Natura 2000) and environmental impact studies.

Protective Isolation (C3): The physical nature of the intervention (an isolated island) acts as an effective natural safeguard against terrestrial predators and human disturbance.

Regulatory Compliance (C2): Risk management is aligned with Habitats Directive and national plans, ensuring a minimum legal basis.

Scalability Vision (C8): There is an intention to replicate the model in other transboundary lagoons, demonstrating an ambition for larger-scale impact.

WEAKNESSES

Lack of Autonomy (C1, C2, C5, C6): This is the most critical weakness. The Pilot relies excessively on the Maritime Office and previous external studies, limiting its ability to independently validate results or make agile decisions.

Deficiency in Monitoring and Data (C3, C7): Updated baseline assessments were not conducted at the start of the project, nor was monitoring data generated by the intervention itself provided to support the claimed benefits.

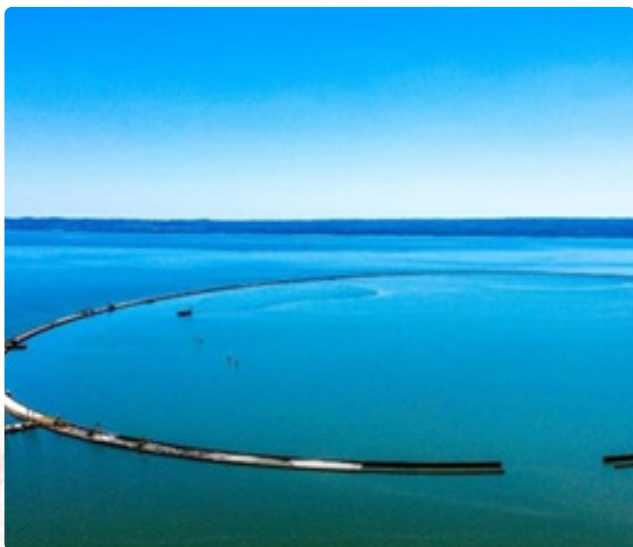
Limited Governance and Participation (C5): Low interest from the local community and total dependence on the national authority's grievance mechanisms restrict inclusive participation.

Economic and Financial Weakness (C4): There is no cost-effectiveness analysis compared to alternative solutions, and financial viability depends exclusively on the government budget, without diversification of funds.

Lack of Adaptive Management (C7): Management adjustments based on monitoring results or stakeholder input have not been defined or implemented.

Lack of Formal Safeguards (C6): There are no documents formalising social or environmental safeguards, nor are they reviewed periodically to mitigate unintended negative impacts.

AERIAL VIEW OF THE VISTULA LAGOON PILOT SITE AT THE START OF RESTORATION WORKS (2021) AND AFTER IMPLEMENTATION (2025). © (A) WWW.POLSATNEWS.PL © (B) WWW.TECH.WP.PL



(A)
2021



(B)
2025



HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS?



WADDEN SEA

MAY 2026

Authors Pilar Marín, Naomie Kayitesi, Natascha Wahlberg

Contributors Andreas Wurpts, Pushpa Dissanayake, Mindert de Vries, Sonja Wanke, Bas van Maren, Richard Marijnissen, Joanna Staneva, Wei Chen, Luciana Villa, Benjamin Jacob, Martin Baptist, Evelien Meinders, Matthijs Buurman

THE PILOT AND THE RESTORATION ACTIONS

The Pilot focuses on assessing restoration measures to enhance coastal resilience and ecosystem functioning in a highly dynamic tidal system of outstanding ecological value, recognised as a UNESCO World Heritage and Natura 2000 site. The area hosts diverse habitats such as mudflats, saltmarshes and seagrass meadows, supporting high biodiversity but affected by sediment imbalance, habitat loss and climate change. The Pilot evaluates interventions including seagrass restoration, saltmarsh development and sediment management using brushwood dams. Outcomes aim to improve sediment retention, reduce wave energy, and strengthen coastal protection and climate adaptation within a transboundary governance framework.

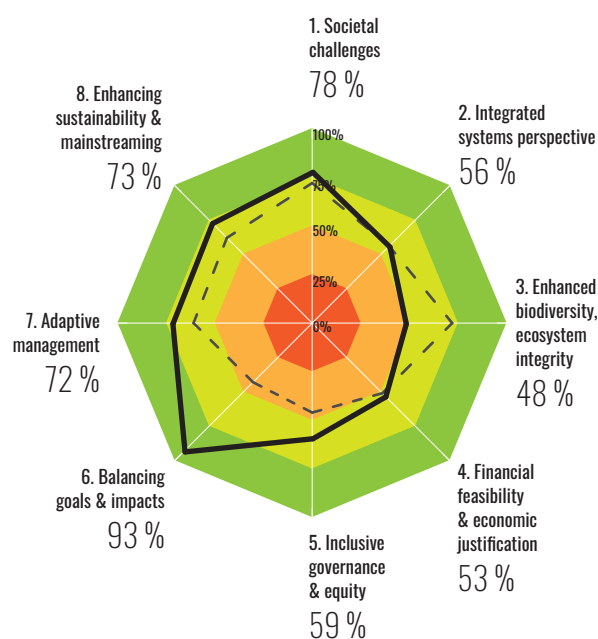
ADAPTATION MEASURE CATEGORIES APPLIED IN THE PILOT SITE



ASSESSMENT OVERVIEW

The Wadden Sea Pilot demonstrates overall good performance under the NbS Standard, with strong results in identifying societal challenges and establishing a clear link between restoration and climate adaptation (Criterion 1). It shows a solid understanding of system interactions and ecosystem services, though cross-sectoral integration could be further strengthened (Criterion 2). Biodiversity performance is only partial

Pilot performance against the IUCN NbS Global Standard criteria.



PILOT SITE
SCORE
REST-COAST
AVERAGE

LEVEL OF ADHERENCE

- Strong 75–100%
- Adequate 50–74%
- Partial 25–49%
- Insufficient 0–24%

PILOT
OVERALL
SCORE

65%

ADEQUATE

ALIGNMENT WITH THE NbS STANDARD

due to limited indicators, targets, and monitoring frameworks (Criterion 3). Economic feasibility is adequately assessed but lacks secured long-term financing (Criterion 4). Governance mechanisms are in place but could improve inclusiveness (Criterion 5). Risk management is strong (Criterion 6), while adaptive management and upscaling show good potential but require further consolidation (Criteria 7 and 8).



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.

STRENGTHS

Risk Management and Safeguards (C6): This is the most outstanding aspect. The Pilot has high-quality risk management protocols that include technical and budgetary contingency measures, as well as transparent processes and regular stakeholder reviews.

Social Challenges and Transparency (C1): Excellent identification and justification of social challenges. The project uses successful external references (such as Waterdunen) to validate its mix of interventions.

Sustainability and Scalability (C8): Lessons learnt are effectively captured and are already being used to scale up the project, aligning with jurisdictional environmental and socio-economic goals.

Economic Analysis (C4): A cost-effectiveness analysis and a scalable plan have been developed to close the implementation gap, documenting future costs and benefits.

Adaptive Management (C7): Although a monitoring plan is under development, corrective actions have already been implemented using participatory and inclusive approaches.

WEAKNESSES

Biodiversity Monitoring (C3): This is a significant weakness. Clear objectives and biodiversity indicators are lacking (currently, only turbidity is measured), and a monitoring plan to ensure net biodiversity gains has not been formalised.

Long-Term Financial Viability (C4): Despite a sound economic analysis, the pilot has not identified or secured financial mechanisms to guarantee the restoration's long-term viability.

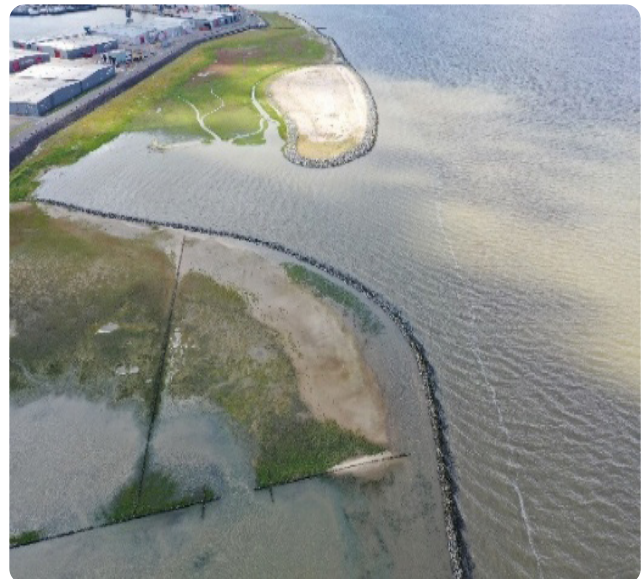
Systems Integration (C2): Although it links ecology and economics through ecosystem services, it has failed to integrate complementary interventions, limiting itself to seeking external synergies.

Inclusive Governance (C5): Despite having documented grievance mechanisms, the decision-making system does not fully address the rights and interests of affected stakeholders, creating a gap in inclusive management.



HOW DO REST-COAST PILOT SITES ADHERE TO THE IUCN GLOBAL STANDARD FOR NATURE-BASED SOLUTIONS? MAY 2026

WORKS WITHIN THE WADDEN SEA PILOT SITE (DOUBLE DIKE AND MARCONI SALTMARSH). © ED2050 PROGRAM.



REST-COAST project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101037097.