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Action Plan for Seagrass Restoration in the Mediterranean

June 2026



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Seagrass Restoration Action Plan 2030 by





Index

1	Executive summary	1
2	Introduction	3
3	Political and Regulatory Context	5
3.1	Regional and International Framework	5
3.2	European Union Regulatory Framework	6
3.3	European Strategies on Biodiversity, Climate and Restoration	6
3.4	National Regulatory Landscape Across Mediterranean Countries	7
3.5	Financial Framework and Nature Markets	7
3.6	Implications for the Action Plan	8
4	Methodology	9
4.1	Conceptual Foundations and Alignment with Scientific and Regulatory Standards	9
4.2	Feasibility Assessment and Site Definition	10
4.3	Baseline Construction and Ecological Reference Framework	10
4.4	Project Design, Spatial Boundary Definition and Additionality Assessment	11
4.5	Monitoring, Reporting and Verification (MRV)	11
4.6	Evaluation of Ecosystem Outcomes	11
4.7	Governance, Participation and Institutional Requirements	12
4.8	Financial Planning and Long-Term Sustainability	12
4.9	Risk Management and Adaptive Management	12
4.10	Integration with Mediterranean and EU Biodiversity Strategies	13
4.11	Stakeholder consultation process	13
5	Main results of the ARTEMIS project	15
5.1	Ecological and Baseline Results from the Pilot Sites	15
5.1.1	Menorca (Spain)	15
5.1.2	Sardinia (Italy)	15
5.1.3	Crete (Greece)	15
5.1.4	Comparative Insights Across Pilots	16
5.2	Development of a Standardised Methodology for Seagrass Credits	16



5.2.1	Cookbook Part I: Scientific and Technical Methodology	16
5.2.2	Cookbook Part II: Legal, Institutional, Commercial and Financial Framework	16
5.3	Operationalisation of European Commission Technical Guidelines (Habitat 1120)*	17
5.4	Advances in Monitoring, Reporting and Verification (MRV)	17
5.5	Socio Institutional and Governance Results	17
5.6	Financial and Market Readiness Findings	18
5.7	Consolidation of a Mediterranean Knowledge Base for Restoration	18
6	Conclusions and recommendations	19
6.1	Conclusions	19
6.1.1	Restoration is urgently needed and ecologically justified across the Mediterranean basin	19
6.1.2	A harmonised methodological framework is now available for the Mediterranean	19
6.1.3	Strong alignment exists between ARTEMIS and regional Mediterranean frameworks	20
6.1.4	Restoration requires governance clarity and stakeholder incorporation	20
6.1.5	A robust financial and market structure is required to support long-term restoration	20
6.1.6	ARTEMIS has established a replicable operational framework for basin-wide scaling	20
6.2	Recommendations	21
6.2.1	Establish a Mediterranean-wide standard for seagrass restoration and crediting	21
6.2.2	Prioritise restoration in areas with high ecological need and clear governance pathways	21
6.2.3	Strengthen governance mechanisms and formalise legal pathways for restoration	21
6.2.4	Implement basin-wide Monitoring, Reporting and Verification (MRV) systems	21
6.2.5	Mobilise sustainable financing and nature-based market mechanisms	21
6.2.6	Expand community engagement and ensure equitable benefit sharing	21
6.2.7	Integrate restoration planning with climate adaptation and coastal management strategies	22
7	Mediterranean Seagrass Restoration Action Plan	23
7.1	Introduction	23
7.2	Vision 2030	23
7.3	Overview of the Artemis Mediterranean Seagrass Restoration Action Plan 2030	24
7.3.1	Strategic Line 1. Policy and Planning Uptake	25



7.3.2	Strategic Line 2. Restoration Implementation & Best Practices	26
7.3.3	Strategic Line 3. Monitoring, Assessment & Knowledge Uptake	26
7.3.4	Strategic Line 4. Restoration Finance & Investment	27
7.3.5	Strategic Line 5. Capacity Building and Continuity	27
8	Action Plan. Implementation matrix	29
8.1	Strategic Line 1 – Policy and Planning Uptake	29
8.2	Strategic Line 2 – Restoration Implementation & Best Practices	39
8.3	Strategic Line 3 – Monitoring, Assessment & Knowledge Uptake	50
8.4	Strategic Line 4 – Restoration Finance & Investment	65
8.5	Strategic Line 5 - Capacity Building, Stakeholder Engagement & Long-Term Uptake	80
9	Monitoring and Evaluation Framework	89
9.1	Purpose of the Monitoring System	89
9.2	Monitoring Framework Architecture	89
9.3	Indicator Classification	90
9.3.1	Facilitation Indicators (F)	90
9.3.2	Uptake Indicators (U)	91
9.3.3	Mediterranean Progress Indicators (M)	91
9.4	Master Indicator Catalogue	92
9.5	Indicator Traceability	93
9.5.1	Action–Indicator Traceability Matrix Strategic Line 1. Policy and Planning Uptake	93
9.5.2	Action–Indicator Traceability Matrix Strategic Line 2. Restoration Implementation	93
9.5.3	Action–Indicator Traceability Matrix Strategic Line 3 – Monitoring, Assessment and Knowledge Uptake	94
9.5.4	Action–Indicator Traceability Matrix Strategic Line 4 – Restoration Finance	94
9.5.5	Action–Indicator Traceability Matrix Strategic Line 5 – Capacity Building and Continuity	94
9.6	Indicator Factsheets	95
9.6.1	Facilitation Indicators (F)	96
9.6.2	Uptake Indicators (U)	103
9.7	Mediterranean Progress Indicators (M),	110
10	Planification	118



10.1	Implementation approach	118
10.2	Strategic implementation priorities	118
10.3	Implementation schedule	119
11	. Conclusions	123
	Annexes	0
	Annex 1. Glossary	1
	Annex 2. Stakeholder consultation findings. Interviews.	3
1.	Introduction	3
2.	Public authorities, Marine Protected Areas and regional organisations	3
3.	Research organisations and scientific experts	3
4.	NGOs and civil society organisations	4
5.	Private sector, finance and restoration practitioners	4
6.	Cross-cutting conclusions	5
	Annex 3. Stakeholder consultation findings. Questionnaire results	6
1.	Introduction	6
2.	Stakeholder representation	6
3.	Questionnaire structure	6
4.	Main findings by stakeholder category	7
5.	Cross-cutting findings	10
	Annex 4. Financing, investment pathways and business models. Investment factsheet	11
1.	Introduction	11
2.	Menorca	12
3.	Sardinia	14
4.	Monfalcone	16
5.	Crete	18
	Annex 5. Bibliographical references	21
	Author's table	26

List of tables



Table 1. Descriptive sheet for Action 1 for the Seagrass Restoration Action Plan 2030: Integration of ARTEMIS recommendations into National Restoration Plans (NRPs).	29
Table 2. Descriptive sheet for Action 2 for the Seagrass Restoration Action Plan 2030: Promote ARTEMIS outputs through Barcelona Convention and UNEP/MAP processes.	31
Table 3. Descriptive sheet for Action 3 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration priorities into Marine Spatial Planning and coastal planning.	33
Table 4. Descriptive sheet for Action 4 for the Seagrass Restoration Action Plan 2030: Integrate ARTEMIS approaches into Natura 2000, MPAs and marine conservation planning.	35
Table 5. Descriptive sheet for Action 5 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration into climate adaptation, blue carbon and biodiversity strategies.	37
Table 6. Descriptive sheet for Action 6 for the Seagrass Restoration Action Plan 2030: Apply the Pressure Reduction First approach before restoration interventions.	40
Table 7. Descriptive sheet for Action 7 for the Seagrass Restoration Action Plan 2030: Adopt ARTEMIS restoration prioritisation and suitability methodologies.	42
Table 8. Descriptive sheet for Action 8 for the Seagrass Restoration Action Plan 2030: Integrate ARTEMIS restoration approaches into future restoration projects.	44
Table 9. Descriptive sheet for Action 9 for the Seagrass Restoration Action Plan 2030: Apply ecosystem-service-based restoration planning.	46
Table 10. Descriptive sheet for Action 10 for the Seagrass Restoration Action Plan 2030: Replicate lessons learned from ARTEMIS pilot sites.	48
Table 11. Descriptive sheet for Action 11 for the Seagrass Restoration Action Plan 2030: Promote uptake of ARTEMIS restoration methodologies.	50
Table 12. Descriptive sheet for Action 12 for the Seagrass Restoration Action Plan 2030: Promote adoption of ARTEMIS MRV approaches.	52
Table 13. Descriptive sheet for Action 13 for the Seagrass Restoration Action Plan 2030: Use ARTEMIS ecosystem service assessment methodologies.	55
Table 14. Descriptive sheet for Action 14 for the Seagrass Restoration Action Plan 2030: Promote ecosystem accounting approaches in restoration planning.	57
Table 15. Descriptive sheet for Action 15 for the Seagrass Restoration Action Plan 2030: Align ARTEMIS indicators with NRR, SAP BIO, IMAF, MSFD, Natura 2000 and GBF reporting.	60
Table 16. Descriptive sheet for Action 16 for the Seagrass Restoration Action Plan 2030: Promote uptake and application of ARTEMIS Seagrass Credits Methodology.	62
Table 17. Descriptive sheet for Action 17 for the Seagrass Restoration Action Plan 2030: Integrate restoration financing needs into National Restoration Plans.	65
Table 18. Descriptive sheet for Action 18 for the Seagrass Restoration Action Plan 2030: Use ecosystem service valuation to support restoration investment decisions.	68
Table 19. Descriptive sheet for Action 19 for the Seagrass Restoration Action Plan 2030: Facilitate early adoption and demonstration of ARTEMIS Seagrass Credits.	70
Table 20. Descriptive sheet for Action 20 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration into blue carbon and climate finance initiatives	72



Table 21. Descriptive sheet for Action 21 for the Seagrass Restoration Action Plan 2030: Engage private sector actors through ARTEMIS investment cases.	75
Table 22. Descriptive sheet for Action 22 for the Seagrass Restoration Action Plan 2030: Promote adoption of ARTEMIS financing recommendations in funding programmes.	78
Table 23. Descriptive sheet for Action 23 for the Seagrass Restoration Action Plan 2030: Deliver a Mediterranean knowledge transfer programme for ARTEMIS outputs.	80
Table 24. Descriptive sheet for Action 24 for the Seagrass Restoration Action Plan 2030: Strengthen stakeholder engagement and cross-sector collaboration.	83
Table 25. Descriptive sheet for Action 25 for the Seagrass Restoration Action Plan 2030: Support capacity building for restoration authorities and practitioners.	85
Table 26. Facilitation Indicator (F)	90
Table 27. Uptake Indicators (U)	91
Table 28. Mediterranean Progress Indicators (M)	92
Table 29. Action–Indicator Traceability Matrix. Strategic Line 1. Policy and Planning Uptake	93
Table 30. Action–Indicator Traceability Matrix. Strategic Line 2. Restoration Implementation	94
Table 31. Action–Indicator Traceability Matrix. Strategic Line 3. Monitoring, Assessment and Knowledge Uptake	94
Table 32. Action–Indicator Traceability Matrix. Strategic Line 4. Restoration Finance	94
Table 33. Action–Indicator Traceability Matrix. Strategic Line 5. Capacity Building and Continuity	95
Table 34. F01 – Technical dissemination events organised.	96
Table 35. F02 – Bilateral meetings with competent authorities	96
Table 36. F03 – Stakeholder engagement activities	97
Table 37. F04 – Capacity-building and training activities	98
Table 38. F05 – Dissemination Materials Produced from ARTEMIS Outputs	99
Table 39. F06 – Technical Assistance and Advisory Support Provided	99
Table 40. F07 – Partnerships and Cooperation Mechanisms Facilitated	100
Table 41. F08 – Funding and Investment Promotion Initiatives Facilitated	101
Table 42. F09 – Communication and Outreach Activities	102
Table 43. F10 – Knowledge Transfer Coverage	102
Table 44. U01 – National Restoration Plans Incorporating ARTEMIS Recommendations	103
Table 45. U02 – Marine Spatial Plans Incorporating ARTEMIS Approaches	104
Table 46. U03 – Restoration Projects Applying ARTEMIS Methodologies	105
Table 47. U04 – Restoration Projects Applying Harmonised Monitoring and MRV Approaches	105
Table 48. U05 – Projects Applying ARTEMIS Ecosystem Service Assessment Approaches	106



Table 49. U06 – Institutions Applying Ecosystem Accounting Approaches	107
Table 50. U07 – Organisations Applying the ARTEMIS Seagrass Credits Methodology	107
Table 51. U08 – Public Funding Programmes Referencing ARTEMIS Approaches	108
Table 52. U09 – Organisations Engaged in ARTEMIS-based Restoration Initiatives	109
Table 53. U10 – Institutions Formally Adopting ARTEMIS Outputs	109
Table 54. M01 – Area Under Restoration	110
Table 55. M02 – Area Under Improved Protection or Passive Restoration	111
Table 56. M03 – Ecological Condition of Restored Seagrass Meadows	111
Table 57. M04 – Restoration Areas Benefiting from Pressure Reduction Measures	112
Table 58. M05 – Blue Carbon Recovery	113
Table 59. M06 – Biodiversity Status of Restored Seagrass Ecosystems	114
Table 60. M07 – Restoration Finance Mobilised	114
Table 61. M08 – Mediterranean Countries Reporting Restoration Progress	115
Table 62. M09 – Restoration Projects Using Harmonised Monitoring Approaches	116
Table 63. M10 – Contribution to Mediterranean Restoration Targets	116
Table 64. Strategic Implementation Priorities	119
Table 65. Action Plan Implementation Roadmap	121

List of figures

Figure 1. Restoration sequence	3
Figure 2. Stakeholder consultation process. Main figures.....	14
Figure 3. Monitoring Framework Architecture.....	90
Figure 4. Action Plan. Implementation phases.....	122

List of acronyms

ARTEMIS – Mediterranean Seagrass Restoration Project
 CBF – Kunming–Montreal Global Biodiversity Framework
 CSRD – Corporate Sustainability Reporting Directive
 D1 – Descriptor 1 (Biodiversity, MSFD)
 D5 – Descriptor 5 (Eutrophication, MSFD)
 D6 – Descriptor 6 (Seafloor Integrity, MSFD)
 DOC – Dissolved Organic Carbon



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DIC – Dissolved Inorganic Carbon

EBQI – Ecological/Benthic Quality Index

EcAp – Ecosystem Approach

EU ETS – European Union Emissions Trading System

FPIC – Free, Prior and Informed Consent

GBF – Global Biodiversity Framework

GES – Good Environmental Status

GRI – Global Reporting Initiative

IAEA – International Atomic Energy Agency

IMAP – Integrated Monitoring and Assessment Programme

ISSB – International Sustainability Standards Board

ICZM – Integrated Coastal Zone Management

MAP – Mediterranean Action Plan (UNEP/MAP)

MPA – Marine Protected Area

MPN – Mediterranean Posidonia Network

MRV – Monitoring, Reporting and Verification

MSFD – Marine Strategy Framework Directive

MSP – Marine Spatial Planning

MSSD – Mediterranean Strategy for Sustainable Development

NRR – Nature Restoration Regulation

NPV – Net Present Value

OECD – Other Effective Area-Based Conservation Measures

PES – Payments for Ecosystem Services

PISM – Pressures and Impacts Screening Methodology

POMI – Posidonia Oceanica Monitoring Index

PREI – Posidonia Restoration Ecological Index

SAP BIO – Strategic Action Programme for Biodiversity in the Mediterranean

SEEA-EA – System of Environmental-Economic Accounting – Ecosystem Accounting

SFDR – Sustainable Finance Disclosure Regulation

SPA/BD – Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean

SPA/RAC – Specially Protected Areas / Regional Activity Centre

tCO₂ – Tonnes of CO₂

tCO₂e – Tonnes of CO₂ equivalent

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TNFD – Taskforce on Nature-related Financial Disclosures

UN – United Nations

UNEP – United Nations Environment Programme

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNFCCC – United Nations Framework Convention on Climate Change

VM – Verified Methodology (Verra)

WFD – Water Framework Directive

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1 Executive summary

The Mediterranean Seagrass Restoration Action Plan provides a strategic framework to facilitate the long-term uptake and implementation of the methodologies, tools and recommendations developed through the ARTEMIS project. Rather than proposing new restoration methodologies or creating additional governance structures, the Action Plan focuses on supporting the effective transfer of ARTEMIS outputs into policy, planning, restoration practice, financing mechanisms and capacity-building processes across the Mediterranean region.

The strategic actions proposed in this Action Plan are directly derived from the scientific, methodological and policy outputs generated by ARTEMIS and were further refined through a dedicated Mediterranean stakeholder consultation process.

A key conclusion emerging from the ARTEMIS project is that public funding will remain the primary financing mechanism for achieving the restoration targets established under the EU Nature Restoration Regulation. While existing public funding is currently insufficient and requires better coordination, it provides the essential foundation for long-term restoration efforts. Blended finance, private investment and emerging market-based instruments, including nature and seagrass credits, should therefore be understood as complementary mechanisms capable of mobilising additional resources, rather than as substitutes for public investment. Accordingly, the Action Plan promotes a financing architecture that strengthens public funding while facilitating the responsible mobilisation of complementary sources of finance under robust governance and environmental safeguards.

The Action Plan recognises the critical ecological, climatic and socio-economic importance of Mediterranean seagrass ecosystems, particularly *Posidonia oceanica* and other seagrass species, which provide essential ecosystem services including biodiversity conservation, carbon sequestration, coastal protection, fisheries support and climate resilience. Despite increasing restoration efforts throughout the region, implementation remains constrained by fragmented governance, inconsistent monitoring approaches, limited technical capacity and insufficient integration of restoration into sectoral policies and financing mechanisms.

To address these challenges, the Action Plan is structured around five complementary Strategic Lines, comprising 25 actions designed to facilitate the progressive uptake of ARTEMIS outputs throughout the Mediterranean:

- **Strategic Line 1 – Policy and Planning Uptake** promotes the incorporation of ARTEMIS recommendations into restoration policies, National Restoration Plans, Marine Spatial Planning and governance frameworks.
- **Strategic Line 2 – Restoration Implementation & Best Practices** facilitates the application and replication of ARTEMIS restoration methodologies by competent authorities, restoration practitioners and project developers.
- **Strategic Line 3 – Monitoring, Assessment and Knowledge Uptake** supports the dissemination and harmonised application of monitoring methodologies, ecosystem service assessments, ecosystem accounting approaches and innovative restoration financing tools developed by ARTEMIS.
- **Strategic Line 4 – Restoration Finance & Investment** strengthens public financing mechanisms as the foundation for seagrass restoration, while promoting the

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responsible mobilisation of complementary private investment and innovative financing mechanisms to scale up restoration across the Mediterranean

- **Strategic Line 5 – Capacity Building, Stakeholder Engagement & Long-Term Uptake** acts as the cross-cutting enabling component of the Action Plan, ensuring the continuous dissemination of ARTEMIS outputs, strengthening stakeholder collaboration and supporting capacity development throughout implementation.

Plan Bleu plays a central role in supporting the long-term implementation of the Action Plan by promoting the transfer, uptake and continuous application of ARTEMIS outputs across the Mediterranean region. Through regional coordination, knowledge exchange, institutional dialogue, capacity building and stakeholder engagement, Plan Bleu supports the integration of ARTEMIS methodologies, tools and policy recommendations into restoration planning, governance, monitoring and financing processes. By strengthening cooperation among competent authorities, restoration practitioners, research institutions, funding organisations and other relevant stakeholders, the Action Plan creates the conditions for the progressive mainstreaming of ARTEMIS approaches and contributes to a coordinated and effective restoration of Mediterranean seagrass ecosystems.

Implementation is organised as a progressive process consisting of three complementary phases. The first phase focuses on knowledge transfer and the establishment of enabling conditions. The second phase promotes the practical uptake and replication of ARTEMIS methodologies by restoration practitioners and competent authorities. The final phase aims to consolidate ARTEMIS approaches as recognised references supporting restoration policy, planning, monitoring and financing across the Mediterranean.

To support adaptive implementation, the Action Plan includes a comprehensive Monitoring and Evaluation Framework consisting of 30 core indicators organised into three complementary categories:

- Facilitation Indicators, measuring the implementation efforts undertaken by Plan Bleu.
- Uptake Indicators, measuring the adoption and application of ARTEMIS outputs by competent authorities and other stakeholders.
- Mediterranean Progress Indicators, monitoring broader regional progress towards seagrass restoration objectives using existing reporting systems and official monitoring programmes.

The Monitoring and Evaluation Framework has been specifically designed to minimise reporting burdens by relying primarily on existing national, regional and project-level monitoring systems, thereby avoiding duplication while ensuring consistency with European and Mediterranean reporting obligations.

Overall, the Action Plan provides a practical and realistic implementation framework that bridges the gap between the technical outputs generated by ARTEMIS and their long-term application within restoration policies, restoration programmes and financing mechanisms throughout the Mediterranean region. Through its emphasis on facilitation, cooperation and adaptive learning, the Plan aims to strengthen regional capacity and contribute to the successful restoration of Mediterranean seagrass ecosystems in support of European and international biodiversity commitments.



2 Introduction

Seagrass meadows, particularly those formed by *Posidonia oceanica*, constitute one of the most functionally important yet increasingly threatened ecosystems in the Mediterranean. They underpin marine biodiversity, regulate hydrodynamics, stabilise sediments, enhance coastal water quality, sustain fisheries, protect coastlines from erosion and storm impacts, and store large quantities of carbon over centennial to millennial timescales. Their multifunctionality places them at the core of Mediterranean ecological resilience and contributes significantly to climate change mitigation, adaptation and the provision of essential ecosystem services.

Despite their ecological importance, Mediterranean seagrass ecosystems continue to decline due to cumulative anthropogenic pressures, including unregulated anchoring, bottom trawling, coastal infrastructure development, aquaculture and other marine activities. Scientific consensus, reinforced by the evidence generated through the ARTEMIS pilot sites, demonstrates that active restoration cannot compensate for ongoing degradation. Restoration interventions are unlikely to succeed where the underlying pressures persist, whereas passive restoration can provide an effective and cost-efficient recovery pathway once these pressures have been removed.



Figure 1. Restoration sequence

The ecological evidence generated across the ARTEMIS pilot sites confirms that improvements in ecosystem condition and long-term recovery depend primarily on effective pressure reduction, suitable environmental conditions and sustained ecosystem management. Further information on the ecological assessments and pilot results is provided in the **ARTEMIS Pilot Ecosystem Services Baseline (Deliverable D1.2.1)** and summarised in Chapter 5 of this Action Plan.

Mediterranean seagrass restoration is supported by an evolving policy framework. The EU Water Framework Directive, Habitats Directive and Marine Strategy Framework Directive establish the environmental objectives for marine ecosystems, while the **EU Nature Restoration Regulation (EU) 2024/1991** introduces legally binding restoration targets and requires Member States to prepare National Restoration Plans. At the international level, restoration efforts are further supported by the **Kunming–Montreal Global Biodiversity Framework**, the **Barcelona Convention and its Post-2020 SAP BIO**, the **UN Decade on Ecosystem Restoration**, and the **Mediterranean Strategy for Sustainable Development (MSSD 2026–2035)**. A detailed overview of the policy and regulatory context is presented in Chapter 3.

Although political ambition is increasing, a substantial financing gap continues to constrain restoration implementation across the Mediterranean. The ARTEMIS project highlights that **public funding remains the foundation of large-scale seagrass restoration**, while recognising the **need to mobilise complementary financing sources** capable of supporting long-term restoration efforts. To support this objective, ARTEMIS developed methodologies for



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ecosystem service valuation and Natural Capital Accounting, established the methodological foundations for a harmonised Monitoring, Reporting and Verification (MRV) framework, and developed a methodology for future **Seagrass Credits** as complementary financing instruments. These technical outputs are described in **Deliverables D2.3.1, D3.3.1 (Parts I and II) and D4.2.1**, with their principal findings summarised in **Chapter 5**.

Building on these results, the **Seagrass Restoration Action Plan 2030** provides a practical framework to support the implementation and scaling-up of seagrass restoration across the Mediterranean. Rather than developing new scientific methodologies, the Action Plan translates the technical, ecological, governance and financing outputs generated by ARTEMIS into a coherent set of strategic actions designed to facilitate their uptake by policymakers, competent authorities, restoration practitioners, funding organisations and other stakeholders. It promotes the integration of ARTEMIS methodologies and recommendations into restoration planning, implementation, monitoring, financing and capacity-building processes, providing the continuity required to move from successful pilot experiences towards coordinated, long-term restoration programmes aligned with European and international biodiversity commitments.



3 Political and Regulatory Context

The conservation and restoration of *Posidonia oceanica* in the Mediterranean is not only an environmental priority but is also embedded within a set of legal obligations, policy strategies, and financial mechanisms that together create a framework of action for Member States, regional administrations, and private actors. This multi-level framework combines legally binding instruments, biodiversity and climate strategies, and innovative financial mechanisms aimed at ecosystem restoration and at enhancing the value of ecosystem services.

In this context, the restoration of *Posidonia oceanica* meadows must be understood not only as a conservation action, but as a necessary measure to meet European and Mediterranean environmental objectives, contribute to climate change mitigation and adaptation, and ensure the maintenance of marine ecosystem services. Likewise, the development of new financial instruments linked to natural capital and blue carbon places the restoration of seagrass meadows within the scope of sustainable finance and nature markets.

This Action Plan is therefore developed in coherence with this political, regulatory and financial framework, serving as an implementation instrument for the conservation, restoration and financing objectives established at the Mediterranean and European scales.

3.1 Regional and International Framework

Seagrass restoration in the Mediterranean is embedded within a multi-layered governance system that operates at regional, European and national levels. At the regional scale, the Barcelona Convention and its Protocol concerning Specially Protected Areas and Biological Diversity (SPA/BD Protocol) provide the primary institutional framework for marine biodiversity protection. The Post-2020 Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAPBIO) establishes ecosystem restoration as a central priority for reversing biodiversity loss by 2030 and translates the GBF commitments to the region.

Under the SAP BIO, restoration contributes directly to objectives related to ecosystem recovery, achievement of Good Environmental Status (GES), expansion and effective management of Marine Protected Areas (MPAs), and the integration of biodiversity considerations into climate adaptation and marine spatial planning processes. *The Ecosystem Approach (EcAp) and the Integrated Monitoring and Assessment Programme (IMAP)* provide the operational backbone for assessing ecological status, including biodiversity, eutrophication and seafloor integrity.

At the global level, the GBF reinforces restoration commitments through Target 2 (restore at least 30% of degraded ecosystems), Target 3 (protect 30% of land and sea), and Target 8 (enhance climate resilience and mitigation through nature-based solutions). Furthermore, the CBF recognizes in Target 15 that private sector participation is essential for achieving these restoration commitments. The UN Decade on Ecosystem Restoration (2021–2030) further frames restoration as a global priority requiring scaling, financing and measurable outcomes.

Within this multilateral architecture, Mediterranean seagrass restoration serves as a concrete delivery mechanism for biodiversity recovery, climate mitigation and coastal resilience commitments.



3.2 European Union Regulatory Framework

At the level of the European Union, the protection and restoration of *Posidonia oceanica* are supported by a set of environmental directives that establish legal obligations for Member States regarding habitat conservation, the ecological status of waters, and the environmental status of the marine environment.

The Habitats Directive (92/43/EEC) is the main legal instrument for the conservation of habitats and species in the European Union. Within this Directive, *Posidonia oceanica* meadows are classified as a priority habitat (1120*), meaning Member States must maintain or restore them to a favorable conservation status, prevent their deterioration, and periodically assess their condition. The Directive is implemented, among other instruments, through the Natura 2000 Network, which includes many marine areas where *Posidonia* meadows are designated conservation habitats.

The European Commission has developed specific technical guidelines for the assessment and monitoring of *Posidonia* meadows, establishing ecological variables that must be monitored (shoot density, coverage, meadow limits, sediment status, associated biodiversity, among others) as well as sampling protocols and criteria for assessing conservation status. These guidelines form the methodological reference framework for assessing habitat conservation status under the Habitats Directive.

The Water Framework Directive (2000/60/EC) establishes the obligation to achieve good ecological status for coastal water bodies, and *Posidonia oceanica* is one of the main biological elements used to assess such status. Member States use various ecological indices to evaluate meadow condition, which has enabled *Posidonia* monitoring to be integrated into national coastal water assessment programs.

Meanwhile, the Marine Strategy Framework Directive (2008/56/EC) sets the objective of achieving Good Environmental Status of the marine environment, including biodiversity, seafloor integrity, and the condition of benthic habitats. *Posidonia* meadows play a key role in several descriptors of this Directive, meaning their conservation and restoration directly contribute to fulfilling the EU's marine environmental objectives.

Taken together, these directives not only require the protection of existing meadows but also the restoration of those that are in an unfavorable condition, positioning the restoration of *Posidonia oceanica* as an environmental obligation and a tool for achieving the ecological objectives established by European legislation.

3.3 European Strategies on Biodiversity, Climate and Restoration

Beyond the regulatory framework, the European Union has developed policy strategies that place ecosystem restoration at the center of biodiversity, climate, and sustainability policies. These strategies promote the restoration of degraded ecosystems, the reduction of human pressures on the marine environment, the integration of biodiversity into economic policies, and the development of financial mechanisms to mobilize resources for restoration.

Seagrass restoration is aligned with the objectives of the EU Biodiversity Strategy, the European Green Deal, climate adaptation policies, and sustainable blue economy strategies. These policies acknowledge that marine ecosystems (and in particular blue carbon ecosystems such as *Posidonia* meadows) play a fundamental role in climate mitigation, coastal protection, and the resilience of socio-ecological systems.



Additionally, new corporate sustainability and biodiversity reporting requirements are generating increasing demand for restoration projects that can deliver measurable and verifiable outcomes in terms of biodiversity, carbon, and ecosystem services, thereby opening new financing opportunities for marine ecosystem restoration.

3.4 National Regulatory Landscape Across Mediterranean Countries

Beyond EU-level harmonisation, significant variation exists across Mediterranean countries in the depth, specificity and operationalisation of seagrass-related regulation.

Three broad regulatory tiers can be observed:

Tier 1 – EU Baseline with Dedicated Blue Carbon or Restoration Instruments

Some jurisdictions complement EU obligations with specific instruments designed to operationalise restoration and blue carbon management. Spain represents a leading example, where national climate legislation (Law 7/2021 on Climate Change and Energy Transition) is complemented at regional level by the Andalusian Blue Carbon Standard, which establishes minimum requirements and methodological guidance for conservation, restoration and monitoring of blue carbon ecosystems, including seagrass meadows. Such instruments facilitate alignment between ecological restoration and climate mitigation accounting and create clearer pathways for financing.

Tier 2 – EU Baseline Implemented Through Biodiversity and Climate Strategies

Other EU Mediterranean countries, including France, Italy, Greece, Portugal, Croatia, Cyprus and Malta, embed marine ecosystem restoration within national biodiversity strategies, adaptation plans and marine spatial planning frameworks. While these strategies provide strong policy recognition and planning tools, they often lack dedicated operational standards for blue carbon accounting, MRV harmonisation or restoration finance instruments. Implementation therefore depends heavily on project-level initiatives and regional capacity.

Tier 3 – Non-EU Mediterranean Frameworks with Strategic Recognition

In non-EU Mediterranean countries such as Morocco, Algeria, Tunisia and Türkiye, climate and biodiversity strategies increasingly acknowledge coastal ecosystem protection and adaptation functions. However, regulatory systems may face challenges related to enforcement capacity, data infrastructure, long-term monitoring systems and access to sustainable financing mechanisms. Restoration efforts in these contexts often rely on international cooperation projects and donor funding rather than nationally embedded financing frameworks.

3.5 Financial Framework and Nature Markets

In recent years, a new financial framework has emerged aimed at ecosystem restoration, based on the valuation of ecosystem services, blue carbon, and nature credits. This approach recognizes that natural ecosystems generate measurable benefits for society and the economy, and that these benefits can serve as the basis for developing financing mechanisms to support their conservation and restoration.

The work carried out under the ARTEMIS project shows that there is a significant financing gap for seagrass meadow restoration, partly due to the undervaluation of marine ecosystem services. To close this gap, it is necessary to develop verified ecological metrics, monitoring,



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reporting and verification systems, certification mechanisms, registries, and governance frameworks that ensure the environmental integrity of restoration projects.

In this context, the ARTEMIS project has developed methodologies and tools for creating seagrass-meadow credit systems that integrate blue carbon, biodiversity, and other ecosystem services into financial instruments capable of attracting private investment and complementing public funding. This approach supports the development of mixed (public-private) financing models that enable restoration at scale.

3.6 Implications for the Action Plan

The analysis of the political, regulatory, and financial framework shows that the restoration of *Posidonia oceanica* is grounded in a solid system that establishes legal obligations, defines strategic objectives, and opens financing opportunities. However, it also highlights that one of the main challenges lies in the effective implementation of restoration, coordination among administrations, availability of funding, and the existence of standardized methodologies that allow for the evaluation and financing of restoration projects.

In this context, this Action Plan is proposed as **an instrument to facilitate the implementation of this framework**, providing a roadmap for the restoration of *Posidonia oceanica* meadows, the development of financing mechanisms, the improvement of governance, and the integration of restoration efforts into public policies and sustainable development strategies in the Mediterranean.



4 Methodology

The methodological approach adopted for the preparation of this Action Plan integrates ecological science, regulatory requirements, monitoring standards, socio economic considerations and market aligned mechanisms into a coherent structure for the restoration of *Posidonia oceanica* in the Mediterranean. It emerges from the combined evidence and operational guidance contained in the ARTEMIS methodological deliverables, the official European Commission Technical Guidelines for habitat 1120*, Mediterranean regional frameworks, the Blue Carbon and biodiversity policy landscape, and the lessons derived from the ARTEMIS pilot sites.

The approach is designed to support the entire restoration cycle, beginning with the assessment of ecological and socio institutional feasibility, continuing through baseline construction, project design, governance configuration, monitoring and verification, and culminating in long term ecological evaluation and financial sustainability. By integrating requirements from the Habitats Directive technical implementation guidelines (habitat 1120*), the seagrass credit methodology developed by ARTEMIS and Mediterranean restoration strategies articulated by SPA RAC and SAPBIO, the methodology provides a harmonised operational foundation applicable across the diverse ecological and governance contexts of the Mediterranean basin.

4.1 Conceptual Foundations and Alignment with Scientific and Regulatory Standards

This methodology is anchored in the recognition that *Posidonia oceanica* meadows constitute a priority habitat within the European Union. The official Technical Guidelines for habitat 1120* developed by the European Commission describe the ecological distribution of *P. oceanica*, the functioning of its meadows and the environmental conditions that determine their structure, composition and resilience. These guidelines specify the variables required to evaluate habitat condition, including key physical, chemical, biological, functional and landscape components, as well as the sampling protocols necessary for their consistent measurement (European Commission Technical Guidelines, pp. 4 7).

The ARTEMIS methodological framework complements these regulatory requirements by establishing a complete architecture for restoration and seagrass credit generation. In Part I of the Cookbook, ARTEMIS defines the scope of a standardised framework for quantifying and generating seagrass based biodiversity units, introduces the operational lifecycle of restoration projects, and provides detailed instructions for the assessment of extent, condition and ecosystem outcomes (ARTEMIS D.3.3.1 Part I, pp. 7 14). Part II of the Cookbook expands the approach to incorporate legal considerations, institutional mapping, commercial design, financial planning and risk management. It provides a methodological sequence for establishing legal clarity, creating credible value propositions for nature credits, designing financial plans and implementing mechanisms for risk mitigation and governance (ARTEMIS D.3.3.1 Part II, pp. 4 17).

Together, these documents generate a methodological foundation that is simultaneously grounded in EU conservation law, emerging biodiversity market mechanisms and the on the ground experience of Mediterranean restoration pilots.



4.2 Feasibility Assessment and Site Definition

The first component of the methodology consists of evaluating ecological feasibility at a level consistent with the requirements for habitat 1120*. The European Commission Technical Guidelines specify that a comprehensive assessment of *Posidonia oceanica* meadows must consider physical attributes such as water transparency and hydrodynamics, chemical parameters including nutrient concentrations, biological characteristics such as shoot density and meadow continuity, and functional indicators like sediment stabilization and productivity, as well as landscape level attributes such as fragmentation patterns and meadow limits (European Commission Technical Guidelines, pp. 5 6).

In the ARTEMIS framework, these variables are integrated into an initial feasibility phase in which the implementing entity assesses the ecological context of the site, identifies local pressures, evaluates the vulnerability of meadows and analyses legal or traditional tenure arrangements relevant to the project area (ARTEMIS D.3.3.1 Part I, p. 10). Pilot experience illustrates the importance of this phase. In Menorca, feasibility assessments revealed degradation linked to construction and bentonite discharge, resulting in measurable losses of meadow area (Baseline Menorca). In Sardinia, the analysis confirmed chronic fragmentation caused by unregulated anchoring (Baseline Sardinia). In Crete, feasibility work demonstrated that areas impacted by long term aquaculture operations had not naturally recovered even years after activity cessation (Baseline Crete).

This initial step ensures that restoration interventions are deployed only where ecologically feasible, socially acceptable and legally permissible.

4.3 Baseline Construction and Ecological Reference Framework

A central component of the methodology is the construction of a scientifically robust baseline. The ARTEMIS Cookbook Part I defines two baseline elements: the qualitative baseline scenario, which describes likely ecological trajectories in the absence of intervention, and the quantitative crediting baseline, which serves as a measurable ecological reference for net outcome accounting (ARTEMIS D.3.3.1 Part I, pp. 22 23).

The Technical Guidelines for habitat 1120* specify the variables that must be included in baseline analysis. These include measurements of extent, shoot density, percentage cover, structural complexity, faunal assemblages, epiphytic communities, and indicators of anthropogenic pressures, as well as landscape metrics such as patch size, connectivity and boundary definition (European Commission Technical Guidelines, pp. 4 6).

The ARTEMIS pilots implemented these requirements. Each baseline integrated condition indicators using the EBQI index, which evaluates structure, function, pressures and composition through standardised metrics including rhizome growth, leaf density, cover, epibiota, filter feeders, detritivores and teleost assemblages (ARTEMIS D.3.3.1 Part I, pp. 27 31). The pilots also applied sediment cores for carbon assessment, transect sampling for ichthyofauna and pressure characterisation consistent with the guidelines. In Menorca, Sardinia and Crete, baselines documented clear divergences between control and impacted areas in terms of shoot density, vegetative carbon and fish biomass, confirming the ecological need for restoration (Baseline Menorca, Sardinia and Crete).

Mediterranean regional frameworks reinforce this requirement. SPA RAC restoration guidance emphasises the need for comprehensive baseline documentation prior to restoration, including



ecological condition, environmental pressures and socio institutional considerations. This ensures restoration activities align with the regional strategy for marine biodiversity recovery.

4.4 Project Design, Spatial Boundary Definition and Additionality Assessment

The second stage of methodological implementation concerns project design. ARTEMIS establishes a project lifecycle that includes definition of spatial boundaries, restoration design, stakeholder engagement, additionality demonstration and monitoring plans (ARTEMIS D.3.3.1 Part I, pp. 20 23).

Spatial boundaries consist of the reference area, project area, accreditation area and potential leakage area. Each of these is defined using unique geodetic identifiers and must be supported by spatial datasets consistent with Mediterranean seagrass mapping standards, such as those maintained by the Mediterranean Posidonia Network (ARTEMIS D.3.3.1 Part I, pp. 20 21).

Additionality assessment is required to ensure that restoration benefits exceed what would occur under existing policy or ecological conditions. ARTEMIS defines financial additionality, regulatory additionality and technological additionality as prerequisites for crediting (ARTEMIS D.3.3.1 Part I, p. 22).

4.5 Monitoring, Reporting and Verification (MRV)

The methodology incorporates a comprehensive monitoring system. ARTEMIS prescribes annual monitoring for extent, condition, faunal indicators, pressures and benefit sharing aspects (ARTEMIS D.3.3.1 Part I, pp. 39 40). The Technical Guidelines provide detailed advice on sampling methods, indicator selection and the need for method consistency to ensure comparability between time periods and regions (European Commission Technical Guidelines, pp. 5 6).

Monitoring also includes pressure assessment through the PISM index, which evaluates anthropogenic pressures including artificial coastline, direct leaching, mariculture, rainwater discharges, industrial wastewater and navigation (ARTEMIS D.3.3.1 Part I, p. 32).

Verification is undertaken at least once per decade and must be performed by an independent third party or by the ARTEMIS peer review mechanism during the transitional phase of methodology implementation (ARTEMIS D.3.3.1 Part I, p. 12).

4.6 Evaluation of Ecosystem Outcomes

Ecological outcomes are calculated through the Net Ecosystem Condition Outcome methodology. This process includes the calculation of area adjusted condition, the integration of negative control dynamics and the deduction of any quantifiable leakage (ARTEMIS D.3.3.1 Part I, p. 34).

Condition evaluation relies on the EBQI or MediSkew index depending on the target species. EBQI integrates thirteen ecological indicators with weighted values and produces a score between 0 and 10 (ARTEMIS D.3.3.1 Part I, pp. 29 31). MediSkew applies a statistical transformation of leaf length frequency distribution for *C. nodosa*, producing comparable ecological classes (ARTEMIS D.3.3.1 Part I, pp. 50 51).

Outcome quantification translates net improvements into seagrass biodiversity units and, where applicable, seagrass credits. The methodology incorporates buffer pools equivalent to 20



percent of generated credits to ensure durability and manage ecological reversals (ARTEMIS D.3.3.1 Part I, p. 35).

4.7 Governance, Participation and Institutional Requirements

Governance is a core dimension of the methodology. ARTEMIS Part II describes the need for a mapping of competent authorities across national, regional and local levels and emphasises the establishment of a dedicated governance body responsible for oversight, validation, monitoring supervision and methodological updates (ARTEMIS D.3.3.1 Part II, pp. 7-10).

Participatory processes are essential. The co-creation mechanism used in the ARTEMIS pilots included workshops, interviews, probability impact matrices and structured consultations that integrated scientific, administrative and community knowledge systems into project design and decision making (ARTEMIS D.3.3.1 Part II, pp. 5-6).

SPA/RAC and SAPBIO frameworks reinforce the importance of participatory governance, highlighting that restoration success depends on local acceptance, integration of traditional ecological knowledge and equitable benefit sharing arrangements.

4.8 Financial Planning and Long-Term Sustainability

The methodology incorporates financial planning as an integral component. ARTEMIS Part II provides a detailed structure for estimating startup costs, ongoing costs, revenues, cash flows and breakeven points for restoration projects (ARTEMIS D.3.3.1 Part II, pp. 17-22).

The financial plan must consider capital expenditures, operating expenses and the valuation of ecosystem service outcomes. ARTEMIS provides formulas for calculating minimum profitable credit prices and recommends allocating a portion of revenues to benefit pools (ARTEMIS D.3.3.1 Part I, pp. 36-39).

The economic architecture aligns with findings from the ARTEMIS market consultation report, which identifies that ecosystem services produced by seagrass meadows are often undervalued and that credible nature credit mechanisms require transparency, verification, registry systems and governance safeguards to attract investors (Unlocking Investments, pp. 2-4).

4.9 Risk Management and Adaptive Management

Marine restoration projects face environmental, financial, legal, governance and social risks. ARTEMIS Part II provides a structured process for identifying, prioritising, mitigating and monitoring risks (ARTEMIS D.3.3.1 Part II, pp. 24-28).

Risks specific to the Mediterranean include climate driven events, anchoring pressure, regulatory instability, weak enforcement and social concerns regarding the perceived privatisation of natural ecosystems. The pilots illustrated the presence of these risks and demonstrated the need for adaptive management mechanisms capable of addressing new information and unexpected ecological dynamics (ARTEMIS D.3.3.1 Part II, p. 28).

Adaptive management must ensure that deviations from the original project design are justified by monitoring results, stakeholder feedback or new ecological evidence and are incorporated into future project cycles (ARTEMIS D.3.3.1 Part I, p. 23).



4.10 Integration with Mediterranean and EU Biodiversity Strategies

The methodology is consistent with the objectives of the EU Biodiversity Strategy for 2030 and the Nature Restoration Law, which highlight the need for large scale habitat recovery, scientific monitoring and governance mechanisms capable of mobilising public and private funding. The SPA RAC restoration guidelines and post 2020 SAPBIO specify that Mediterranean restoration must follow ecosystem-based management principles, incorporate socio economic benefits and address cumulative pressures that transcend administrative boundaries.

ARTEMIS operationalises these objectives by providing a harmonised, scientifically grounded, financially viable and socially inclusive methodological structure that can be applied consistently across Mediterranean Member States.

4.11 Stakeholder consultation process

To complement the technical evidence generated by ARTEMIS, a dedicated stakeholder consultation process was designed and implemented specifically for the preparation of this Action Plan. The objective was to validate the project's main conclusions, identify implementation barriers and opportunities, and gather practical recommendations to support the upscaling of seagrass restoration across the Mediterranean.

The consultation was designed to ensure that the Action Plan reflects not only the technical outputs of ARTEMIS but also the experience, priorities and implementation needs identified by Mediterranean stakeholders directly involved in seagrass conservation, restoration, governance and financing.

The consultation combined two complementary methods:

- Semi-structured interviews with selected experts representing key stakeholder groups across the Mediterranean.
- An online questionnaire distributed to organisations involved in seagrass restoration, marine conservation, governance, research and sustainable finance.

The consultation explored five main themes:

- priorities for scaling up seagrass restoration;
- governance and institutional coordination;
- restoration financing and investment opportunities;
- technical and ecological implementation challenges;
- monitoring, knowledge transfer and capacity building.

Overall, the consultation involved 42 semi-structured interviews and 23 completed questionnaires, representing stakeholders from 14 Mediterranean countries and covering seven stakeholder categories: public authorities, Marine Protected Area managers, research and academia, funders and investors, private sector organisations, NGOs and regional organisations.



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Stakeholder Consultation Process

Capturing regional perspectives to support the implementation of ARTEMIS outputs



Figure 2. Stakeholder consultation process. Main figures

Rather than generating new scientific evidence, the consultation was designed to validate and complement the findings of the ARTEMIS project by incorporating practical experience and regional perspectives from the organisations responsible for planning, financing, implementing and supporting seagrass restoration.

The results of the consultation were systematically analysed and used to refine the Action Plan. Stakeholder feedback contributed to:

- validating the proposed strategic priorities;
- identifying governance and financing needs;
- strengthening implementation recommendations;
- refining the proposed actions and monitoring framework.

A synthesis of the interview findings is presented in Annex 2, while the results of the online questionnaire are summarised in Annex 3.



5 ARTEMIS outputs supporting the Action Plan

The ARTEMIS project has produced a comprehensive body of scientific, methodological, institutional and financial results that together represent a significant step forward for large-scale seagrass restoration in the Mediterranean basin. Through its pilots, methodological deliverables and policy-market integration work, ARTEMIS has generated an unprecedented quantity of empirical data on seagrass condition, pressures and restoration potential, while also establishing the operational foundations for a Mediterranean seagrass credit system.

These results span several interconnected domains: ecological baselines, methodological innovation, governance and regulatory analysis, commercial and financial feasibility, and the development of an integrated monitoring and verification framework. Together, they form a robust evidence base that informs this Action Plan and strengthens the region's capacity to restore *Posidonia oceanica* meadows in a scientifically rigorous and financially sustainable manner.

5.1 Ecological and Baseline Results from the Pilot Sites

5.1.1 Menorca (Spain)

The Menorca pilot documented the impacts of bentonite discharge and collector installation associated with coastal infrastructure works. The baseline assessment confirmed the loss of approximately **1,808 m² of *Posidonia oceanica***, along with measurable declines in shoot density, vegetative carbon and ichthyofauna abundance in impacted stations compared with control sites (Menorca Factsheet).

Condition assessments using EBQI classified the ecosystem as degraded, with moderate reductions in biomass and structure relative to reference conditions. These findings highlighted the need for targeted restoration interventions and demonstrated the sensitivity of the meadow to construction-related disturbances.

5.1.2 Sardinia (Italy)

The Sardinia pilot revealed extensive **fragmentation linked to unregulated boat anchoring**, particularly in La Marmorata Bay. Despite the presence of a well-established Marine Protected Area and Natura 2000 designation, shoot density and vegetation carbon stocks were moderately lower in impacted areas (Sardinia Factsheet).

Although the PREI index placed the meadow in **Good ecological status (EQR 0.7532)**, the EBQI indicated **ecosystem condition ranging from Poor to Moderate**, illustrating a mismatch between water-quality-focused status and ecosystem integrity. These results underscore the need for integrated management measures that include anchoring regulation and active restoration.

5.1.3 Crete (Greece)

Crete presented the **most severe degradation** among the pilots. The baseline documented **6.5 hectares of dead matte** in areas previously occupied by a long-standing fish farm that ceased operations in 2017 (Crete Factsheet).

Impacted stations showed sharp declines in shoot density (up to 4× lower) and vegetative carbon (4.3× lower), along with significant reductions in ichthyofauna abundance and biomass. Despite WePOSI categorising the meadow as Moderate to Good, the EBQI indicated a Poor



ecosystem condition, demonstrating the limitations of traditional indices in capturing structural collapse after chronic pressures.

5.1.4 Comparative Insights Across Pilots

The comparative document synthesised the ratios between control and impacted sites, confirming that:

- Crete exhibited the strongest degradation across all metrics (density, carbon, fauna).
- Sardinia and Menorca displayed moderate but ecologically significant losses.
- All pilots showed **functional weakening** of ecosystem services such as nursery function, carbon storage and fish biomass (Comparative Factsheet).

These ecological results provided the scientific foundation for the ARTEMIS restoration methodology and the subsequent crediting framework.

5.2 Development of a Standardised Methodology for Seagrass Credits

A major outcome of ARTEMIS is the creation of a **two-part methodological framework** for the quantification, generation and valuation of seagrass credits.

5.2.1 Cookbook Part I: Scientific and Technical Methodology

The first component establishes:

- a standardised project lifecycle,
- rules for baseline and reference construction,
- quantification protocols for extent and condition,
- the use of EBQI and MediSkew as Condition indices,
- leakage and negative control procedures,
- and conversion of ecological gains into Seagrass Biodiversity Units (SBUs). (ARTEMIS D.3.3.1 Part I)

This document represents the **first transnational, standardised ecological crediting methodology** for Mediterranean seagrass.

5.2.2 Cookbook Part II: Legal, Institutional, Commercial and Financial Framework

The second component sets the enabling conditions needed to scale nature credits:

- legal and regulatory mapping,
- identification of institutional roles,
- commercial design and buyer analysis,
- financial planning including CAPEX, OPEX and pricing,
- risk identification and mitigation,
- long-term governance structures. (ARTEMIS D.3.3.1 Part II)

Together, the two parts constitute a **comprehensive, end-to-end methodology** for planning, implementing and certifying seagrass restoration projects.



5.3 Operationalisation of European Commission Technical Guidelines (Habitat 1120)*

ARTEMIS has operationalised the requirements of the European Commission Technical Guidelines for habitat 1120*, particularly regarding:

- multi-variable condition assessment (physical, biological, functional and landscape components),
- standardised sampling methods,
- use of EBQI and other ecological indices,
- and thresholds for favourable conservation status. (EC Technical Guidelines)

The project successfully translated these regulatory principles into applied protocols and field methodologies used in the pilots, closing the gap between high-level directives and practical implementation.

5.4 Advances in Monitoring, Reporting and Verification (MRV)

ARTEMIS established the methodological foundations for a harmonised Monitoring, Reporting and Verification (MRV) framework, bringing together ecological indicators, monitoring protocols and verification principles that can support future restoration programmes and financing mechanisms. The **methodological framework** proposes the integration of:

- annual monitoring of EBQI and extent,
- biological surveys (fish, epifauna, epiphytes),
- pressure monitoring (PISM index),
- georeferenced evidence (photos, video transects, drone mapping),
- and independent verification cycles every 10 years. (ARTEMIS D.3.3.1 Part I, MRV Chapter).

This MRV framework provides **traceability, transparency and auditability**, aligning restoration monitoring with emerging nature markets and EU reporting obligations.

5.5 Socio Institutional and Governance Results

ARTEMIS produced a detailed understanding of the governance challenges in Mediterranean restoration:

- fragmented regulatory pathways across Spain, Italy and Greece,
- lack of explicit legal categories for marine restoration in several jurisdictions,
- variable institutional capacity for long-term monitoring,
- high relevance of MPAs and Natura 2000 governance arrangements,
- need for dedicated restoration governance bodies at project and basin levels. (ARTEMIS D.3.3.1 Part II, Legal Foundations; Box 2 on pilots)

The co-creation processes across pilots demonstrated that social acceptance, clarity of roles and equitable benefit-sharing mechanisms are essential for durable restoration outcomes.



5.6 Financial and Market Readiness Findings

The project conducted an extensive analysis of financial structures, credit viability and market demand. Key findings include:

1. ecosystem services of seagrass meadows remain largely undervalued, creating a persistent investment gap,
2. potential demand observed in tourism, maritime transport, ports and energy sectors,
3. preference for multi benefit credits bundling biodiversity and carbon,
4. need for transparent price setting based on ecosystem service valuations and project costs,
5. importance of third party certification and registry systems. (Unlocking Investments; Cookbook Part II, Commercial and Financial Chapters)

These results indicate that a Mediterranean seagrass credit market is feasible but requires regulatory clarity, credible MRV and strong governance to scale.

5.7 Consolidation of a Mediterranean Knowledge Base for Restoration

Across pilots, guidelines and methodological deliverables, ARTEMIS has created:

- one of the most extensive regional datasets on *P. oceanica* condition,
- a unified structure for restoration project design,
- shared criteria for ecological assessment and crediting,
- and a replicable model that can be scaled across the basin.

The project thus constitutes the **first scientific, legal and financial foundation** for a coordinated Mediterranean restoration agenda.



6 Conclusions and recommendations

The ARTEMIS project represents a significant advance in the scientific, policy and financial foundations required to accelerate the restoration of *Posidonia oceanica* meadows in the Mediterranean. Across its pilots, methodological deliverables and governance analyses, the project has demonstrated that restoring this priority habitat (1120*) is not only ecologically necessary but institutionally feasible and technically achievable when supported by robust methodological frameworks, adequate governance structures and sustained financial mechanisms.

The conclusions presented below synthesise the main cross-cutting lessons learned from ARTEMIS and articulate the priority recommendations that will guide the operationalisation of the Mediterranean Seagrass Restoration Action Plan. These conclusions reflect both the empirical findings of the pilot sites and the strategic insights arising from the methodological work, including the ARTEMIS Cookbook Part I and II, the European Commission Technical Guidelines for habitat 1120*, Mediterranean regional restoration frameworks and the financial analysis undertaken through Unlocking Investments.

6.1 Conclusions

6.1.1 Restoration is urgently needed and ecologically justified across the Mediterranean basin

The ecological baselines developed for Menorca, Sardinia and Crete show clear and consistent patterns of degradation. Loss of seagrass area, reduced shoot density, diminished vegetative carbon stocks and declines in ichthyofauna abundance were observed at all impacted sites, with Crete displaying the most severe degradation including 6.5 hectares of dead matte that have not naturally recovered after aquaculture cessation (Crete Factsheet).

Similarly, pilot assessments in Sardinia revealed structural fragmentation due to anchoring pressure (Sardinia Factsheet), while Menorca exhibited loss of meadow area linked to construction-related bentonite discharge (Menorca Factsheet).

These findings align with the ecological pressures and vulnerability patterns described in the European Commission Technical Guidelines, which highlight the sensitivity of *P. oceanica* to physical disturbance, eutrophication and chronic stressors (EC Technical Guidelines). The evidence demonstrates that natural recovery is often slow or absent and that **active restoration interventions are essential**.

6.1.2 A harmonised methodological framework is now available for the Mediterranean

Before ARTEMIS, restoration methodologies varied substantially across countries. The project has delivered the first integrated, transnational framework for restoration design, baseline construction, monitoring, verification and credit generation. The scientific sections in Cookbook Part I provide a complete and standardised approach for measuring extent, condition and pressures, including the use of EBQI and MediSkew indices (ARTEMIS D.3.3.1 Part I). Cookbook Part II complements this by defining legal, institutional, commercial and financial foundations necessary for long-term programme viability (ARTEMIS D.3.3.1 Part II).

This integrated methodology operationalises multiple regulatory requirements embedded in the Habitats Directive, the Water Framework Directive and the Marine Strategy Framework Directive and reflects the multi-variable assessment protocols defined in the EC Technical Guidelines.



6.1.3 Strong alignment exists between ARTEMIS and regional Mediterranean frameworks

The methodology and pilot findings resonate with the priorities established in SPA/RAC restoration guidelines and the post-2020 SAPBIO, which call for more rigorous ecological baselines, multi-scalar assessments of pressures, restoration planning grounded in ecosystem function and the integration of socio-economic considerations. ARTEMIS provides the operational tools to implement these strategic objectives.

6.1.4 Restoration requires governance clarity and stakeholder incorporation

The legal and institutional mapping undertaken through Cookbook Part II demonstrates that governance structures differ significantly across Mediterranean jurisdictions. While Menorca benefits from strong regional regulation and protected area management, Sardinia displays more fragmented governance, and Crete faces regulatory gaps where restoration is not yet defined as a formal project category (ARTEMIS D.3.3.1 Part II, Box 2).

The co-creation processes conducted across pilots confirmed that early involvement of stakeholders, integration of local knowledge and transparent benefit sharing mechanisms are critical for achieving social legitimacy and long-term stewardship.

6.1.5 A robust financial and market structure is required to support long-term restoration

ARTEMIS demonstrated that restoration is financially viable when supported by clear cost structures, transparent MRV systems and nature credit mechanisms. The financial analyses highlight the substantial undervaluation of seagrass ecosystem services and the existence of an investment gap, as well as the emerging demand from sectors such as tourism, ports and transport (Unlocking Investments).

The methodologies for pricing, cost modelling, cash-flow forecasting and credit allocation developed in Cookbook Part II provide the initial tools for sustainable financing. The integration of ecosystem service valuation and credit unit economics further positions restoration projects to benefit from emerging nature markets.

6.1.6 ARTEMIS has established a replicable operational framework for basin-wide scaling

Through the alignment of scientific protocols, regulatory requirements, financial mechanisms and governance models, ARTEMIS has produced an integrated infrastructure capable of supporting restoration programmes at scale. The project's outputs form the foundation of a Mediterranean restoration architecture that can be replicated across countries and adapted to varied ecological and socio institutional contexts.

6.2 Recommendations

Based on the results and the analysis conducted throughout the ARTEMIS project, the following recommendations outline the essential actions for implementing the Mediterranean Seagrass Restoration Action Plan.

6.2.1 Establish a Mediterranean-wide standard for seagrass restoration and crediting

The methodology developed in ARTEMIS, integrating the EC Technical Guidelines and regional SPA/RAC frameworks, should be formalised as an official Mediterranean standard. This will



ensure common criteria for baseline construction, condition assessment, ecological monitoring and credit quantification.

6.2.2 Prioritise restoration in areas with high ecological need and clear governance pathways

Pilot results suggest that priority restoration areas include zones affected by chronic pressure and low natural recovery capacity, such as areas impacted by anchoring, aquaculture or construction works. Natura 2000 sites and MPAs should be focal points given their conservation obligations and jurisdictional clarity.

6.2.3 Strengthen governance mechanisms and formalise legal pathways for restoration

Mediterranean states should establish clear permitting procedures, define restoration as a distinct legal category and assign dedicated governance bodies responsible for method validation, monitoring oversight and compliance evaluation, reflecting the governance model described in Cookbook Part II.

6.2.4 Implement basin-wide Monitoring, Reporting and Verification (MRV) systems

The MRV framework developed through ARTEMIS, based on validated scientific indicators and long-term verification cycles, should be adopted for all restoration projects. This will enhance transparency, facilitate comparability and ensure alignment with EU reporting obligations.

6.2.5 Mobilise sustainable financing and nature-based market mechanisms

Mediterranean countries should integrate the financial structures proposed in ARTEMIS into national and regional investment strategies. This includes the establishment of credit registries, transparent price setting, ecosystem service valuation frameworks and blended finance approaches involving public and private partners.

6.2.6 Expand community engagement and ensure equitable benefit sharing

Restoration will only be durable if communities are recognised as co-stewards of seagrass ecosystems. Stakeholder participation processes such as those implemented in ARTEMIS should be institutionalised, and benefit sharing frameworks should reflect socio economic realities of local communities.

6.2.7 Integrate restoration planning with climate adaptation and coastal management strategies

Given the sensitivity of *Posidonia oceanica* to warming, storm events and pollution, restoration should be embedded within broader climate adaptation, coastal protection and marine spatial planning frameworks.



7 Mediterranean Seagrass Restoration Action Plan

7.1 Introduction

The Mediterranean Sea hosts one of the most extensive and ecologically significant populations of *Posidonia oceanica*, a priority habitat recognized for its key role in coastal protection, carbon sequestration, biodiversity support and socio-economic benefits. However, pressures from coastal development, anchoring, pollution, mariculture and climate-driven changes have resulted in substantial degradation across the basin.

The ARTEMIS project has demonstrated that reversing this decline is both possible and achievable when supported by robust scientific baselines, harmonised methodologies, strong governance, and sustainable financing. Building on the results generated between 2024 and 2026 across pilot sites in Spain, Italy and Greece, the Mediterranean Seagrass Restoration Action Plan presents a coordinated roadmap to restore *Posidonia oceanica* ecosystems at scale.

This Plan aims to align Mediterranean restoration efforts with European environmental objectives (including the Habitats Directive, Water Framework Directive, Marine Strategy Framework Directive, the EU Biodiversity Strategy for 2030 and the Nature Restoration Law), and with regional frameworks such as the SPA/RAC guidance and the post-2020 SAPBIO. It operationalises these commitments through strategic priorities, long-term pillars and actionable measures that enable countries to implement restoration programmes in a coherent, transparent and scientifically grounded manner.

7.2 Vision 2030

By 2030, the Mediterranean basin should stand as a global reference for the restoration and long-term stewardship of *Posidonia oceanica*, driven by coordinated action, robust science and a shared commitment to safeguard one of the region's most valuable marine ecosystems. The vision guiding this Action Plan is rooted in the conviction that large-scale restoration is not only ecologically necessary but also institutionally, technically and financially achievable. The ARTEMIS project has been instrumental in demonstrating this. Through its scientific baselines, methodological innovation, financial analysis and governance work, ARTEMIS has shown that restoring *Posidonia oceanica* at scale in the Mediterranean is both urgent and feasible. The project has generated the methodological, scientific, financial and governance foundations required for a coordinated regional restoration effort.

Building on these foundations, the 2030 vision calls for a Mediterranean region where restoration actions are systematically guided by transparent and scientifically grounded methodologies, where ecological baselines are consistently monitored, and where governance frameworks empower institutions, local communities and stakeholders to participate effectively in the recovery of marine habitats. By 2030, restoration interventions should no longer be isolated or experimental, but part of an integrated, basin-wide programme aligned with European and Mediterranean biodiversity strategies, the regulatory requirements of the Habitats Directive (1120*), the Water Framework Directive and the Marine Strategy Framework Directive, as well as SPA/RAC restoration principles and the post-2020 SAPBIO.



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The 2030 vision also recognises that restoration must be embedded within a socio-ecological transformation in which healthy seagrass meadows are understood as critical natural infrastructure for climate resilience, coastal protection, fisheries productivity and carbon sequestration. By 2030, the region should benefit from a strengthened network of protected areas where restoration is systematically planned, monitored and financed, ensuring that degraded seagrass landscapes transition toward functional, resilient and self-sustaining ecosystems.

Achieving this vision requires the emergence of stable financial mechanisms that channel public and private investment into marine restoration. ARTEMIS has laid the groundwork for this by developing the first Mediterranean seagrass credit framework, supported by comprehensive monitoring, reporting and verification systems. By 2030, restoration financing should be underpinned by credible, market-aligned instruments that reward ecological performance, ensure transparency and enable long-term stewardship. This will allow restoration to evolve from dependency on fragmented project grants to a durable investment domain capable of attracting blended finance, corporate participation and sustained public support.

Fundamentally, the 2030 vision is anchored in the principles of collaboration, scientific integrity and ecological responsibility. Mediterranean countries must converge around common methodologies, shared monitoring indicators and coordinated governance arrangements that reflect the transboundary nature of seagrass ecosystems. Institutions, national authorities, stakeholders and financial partners must work together to implement effective restoration actions capable of reversing the decline of *Posidonia oceanica* across the basin. ARTEMIS has demonstrated that this transformation is within reach, offering the tools, evidence and structures necessary to guide the Mediterranean toward a future where the restoration of seagrass ecosystems is mainstreamed into marine policy, coastal management and sustainable development agendas.

By 2030, success will be measured by visible ecological recovery, strengthened institutional capacity, improved regulatory coherence and the establishment of a Mediterranean restoration economy that recognises the true value of *Posidonia oceanica*. This Vision sets the direction for the Action Plan, ensuring that restoration becomes both a regional priority and a long-term commitment to marine biodiversity, climate mitigation and generational equity.

7.3 Overview of the Artemis Mediterranean Seagrass Restoration Action Plan 2030

The ARTEMIS Mediterranean Seagrass Restoration Action Plan 2030 has been designed to maximise the long-term impact of the ARTEMIS project by facilitating the uptake, integration and implementation of its methodologies, tools, pilot experiences and policy recommendations across the Mediterranean region.

The Action Plan recognises that ARTEMIS itself is not an implementation instrument, but rather a catalyst for change. Its role has been to generate scientific evidence, operational methodologies, innovative financing approaches and policy recommendations capable of supporting the restoration of Mediterranean seagrass ecosystems. The challenge now is to ensure that these outputs are effectively transferred to the institutions and stakeholders responsible for planning, financing, implementing and monitoring restoration actions beyond the lifetime of the project.



The Action Plan therefore focuses on supporting the integration of ARTEMIS outputs into existing policy, planning, financing and management frameworks rather than creating new governance structures or institutions. It is fully aligned with the implementation of the EU Nature Restoration Regulation, the development and implementation of National Restoration Plans, the objectives of the Barcelona Convention and its regional strategies, as well as other key European and international biodiversity, climate and marine policy frameworks.

More specifically, the Action Plan seeks to contribute to:

- Accelerating the restoration and long-term conservation of Mediterranean seagrass ecosystems;
- Supporting the implementation of the Nature Restoration Regulation and National Restoration Plans;
- Strengthening the integration of seagrass restoration into marine and coastal planning processes;
- Facilitating the adoption of ARTEMIS methodologies and technical tools by competent authorities and practitioners;
- Increasing the availability of public and private financing for restoration activities;
- Enhancing the contribution of seagrass restoration to biodiversity conservation, climate mitigation, climate adaptation and ecosystem resilience objectives;
- Ensuring that ARTEMIS outputs remain relevant, accessible and operational after the end of the project.

To achieve these objectives, the Action Plan is structured around **five Strategic Lines comprising twenty-five complementary actions** that collectively address the main barriers and opportunities identified throughout the ARTEMIS project.

7.3.1 Strategic Line 1. Policy and Planning Uptake

Objective

To facilitate the integration of ARTEMIS methodologies, tools and recommendations into the policy and planning instruments that will guide restoration efforts across the Mediterranean over the coming decade.

The approval of the **Nature Restoration Regulation and the preparation of National Restoration Plans create a unique opportunity to embed ARTEMIS outputs into national and regional restoration frameworks**. This strategic line focuses on ensuring that restoration planning and policy development benefit from the knowledge generated by ARTEMIS and that restoration becomes an integral component of marine and coastal governance processes.

Actions

- Action 1.1 Support **integration of ARTEMIS restoration prioritisation methodologies** into National Restoration Plans.
- Action 1.2 **Promote ARTEMIS outputs through Barcelona Convention** mechanisms.
- Action 1.3 **Support integration of seagrass restoration priorities** into Marine Spatial Planning processes.
- Action 1.4 Support **integration of restoration measures** into Natura 2000 and Marine Protected Area management plans.



- Action 1.5 **Promote incorporation of ARTEMIS methodologies** into future European and Mediterranean restoration programmes, biodiversity, climate adaptation and coastal planning frameworks.

7.3.2 Strategic Line 2. Restoration Implementation & Best Practices

Objective

To promote the practical application of restoration approaches, methodologies and lessons learned generated through ARTEMIS in future restoration projects and restoration planning processes across the Mediterranean.

ARTEMIS has generated valuable operational knowledge regarding restoration planning, site selection, pressure management and restoration implementation. This strategic line seeks to ensure that this knowledge becomes standard practice for future restoration initiatives.

The objective is to improve restoration effectiveness, increase restoration success rates and avoid repeating mistakes already identified through ARTEMIS pilot experiences.

Actions

- Action 2.1 Promote application of the “Pressure Reduction First” approach in restoration planning.
- Action 2.2 Facilitate uptake of ARTEMIS restoration site prioritisation and suitability assessment methodologies.
- Action 2.3 Promote integration of ARTEMIS restoration approaches into future restoration projects
- Action 2.4 Promote uptake of ecosystem-service-based restoration planning approaches developed through ARTEMIS
- Action 2.5 Facilitate replication of lessons learned from ARTEMIS pilot sites across the Mediterranean.

7.3.3 Strategic Line 3. Monitoring, Assessment & Knowledge Uptake

Objective

To **maximise the operational use of the methodologies, tools and technical outputs** developed through ARTEMIS by **supporting their transfer, adoption and application by public authorities, restoration practitioners, Marine Protected Area managers and future restoration initiatives.**

Rather than generating new methodologies, this strategic line focuses on ensuring that existing ARTEMIS outputs are effectively used by those responsible for restoration planning, implementation and monitoring.

Actions

- Action 3.1 Promote uptake of ARTEMIS restoration methodologies.
- Action 3.2 Promote uptake of the ARTEMIS monitoring and MRV framework.
- Action 3.3 Promote uptake of ARTEMIS ecosystem service assessment methodologies.
- Action 3.4 Promote uptake of ARTEMIS ecosystem accounting methodologies in restoration planning and decision-making.



- Action 3.5 Promote uptake of the ARTEMIS Seagrass Credits Methodology.
- Action 3.6 Promote alignment of ARTEMIS monitoring indicators and MRV metrics with existing reporting frameworks

7.3.4 Strategic Line 4. Restoration Finance & Investment

Objective

To facilitate the mobilisation of financial resources capable of supporting the implementation of restoration actions at the scale required to achieve Mediterranean restoration target.

ARTEMIS identified financing as one of the main barriers to restoration implementation. This strategic line seeks to ensure that restoration priorities are translated into investable projects and that restoration becomes increasingly integrated into public funding programmes, climate finance mechanisms and emerging nature finance initiatives.

Actions

- Action 4.1 Facilitate integration of seagrass restoration into National Restoration Plan financing pipelines.
- Action 4.2 Promote ecosystem service valuation in restoration investment decisions.
- Action 4.3 Support pilot application of Seagrass Credits schemes.
- Action 4.4 Promote integration of seagrass restoration into blue carbon and climate financing initiatives.
- Action 4.5 Promote incorporation of ARTEMIS financing recommendations into future restoration funding programmes.
- Action 4.6. Facilitate engagement of private sector actors in restoration finance

7.3.5 Strategic Line 5. Capacity Building and Continuity

Objective

To strengthen the capacity of Mediterranean stakeholders to apply ARTEMIS methodologies, facilitate knowledge transfer and foster collaboration among institutions and practitioners involved in seagrass restoration.

The success of ARTEMIS will ultimately depend on the ability of policymakers, restoration authorities, MPA managers, practitioners, researchers and funding institutions to understand, adopt and apply the project's methodologies and recommendations. This strategic line therefore focuses on ensuring that ARTEMIS outputs are effectively disseminated, understood and used across the Mediterranean through existing networks, cooperation platforms and institutional processes.

Unlike the other strategic lines, which focus on policy uptake, restoration implementation, monitoring and finance, this strategic line acts as a cross-cutting enabler supporting the implementation of the entire Action Plan.

Actions

- Action 5.1. Deliver a Mediterranean knowledge transfer programme for ARTEMIS outputs
- Action 5.2. Strengthen stakeholder engagement and cross-sector collaboration



ARTEMIS

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- Action 5.3. Support capacity building for restoration authorities and practitioners



8 Action Plan. Implementation matrix

8.1 Strategic Line 1 – Policy and Planning Uptake

The main objective of this strategic line is embedding ARTEMIS methodologies, policy recommendations and restoration approaches into existing Mediterranean, European and national policy frameworks.

Table 1. Descriptive sheet for Action 1 for the Seagrass Restoration Action Plan 2030: Integration of ARTEMIS recommendations into National Restoration Plans (NRPs).

Field	Description
Action 1.1	Integration of ARTEMIS recommendations into National Restoration Plans (NRPs)
Strategic objective	Facilitate the integration of ARTEMIS outputs into National Restoration Plans contributing to SAP BIO implementation, the MPN 2030 Roadmap, GBF Targets 2, 3 and 14, and the EU Nature Restoration Regulation through National Restoration Plans.
Problems identified	National Restoration Plans are becoming the main implementation vehicle for legally binding restoration targets, but marine restoration sections may remain uneven, insufficiently spatialised or weakly linked to tested seagrass methodologies. There is a risk that ARTEMIS outputs remain outside national planning cycles if they are not actively transferred to NRP authorities.
ARTEMIS evidence supporting this action	ARTEMIS identified the integration of restoration priorities into National Restoration Plans (NRPs) as a key condition for achieving the objectives of the EU Nature Restoration Regulation. The Policy Recommendations (D4.2.1, Section 6.1) recommend aligning NRPs with biodiversity, marine and climate policies, strengthening governance coordination and ensuring that restoration priorities are based on robust scientific evidence. This recommendation is supported by the Pilot Ecosystem Services Baseline (D1.2.1), which demonstrates how harmonised ecological assessments can support restoration prioritisation, and by the Cookbook Part I (D3.3.1), which provides a common methodology for restoration planning and implementation. Stakeholder consultations undertaken during ARTEMIS identified fragmented governance, overlapping institutional responsibilities and limited coordination between competent authorities as important barriers to restoration implementation. Participants consistently supported strengthening national planning frameworks and improving coordination between biodiversity, marine and climate policies to facilitate restoration delivery.
Action description	Promote the integration of ARTEMIS outputs into National Restoration Plans (NRPs) by supporting competent authorities in the use of project methodologies, evidence and technical guidance throughout the planning process. The action focuses on transferring project results through existing policy and governance mechanisms, encouraging Mediterranean countries to incorporate ARTEMIS approaches when defining marine restoration priorities, restoration measures, monitoring frameworks and financing strategies. Key implementation activities include: • Preparing targeted policy messages and technical materials to facilitate the uptake of project results by national authorities. • Presenting relevant ARTEMIS methodologies, criteria and tools through existing policy forums and technical exchanges. • Supporting the application of ARTEMIS approaches to:



Field	Description
	- identify and prioritise restoration areas; - define restoration objectives and measures; - establish monitoring frameworks aligned with ARTEMIS MRV principles; - estimate implementation costs and financing needs. • Facilitating the integration of these methodologies into ongoing National Restoration Plan development and revision processes. • Monitoring and documenting the extent to which ARTEMIS methodologies and recommendations are incorporated into National Restoration Plans
Legal basis / policy alignment	EU Nature Restoration Regulation and National Restoration Plans; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF; EU Biodiversity Strategy 2030; MSFD; Habitats Directive / Natura 2000; MSP Directive; IMAP where relevant.
Type of action	Enabling action/Policy integration
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	EU Mediterranean Member States; adaptable for non-EU Mediterranean countries through UNEP/MAP channels.
Competence level	National competence, supported by Mediterranean-level transfer.
Lead promoter	ARTEMIS partners involved in NRP consultation processes.
Key Stakeholders	- ARTEMIS project partners: facilitates transfer and alignment of ARTEMIS outputs with policy processes; supports dialogue with national authorities - National ministries / NRP coordination units: integrate ARTEMIS outputs into NRPs - Technical agencies and research institutes: adapt ARTEMIS outputs to national formats (without modifying content) - UNEP/MAP / SPA-RAC (support role): enable regional coordination and knowledge exchange
Indicative cost range	- Bilateral technical exchanges: €20,000–40,000 - Regional workshops/side events: €20,000–50,000 - Follow up and uptake tracking €20,000–50,000
Financing pathways	Public funding / programme support.
Implementation timeline	- Short-term (2026–2027) for initial NRP uptake - Medium-term (2028–2029) for implementation
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	High
Monitoring indicators	
- Facilitation: F02; F05; F06 - Uptake: U01; U10 - Mediterranean Progress: M08	



Table 2. Descriptive sheet for Action 2 for the Seagrass Restoration Action Plan 2030: Promote ARTEMIS outputs through Barcelona Convention and UNEP/MAP processes.

Field	Description
Action 1.2	Promote ARTEMIS outputs through Barcelona Convention and UNEP/MAP processes
Strategic objective	Facilitate the regional uptake of existing ARTEMIS outputs through the Barcelona Convention and UNEP/MAP governance system, contributing to SAP BIO implementation and alignment with Mediterranean biodiversity and restoration frameworks.
Problems identified	Mediterranean seagrass restoration remains fragmented across countries. ARTEMIS outputs could remain limited to project partners unless they are elevated through the regional structures that already guide Contracting Parties and technical institutions.
ARTEMIS evidence supporting this action	The Policy Recommendations (D4.2.1) emphasise the importance of strengthening Mediterranean cooperation and improving policy coordination to facilitate the uptake of restoration methodologies and governance approaches beyond the ARTEMIS pilot sites. The Action Plan builds on this recommendation by promoting the dissemination of ARTEMIS methodologies, policy recommendations and technical guidance through existing regional cooperation mechanisms, thereby supporting their long-term application across the Mediterranean. Stakeholder consultations highlighted the need for stronger coordination between institutions operating at different governance levels and recognised that existing Mediterranean cooperation frameworks offer an effective mechanism for exchanging knowledge, promoting good practices and supporting coherent restoration implementation.
Action description	Facilitate the integration of ARTEMIS outputs into existing Barcelona Convention and UNEP/MAP processes by embedding project methodologies, evidence and technical guidance within established regional policy and governance mechanisms. The action builds on existing institutional structures, ensuring that project results contribute to the implementation of regional biodiversity and restoration frameworks without creating new governance processes. Key implementation activities include: - Identifying ARTEMIS methodologies, indicators and technical outputs that are directly relevant to regional frameworks, including SAP BIO, IMAP and other UNEP/MAP initiatives. - Translating project outputs into policy-oriented formats compatible with regional decision-making processes, such as technical summaries, guidance notes and policy briefs derived exclusively from existing ARTEMIS deliverables. - Presenting ARTEMIS results through established governance and coordination mechanisms, including: - SPA/RAC technical meetings; - UNEP/MAP thematic working groups; - SAP BIO implementation processes; - Barcelona Convention COP technical sessions and side events. - Supporting Contracting Parties in the voluntary uptake of ARTEMIS methodologies by promoting their application within: - National reporting processes; - SAP BIO implementation activities; - National Restoration Plans and related marine restoration strategies.



Field	Description
	Monitoring and documenting the extent to which ARTEMIS methodologies, indicators and recommendations are reflected in regional guidance, national reports and implementation activities.
Legal basis / policy alignment	This action contributes to: Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network (MPN) 2030 Roadmap; Kunming–Montreal Global Biodiversity Framework (Targets 2, 3, 14); EU Nature Restoration Regulation (indirectly through national uptake); EU Biodiversity Strategy 2030
Type of action	Enabling action
Target ecosystems / species	Mediterranean seagrass habitats, with emphasis on <i>Posidonia oceanica</i> .
Spatial scope	Mediterranean.
Competence level	Mediterranean / regional cooperation level.
Lead promoter	Plan Bleu and SPA/RAC, within UNEP/MAP system.
Key Stakeholders	• SPA/RAC integrates ARTEMIS outputs into technical discussions and guidance • UNEP/MAP bodies consider ARTEMIS outputs within policy processes • Contracting Parties (countries) incorporate ARTEMIS tools into national implementation and reporting
Indicative cost range	• Participation in regional processes and events: 20,000–50,000 € • Technical exchanges and coordination: 30,000–70,000 € • Uptake monitoring and follow-up: 20,000–50,000 €
Financing pathways	Public / regional cooperation funding.
Implementation timeline	Short-term (2026–2027) and continuous through 2030.
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	High.
Monitoring indicators	- Facilitation: F02; F05; F06 - Uptake: U01; U10 - Mediterranean Progress: M08

Table 3. Descriptive sheet for Action 3 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration priorities into Marine Spatial Planning and coastal planning.

Field	Description
Action 1.3	Integrate seagrass restoration priorities into Marine Spatial Planning and coastal planning
Strategic objective	Facilitate the integration of existing ARTEMIS spatial, ecological and pressure-related outputs into Marine Spatial Planning (MSP) and coastal planning processes, ensuring that restoration priorities and pressure reduction measures are effectively embedded in spatial decision-making frameworks.
Problems identified	Restoration priorities are often not translated into spatial planning decisions. Marine uses such as anchoring, coastal development, ports and tourism may



Field	Description
	continue to conflict with restoration potential if seagrass restoration is not embedded in MSP and coastal planning.
ARTEMIS evidence supporting this action	The Policy Recommendations (D4.2.1, Recommendation 2) call for spatially explicit, science-based prioritisation of restoration areas, while the Pilot Ecosystem Services Baseline (D1.2.1) generated habitat maps, ecological condition assessments and pressure analyses that provide the scientific basis for integrating restoration priorities into Marine Spatial Planning (MSP) and coastal planning processes. These outputs demonstrate how ARTEMIS evidence can support spatial decision-making and restoration prioritisation. Stakeholder consultations and expert interviews highlighted the need to strengthen the integration of ecological information into marine planning and identified improved mapping, pressure assessment and restoration prioritisation as essential components of effective Marine Spatial Planning.
Action description	Promote the consideration of ARTEMIS methodologies, pilot results and restoration prioritisation approaches within Marine Spatial Planning (MSP), coastal zone planning and other sectoral marine planning processes to support ecosystem-based management and the identification of suitable areas for marine restoration. The action focuses on transferring the knowledge generated by ARTEMIS, including methodological approaches, restoration criteria and lessons learned from the pilot sites, through existing planning and governance processes. Key implementation activities include: - Identifying ARTEMIS methodologies, restoration criteria and pilot experiences that can inform marine spatial planning and coastal management. - Presenting these approaches to Marine Spatial Planning authorities, coastal planners and other competent authorities through existing technical and policy exchange mechanisms. - Supporting the consideration of ARTEMIS approaches when: - identifying suitable areas for restoration; - defining restoration-compatible management measures; - reducing pressures affecting priority restoration areas; - improving coherence between restoration objectives and marine planning. - Promoting ecosystem-based planning by encouraging the use of ARTEMIS evidence and lessons learned to support informed spatial decision-making. - Monitoring the extent to which ARTEMIS methodologies and recommendations are considered within Marine Spatial Plans, coastal strategies and other planning instruments.
Legal basis / policy alignment	EU Nature Restoration Regulation and National Restoration Plans; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF; EU Biodiversity Strategy 2030; MSFD; Habitats Directive / Natura 2000; MSP Directive; IMAP where relevant. ICZM Protocol and national coastal management regulations.
Type of action	Passive restoration / Enabling action
Target ecosystems / species	<i>Posidonia oceanica</i> and other seagrass meadows affected by spatial conflicts.
Spatial scope	National and regional coastal / marine planning areas.
Competence level	National / regional.
Lead promoter	ARTEMIS partners involved in MSP processes



Field	Description
Key Stakeholders	- National Marine Spatial Planning (MSP) authorities and revision cycles - Integrated Coastal Zone Management (ICZM) processes - National ministries responsible for maritime affairs, environment and planning - UNEP/MAP ICZM Protocol implementation framework - Regional exchange through UNEP/MAP and Plan Bleu platforms
Indicative cost range	60,000–180,000 €
Financing pathways	Public funding.
Implementation timeline	Medium-term (2028–2029), with early engagement in 2026–2027.
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	High.
Monitoring indicators	- Facilitation: F02; F05; F06 - Uptake: U02 - Mediterranean Progress: M08

Table 4. Descriptive sheet for Action 4 for the Seagrass Restoration Action Plan 2030: Integrate ARTEMIS approaches into Natura 2000, MPAs and marine conservation planning.

Field	Description
Action 1.4	Integrate ARTEMIS approaches into Natura 2000, MPAs and marine conservation planning
Strategic objective	Promote the uptake of ARTEMIS outputs within Natura 2000 and MPA management plans. Contribute to SAP BIO implementation, the MPN 2030 Roadmap, GBF Targets 2, 3 and 14, and the EU Nature Restoration Regulation through site-level planning and management instruments.
Problems identified	Many protected areas contain seagrass habitats, but management plans often prioritise protection and monitoring overactive or passive restoration measures. Pilot sites show that protection status alone does not guarantee pressure reduction or ecological recovery.
ARTEMIS evidence supporting this action	The Pilot Ecosystem Services Baseline (D1.2.1) demonstrated that many degraded seagrass meadows remain subject to significant pressures despite being located within protected areas. The Policy Recommendations (D4.2.1) therefore emphasise that restoration should be integrated into Marine Protected Area and Natura 2000 management, combining active restoration, pressure reduction and long-term ecological monitoring to improve conservation outcomes. takeholder consultations and expert interviews consistently recognised that legal protection alone is often insufficient to ensure ecosystem recovery. Participants highlighted the importance of strengthening management measures, reducing pressures and integrating restoration actions into existing protected area management plans.
Action description	Promote the integration of ARTEMIS outputs into MPA and Natura 2000 management frameworks by supporting site managers and competent



Field	Description
	authorities in the use of project methodologies, criteria and technical guidance for restoration planning and implementation. The action focuses on transferring ARTEMIS approaches through existing management and governance structures, encouraging their application in defining site-level restoration priorities, measures and monitoring systems. Key implementation activities include: • Preparing targeted technical materials to facilitate the uptake of ARTEMIS methodologies by MPA and Natura 2000 managers. • Presenting relevant ARTEMIS criteria, tools and lessons learned through existing networks, technical exchanges and management fora. • Supporting the application of ARTEMIS approaches to: - identify and prioritise restoration areas within sites; - define restoration measures (including pressure reduction and active/passive restoration); - address key pressures affecting seagrass habitats; - establish monitoring frameworks aligned with ARTEMIS MRV principles. • Facilitating the integration of these approaches into management plans, site regulations and operational practices. • Monitoring and documenting the extent to which ARTEMIS recommendations are applied in site-level management frameworks.
Legal basis / policy alignment	EU Nature Restoration Regulation; Habitats Directive / Natura 2000; MSFD; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF; EU Biodiversity Strategy 2030; IMAP (monitoring alignment where relevant)
Type of action	Passive restoration / Active restoration / Enabling action
Target ecosystems / species	Habitat 1120* <i>Posidonia</i> beds; other Mediterranean seagrass habitats.
Spatial scope	Mediterranean MPAs and Natura 2000 sites (EU and non-EU, where applicable through UNEP/MAP frameworks)
Competence level	Regional / local, supported by national Natura 2000 and MPA authorities.
Lead promoter	ARTEMIS partners
Key Stakeholders	• Plan Bleu: facilitates transfer of ARTEMIS methodologies; supports knowledge exchange across sites and countries • MPA authorities and Natura 2000 site managers: apply ARTEMIS methodologies in management planning and implementation • National ministries and environment agencies: support integration into regulatory and planning frameworks • Technical organisations and research institutes: support application of ARTEMIS approaches at site level • UNEP/MAP / SPA-RAC (support role): enable regional coordination, networks and dissemination
Indicative cost range	• Technical exchanges with site managers: 30,000–60,000 € • Workshops and capacity-building activities: 30,000–80,000 € • Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / programme support / site-level management budgets



Field	Description
Implementation timeline	- Short-term (2026–2027): initial uptake in management planning processes - Medium-term (2028–2029): integration into management plans and practices
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	High.
Monitoring indicators	- Facilitation: F02; F06 - Uptake: U03; U10 - Mediterranean Progress: M02; M03

Table 5. Descriptive sheet for Action 5 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration into climate adaptation, blue carbon and biodiversity strategies.

Field	Description
Action 1.5	Integrate seagrass restoration into climate adaptation, blue carbon and biodiversity strategies
Strategic objective	Strengthen recognition of seagrass restoration as a nature-based solution for climate adaptation and biodiversity conservation. Contribute to SAP BIO implementation, the MPN 2030 Roadmap, GBF Targets 2, 3, 14 and 15, and relevant climate policy instruments
Problems identified	Seagrass restoration is still insufficiently integrated into climate adaptation, blue carbon, resilience and biodiversity strategies despite clear ecosystem service benefits. Integration into these strategies will facilitate access to climate and biodiversity finance.
ARTEMIS evidence supporting this action	ARTEMIS developed a comprehensive set of methodologies covering restoration planning, ecosystem assessment, monitoring, ecosystem services, Natural Capital Accounting and sustainable financing. The Policy Recommendations (D4.2.1) recommend integrating these approaches into future biodiversity, climate adaptation and coastal planning frameworks, while the Cookbook (D3.3.1) provides the practical methodologies required to support their implementation. Stakeholder consultations identified the need for stronger policy integration and recognised that restoration should contribute simultaneously to biodiversity conservation, climate resilience and sustainable coastal management. Participants supported the incorporation of ecosystem service assessments and common restoration methodologies into future planning and policy frameworks.
Action description	Promote the integration of ARTEMIS outputs into climate and biodiversity policy frameworks by supporting competent authorities in the use of project methodologies, evidence and technical guidance related to blue carbon and ecosystem services. The action focuses on transferring ARTEMIS approaches through existing policy processes, encouraging their application in recognising the role of seagrass ecosystems in climate mitigation, adaptation and nature-based solutions, as well as in informing financing strategies. Key implementation activities include:



Field	Description
	- Preparing targeted policy messages and technical materials to facilitate the uptake of ARTEMIS outputs in climate and biodiversity policies. - Presenting ARTEMIS ecosystem service assessments, blue carbon approaches and financial considerations through existing policy fora and technical exchanges. - Supporting the application of ARTEMIS approaches to: - integrate seagrass ecosystems into climate mitigation and adaptation strategies (e.g. NDCs, adaptation plans); - incorporate ecosystem service and blue carbon values into biodiversity strategies and planning instruments; - inform nature-based solutions and restoration-related policy measures; - support the identification of financing opportunities linked to ecosystem services and carbon benefits. - Facilitating the integration of these elements into existing national policy and planning processes. - Monitoring and documenting the extent to which ARTEMIS approaches are reflected in climate and biodiversity frameworks.
Legal basis / policy alignment	UNFCCC framework and Nationally Determined Contributions (NDCs); EU Climate Law; EU Adaptation Strategy; EU Biodiversity Strategy 2030; EU Nature Restoration Regulation; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Targets 2, 3, 14, 15); MSFD.
Type of action	Enabling action / Passive restoration / Policy integration
Target ecosystems / species	Seagrass meadows, especially <i>Posidonia oceanica</i> .
Spatial scope	National / regional / Mediterranean.
Competence level	National climate and biodiversity authorities, supported by regional cooperation bodies.
Lead promoter	Plan Bleu and SPA/RAC with UNEP/MAP and national climate/biodiversity focal points + ARTEMIS partners.
Key stakeholders	- Plan Bleu: facilitates transfer and alignment of ARTEMIS outputs with climate and biodiversity policy processes; supports dialogue with national authorities - National ministries (environment, climate, energy): integrate ARTEMIS approaches into climate and biodiversity policies - Technical agencies and research institutes: support application of ecosystem service and carbon approaches - UNEP/MAP / SPA-RAC (support role): enable regional coordination and policy alignment - Climate and biodiversity policy bodies (national and regional): incorporate ARTEMIS approaches into planning and reporting frameworks.
Indicative cost range	- Policy engagement and technical exchanges: 20,000–50,000 € - Workshops and targeted policy dialogue: 20,000 –60,000 € - Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / climate and biodiversity programmes / international cooperation



Field	Description
Implementation timeline	- Short-term (2026–2027): initial policy uptake - Medium-term (2028–2029): integration into policy cycles and updates
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	Medium.
Monitoring indicators	• Facilitation: F01 · F05 · F06 • Uptake: U01 · U08 • Mediterranean Progress: M08

8.2 Strategic Line 2 – Restoration Implementation & Best Practices

The main objective of this strategic line is to promote the uptake of ARTEMIS restoration approaches and lessons learned from pilot actions in future restoration projects, supporting SAP BIO and GBF Target 2 by enhancing ecological effectiveness, restoration readiness, and pressure reduction prior to active restoration interventions.

Table 6. Descriptive sheet for Action 6 for the Seagrass Restoration Action Plan 2030: Apply the Pressure Reduction First approach before restoration interventions.

Field	Description
Action 2.1	Apply the Pressure Reduction First approach before restoration interventions
Strategic objective	Increase the effectiveness and long-term success of seagrass restoration by ensuring that pressures are reduced before active restoration is undertaken, contributing to SAP BIO, NRR and GBF Target 2.
Problems identified	Restoration can fail when the original pressures remain active. ARTEMIS pilot evidence shows impacts from aquaculture legacy, anchoring, infrastructure and construction-related damage.
ARTEMIS evidence supporting this action	ARTEMIS identified pressure reduction as a prerequisite for successful seagrass restoration. The Policy Recommendations (D4.2.1, Sections 5.1 and 6.2) emphasise that restoration efforts should only be implemented where the causes of ecosystem degradation have been addressed. This approach is operationalised in the Cookbook Part I (D3.3.1), which incorporates pressure assessment, ecosystem condition, risk analysis and adaptive management as core elements of restoration planning. Together, these outputs establish a "pressure reduction first" approach to maximise long-term restoration success. Both the stakeholder consultations and expert interviews consistently recognised that reducing the pressures affecting seagrass meadows (such as anchoring, coastal development and other human activities) is essential before implementing active restoration measures and should therefore be prioritised within restoration planning.
Action description	Promote the application of the "Pressure Reduction First" approach by supporting authorities, project developers and practitioners in integrating pressure assessment and reduction as a prerequisite for restoration actions. The action focuses on transferring this core ARTEMIS principle through existing planning and implementation processes, ensuring that restoration



Field	Description
	efforts are based on improved environmental conditions rather than implemented in unsuitable contexts. Key implementation activities include: • Preparing targeted technical materials to communicate the ARTEMIS “Pressure Reduction First” approach and its application in restoration planning. • Presenting ARTEMIS methodologies and pilot lessons related to pressure assessment and management through technical exchanges and practitioner networks. • Supporting the application of ARTEMIS approaches to: - identify and assess key pressures affecting seagrass ecosystems; - integrate pressure reduction measures (e.g. anchoring management, ecological moorings, wastewater treatment improvements, sediment management and regulation of incompatible activities) into restoration planning; - ensure that restoration actions are implemented only in areas where pressures have been removed or sufficiently reduced. • Promoting the incorporation of this approach into restoration projects, MPA management, and planning processes. • Monitoring and documenting the extent to which pressure reduction is applied as a prerequisite in restoration initiatives.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD (pressure and Good Environmental Status); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Technical application
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i> ; <i>Zostera spp.</i> ; mixed seagrass habitats, depending on site relevance.
Spatial scope	Mediterranean, with implementation at national, regional or local level depending on the action.
Competence level	National, regional and site-level competence
Lead promoter	ARTEMIS project partners
Key Stakeholders	• Plan Bleu: facilitates transfer and promotion of the ARTEMIS approach; supports knowledge exchange across countries and sectors • Project developers and restoration practitioners: apply pressure reduction principles in restoration design and implementation • MPA managers and coastal authorities: integrate pressure reduction measures into site management • National ministries and environmental agencies: incorporate the approach into policies and planning processes • UNEP/MAP / SPA-RAC (support role): support dissemination and coordination
Indicative cost range	• Technical exchanges and practitioner engagement: 30,000–70,000 € • Workshops and training activities: 30,000–80,000 € • Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / restoration projects / environmental programmes



Field	Description
Implementation timeline	- Short-term (2026–2027): initial uptake in projects and planning processes - Medium-term (2028–2029): systematic application in restoration initiatives
Expected outputs	Technical materials, practitioner exchanges and training activities; integration of pressure reduction principles into restoration planning and projects; and documented uptake by authorities and practitioners
Priority level	High.
Monitoring indicators	- Facilitation: F04; F05; F06 - Uptake: U03 - Mediterranean Progress: M04; M03

Table 7. Descriptive sheet for Action 7 for the Seagrass Restoration Action Plan 2030: Adopt ARTEMIS restoration prioritisation and suitability methodologies.

Field	Description
Action 2.2	Adopt ARTEMIS restoration prioritisation and suitability methodologies
Strategic objective	Maximise ecological effectiveness and cost-efficiency of restoration investments. Contribute to SAP BIO, the MPN 2030 Roadmap, GBF Target 2 and the EU Nature Restoration Regulation.
Problems identified	Restoration sites are often selected opportunistically rather than according to ecological feasibility, pressure status, ecosystem condition and potential service recovery.
ARTEMIS evidence supporting this action	ARTEMIS developed and validated a harmonised methodology for identifying restoration opportunities based on ecological feasibility. The Pilot Ecosystem Services Baseline (D1.2.1) and the Cookbook Part I (D3.3.1) establish common procedures for defining project eligibility, baseline conditions, ecosystem condition, reference ecosystems, pressures and additionality. These methodologies provide a consistent scientific framework for prioritising restoration actions across different Mediterranean contexts. The participatory processes undertaken during ARTEMIS highlighted the importance of prioritising restoration where ecological conditions, long-term feasibility and effective management can be demonstrated, supporting the adoption of common restoration prioritisation criteria across the Mediterranean.
Action description	Promote the application of ARTEMIS prioritisation criteria by supporting authorities, project developers and practitioners in using ARTEMIS methodology to guide the selection of restoration sites and actions. The action focuses on transferring ARTEMIS criteria and decision-support approaches through existing planning and project development processes, enabling stakeholders to define restoration priorities based on consistent and evidence-based criteria. Key implementation activities include: Preparing targeted technical materials presenting ARTEMIS prioritisation criteria and their practical application.



Field	Description
	- Presenting ARTEMIS methodology through technical exchanges, practitioner networks and project development fora. - Supporting the application of ARTEMIS criteria to: - assess ecological status and degradation levels; - evaluate pressures and constraints; - determine feasibility and governance conditions; - prioritise areas for restoration actions. - Encouraging the use of ARTEMIS prioritisation frameworks in project proposals, planning processes and funding applications. - Monitoring and documenting the uptake of ARTEMIS criteria in restoration planning and project design.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Technical application
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i> ; <i>Zostera spp.</i> ; mixed seagrass habitats, depending on site relevance.
Spatial scope	Mediterranean, with implementation at national, regional or local level depending on the action.
Competence level	Shared competence across Mediterranean, EU, national, regional and local levels depending on the implementation pathway.
Lead promoter	ARTEMIS project partners
Responsible actors	- Plan Bleu: facilitates transfer and interpretation of ARTEMIS prioritisation criteria; supports knowledge exchange - Project developers and restoration practitioners: apply prioritisation criteria in project design - National and regional authorities: integrate criteria into planning and funding decisions - Technical agencies and research institutes: support application of methodological approaches - UNEP/MAP / SPA-RAC (support role): support coordination and dissemination
Indicative cost range	- Technical exchanges and practitioner engagement: 30,000–70,000 € - Workshops and training activities: 30,000–80,000 € - Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / restoration programmes / project development funding
Implementation timeline	- Short-term (2026–2027): initial uptake in projects and planning - Medium-term (2028–2029): systematic application in project pipelines
Expected outputs	Technical materials and guidance; integration of ARTEMIS prioritisation criteria into project design and planning processes; and documented uptake by authorities and project developers.
Priority level	High.
Monitoring indicators	- Facilitation: F04 · F05 - Uptake: U03



Field	Description
	Mediterranean Progress: M01 · M03

Table 8. Descriptive sheet for Action 8 for the Seagrass Restoration Action Plan 2030: Integrate ARTEMIS restoration approaches into future restoration projects.

Field	Description
Action 2.3	Integrate ARTEMIS restoration approaches into future restoration projects
Strategic objective	Facilitate the scaling-up of restoration actions across the Mediterranean. Contribute to SAP BIO, the MPN 2030 Roadmap, GBF Target 2 and the EU Nature Restoration Regulation.
Problems identified	Future LIFE, EMFAF, Interreg and national projects may duplicate methodological work or design restoration without using ARTEMIS lessons.
ARTEMIS evidence supporting this action	One of the principal outcomes of ARTEMIS was the development of a harmonised restoration methodology applicable across Mediterranean seagrass restoration projects. The Cookbook Part I (D3.3.1) provides practical guidance covering project design, restoration planning, monitoring, adaptive management and verification, while the Policy Recommendations (D4.2.1, Section 6.2) recommend the adoption of common methodologies and technical protocols to improve consistency and facilitate replication of restoration initiatives. Stakeholder engagement identified the lack of harmonised technical guidance as an important barrier to restoration implementation and recognised the value of practical methodologies that can be consistently applied by restoration practitioners and competent authorities across Mediterranean countries.
Action description	Promote the integration of ARTEMIS methodologies into restoration project design and implementation by supporting project developers, practitioners and authorities in applying ARTEMIS approaches throughout the project cycle. The action focuses on transferring ARTEMIS methodologies, tools and lessons learned through existing project development and funding processes, encouraging their use in the design, justification and implementation of restoration actions. Key implementation activities include: - Preparing targeted technical materials presenting ARTEMIS methodologies, tools and pilot lessons for project development. - Presenting ARTEMIS approaches through project development platforms, funding programmes and practitioner networks. - Supporting the application of ARTEMIS methodologies to: - design restoration interventions (including pressure reduction and active/passive restoration); - justify project proposals using structured criteria and evidence; - define monitoring systems aligned with ARTEMIS MRV principles; - estimate costs and expected outcomes. - Encouraging the inclusion of ARTEMIS approaches in project proposals submitted to funding programmes (e.g. EU, national or regional funds). - Monitoring and documenting the uptake of ARTEMIS methodologies in funded and implemented restoration projects.
Legal basis / policy alignment	EU Nature Restoration Regulation; EU funding frameworks (e.g. LIFE, EMFAF, Cohesion Funds); MSFD; Habitats Directive / Natura 2000; Barcelona



Field	Description
	Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Technical application / Project implementation support
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region.
Competence level	Project-level, supported by national and regional frameworks
Lead promoter	ARTEMIS project partners.
Key Stakeholders	- ARTEMIS project partners: facilitates transfer of ARTEMIS methodologies; supports alignment with project development and funding processes - Project developers and restoration practitioners: apply ARTEMIS methodologies in project design and implementation - National and regional authorities: support integration into funding and planning frameworks - Funding bodies (EU, national, regional): consider ARTEMIS approaches in project evaluation and selection - Technical organisations and research institutes: support methodological application and technical design - UNEP/MAP / SPA-RAC (support role): support dissemination and coordination.
Indicative cost range	- Technical exchanges and project development support: 40,000–90,000 € - Workshops and training for project developers: 30,000–80,000 € - Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	EU funding programmes / national and regional funds / international cooperation / project-based funding
Implementation timeline	- Short-term (2026–2027): integration into project pipelines and proposals - Medium-term (2028–2029): application in funded and implemented projects
Expected outputs	Technical guidance and materials; integration of ARTEMIS methodologies into project proposals and designs; increased number of restoration projects applying ARTEMIS approaches; and documented uptake by developers and funding bodies.
Priority level	High.
Monitoring indicators	• Facilitation: F04 · F06 • Uptake: U03 · U04 • Mediterranean Progress: M01 · M03

Table 9. Descriptive sheet for Action 9 for the Seagrass Restoration Action Plan 2030: Apply ecosystem-service-based restoration planning.

Field	Description
Action 2.4	Promote ecosystem-service-based restoration planning



Field	Description
Strategic objective	Ensure that restoration planning considers ecosystem services and socio-economic benefits. Contribute to SAP BIO, the MPN 2030 Roadmap, GBF Targets 2, 14 and 15, and the EU Nature Restoration Regulation.
Problems identified	Restoration decisions frequently focus on ecological status or hectares alone and do not fully capture benefits such as blue carbon, biodiversity support, fisheries and coastal protection.
ARTEMIS evidence supporting this action	ARTEMIS demonstrated that restoration planning should consider the full range of ecosystem services provided by seagrass meadows. The Ecosystem Service Value Report (D2.3.1) and the Cookbook Part I (D3.3.1, Section 1.4) integrate ecosystem services, ecosystem condition and Natural Capital Accounting into restoration planning, supporting decision-making that maximises biodiversity, climate regulation, coastal protection and other ecosystem benefits alongside habitat recovery. Stakeholder consultations recognised that restoration delivers multiple environmental and socio-economic benefits beyond biodiversity conservation and highlighted the importance of considering these wider ecosystem services when planning and evaluating restoration projects.
Action description	Promote use of ARTEMIS ecosystem service evidence to prioritise restoration actions that maximise ecological recovery, service provision and societal benefits. The action focuses on transferring ARTEMIS methodologies and evidence through existing planning and project development processes, encouraging their use to strengthen the justification, prioritisation and financing of restoration actions. Key implementation activities include: - Preparing targeted technical materials presenting ARTEMIS ecosystem service assessments and valuation approaches. - Presenting ARTEMIS methodologies and results through policy forums, technical exchanges and practitioner networks. - Supporting the application of ARTEMIS approaches to: - assess and communicate the ecosystem services provided by seagrass habitats; - integrate ecosystem service values into restoration prioritisation and planning processes; - support cost-benefit considerations and economic justification of restoration actions; - inform decision-making and prioritisation in project design and policy development. - Encouraging the use of ARTEMIS ecosystem service approaches in project proposals, planning instruments and investment decisions. - Monitoring and documenting the uptake of ecosystem service valuation in restoration-related processes.
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; EU Climate and adaptation policies; MSFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Targets 2, 14, 15); SEEA-EA framework where relevant.
Type of action	Enabling action / Technical application / Decision-support



Field	Description
Target ecosystems / species	<i>Posidonia oceanica</i> , <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region
Competence level	National, regional and project-level competence
Lead promoter	ARTEMIS project partners
Key Stakeholders	- ARTEMIS project partners: facilitates transfer and interpretation of ARTEMIS ecosystem service methodologies; supports policy and decision-making processes - National ministries and authorities (environment, planning, economy): integrate valuation approaches into planning and policy frameworks - Project developers and practitioners: apply valuation approaches in project design and justification - Technical organisations and research institutes: support implementation of ecosystem service assessments - Funding and investment bodies: consider ecosystem service values in decision-making - UNEP/MAP / SPA-RAC (support role): support coordination and dissemination
Indicative cost range	- Technical exchanges and policy/practitioner engagement: 30,000–70,000 € - Workshops and capacity-building activities: 30,000–80,000 € - Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / environmental and restoration programmes / project development funding
Implementation timeline	- Short-term (2026–2027): initial uptake in planning and projects - Medium-term (2028–2029): systematic use in decision-making and investment processes
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	Medium.
Monitoring indicators	• Facilitation: F04 · F05 • Uptake: U05 • Mediterranean Progress: M05 · M07

Table 10. Descriptive sheet for Action 10 for the Seagrass Restoration Action Plan 2030: Replicate lessons learned from ARTEMIS pilot sites.

Field	Description
Action 2.5	Replicate lessons learned from ARTEMIS pilot sites
Strategic objective	Accelerate restoration by transferring proven experiences and reducing uncertainty. Contribute to SAP BIO, the MPN 2030 Roadmap, GBF Target 2 and the EU Nature Restoration Regulation



Field	Description
Problems identified	Pilot knowledge can remain localised if lessons are not translated into replication pathways for other Mediterranean contexts.
ARTEMIS evidence supporting this action	ARTEMIS tested its restoration approaches across multiple pilot sites representing different ecological, governance and socio-economic contexts. The methodologies presented in the Cookbook Part I (D3.3.1) were developed and refined through this pilot experience, while the pilot deliverables provide practical evidence on restoration planning, implementation and monitoring. The Action therefore aims to facilitate the transfer and replication of these validated approaches across future Mediterranean restoration initiatives. The ARTEMIS co-creation process demonstrated the value of combining scientific knowledge with practical experience from restoration practitioners and pilot partners. Stakeholders supported the continued exchange of lessons learned and the replication of successful restoration approaches beyond the lifetime of the project.
Action description	Transfer lessons from ARTEMIS pilot sites to comparable restoration contexts, highlighting feasibility conditions, pressures, data needs, monitoring and financing implications. The action focuses on transferring practical knowledge from ARTEMIS pilot sites through existing networks and project development processes, enabling stakeholders to replicate effective approaches while adapting them to local ecological and governance conditions. Key implementation activities include: • Preparing targeted technical materials summarising ARTEMIS pilot experiences, lessons learned and good practices. • Presenting pilot results through practitioner networks, technical exchanges and regional fora. • Supporting the application of ARTEMIS pilot experience to: - design restoration interventions based on tested approaches; - adapt implementation practices to similar ecological and pressure conditions; - integrate governance, stakeholder engagement and operational lessons; - reduce risks and improve the effectiveness of restoration actions. • Encouraging the use of ARTEMIS pilot experience in project development, planning processes and funding proposals. • Monitoring and documenting the replication of ARTEMIS approaches across sites and countries.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Technical application / Replication
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region
Competence level	Project-level and site-level competence, supported by national and regional frameworks
Lead promoter	ARTEMIS project partners



Field	Description
Key Stakeholders	- ARTEMIS project partners: facilitates transfer of ARTEMIS pilot experience; supports knowledge exchange and replication across countries - Project developers and restoration practitioners: apply and adapt ARTEMIS pilot approaches in new projects - MPA managers and site authorities: implement replicated approaches at site level - National ministries and agencies: support integration into planning and funding processes - Technical organisations and research institutes: support adaptation to local contexts - UNEP/MAP / SPA-RAC (support role): enable regional dissemination and coordination
Indicative cost range	- Knowledge transfer and technical exchanges: 30,000–70,000 € - Workshops and replication-focused training: 30,000–80,000 € - Follow-up and replication tracking: 20,000–50,000 €
Financing pathways	Public funding / restoration and project funding / international cooperation
Implementation timeline	- Short-term (2026–2027): initial replication in new sites and projects - Medium-term (2028–2029): scaling-up across multiple countries
Expected outputs	Technical materials on pilot experiences; knowledge exchange activities; replication of ARTEMIS approaches in new sites and projects; and documented uptake of pilot-based practices across the Mediterranean.
Priority level	High
Monitoring indicators	• Facilitation: F01 · F07 · F09 • Uptake: U03 · U10 • Mediterranean Progress: M09

8.3 Strategic Line 3 – Monitoring, Assessment & Knowledge Uptake

The main objective of this strategic line is to facilitate the uptake of ARTEMIS monitoring, MRV, ecosystem service assessment, and ecosystem accounting outputs within relevant policy and management frameworks, supporting SAP BIO monitoring, IMAP harmonisation, the achievement of MSFD Good Environmental Status, Natura 2000 reporting, and GBF monitoring efforts.

Table 11. Descriptive sheet for Action 11 for the Seagrass Restoration Action Plan 2030: Promote uptake of ARTEMIS restoration methodologies.

Field	Description
Action 3.1	Promote uptake of ARTEMIS restoration methodologies
Strategic objective	Increase restoration effectiveness using harmonised methodologies. Contribute to SAP BIO, the MPN 2030 Roadmap, GBF Target 2 and the EU Nature Restoration Regulation.



Field	Description
Problems identified	Practitioners require accessible, tested methodologies and may otherwise rely on inconsistent approaches.
ARTEMIS evidence supporting this action	ARTEMIS developed a harmonised scientific framework to support the planning, implementation and evaluation of seagrass restoration projects. The Cookbook Part I (D3.3.1) establishes common methodologies for restoration planning, baseline definition, monitoring and adaptive management, while the Policy Recommendations (D4.2.1, Section 6.2) recommend the adoption of common methodologies and technical guidance to improve restoration consistency and facilitate replication across Mediterranean countries. The ARTEMIS co-creation process highlighted the importance of providing restoration practitioners and competent authorities with harmonised technical guidance that can be consistently applied across different Mediterranean contexts. Participants recognised common methodologies as essential to improve restoration quality and facilitate knowledge transfer.
Action description	Promote the consistent application of ARTEMIS restoration methodologies by supporting authorities, practitioners and project developers in using the project's existing methodological framework across planning and implementation processes. The action focuses on facilitating the uptake and alignment of ARTEMIS methodologies through existing technical and institutional channels, ensuring that restoration actions are designed and implemented following common and tested approaches. Key implementation activities include: • Preparing targeted technical materials presenting ARTEMIS restoration methodologies and their practical application. • Disseminating ARTEMIS methodological frameworks through technical exchanges, practitioner and restoration networks and existing policy and project platforms. • Supporting the use of ARTEMIS methodologies to: - design restoration interventions (including pressure reduction and active/passive restoration); - ensure consistency in project design and implementation approaches; - align restoration practices across sites, projects and countries. • Encouraging the use of ARTEMIS methodologies as a common reference in planning documents, project proposals and technical guidelines. • Monitoring and documenting the extent to which ARTEMIS methodologies are used across restoration-related processes.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Technical application / Methodological alignment
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region
Competence level	Regional, national and project-level competence
Lead promoter	ARTEMIS partners



Field	Description
Key Stakeholders	• ARTEMIS project partners: facilitates dissemination and alignment of ARTEMIS methodologies; supports coherence across countries and sectors • Project developers and restoration practitioners: apply ARTEMIS methodologies in project design and implementation • National and regional authorities: promote use of consistent methodologies in planning and funding processes • Technical organisations and research institutes: support methodological application and technical consistency • UNEP/MAP / SPA-RAC (support role): support regional coordination and dissemination
Implementation mechanism	Technical transfer through restoration networks and future projects.
Indicative cost range	• Technical exchanges and methodological dissemination: 30,000–70,000 € • Workshops and training activities: 30,000–80,000 € • Follow-up and uptake tracking: 20,000–50,000 €
Financing pathways	Public funding / environmental and restoration programmes / project funding
Implementation timeline	• Short-term (2026–2027): initial uptake and dissemination • Medium-term (2028–2029): consolidation of consistent methodological use
Expected outputs	Technical materials and guidance; dissemination of ARTEMIS methodologies; increased consistency in restoration approaches across projects and countries; and documented uptake by practitioners and authorities.
Priority level	High.
Monitoring indicators	• Facilitation: F04 · F05 • Uptake: U04 • Mediterranean Progress: M03

Table 12. Descriptive sheet for Action 12 for the Seagrass Restoration Action Plan 2030: Promote adoption of ARTEMIS MRV approaches.

Field	Description
Action 3.2	Promote the development of a harmonised MRV framework for seagrass restoration
Strategic objective	Promote the development of a common, science-based and harmonised Monitoring, Reporting and Verification (MRV) framework for seagrass restoration across the Mediterranean, based on ARTEMIS principles, to enable consistent tracking of restoration outcomes and support policy implementation (NRR, GBF Target 2) and emerging financing mechanisms.
Problems identified	Monitoring of restoration actions is often fragmented and inconsistent across projects and countries, limiting comparability and the ability to assess effectiveness. In addition, monitoring requirements are not always clearly structured or linked to restoration outcomes.
ARTEMIS evidence supporting this action	ARTEMIS established a harmonised Monitoring, Reporting and Verification (MRV) framework as part of the Cookbook Part I (D3.3.1), including common protocols for ecological monitoring, baseline definition, adaptive management,



Field	Description
	verification and long-term project evaluation. This framework should guide the development of comprehensive, transparent and scientifically robust MRV methodologies to assess the outcomes of restoration and are reinforced by the Policy Recommendations (D4.2.1), which call for strengthening monitoring, reporting and data collection systems. Stakeholder consultations and the ARTEMIS co-creation process recognised that harmonised monitoring and verification systems are essential to generate comparable restoration results, support adaptive management and increase confidence in restoration outcomes.
Action description	Promote the use of ARTEMIS MRV principles and monitoring approaches by supporting authorities, practitioners and project developers in integrating ARTEMIS guidance into restoration monitoring and reporting processes. The action focuses on transferring the ARTEMIS MRV logic (based on precaution, multidimensional ecosystem assessment and results-based monitoring) as a starting point for the development of a robust MRV framework applicable to restoration projects that are launched. Key implementation activities include: • Preparing targeted technical materials presenting ARTEMIS MRV principles, monitoring requirements and indicators. • Presenting ARTEMIS monitoring approaches through technical exchanges, monitoring networks and policy fora. • Supporting the application of ARTEMIS guidance to: - define monitoring indicators (e.g. ecosystem condition, extent, pressures, indicator species); - structure monitoring plans with minimum requirements (e.g. annual monitoring, periodic verification); - integrate precautionary and evidence-based approaches to reporting; - align monitoring practices with existing frameworks (e.g. MSFD, IMAP, NRR reporting obligations). • Promoting the link between MRV and financing mechanisms, ensuring that: - MRV systems can support carbon and biodiversity credit schemes - Environmental integrity, additionality and transparency are ensured • Encouraging the use of ARTEMIS monitoring approaches in project design, management plans and reporting systems. • Monitoring and documenting the extent to which ARTEMIS MRV principles are reflected in restoration processes.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; WFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; IMAP; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Target 2); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Coordination / MRV alignment
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region
Competence level	Shared competence across Mediterranean, EU, national, regional and local levels depending on the implementation pathway.
Lead promoter	ARTEMIS project partners
Key Stakeholders	- UNEP/MAP – Plan Bleu: promotes MRV convergence and regional coordination



Field	Description
	- Project developers and practitioners: contribute to MRV implementation and feedback - National and regional authorities: integrate MRV principles into policy and planning frameworks - Research institutions and technical organisations: support methodological alignment and scientific robustness - Standard-setting bodies (emerging role): contribute to MRV compatibility with credit frameworks - Private sector actors: support development and uptake through financing mechanisms
Indicative cost range	- Coordination and technical alignment activities: 40,000–100,000 € - Workshops, exchanges and MRV convergence processes: 40,000–120,000 € - Follow-up and alignment tracking: 30,000–70,000 €
Financing pathways	Public funding; EU environmental and restoration programmes; research and innovation funding; project-based funding; emerging blended finance mechanisms.
Implementation timeline	- Short-term (2026–2027): promotion of ARTEMIS MRV principles and initial alignment - Medium-term (2028–2029): convergence of methodologies and integration into frameworks - Long-term (≥2030): broad adoption of a harmonised MRV approach across the Mediterranean
Expected outputs	- Increased alignment of MRV approaches across projects and countries - Integration of ARTEMIS-based MRV principles into policy and planning - Improved consistency and comparability of monitoring systems - Strengthened foundation for financing mechanisms and credit schemes
Priority level	High.
Monitoring indicators	• Facilitation: F04 · F05 · F06 • Uptake: U04 • Mediterranean Progress: M03 · M09

Table 13. Descriptive sheet for Action 13 for the Seagrass Restoration Action Plan 2030: Use ARTEMIS ecosystem service assessment methodologies.

Field	Description
Action 3.3	Use ARTEMIS ecosystem service assessment methodologies
Strategic objective	Improve the valuation and visibility of restoration benefits, strengthening the case for investment, policy integration and financing mechanisms, including carbon and biodiversity markets. Contribute to the implementation of international and EU policy frameworks including the Kuning Montreal Global Biodiversity Framework (target 2 and 19), the EU Nature Restoration Regulation, EU Biodiversity Strategy 2030, SAP BIO and MPN 2030 Roadmap.
Problems identified	Ecosystem service benefits are frequently under-documented, weakening the case for investment and policy support.



Field	Description
ARTEMIS evidence supporting this action	ARTEMIS developed a harmonised methodology for assessing ecosystem services generated by seagrass ecosystems through the Ecosystem Service Value Report (D2.3.1). This work is complemented by the Pilot Ecosystem Services Baseline (D1.2.1) and integrated into the Cookbook Part I (D3.3.1), enabling restoration planning to consider biodiversity conservation, carbon sequestration, coastal protection, fisheries support and other ecosystem services within a common assessment framework. Stakeholder consultations highlighted the importance of demonstrating the multiple environmental and socio-economic benefits generated by restoration to improve decision-making, strengthen public support and facilitate future investment in restoration programmes.
Action description	Encourage authorities and project developers to assess blue carbon, biodiversity, water quality, coastal protection and socioeconomic benefits using ARTEMIS approaches. The action focuses on embedding ecosystem service assessment into restoration design, monitoring and financing processes, ensuring consistency, comparability and alignment with MRV principles. Key implementation activities include: - Encouraging authorities and project developers to assess key ecosystem services using ARTEMIS approaches, including: - Blue carbon (stocks and sequestration) - Biodiversity and habitat provision - Water quality regulation - Coastal protection - Socioeconomic benefits - Promoting the use of ARTEMIS methodologies as a standard reference for ecosystem service valuation in: - Restoration planning and project design - Investment cases and funding applications - Policy and strategic documents - Supporting the integration of ecosystem service assessment with MRV frameworks (linked to Action 3.2), ensuring: - Consistent baselines and indicators - Alignment with monitoring protocols - Measurable and comparable outcomes - Facilitating the use of ecosystem service data to: - Strengthen investment cases for restoration projects - Support public and private financing decisions - Enable the development of carbon and biodiversity credit schemes - Promoting alignment with: - International frameworks (SEEA Ecosystem Accounting, IPCC guidance) - EU policy frameworks (NRR, MSFD, WFD) - Supporting knowledge exchange and capacity building among: - Authorities and practitioners - Research and technical institutions - Financial and investment actors - Monitoring and documenting the uptake of ecosystem service assessment approaches across projects and policy processes
Legal basis / policy alignment	EU Nature Restoration Regulation and National Restoration Plans; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF; EU Biodiversity



Field	Description
	Strategy 2030; MSFD; WFD; Habitats Directive / Natura 2000; MSP Directive; IMAP; SEEA Ecosystem Accounting.
Type of action	Enabling action / Ecosystem service valuation / Financing support
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean, with implementation at national, regional or local level.
Competence level	Shared competence across Mediterranean, EU, national, regional and local levels.
Lead promoter	ARTEMIS project partners
Key stakeholders	- ARTEMIS project partners: promotes uptake of ARTEMIS ecosystem services assessment and valuation methodologies and ensures regional coherence - National and regional authorities (policy integration): incorporate ecosystem service valuation into planning, NRPs and funding criteria - Project developers and restoration practitioners (application): apply methodologies in project design, monitoring and reporting - Research institutions and technical organisations (scientific support): ensure robust valuation methods, data consistency and MRV alignment - Financial actors and investors (uptake and use): use ecosystem service valuation for investment decisions and project evaluation - Standard-setting and certification bodies (emerging role): ensure compatibility with carbon and biodiversity credit schemes
Indicative cost range	- Workshops, training and dissemination activities to promote the use of ARTEMIS outputs: 30,000–80,000 € - Development and adaptation of technical valuation materials: 40,000–100,000 € - Integration with MRV systems and follow-up (data consistency, tracking uptake): 30,000–70,000 €
Financing pathways	Public / private / blended finance.
Implementation timeline	- Short-term (2026–2027): dissemination of ARTEMIS valuation methodologies and initial uptake - Medium-term (2028–2029): integration into planning, MRV and funding processes - Long-term (≥2030): mainstream use in restoration, policy and financing mechanisms
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	Medium- High (key enabler for financing and scaling restoration)
Monitoring indicators	• Facilitation: F04 · F05 • Uptake: U05 • Mediterranean Progress: M05



Table 14. Descriptive sheet for Action 14 for the Seagrass Restoration Action Plan 2030: Promote ecosystem accounting approaches in restoration planning.

Field	Description
Action 3.4	Promote ecosystem accounting approaches in restoration planning
Strategic objective	Facilitate integration of restoration benefits into decision-making. Contribute to the implementation of the EU Nature Restoration Regulation, the Kunming-Montreal Global Biodiversity Framework (Target 2), SAP BIO and the Mediterranean Posidonia Network 2030 Roadmap.
Problems identified	Natural capital and ecosystem service values are still poorly integrated into public accounts, planning and investment decisions.
ARTEMIS evidence supporting this action	The Ecosystem Service Value Report (D2.3.1) developed Natural Capital Accounting approaches that integrate ecosystem condition and ecosystem service assessments into restoration planning. These approaches are further supported by the Cookbook Part I (D3.3.1, Sections 1.3 and 1.4), which demonstrate how ecosystem accounting can strengthen restoration planning, policy implementation and sustainable financing by making ecosystem benefits more visible and measurable. The Ecosystem Service Value Report (D2.3.1) developed Natural Capital Accounting approaches that integrate ecosystem condition and ecosystem service assessments into restoration planning. These approaches are further supported by the Cookbook Part I (D3.3.1, Sections 1.3 and 1.4), which demonstrate how ecosystem accounting can strengthen restoration planning, policy implementation and sustainable financing by making ecosystem benefits more visible and measurable.
Action description	Promote the use of ARTEMIS ecosystem accounting approaches (aligned with SEEA Ecosystem Accounting) as a structured framework to integrate ecological, spatial and economic information on seagrass ecosystems into planning and decision-making processes. The action focuses on transferring and scaling ARTEMIS accounting methodologies to support evidence-based policy-making, linking restoration, ecosystem services (Action 3.3) and MRV systems (Action 3.2) within a coherent accounting framework. Key implementation activities include: • Preparing targeted technical materials on ARTEMIS ecosystem accounting approaches, including: - Ecosystem extent and condition accounts - Ecosystem service accounts (e.g. carbon, coastal protection, biodiversity) - Links to economic and policy indicators • Promoting the use of ARTEMIS ecosystem accounting as a decision-support tool in: - National Restoration Plans - Marine Spatial Planning processes - Coastal and marine management strategies • Supporting the alignment of ecosystem accounting approaches with: - SEEA Ecosystem Accounting framework - EU policy frameworks (NRR, MSFD, WFD) - National statistical and environmental reporting systems • Encouraging the integration of ecosystem accounting with: - MRV frameworks (Action 3.2) for consistent monitoring and reporting - Ecosystem service valuation (Action 3.3) for economic and investment analysis



Field	Description
	- Supporting authorities in using ecosystem accounts to: - Identify restoration priorities - Track changes in ecosystem condition and services over time - Inform cost-benefit analysis and public investment decisions - Facilitating knowledge exchange between: - Environmental authorities - Statistical offices - Research institutions and technical bodies - Monitoring and documenting the uptake of ecosystem accounting approaches in policy, planning and reporting processes.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; WFD; Habitats Directive / Natura 2000; Marine Spatial Planning Directive; Barcelona Convention and SPA/BD Protocol; IMAP; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Targets 2 and 19); EU Biodiversity Strategy 2030; SEEA Ecosystem Accounting.
Type of action	Enabling action / Ecosystem accounting / Decision-support integration
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region
Competence level	Shared competence across Mediterranean, EU, national, regional and local levels.
Lead promoter	ARTEMIS project partners
Key Stakeholders	Plan Bleu / UNEP-MAP (coordination): promotes ecosystem accounting uptake and regional coherence National authorities (policy integration): integrate ecosystem accounting into NRPs, planning and reporting frameworks National statistical offices (data integration): align ecosystem accounts with SEEA and national accounting systems Research institutions and technical organisations (methodological support): develop and apply accounting frameworks and datasets Regional and local authorities / MPA managers (application): use accounts in planning and management decisions Project developers (data provision): contribute ecological and monitoring data to ecosystem accounts
Indicative cost range	- Promote the uptake of ARTEMIS-aligned ecosystem accounting approaches: 60,000–150,000 € - Technical support, training and capacity building: 40,000–100,000 € - Data integration, pilot accounts and follow-up: 40,000–120,000 €
Financing pathways	Public funding; EU environmental and statistical programmes; research and innovation funding; national accounting and reporting budgets; technical assistance instruments
Implementation timeline	Short-term (2026–2027): dissemination of ARTEMIS ecosystem accounting approaches and pilot applications Medium-term (2028–2029): integration into planning, MRV and national reporting systems Long-term (≥2030): institutionalisation within national accounting and policy frameworks



Field	Description
Expected outputs	Transfer materials, workshops, technical exchanges, uptake in plans/projects/programmes and documented adoption by competent actors.
Priority level	Medium–High (strategic enabler for policy integration and long-term planning)
Monitoring indicators	- Facilitation: F04 · F05 - Uptake: U06 - Mediterranean Progress: M07

Table 15. Descriptive sheet for Action 15 for the Seagrass Restoration Action Plan 2030: Align ARTEMIS indicators with NRR, SAP BIO, IMAP, MSFD, Natura 2000 and GBF reporting.

Field	Description
Action 3.5	Align ARTEMIS indicators with NRR, SAP BIO, IMAP, MSFD, Natura 2000 and GBF reporting
Strategic objective	Reduce reporting fragmentation and facilitate interoperability. Contribute to the implementation of the EU Nature Restoration Regulation, the Kunming-Montreal Global Biodiversity Framework (notably Targets 2 and 19), SAP BIO, IMAP and related policy frameworks.
Problems identified	Multiple reporting frameworks create a risk of duplicated effort and inconsistent indicators.
ARTEMIS evidence supporting this action	ARTEMIS developed harmonised ecological indicators, monitoring methodologies and reporting approaches through the Cookbook Part I (D3.3.1), supported by the ecological assessments undertaken in the Pilot Ecosystem Services Baseline (D1.2.1) and the recommendations presented in D4.2.1 Policy Recommendations. The project explicitly aligned these methodologies with major European and Mediterranean biodiversity and restoration frameworks, facilitating future reporting and implementation under the Nature Restoration Regulation, SAP BIO, IMAP, MSFD, Natura 2000 and the Kunming–Montreal Global Biodiversity Framework. Stakeholder consultations highlighted the importance of harmonised indicators and comparable monitoring approaches to improve consistency between restoration projects and facilitate coordinated reporting across Mediterranean countries.
Action description	Promote the alignment and interoperability of ARTEMIS indicators with key EU and Mediterranean reporting frameworks, ensuring that data generated at project level can support policy reporting and target tracking. The action focuses on facilitating convergence between ARTEMIS monitoring approaches (Action 3.2) and existing reporting systems, without creating additional reporting burdens. Key implementation activities include: - Mapping ARTEMIS indicators against reporting requirements of: - EU Nature Restoration Regulation (NRR) - MSFD and IMAP indicators - Natura 2000 conservation status assessments - SAP BIO monitoring framework - Kunming-Montreal GBF indicators - Identifying common indicators and overlaps, including: - Habitat extent and condition - Ecological status and pressures



Field	Description
	- Biodiversity indicators - Ecosystem service metrics (where relevant) • Developing guidance for indicator alignment, including: - Crosswalks between ARTEMIS indicators and policy reporting frameworks - Minimum common datasets and indicator sets - Recommendations for harmonised data collection • Supporting authorities and practitioners to: - Use ARTEMIS indicators in a way that is compatible with reporting obligations - Reduce duplication of monitoring and reporting efforts - Improve data comparability across projects and countries • Promoting the integration of aligned indicators into: - National Restoration Plans reporting systems - MSFD and IMAP monitoring programmes - Natura 2000 reporting processes • Supporting the use of aligned indicators to: - Aggregate data at national and Mediterranean scales - Track progress towards NRR and GBF targets - Strengthen links between MRV (Action 3.2), valuation (3.3) and accounting (3.4) • Monitoring and documenting the uptake of aligned indicators across reporting systems.
Legal basis / policy alignment	EU Nature Restoration Regulation; MSFD; WFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; IMAP; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Targets 2 and 19); EU Biodiversity Strategy 2030.
Type of action	Enabling action / Indicator alignment / Reporting coherence
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, with implementation at national, regional or local level.
Competence level	Shared competence across Mediterranean, EU, national, regional and local levels depending on the implementation pathway.
Lead promoter	Plan Bleu (UNEP/IMAP interface), in coordination with SPA/RAC and regional monitoring frameworks.
Key Stakeholders	Competent public authorities, MPA managers, funding bodies, project developers or restoration practitioners depending on the action.
Implementation mechanism	- Plan Bleu / UNEP-MAP (coordination): leads regional alignment of indicators and coherence across frameworks - National authorities (reporting integration): integrate aligned indicators into national reporting systems and NRPs - Environmental agencies (technical implementation): apply indicators within monitoring and reporting programmes (MSFD, Natura 2000) - Research institutions and technical organisations (methodological support): develop indicator crosswalks, ensure scientific robustness - Statistical and reporting bodies (data harmonisation): ensure interoperability with national and EU reporting systems - Project developers and practitioners (data provision): generate and report data aligned with ARTEMIS indicators



Field	Description
Indicative cost range	- Indicator mapping and methodological alignment: 40,000–100,000 € - Development of guidance and crosswalk tools: 40,000–90,000 € - Coordination, workshops and follow-up integration: 30,000–80,000 €
Financing pathways	Public funding; EU environmental programmes; national reporting and monitoring budgets; technical assistance mechanisms.
Implementation timeline	- Short-term (2026–2027): indicator mapping and initial alignment guidance - Medium-term (2028–2029): integration into reporting frameworks and monitoring systems - Long-term (≥2030): full interoperability and streamlined reporting across frameworks
Expected outputs	Indicator crosswalks between ARTEMIS and policy frameworks; Guidance documents for aligned monitoring and reporting; Increased interoperability of datasets across systems; Reduced reporting burden and improved efficiency; Enhanced ability to track progress towards policy targets
Priority level	High (critical for policy coherence and reporting efficiency)
Monitoring indicators	• Facilitation: F05 · F06 • Uptake: U10 • Mediterranean Progress: M08 · M09

Table 16. Descriptive sheet for Action 16 for the Seagrass Restoration Action Plan 2030: Promote uptake and application of ARTEMIS Seagrass Credits Methodology.

Field	Description
Action 3.6	Promote uptake and application of ARTEMIS Seagrass Credits Methodology
Strategic objective	Facilitate development of credible blue carbon projects. Promote the uptake and formal recognition of the ARTEMIS Seagrass Credits Methodology as a science-based and harmonised framework for restoration, monitoring and credit generation, contributing to the implementation of the EU Nature Restoration Regulation, the Kunming-Montreal Global Biodiversity Framework (Targets 2 and 19), SAP BIO and the development of high-integrity carbon and biodiversity markets.
Problems identified	Nature credit markets are emerging but require credible, transparent and scientifically robust methodologies to avoid integrity risks.
ARTEMIS evidence supporting this action	ARTEMIS developed a comprehensive methodology for Seagrass Credits through the Cookbook Part II (D3.3.1), covering legal and institutional requirements, governance arrangements, commercial design, financial planning and risk management. The Policy Recommendations (D4.2.1, Section 6.4) recognise market-based mechanisms as complementary financing instruments, provided that they are supported by robust governance, transparent methodologies and strong environmental safeguards. The ARTEMIS co-creation process recognised the potential of emerging nature-based financing mechanisms while emphasising that their future implementation should be based on scientific credibility, transparent governance, independent verification and measurable ecological outcomes.



Field	Description
Action description	Promote the uptake, testing and formal recognition of the ARTEMIS Seagrass Credits Methodology as a common framework to guide restoration projects that aim to generate carbon and biodiversity credits. The action focuses on positioning Seagrass Credit Methodology as a validated, science-based reference methodology, suitable for use by project developers and recognised by competent authorities and emerging credit systems. Key implementation activities include: • Promoting the ARTEMIS Seagrass Credits Methodology as a reference framework for: - Restoration design (including pressure reduction and active/passive restoration) - Monitoring and MRV (aligned with Action 3.2) - Ecosystem service assessment (Action 3.3) - Indicator alignment (Action 3.5) • Supporting the technical validation and testing of the methodology through: - Pilot projects across different Mediterranean contexts - Demonstration of environmental integrity (additionality, permanence, leakage) - Documentation of results and lessons learned • Facilitating engagement with competent authorities, including: - Climate authorities (carbon accounting and offset mechanisms) - National carbon registries - Authorities responsible for biodiversity and restoration • Promoting the formal recognition or endorsement of the methodology by: - National authorities - Regional frameworks (UNEP/MAP, Barcelona Convention) - Relevant certification or standard-setting bodies • Encouraging the integration of the methodology into: - National carbon footprint registries and offset schemes - Voluntary carbon and biodiversity markets - Public funding instruments and restoration programmes • Providing guidance and support to project developers to: - Apply the ARTEMIS methodology in project design - Structure projects for credit generation - Ensure compliance with recognised standards • Supporting alignment with: - International standards (e.g. IPCC guidance) - EU climate and sustainability frameworks - Emerging biodiversity credit frameworks • Monitoring and documenting uptake, recognition and application of the methodology across projects and countries.
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Climate Law; EU Biodiversity Strategy 2030; MSFD; Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF (Targets 2 and 19).
Type of action	Enabling action / Market development / Methodological validation / Active restoration
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>



Field	Description
Spatial scope	Mediterranean, with implementation at national and regional level
Competence level	Regional, national and project-level (with strong relevance at national and regional regulatory level)
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC and regional and national bodies responsible for monitoring, measuring and offsetting carbon emissions.
Key Stakeholders	- Plan Bleu / UNEP-MAP (coordination and promotion): positions ARTEMIS as a regional reference and supports uptake - National climate authorities (validation/regulatory role): assess and potentially endorse methodology within carbon frameworks - Carbon registry bodies (integration): incorporate methodology into registries and offset systems - Certification and standard-setting bodies (credibility): ensure methodological robustness and compatibility with market standards - Project developers and practitioners (application): apply the methodology in restoration and credit-generating projects - Research institutions (scientific validation): support methodological robustness and evidence generation - Private sector actors / investors (market uptake): use methodology for investment and credit demand
Indicative cost range	- Methodology testing and pilot projects: 80,000–250,000 € - Technical validation and documentation: 50,000–150,000 € - Stakeholder engagement and regulatory alignment: 40,000–120,000 €
Financing pathways	Public funding; EU programmes; climate finance; private investment; voluntary carbon and biodiversity markets; blended finance mechanisms.
Implementation timeline	- Short-term (2026–2027): pilot testing and initial uptake of methodology - Medium-term (2028–2029): validation, recognition and integration into frameworks - Long-term (≥2030): mainstream use in restoration projects and credit markets
Expected outputs	Tested and documented ARTEMIS Seagrass Credits Methodology; Increased number of projects applying the methodology; Initial recognition or endorsement by authorities and frameworks; Improved readiness for credit-based restoration projects; Strengthened link between restoration, MRV and financing
Priority level	Very high (critical for unlocking private finance and scaling restoration)
Monitoring indicators	• Facilitation: F04 · F05 · F08 • Uptake: U07 • Mediterranean Progress: M05 · M07

8.4 Strategic Line 4 – Restoration Finance & Investment

Consistent with the conclusions of ARTEMIS, this Strategic Line recognises that public funding remains the foundation of seagrass restoration. The proposed actions therefore focus on strengthening public financing mechanisms and improving their coordination, while promoting



blended finance, corporate engagement and emerging Seagrass Credit mechanisms as complementary instruments capable of mobilising additional investment under robust governance and environmental safeguards.

The Strategic Line also contributes to SAP BIO resource mobilisation objectives and aligns with GBF Target 19, supporting the transition from project-based restoration towards scalable, investable, and long-term restoration pipelines.

Table 17. Descriptive sheet for Action 17 for the Seagrass Restoration Action Plan 2030: Integrate restoration financing needs into National Restoration Plans.

Field	Description
Action 4.1	Integrate restoration financing needs into National Restoration Plans
Strategic objective	Ensure that seagrass restoration financing needs are systematically integrated into National Restoration Plans (NRPs), enabling their effective implementation and contributing to the achievement of Kunming–Montreal GBF Target 19 (resource mobilisation), the EU Nature Restoration Regulation, SAP BIO, and alignment with the EU Biodiversity Strategy 2030, MSFD and Mediterranean policy frameworks.
Problems identified	Restoration priorities are unlikely to be implemented without realistic financing plans and links to funding instruments.
ARTEMIS evidence supporting this action	ARTEMIS identifies public funding as the cornerstone of large-scale seagrass restoration. The Policy Recommendations (D4.2.1, Executive Summary, Section 4 and Section 6.3, Public Financing Architecture) conclude that achieving the objectives of the Nature Restoration Regulation will require stronger, long-term public investment, better coordination between funding instruments and the integration of restoration priorities into National Restoration Plans and Prioritised Action Frameworks. ARTEMIS therefore recommends strengthening existing public financing mechanisms before relying on complementary private investment Stakeholder consultations consistently identified insufficient and fragmented public funding as one of the principal barriers to restoration implementation. Participants highlighted the need for stable, long-term financing mechanisms capable of supporting restoration beyond individual project cycles.
Action description	Promote the integration of financing strategies, costed measures and investment pipelines for seagrass restoration within National Restoration Plans (NRPs), ensuring alignment between ecological targets and financial resources. The action focuses on moving from policy objectives to implementable and finance-ready restoration pipelines, building on ARTEMIS technical outputs. Key activities include: - Supporting national authorities in estimating restoration costs, including both passive and active restoration approaches - Facilitate alignment between restoration needs identified in NRPs and existing funding opportunities. - Support the identification of financing needs and their articulation within existing funding frameworks (public budgets, EU funds, private investment, blended finance, PES and nature-credit mechanisms) - Integrating ARTEMIS outputs into financial planning, including: - Ecosystem service valuation (Action 3.3) - MRV frameworks (Action 3.2) - Seagrass credit methodologies



Field	Description
	- Supporting the integration of restoration financing into: - National Restoration Plans - National biodiversity strategies and action plans - Marine and coastal planning frameworks - Aligning NRPs with investment cycles, funding instruments and financial programming - Promoting coherence between restoration goals and long-term financing mechanisms - Promoting the development of a portfolio of bankable and investable restoration projects, aligned with ARTEMIS selection criteria, to facilitate the mobilisation of private sector investment by strengthening connections between competent authorities and funding mechanisms
Legal basis / policy alignment	EU Nature Restoration Regulation (NRR) and National Restoration Plans; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive/Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Target 19); IMAP (where relevant).
Type of action	Enabling action / Strategic finance integration.
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, implemented primarily at national level and supported at regional scale.
Competence level	Shared competence across EU, Mediterranean, national and regional levels, with primary responsibility at national level
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC.
Key Stakeholders	- Plan Bleu (technical facilitator): transfer ARTEMIS financial approaches - National authorities (NRP owners): integrate financing into plans; design a portfolio of restoration projects - Finance ministries (budget integration): link restoration to national budgets - Funding bodies (alignment): connect NRPs to funding instruments - Project developers (pipeline design) in coordination with authorities: structure bankable projects - Research institutions (technical support): support cost estimation and economic analysis
Indicative cost range	• Financial planning and portfolio of restoration projects development: 50,000–120,000 € • Technical assistance and alignment: 40,000–100,000 € • Stakeholder coordination: 30,000–80,000 €
Financing pathways	Public funding (EU, national and regional programmes); private investment; blended finance; payments for ecosystem services (PES); carbon and biodiversity credit mechanisms
Implementation timeline	- Short-term (2026–2027): initial integration of financing needs into NRPs - Medium-term (2028–2029): consolidation of restoration pipelines and financing strategies



Field	Description
Expected outputs	Translate ARTEMIS outputs into decision-relevant formats for policy and investment stakeholders; NRPs including costed seagrass restoration measures; Identified and structured restoration investment pipelines; Improved alignment between restoration priorities and funding instruments; Increased readiness of projects for public and private financing; Strengthened integration of ARTEMIS outputs into planning and financing
Priority level	High.
Monitoring indicators	- Facilitation: F02 · F08 - Uptake: U08 - Mediterranean Progress: M07

Table 18. Descriptive sheet for Action 18 for the Seagrass Restoration Action Plan 2030: Use ecosystem service valuation to support restoration investment decisions.

Field	Description
Action 4.2	Use ecosystem service valuation to support restoration investment decisions
Strategic objective	Increase recognition of the economic value of seagrass ecosystems and facilitate restoration investments. Contribute to the implementation of the EU Nature Restoration Regulation, Kunming–Montreal GBF Target 19 (resource mobilisation), GBF Target 2, SAP BIO, and alignment with the EU Biodiversity Strategy 2030, MSFD and SEEA Ecosystem Accounting framework.
Problems identified	Restoration benefits are often externalised from funding and investment decisions.
ARTEMIS evidence supporting this action	The Policy Recommendations (D4.2.1, Sections 4.5–4.6 and Section 6.3) identify the need to improve coordination between European and national funding programmes supporting restoration. ARTEMIS highlights that existing instruments (including LIFE, EMFAF, Cohesion Policy and national funding schemes) already provide important opportunities, but their effectiveness depends on better strategic alignment, simplified access and stronger integration with restoration priorities identified through National Restoration Plans. Stakeholder consultations highlighted administrative complexity, fragmented funding opportunities and limited institutional capacity to prepare restoration proposals as important barriers to implementation. Participants supported improving coordination between existing funding programmes rather than creating new financing mechanisms.
Action description	Promote the integration of ARTEMIS ecosystem service valuation results into financial and investment decision-making processes to strengthen the economic case for seagrass restoration. The action focuses on embedding valuation into real financial decisions, ensuring that ecosystem benefits are recognised in both public and private investment contexts. Key activities include: - Supporting the use of ARTEMIS valuation outputs in: - Cost-benefit analyses - Public expenditure planning and budgeting - Investment screening and prioritisation



Field	Description
	- Funding applications and project proposals - Promoting the integration of valuation into: - National Restoration Plans and investment pipelines (linked to Action 4.1) - Public procurement and infrastructure planning - Marine spatial planning and coastal development decisions - Facilitating the use of valuation to: - Quantify co-benefits (climate, biodiversity, coastal protection) - Compare restoration options - Support decision-making under limited budgets - Aligning valuation approaches with: - MRV systems (Action 3.2) - Ecosystem accounting frameworks (Action 3.4) - EU and international economic valuation standards (SEEA, IPCC guidance) - Supporting financial actors and authorities in incorporating valuation into: - Risk and opportunity assessments - ESG and sustainable finance frameworks - Blended and impact investment strategies - Monitoring and documenting the uptake of valuation in financial decision-making processes
Legal basis / policy alignment	EU Nature Restoration Regulation and National Restoration Plans; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal GBF; EU Biodiversity Strategy 2030; MSFD; Habitats Directive / Natura 2000; MSP Directive; IMAP where relevant.
Type of action	Enabling action / Investment decision support / Economic valuation uptake
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, applicable at national, regional and project level
Competence level	Shared competence across EU, Mediterranean, national and regional levels
Lead promoter	Plan Bleu (UNEP/MAP interface), with support from SPA/RAC and technical partners
Key Stakeholders	• Plan Bleu (technical facilitator): transfer ARTEMIS valuation approaches and ensure coherence • Public authorities (decision-makers): integrate valuation into planning, budgeting and investment decisions • Financial institutions and investors (investment application): use valuation to inform investment appraisals and risk assessments • Project developers (application): incorporate valuation into project design and funding proposals • Research institutions (methodological support): ensure robustness and consistency of valuation approaches • Funding bodies (programme integration): include valuation requirements in funding criteria
Indicative cost range	• Translate ARTEMIS outputs into decision-relevant formats for policy and investment stakeholders: 40,000–100,000 € • Training, dissemination and technical exchanges: 30,000–80,000 €



Field	Description
	Integration into investment and planning processes: 30,000–70,000 €
Financing pathways	Public funding; EU programmes; private investment; blended finance; PES schemes; carbon and biodiversity credit-related mechanisms
Implementation timeline	- Short-term (2026–2027): initial dissemination and integration into decision frameworks - Medium-term (2028–2029): systematic use in investment and planning processes
Expected outputs	Increased use of ecosystem service valuation in investment decisions; Improved economic justification of restoration projects; Integration of ecosystem services into financial and planning framework; Stronger alignment between ecological outcomes and financing decisions
Priority level	Medium–High (critical enabler for scaling investment)
Monitoring indicators	- Facilitation: F06 · F08 - Uptake: U08 · U09 - Mediterranean Progress: M07

Table 19. Descriptive sheet for Action 19 for the Seagrass Restoration Action Plan 2030: Facilitate early adoption and demonstration of ARTEMIS Seagrass Credits.

Field	Description
Action 4.3	Facilitate early adoption and demonstration of ARTEMIS Seagrass Credits
Strategic objective	Demonstrate the feasibility and credibility of seagrass restoration financing through high-integrity carbon and biodiversity credits, contributing to the implementation of the EU Nature Restoration Regulation, Kunming–Montreal GBF Targets 2 and 19, SAP BIO, and aligning with IPCC guidance, EU climate policy and emerging nature markets.
Problems identified	The ARTEMIS credit methodology needs demonstration in real projects to build confidence among authorities, buyers and developers.
ARTEMIS evidence supporting this action	ARTEMIS recognises blended finance as an effective approach for mobilising additional investment while maintaining public funding as the primary source of restoration finance. The Policy Recommendations (D4.2.1, Section 6.4) recommend combining public funding with complementary private investment where appropriate, while the Cookbook Part II (D3.3.1, Financial Aspects) provides guidance on developing financially robust restoration projects capable of attracting diversified funding sources without compromising environmental integrity. Stakeholder engagement highlighted the importance of diversified financing strategies capable of ensuring the long-term sustainability of restoration projects. Participants recognised blended finance as a promising approach provided that public funding continues to play the leading role.
Action description	Facilitate the use of ARTEMIS Seagrass Credit Methodology by project developers in pilot initiatives, to validate its technical, financial and operational feasibility. The action focuses on generating real-world evidence to support the uptake, recognition and scaling of seagrass credit-based restoration. Key activities include:



Field	Description
	- Facilitate the use of ARTEMIS credit methodology by project developers in pilot initiatives, considering: - Ecological potential - Feasibility of restoration - Carbon and biodiversity benefits - Replicability across the Mediterranean - Assisting project developers in: - Designing restoration projects aligned with ARTEMIS methodology - Structuring projects for credit generation (carbon and biodiversity) - Integrating MRV requirements (Action 3.2) Facilitating partnerships between: - Project developers - Public authorities - Buyers and investors - Technical experts - Supporting the mobilisation of pilot funding, including: - Public funding (e.g. EU programmes) - Private investment - Blended finance arrangements - Testing and refining key components of the methodology: - Restoration protocols - Monitoring and verification systems - Credit quantification and issuance - Documenting and disseminating lessons learned, costs, risks and benefits - Promoting replication and scaling of successful models across the region
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Climate Law; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Targets 2 and 19); IPCC Wetlands Supplement.
Type of action	Enabling action / Pilot implementation / Market demonstration
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, implemented at project and national scale
Competence level	Shared competence across national and project level, with regional coordination
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC
Key Stakeholders	Plan Bleu (coordination and scaling): facilitate alignment, knowledge transfer and replication Project developers and practitioners (implementation): design and implement pilot restoration projects National and regional authorities (authorisation and oversight): enable project development and ensure regulatory compliance Private sector buyers and investors (demand and financing): provide funding and demand for credits Research institutions (technical validation): ensure scientific robustness and MRV consistency



Field	Description
	- Certification and standard-setting bodies (credibility): support alignment with carbon and biodiversity market standards
Indicative cost range	- Feasibility studies and project design: 80,000–200,000 € - Pilot implementation (restoration and monitoring): 100,000–350,000 € - MRV application, validation and documentation: 50,000–150,000 €
Financing pathways	Public funding (EU programmes such as LIFE, Horizon Europe); private investment; blended finance; voluntary carbon and biodiversity markets; philanthropic funding.
Implementation timeline	- Short-term (2026–2027): project identification and preparation - Medium-term (2028–2029): implementation of pilot projects - Long-term (≥2030): replication and scaling across the Mediterranean
Expected outputs	- Portfolio of pilot seagrass restoration projects applying ARTEMIS methodology - Validated approaches for credit generation and MRV - Documented lessons learned and cost structures - Increased confidence among authorities and investors - Foundations for scaling credit-based restoration mechanisms.
Priority level	High (critical for unlocking market-based financing)
Monitoring indicators	• Facilitation: F01 · F07 · F08 • Uptake: U09 • Mediterranean Progress: M07

Table 20. Descriptive sheet for Action 20 for the Seagrass Restoration Action Plan 2030: Integrate seagrass restoration into blue carbon and climate finance initiatives

Field	Description
Action 4.4	Integrate seagrass restoration into blue carbon and climate finance initiatives
Strategic objective	Position seagrass restoration as a credible and investable nature-based climate solution, facilitating access to climate finance and contributing to the implementation of the Paris Agreement, the EU Climate Law, the EU Nature Restoration Regulation, and the Kunming–Montreal GBF (Targets 2 and 19), while supporting SAP BIO resource mobilisation and alignment with IPCC guidance on blue carbon ecosystems
Problems identified	Seagrass climate benefits are not yet fully operationalised within climate finance, adaptation and carbon accounting frameworks.
ARTEMIS evidence supporting this action	One of the principal innovations of ARTEMIS is the development of a Mediterranean Seagrass Credits Methodology, presented in the Cookbook Part II (D3.3.1). The methodology establishes legal, governance, commercial, financial and risk management requirements for future credit schemes. The Policy Recommendations (D4.2.1, Section 6.4) emphasise that market-based instruments should complement public funding and only be implemented where robust governance, transparent methodologies and environmental integrity can be guaranteed. The ARTEMIS co-creation process demonstrated interest in developing innovative financing mechanisms while consistently highlighting the



Field	Description
	importance of scientific credibility, transparent governance, independent verification and clear regulatory frameworks before scaling market-based approaches.
Action description	Promote the integration of seagrass restoration into blue carbon and climate finance frameworks, enabling it to be recognised, financed and implemented as a nature-based solution for climate mitigation and adaptation. The action focuses on connecting ARTEMIS outputs with global and European climate finance mechanisms, ensuring seagrass restoration is included in climate investment portfolios. Key activities include: - Supporting the inclusion of seagrass restoration in: - Nationally Determined Contributions (NDCs) - National climate adaptation and mitigation strategies - Long-term climate planning frameworks - Promoting alignment with IPCC Wetlands Supplement methodologies to support: - Carbon accounting - Reporting and transparency - Engaging climate finance actors, including: - Multilateral Development Banks (MDBs) - Climate funds (e.g. Green Climate Fund, Adaptation Fund) - Development agencies - Supporting the integration of seagrass restoration into: - Climate finance proposals - Blue carbon initiatives - Nature-based investment portfolios - Facilitating development of climate-aligned restoration pipelines, linking with: - Action 4.1 (NRPs and financing pipelines) - Action 4.3 (pilot credit projects) - Promoting the use of: - ARTEMIS MRV systems (Action 3.2) - Ecosystem service valuation (Action 3.3) - Seagrass credit methodologies (Action 4.7) - Encouraging private sector engagement through: - Net-zero commitments - ESG and disclosure frameworks - Voluntary carbon markets - Documenting climate benefits (mitigation and adaptation) to support scaling and replication.
Legal basis / policy alignment	Paris Agreement; EU Climate Law; EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Targets 2 and 19); IPCC Wetlands Supplement; Nationally Determined Contributions (NDCs).
Type of action	Enabling action / Climate finance integration / Nature-based solutions
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region with national and project-level implementation



Field	Description
Competence level	Shared competence across EU, Mediterranean, national and international climate policy levels
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC and climate policy stakeholders
Key Stakeholders	• Plan Bleu (facilitation and coordination): connect ARTEMIS outputs to climate finance frameworks • National climate authorities (policy integration): include seagrass in NDCs and climate strategies • Multilateral development banks and climate funds (financing): provide funding and scale investments • Project developers (pipeline development): design climate-aligned restoration projects • Private sector actors (investment and demand): finance projects through carbon markets and ESG strategies • Research institutions (technical support): ensure alignment with IPCC methodologies and MRV robustness
Indicative cost range	• Climate finance integration and policy alignment: 50,000–120,000 € • Stakeholder engagement (climate funds, MDBs, authorities): 40,000–100,000 € • Development of climate-aligned restoration pipelines: 60,000–150,000 €
Financing pathways	Public climate finance; multilateral climate funds; development finance institutions; private investment; blended finance; voluntary carbon markets; blue carbon initiatives.
Implementation timeline	• Short-term (2026–2027): engagement with climate actors and initial integration into climate frameworks • Medium-term (2028–2029): inclusion in climate finance pipelines and programmes • Long-term (≥2030): mainstream integration into climate finance and investment flows
Expected outputs	• Integration of seagrass restoration into climate policies and strategies • Inclusion of seagrass in climate finance proposals and investment portfolios • Increased visibility of seagrass as a climate solution • Improved linkage between restoration, MRV and climate finance • Strengthened pipeline of climate-financed restoration projects
Priority level	Medium-High (strategic for scaling finance and global positioning)
Monitoring indicators	• Facilitation: F02 · F08 • Uptake: U08 · U09 • Mediterranean Progress: M05 · M07

Table 21. Descriptive sheet for Action 21 for the Seagrass Restoration Action Plan 2030: Engage private sector actors through ARTEMIS investment cases.

Field	Description
Action 4.5	Engage private sector actors through ARTEMIS investment cases



Field	Description
Strategic objective	Mobilise private sector investment in seagrass restoration by developing and promoting robust, evidence-based investment cases, contributing to Kunming–Montreal GBF Target 19, the EU Nature Restoration Regulation, and alignment with the EU sustainable finance framework (EU Taxonomy, ESG, CSRD), while supporting SAP BIO resource mobilisation and the EU Biodiversity Strategy 2030.
Problems identified	Private sector engagement remains underdeveloped despite dependencies of tourism, ports, fisheries, infrastructure and utilities on healthy coastal ecosystems.
ARTEMIS evidence supporting this action	The Policy Recommendations (D4.2.1, Section 4.3 and Section 6.4) recognise that corporate investment can contribute to scaling seagrass restoration when supported by robust governance and transparent methodologies. ARTEMIS highlights that emerging sustainability frameworks (including CSRD, the EU Taxonomy and corporate biodiversity commitments) create opportunities for voluntary private-sector engagement, while the Cookbook Part II (D3.3.1) provides guidance for developing credible restoration investment models that minimise greenwashing risks and ensure measurable ecological outcomes. Stakeholder consultations recognised growing interest from the private sector in supporting nature restoration. At the same time, participants emphasised that corporate engagement should be underpinned by transparent methodologies, measurable ecological outcomes and robust governance to ensure environmental credibility and public confidence.
Action description	Promote the engagement of private sector actors by developing and disseminating ARTEMIS-based investment cases that demonstrate the economic, environmental and strategic value of seagrass restoration. The action focuses on translating technical outputs (valuation, MRV, credits) into clear, sector-specific investment propositions. Key activities include: - Disseminating ARTEMIS outputs to private sector actors in accessible and decision-relevant formats Promoting the use of ARTEMIS financial fact sheets as practical reference materials, showcasing: - Real cost structures of restoration interventions - Operational and monitoring requirements - Financial characteristics of pilot projects - Lessons learned on feasibility, risks and implementation - Translating financial fact sheet information into sector-relevant insights, helping private actors to: - Better understand cost drivers and timelines - Identify potential entry points for engagement - Assess alignment with corporate sustainability and ESG strategies - Facilitating dialogue and exchange platforms between: - Private sector actors - Public authorities - Project developers and practitioners - Research organisations - Supporting matchmaking processes by connecting: - Interested private actors - Restoration practitioners and implementing organisations - Public authorities - Promoting ARTEMIS outputs (including fact sheets) as a common technical and financial reference.



Field	Description
	Documenting and sharing examples of private sector engagement informed by ARTEMIS evidence
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; EU sustainable finance framework (EU Taxonomy, CSRD, SFDR); Marine Strategy Framework Directive (MSFD); Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Target 19).
Type of action	Enabling action / Private sector engagement / Investment mobilisation
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, with implementation at national, regional and project levels
Competence level	Shared competence across EU, national, regional and private sector levels
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC and private sector networks.
Key Stakeholders	Plan Bleu (facilitation and matchmaking): connect private actors with ARTEMIS investment opportunities Private sector companies (investment and implementation): invest in and co-develop restoration projects, integrate into corporate strategies Financial institutions and investors (financing): structure funding and evaluate investment opportunities Public authorities (enabling framework): provide regulatory clarity and co-financing mechanisms Project developers and practitioners (project preparation): develop investable restoration projects Research institutions (technical validation): support valuation and ensure credibility of investment cases
Indicative cost range	- Preparation of sector-oriented communication and technical materials: 40,000–90,000 € - Organisation of workshops, roundtables and stakeholder engagement platforms: 40,000–100,000 € - Facilitation of partnerships, matchmaking and follow-up: 30,000–90,000 €
Financing pathways	Public funding; EU programmes; technical assistance; contributions from participating organisations; in-kind support
Implementation timeline	Short-term (2026–2027): dissemination of ARTEMIS outputs and initial engagement Medium-term (2028–2029): consolidation of partnerships and collaboration pathways Long-term (≥2030): sustained private sector engagement and scaling
Expected outputs	- Increased awareness of ARTEMIS outputs among private sector actors - Strengthened dialogue between private sector and restoration stakeholders - Emergence of partnerships and collaboration initiatives - Improved alignment between restoration needs and corporate sustainability strategies



Field	Description
	Enhanced enabling environment for private investment (without direct product development)
Priority level	Medium.
Monitoring indicators	- Facilitation: F03 · F07 · F08 - Uptake: U09 - Mediterranean Progress: M07

Table 22. Descriptive sheet for Action 22 for the Seagrass Restoration Action Plan 2030: Promote adoption of ARTEMIS financing recommendations in funding programmes.

Field	Description
Action 4.6	Promote adoption of ARTEMIS financing recommendations in funding programmes
Strategic objective	Increase the availability of financial instruments supporting restoration. Contribute to the implementation of the EU Nature Restoration Regulation, Kunming–Montreal GBF Target 19 (resource mobilisation), SAP BIO, and alignment with the EU Biodiversity Strategy 2030 and MSFD.
Problems identified	Existing EU, national and regional funds are fragmented and do not always support long-term restoration needs.
ARTEMIS evidence supporting this action	ARTEMIS identified that, beyond increasing financial resources, funding programmes need to be better aligned with the ecological, technical and long-term requirements of seagrass restoration. The Policy Recommendations (D4.2.1, Sections 4.5, 4.6 and Section 6.3) recommend improving the strategic alignment of European and national funding instruments with restoration priorities identified under the Nature Restoration Regulation and National Restoration Plans. To support this objective, ARTEMIS developed Financial Factsheets for the pilot projects, providing practical information on restoration costs, financing needs and investment requirements, together with the Cookbook Part II (D3.3.1), which offers guidance on financial planning, project structuring and risk management. Together, these outputs provide a practical basis for integrating ARTEMIS recommendations into future funding programmes, calls for proposals and evaluation frameworks. Stakeholder consultations identified fragmented funding opportunities, administrative complexity and limited alignment between funding programmes and restoration needs as important barriers to implementation. Participants highlighted the need for stronger dialogue between funding authorities, restoration practitioners and technical experts to ensure that future funding instruments better reflect the technical, financial and long-term requirements of restoration projects.
Action description	Encourage fund managers to use ARTEMIS recommendations, including the Financial Factsheets and restoration financing guidance, when designing calls, eligibility criteria and restoration investment windows. Key activities include: - Disseminating ARTEMIS outputs to: - EU programme managers (e.g. LIFE, EMFAF, Horizon Europe, Interreg) - National and regional funding authorities - Promoting the integration of ARTEMIS recommendations into: - Calls for proposals



Field	Description
	- Eligibility criteria - Evaluation frameworks - Funding priorities • Facilitating dialogue between: - Funding bodies - National authorities (NRP implementers) - Restoration practitioners and technical experts • Supporting funding authorities in better understanding: - Cost structures of restoration (using ARTEMIS financial fact sheets) - Technical requirements (restoration methodologies) - Timeframes and risks associated with restoration projects • Encouraging alignment between funding programmes and: - Restoration needs identified in NRPs (Action 4.1) - MRV and reporting requirements (Action 3.2 and 3.5) - Ecosystem service valuation approaches (Action 3.3) • Promoting consistency across programmes to reduce fragmentation and improve scalability of restoration funding • Monitoring how ARTEMIS recommendations are reflected in funding instruments and programmes
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Target 19); IMAP (where relevant).
Type of action	Enabling action / Funding programme alignment / Strategic mainstreaming
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, with implementation at EU, national and regional levels
Competence level	Shared competence across EU institutions, national managing authorities and regional funding bodies
Lead promoter	Plan Bleu (UNEP/IMAP interface), in coordination with SPA/RAC
Key Stakeholders	• Plan Bleu (facilitator and transfer agent): disseminates ARTEMIS financing recommendations and facilitates dialogue with funding bodies • EU programme managers (programme design): integrate restoration-relevant criteria into EU funding instruments • National and regional managing authorities (implementation): adapt calls and funding priorities to restoration needs • Public authorities (alignment): ensure consistency between NRPs and funding programmes • Project developers and practitioners (feedback): provide practical insights on funding gaps and barriers • Research institutions (technical support): support interpretation of ARTEMIS methodologies and cost structures
Indicative cost range	• Preparation of guidance and programme-oriented materials: 30,000–80,000 € • Stakeholder engagement and technical exchanges: 30,000–80,000 € • Follow-up, alignment tracking and support: 20,000–60,000 €



Field	Description
Financing pathways	Public funding; EU programmes; technical assistance mechanisms; institutional budgets
Implementation timeline	• Short-term (2026–2027): dissemination and engagement with funding bodies • Medium-term (2028–2029): integration of ARTEMIS recommendations into programmes and calls
Expected outputs	• Increased awareness of ARTEMIS financing approaches among funding authorities • Integration of restoration-relevant criteria into funding programmes • Improved alignment between funding instruments and restoration needs • Enhanced coherence across funding frameworks • Better access to funding for restoration practitioners
Priority level	High.
Monitoring indicators	• Facilitation: F02 · F08 • Uptake: U08 • Mediterranean Progress: M07 · M08

8.5 Strategic Line 5 - Capacity Building, Stakeholder Engagement & Long-Term Uptake

This Strategic Line aims to secure the long-term legacy of ARTEMIS by facilitating the transfer, uptake and practical application of the methodologies, policy recommendations and lessons learned generated throughout the project, contributing to SAP BIO enabling conditions and the achievement of GBF Targets 20, 21, and 22.

Table 23. Descriptive sheet for Action 23 for the Seagrass Restoration Action Plan 2030: Deliver a Mediterranean knowledge transfer programme for ARTEMIS outputs.

Field	Description
Action 5.1	Deliver a Mediterranean knowledge transfer programme for ARTEMIS outputs
Strategic objective	Ensure the long-term uptake, replication and application of ARTEMIS outputs beyond the project lifetime, strengthening capacity, knowledge transfer and cross-sector collaboration, and contributing to SAP BIO enabling conditions, the Kunming–Montreal GBF Targets 20, 21 and 22, the EU Nature Restoration Regulation, and alignment with the EU Biodiversity Strategy 2030 and MSFD.
Problems identified	ARTEMIS outputs may not be adopted if they are not actively communicated to implementers in accessible and practical formats.
ARTEMIS evidence supporting this action	ARTEMIS was conceived as a capitalisation project, aiming to ensure that its methodologies, policy recommendations and pilot experience continue to support seagrass restoration beyond the project lifetime. The Policy Recommendations (D4.2.1) encourage the dissemination and uptake of ARTEMIS outputs across Mediterranean countries, while the Cookbook Part II (D3.3.1) explains how the restoration methodology was developed through a collaborative co-creation process and is intended to be transferred and applied by future restoration initiatives.



Field	Description
	Throughout the ARTEMIS stakeholder consultation process and the interviews undertaken for this Action Plan, participants highlighted the importance of maintaining knowledge exchange beyond individual projects and recognised that sharing practical experience, methodologies and lessons learned is essential to accelerate restoration across the Mediterranean.
Action description	Implement a structured knowledge-transfer programme through existing networks, events and policy processes to ensure users know what outputs exist and how to apply them. Key activities include: - Identifying and structuring ARTEMIS outputs into user-oriented knowledge packages, including: - Restoration methodologies - MRV approaches - Ecosystem service valuation - Ecosystem accounting - Seagrass credit approaches - Financial and technical fact sheets Translating technical outputs into: - Practical guidance materials - Summaries for decision-makers - Sector-specific communication formats Delivering a programme of knowledge transfer activities, including: - Workshops and technical seminars - Regional and national events - Webinars and online dissemination Using existing regional platforms and networks: - UNEP/MAP processes - MedPAN and MPA networks - Scientific and technical fora Targeting key user groups: - Public authorities - Practitioners and project developers - Funding bodies - Private sector actors Facilitating feedback loops to: - Understand user needs - Improve usability of outputs - Support adaptive dissemination Promoting integration of ARTEMIS outputs into: - Policy processes - Planning frameworks - Restoration projects
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Targets 20, 21 and 22); IMAP (where relevant).
Type of action	Enabling action / Knowledge transfer / Capacity building
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>



Field	Description
Spatial scope	Mediterranean región
Competence level	Regional coordination with implementation at national and local levels
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC.
Key Stakeholders	• Plan Bleu (coordination and dissemination): leads knowledge transfer programme and ensures accessibility of outputs • UNEP/MAP and SPA/RAC (regional platforms): support dissemination and integration into regional processes • National authorities (uptake): integrate ARTEMIS outputs into policy and planning • Project developers and practitioners (application): apply methodologies in restoration projects • Research institutions (technical support): explain and contextualise scientific outputs • Regional networks (e.g. MedPAN) (outreach): expand reach and stakeholder engagement.
Indicative cost range	• Preparation and adaptation of knowledge materials: 50,000–120,000 € • Organisation of workshops, events and dissemination activities: 40,000–120,000 € • Programme coordination and follow-up: 30,000–80,000 €
Financing pathways	Public funding; EU programmes; regional cooperation frameworks; technical assistance; institutional budgets
Implementation timeline	• Short-term (2026–2027): launch of knowledge transfer programme • Medium-term (2028–2029): consolidation and expansion • Long-term (≥2030): sustained dissemination and uptake
Expected outputs	Structured and accessible ARTEMIS knowledge packages; Increased awareness and understanding of ARTEMIS outputs; Strengthened capacity among key stakeholders; Improved continuity beyond project lifetime
Priority level	High.
Monitoring indicators	• Facilitation: F01 · F04 · F05 · F09 · F10 • Uptake: U10 • Mediterranean Progress: M09

Table 24. Descriptive sheet for Action 24 for the Seagrass Restoration Action Plan 2030: Strengthen stakeholder engagement and cross-sector collaboration.

Field	Description
Action 5.2	Strengthen stakeholder engagement and cross-sector collaboration
Strategic objective	Improve coordination and cooperation among key stakeholders involved in restoration. Contribute to Kunming–Montreal GBF Targets 21 and 22 (participation, inclusion and governance), the EU Nature Restoration Regulation, SAP BIO enabling conditions, and alignment with the EU Biodiversity Strategy 2030, MSFD and the Barcelona Convention.



Field	Description
Problems identified	Restoration requires coordination among policy, science, finance, ports, tourism, fisheries, MPAs and civil society, but collaboration remains fragmented.
ARTEMIS evidence supporting this action	Stakeholder engagement is a central component of the ARTEMIS approach. The Policy Recommendations (D4.2.1, Section 6.2) identify stakeholder participation as a prerequisite for successful restoration planning and implementation, while the stakeholder analyses undertaken in Greece, Italy and Spain demonstrate the importance of improving cooperation between public authorities, researchers, NGOs, local communities and the private sector to overcome fragmented governance and facilitate restoration delivery. Both the stakeholder consultations carried out during ARTEMIS and the interviews conducted for this Action Plan consistently highlighted the need for stronger collaboration between sectors, clearer institutional roles and more inclusive decision-making processes. Participants recognised that effective restoration depends on sustained cooperation throughout project planning, implementation and long-term management.
Action description	Facilitate collaboration among authorities, research institutions, NGOs, MPA managers, project developers and private actors to support restoration implementation. Use existing stakeholder processes to connect actors needed for uptake, financing and implementation of ARTEMIS outputs. Key activities include: - Facilitating multi-stakeholder dialogue platforms, bringing together: - Public authorities - Scientists and technical experts - Restoration practitioners - Economic sectors (tourism, ports, fisheries, infrastructure) - Using existing regional and national frameworks and networks: - UNEP/MAP and Barcelona Convention processes - MedPAN and MPA networks - National stakeholder platforms - Supporting cross-sector exchanges to: - Align priorities and objectives - Identify synergies and shared interests - Reduce conflicts between uses and restoration goals - Enhancing collaboration across governance levels: - Regional (Mediterranean) - National - Local (MPAs, coastal zones) - Promoting stakeholder participation in: - Restoration planning - Implementation processes - Monitoring and evaluation - Supporting integration of ARTEMIS outputs into stakeholder processes, ensuring: - Common understanding - Consistent approaches - Shared technical reference - Facilitating coordination between key strategic lines, including: - Technical frameworks (Line 3) - Financing (Line 4) - Capacity-building (Line 5)



Field	Description
	Documenting good practices and lessons learned in stakeholder collaboration
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Targets 21 and 22); IMAP (where relevant).
Type of action	Enabling action / Stakeholder engagement / Governance support
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region, with implementation at regional, national and local levels
Competence level	Shared competence across regional, national and local governance levels
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC and regional networks.
Responsible actors	Plan Bleu (facilitator and convenor): enables dialogue, connects stakeholders and ensures coherence across processes Public authorities (coordination and implementation): lead planning, regulation and restoration initiatives Research institutions (technical support): provide scientific input and support evidence-based dialogue Restoration practitioners and project developers (implementation): bring operational experience and practical needs Sectoral stakeholders (engagement and alignment): contribute to cross-sector coordination (tourism, fisheries, maritime, infrastructure) Regional networks and NGOs (outreach and facilitation): support stakeholder mobilisation and communication
Indicative cost range	- Organisation of stakeholder engagement processes (workshops, platforms): 40,000–120,000 € - Coordination and facilitation activities: 30,000–90,000 € - Documentation of outcomes and follow-up: 30,000–80,000 €
Financing pathways	Public funding; EU programmes; regional cooperation frameworks; institutional budgets; technical assistance
Implementation timeline	- Short-term (2026–2027): initiation of engagement processes - Medium-term (2028–2029): consolidation of collaboration mechanisms - Long-term (≥2030): sustained and institutionalised stakeholder engagement
Expected outputs	- Strengthened stakeholder dialogue and coordination - Increased cross-sector collaboration - Improved alignment between restoration, policy and economic activities - Greater stakeholder involvement in restoration processes - Enhanced coherence across governance levels
Priority level	High.
Monitoring indicators	- Facilitation: F03 · F07 · F09 - Uptake: U09 · U10



Field	Description
	Mediterranean Progress: M09

Table 25. Descriptive sheet for Action 25 for the Seagrass Restoration Action Plan 2030: Support capacity building for restoration authorities and practitioners.

Field	Description
Action 5.3	Support capacity building for restoration authorities and practitioners
Strategic objective	Strengthen the technical and institutional capacity of authorities, practitioners and project developers to effectively plan, implement, monitor and finance seagrass restoration, contributing to Kunming–Montreal GBF Targets 20, 21 and 22 (capacity building, knowledge and participation), the EU Nature Restoration Regulation, SAP BIO enabling conditions, and alignment with the EU Biodiversity Strategy 2030 and MSFD.
Problems identified	Institutional and technical capacity is uneven across the Mediterranean, limiting implementation of restoration, MRV, finance and stakeholder engagement approaches.
ARTEMIS evidence supporting this action	ARTEMIS identified limited technical capacity and uneven institutional expertise as important barriers to scaling up seagrass restoration. The Policy Recommendations (D4.2.1) recommend strengthening technical capacity among competent authorities and restoration practitioners, while the Cookbook Part I (D3.3.1) provides harmonised methodologies, protocols and technical guidance that can be used as the basis for future training and capacity-building activities across the Mediterranean. Stakeholder consultations and interviews consistently identified the need for practical training, accessible technical guidance and opportunities to exchange experience between restoration practitioners. Participants considered capacity building essential to ensure the consistent application of ARTEMIS methodologies and to improve restoration effectiveness across different Mediterranean contexts.
Action description	Support the development of technical capacities and practical skills required for the implementation of seagrass restoration, ensuring that ARTEMIS outputs are effectively applied by authorities and practitioners. The action focuses on hands-on, practice-oriented capacity building, enabling stakeholders to move from knowledge to operational use. Key activities include: - Developing and disseminating training materials and tools based on ARTEMIS outputs, including: - Restoration methodologies (active and passive) - Monitoring, reporting and verification (MRV) approaches - Ecosystem service valuation - Ecosystem accounting approaches - Seagrass credit methodologies - Delivering targeted training programmes, including: - Technical workshops - Practical training sessions - Field-based learning (where possible) - Online modules and webinars - Targeting key audiences: - National and regional authorities - MPA managers



Field	Description
	- Restoration practitioners and project developers - Technical staff and consultants • Supporting the practical application of ARTEMIS outputs in: - Restoration projects - Monitoring programmes - Planning and reporting processes • Encouraging peer-to-peer learning and experience exchange, through: - Case studies (including ARTEMIS pilot sites) - Best practices and lessons learned - Practitioner networks • Facilitating technical assistance and mentoring, where possible, to: - Support early-stage implementation - Address specific challenges • Promoting the integration of capacity-building into: - National Restoration Plans (NRPs) - Funding programmes - Institutional training systems
Legal basis / policy alignment	EU Nature Restoration Regulation; EU Biodiversity Strategy 2030; Marine Strategy Framework Directive (MSFD); Habitats Directive / Natura 2000; Barcelona Convention and SPA/BD Protocol; Post-2020 SAP BIO; Mediterranean Posidonia Network 2030 Roadmap; Kunming-Montreal Global Biodiversity Framework (Targets 20, 21 and 22); IMAP (where relevant).
Type of action	Enabling action / Capacity building / Technical uptake
Target ecosystems / species	<i>Posidonia oceanica</i> ; <i>Cymodocea nodosa</i>
Spatial scope	Mediterranean region.
Competence level	Shared competence across regional, national and local levels
Lead promoter	Plan Bleu (UNEP/MAP interface), in coordination with SPA/RAC and technical partners
Key Stakeholders	• Plan Bleu (coordination and facilitation): structures capacity-building programme and ensures dissemination of ARTEMIS outputs • National and regional authorities (uptake): integrate capacity-building into institutional processes and apply knowledge • MPA managers and local authorities (implementation): apply skills in site-level restoration and management • Project developers and practitioners (application): implement restoration and monitoring using ARTEMIS approaches • Research institutions (technical training): provide scientific expertise and training content • Regional networks and NGOs (outreach and training support): facilitate engagement and delivery of training activities
Indicative cost range	• Development of training materials and technical guidance: 50,000–120,000 € • Delivery of training programmes, workshops and field sessions: 50,000–150,000 € • Technical assistance, mentoring and follow-up support: 40,000–120,000 €
Financing pathways	Public funding; EU programmes (e.g. LIFE, Horizon Europe, EMFAF); national budgets; technical assistance instruments; project-based funding

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Field	Description
Implementation timeline	- Short-term (2026–2027): development of materials and initial training activities - Medium-term (2028–2029): expansion and consolidation of capacity-building programmes - Long-term (≥2030): institutionalisation and continuous capacity development
Expected outputs	- Training materials and guidance based on ARTEMIS outputs - Increased number of trained authorities and practitioners - Improved technical capacity to implement restoration projects - Greater uptake of ARTEMIS methodologies and frameworks - Strengthened implementation capacity across the Mediterranean
Priority level	High.
Monitoring indicators	- Facilitation: F04 · F06 · F10 - Uptake: U10 - Mediterranean Progress: M09 · M10



9 Monitoring and Evaluation Framework

9.1 Purpose of the Monitoring System

The Action Plan is intended to facilitate the long-term uptake and implementation of the scientific knowledge, methodologies and policy recommendations generated by the ARTEMIS project across the Mediterranean region. As implementation will largely depend on national authorities, regional organisations, project developers, protected area managers, research institutions and private stakeholders, the monitoring framework has been specifically designed to distinguish between activities directly delivered by Plan Bleu and the broader outcomes and impacts generated through the adoption of ARTEMIS results by third parties.

Consequently, this Monitoring and Evaluation Framework does not evaluate only the implementation of the Action Plan itself. Instead, it provides a structured mechanism to monitor the complete pathway from knowledge transfer to regional implementation, allowing progress to be assessed while maintaining a clear distinction between direct responsibilities, indirect influence and wider Mediterranean restoration progress.

The framework has been designed to:

- monitor the implementation of the Action Plan;
- assess the uptake of ARTEMIS outputs by competent authorities and other stakeholders;
- monitor progress towards Mediterranean seagrass restoration objectives;
- support adaptive management through periodic evaluation;
- provide a harmonised reporting framework aligned with European and Mediterranean policy objectives.

This framework is based on a single Master Indicator Catalogue. Indicators are defined only once and are subsequently linked to all relevant actions through a traceability matrix. This approach eliminates duplication, improves consistency, facilitates future updates and allows a single indicator to contribute simultaneously to several actions, strategic objectives and policy frameworks.

Once the possible measures to be developed in each region have been established, as well as the time horizon for each one of them, the system of indicators to be used to evaluate the efficiency of each one of them is defined, thus allowing the reformulation of those actions that do not provide the estimated result.

9.2 Monitoring Framework Architecture

The monitoring system follows the intervention logic of the Action Plan.

The Action Plan does not develop new restoration methodologies, monitoring protocols or financial mechanisms. Instead, it facilitates the transfer, dissemination and uptake of the results already generated by ARTEMIS. Consequently, the monitoring framework follows the complete implementation pathway from ARTEMIS outputs to Mediterranean restoration outcomes.

The monitoring architecture is structured as follows:



Figure 3. Monitoring Framework Architecture

This logic reflects the different levels of responsibility associated with implementation.

Plan Bleu is directly responsible for facilitating dissemination, capacity building, stakeholder engagement and institutional dialogue. However, decisions regarding the adoption of ARTEMIS methodologies, the implementation of restoration projects, policy reforms or investment programmes remain under the responsibility of national authorities and other stakeholders.

Similarly, ecological improvements, restoration outcomes and financing mobilisation are monitored as regional progress indicators rather than direct performance indicators of Plan Bleu.

This distinction ensures that the monitoring system remains realistic, transparent and fully aligned with the actual governance role of Plan Bleu within the Mediterranean region.

9.3 Indicator Classification

To reflect the different levels of responsibility and influence, indicators have been organised into three complementary categories.

9.3.1 Facilitation Indicators (F)

Facilitation Indicators measure activities directly implemented by Plan Bleu in support of the transfer and dissemination of ARTEMIS results.

These indicators evaluate the delivery of activities that are fully under the control of Plan Bleu, including technical assistance, capacity-building activities, stakeholder engagement, dissemination events, institutional dialogue, communication actions and partnership development.

They therefore provide evidence of the effective implementation of the Action Plan itself.

Table 26. Facilitation Indicator (F)

Cod e	Facilitation Indicator (F)
F01	Technical dissemination events organised
F02	Bilateral meetings with competent authorities
F03	Stakeholder engagement activities
F04	Capacity-building and training activities
F05	Technical guidance and dissemination materials produced from ARTEMIS outputs
F06	Technical assistance and advisory support provided
F07	Partnerships and cooperation mechanisms facilitated



F08	Funding and investment promotion initiatives facilitated
F09	Communication and outreach activities
F10	Knowledge transfer coverage (countries / institutions reached)

Because these activities are implemented directly by Plan Bleu, Facilitation Indicators represent the highest level of accountability within the monitoring framework.

9.3.2 Uptake Indicators (U)

Uptake Indicators measure the degree to which ARTEMIS outputs are adopted and applied by third parties.

These indicators assess whether competent authorities, regional organisations, project developers, research institutions and other stakeholders incorporate ARTEMIS methodologies, recommendations and tools into their own policies, planning instruments and restoration initiatives.

Plan Bleu cannot directly control these outcomes but can significantly influence them through knowledge transfer, networking and technical support.

Uptake Indicators include:

Table 27. Uptake Indicators (U)

Cod e	Uptake Indicator (U)
U01	National Restoration Plans incorporating ARTEMIS recommendations
U02	Marine Spatial Plans incorporating ARTEMIS approaches
U03	Restoration projects applying ARTEMIS methodologies
U04	Projects applying harmonised MRV
U05	Projects applying ecosystem service valuation
U06	Projects applying ecosystem accounting (SEEA-EA)
U07	Organisations applying the Seagrass Credits methodology
U08	Public funding programmes referencing ARTEMIS
U09	Private sector organisations engaged in ARTEMIS-based restoration
U10	Institutions formally adopting ARTEMIS outputs

These indicators provide the primary measure of the effectiveness of the Action Plan as a knowledge-transfer instrument.

9.3.3 Mediterranean Progress Indicators (M)

Mediterranean Progress Indicators monitor long-term ecological, institutional and financial progress achieved across the Mediterranean region.

These indicators are not intended to assess the direct performance of Plan Bleu. Instead, they provide contextual evidence of regional progress towards large-scale restoration objectives.

The Mediterranean Progress Indicators include:



Table 28. Mediterranean Progress Indicators (M)

Cod e	Mediterranean Progress Indicators (M)
M01	Area under restoration
M02	Area under improved protection or passive restoration
M03	Ecological condition of restored meadows
M04	Restoration areas benefiting from pressure reduction
M05	Carbon sequestration and storage recovered
M06	Biodiversity status
M07	Restoration finance mobilised
M08	Countries reporting restoration progress
M09	Projects monitored using harmonised methodologies
M10	Contribution to Mediterranean Restoration Targets

Since these indicators depend on multiple actors operating across different governance levels, they should be interpreted as regional context indicators rather than direct measures of Action Plan performance.

Monitoring these indicators nevertheless allows the Action Plan to evaluate whether increased uptake of ARTEMIS outputs is ultimately contributing to the broader restoration objectives established under European and Mediterranean policy frameworks.

9.4 Master Indicator Catalogue

The monitoring framework is supported by a Master Indicator Catalogue containing the complete technical specification of every indicator included in the Action Plan.

Each indicator is assigned a unique identification code and is defined only once to ensure consistency throughout the document.

For each indicator, the catalogue provides:

- Indicator code and name
- Description
- Method of calculation
- Unit of measurement;
- Reporting frequency;
- Desired trend
- Applicable actions
- Alignment with international frameworks

Using a single catalogue avoids duplication of indicator descriptions throughout the Action Plan and ensures that any future methodological updates only need to be introduced once.

9.5 Indicator Traceability

Each Action within the Action Plan is linked to a specific combination of Facilitation (F), Uptake (U) and Mediterranean Progress (M) indicators.



Rather than creating a unique set of indicators for every action, the framework applies a common pool of indicators across multiple actions according to their contribution to implementation.

This approach provides complete traceability between:

- ARTEMIS outputs;
- Action Plan actions;
- monitoring indicators;
- supporting metrics;
- reporting responsibilities;
- European and Mediterranean policy frameworks.

The Action–Indicator Traceability Matrix presented below identifies the indicators applicable to each action and constitutes the operational backbone of the monitoring system.

9.5.1 Action–Indicator Traceability Matrix Strategic Line 1. Policy and Planning Uptake

Table 29. Action–Indicator Traceability Matrix. Strategic Line 1. Policy and Planning Uptake

Action	F	U	M
1.1 Promote integration into National Restoration Plans	F02 F05 F06	U01 U10	M08
1.2 Strengthen cooperation with Barcelona Convention and regional frameworks	F01 F02 F07 F09	U10	M08 M09
1.3 Promote integration into Marine Spatial Planning	F02 F05 F06	U02	M08
1.4 Promote integration into Natura 2000 and MPAs	F02 F06	U10 U03	M02 M03
1.5 Promote integration into climate and biodiversity strategies	F01 F05 F06	U01 U08	M08

9.5.2 Action–Indicator Traceability Matrix Strategic Line 2. Restoration Implementation

Table 30. Action–Indicator Traceability Matrix. Strategic Line 2. Restoration Implementation

Action	F	U	M
2.1 Promote pressure reduction before restoration	F04 F05 F06	U03	M04 M03
2.2 Promote restoration prioritisation methodology	F04 F05	U03	M01 M03
2.3 Promote implementation of restoration methodologies	F04 F06	U03 U04	M01 M03
2.4 Promote ecosystem service assessment	F04 F05	U05	M05 M07
2.5 Promote replication of successful approaches	F01 F07 F09	U03 U10	M09

9.5.3 Action–Indicator Traceability Matrix Strategic Line 3 – Monitoring, Assessment and Knowledge Uptake



Table 31. Action–Indicator Traceability Matrix. Strategic Line 3. Monitoring, Assessment and Knowledge Uptake

Action	F	U	M
3.1 Promote harmonised monitoring methodologies	F04 F05	U04	M03
3.2 Promote harmonised MRV implementation	F04 F05 F06	U04	M03 M09
3.3 Promote ecosystem service assessment	F04 F05	U05	M05
3.4 Promote ecosystem accounting	F04 F05	U06	M07
3.5 Promote indicator harmonisation	F05 F06	U10	M08 M09

9.5.4 Action–Indicator Traceability Matrix Strategic Line 4 – Restoration Finance

Table 32. Action–Indicator Traceability Matrix. Strategic Line 4. Restoration Finance

Action	F	U	M
4.1 Promote integration into public financing programmes	F02 F08	U08	M07
4.2 Promote investment readiness	F06 F08	U08 U09	M07
4.3 Promote demonstration of financing approaches	F01 F07 F08	U09	M07
4.4 Promote Seagrass Credits methodology	F04 F05 F08	U07	M05 M07
4.5 Promote private-sector engagement	F03 F07 F08	U09	M07
4.6 Promote long-term financing mechanisms	F02 F08	U08	M07 M08

9.5.5 Action–Indicator Traceability Matrix Strategic Line 5 – Capacity Building and Continuity

Table 33. Action–Indicator Traceability Matrix. Strategic Line 5. Capacity Building and Continuity

Action	F	U	M
5.1 Knowledge transfer programme	F01 F04 F05 F09 F10	U10	M09
5.2 Stakeholder engagement and collaboration	F03 F07 F09	U09 U10	M09
5.3 Capacity building for authorities and practitioners	F04 F06 F10	U10	M09 M10

9.6 Indicator Factsheets

The final section of this chapter presents the complete technical factsheet for each indicator included in the Master Indicator Catalogue.

Each factsheet contains all methodological information required for implementation, monitoring and reporting, including calculation methods, data requirements, reporting responsibilities, verification procedures and alignment with the Nature Restoration Regulation, the Marine



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Strategy Framework Directive, the Habitats Directive, the Global Biodiversity Framework, SAP BIO and other relevant European and Mediterranean frameworks.

These factsheets constitute the operational reference for the implementation of the Monitoring and Evaluation Framework.



9.6.1 Facilitation Indicators (F)

Table 34. F01 – Technical dissemination events organised.

Field	Description
Indicator code and name	F01 – Technical dissemination events organised
Description	Measures the number of technical dissemination events organised or co-organised by Plan Bleu to communicate ARTEMIS methodologies, policy recommendations and technical outputs to competent authorities and relevant stakeholders across the Mediterranean.
Method of calculation	Total number of dissemination events completed during the reporting period, including workshops, seminars, webinars, conferences and technical meetings organised or co-organised by Plan Bleu. Each event is counted once.
Data source	• Plan Bleu annual activity reports • Event agendas • Attendance lists • Event reports • Communication records
Unit of measurement	Number of events
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.2, 2.5, 4.3, 5.1
Alignment with international frameworks	Barcelona Convention, SAP BIO, Nature Restoration Regulation (EU) 2024/1991, Kunming–Montreal Global Biodiversity Framework (Target 21 – knowledge sharing and capacity development).

Table 35. F02 – Bilateral meetings with competent authorities

Field	Description
Indicator code and name	F02 – Bilateral meetings with competent authorities
Description	Measures the institutional engagement undertaken by Plan Bleu with ministries, competent authorities and public agencies responsible for marine restoration, biodiversity conservation and marine spatial planning to facilitate the uptake of ARTEMIS outputs.
Method of calculation	Total number of bilateral meetings organised or co-organised by Plan Bleu during the reporting period. Meetings addressing different implementation topics are counted separately.
Data source	• Meeting minutes • Mission reports • Bilateral meeting records • Plan Bleu implementation reports
Unit of measurement	Number of meetings



Field	Description
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.1, 1.2, 1.3, 4.1, 4.6
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991, Barcelona Convention, SAP BIO, EU Biodiversity Strategy 2030.

Table 36. F03 – Stakeholder engagement activities

Field	Description
Indicator code and name	F03 – Stakeholder engagement activities
Description	Measures the activities organised by Plan Bleu to engage public authorities, NGOs, research institutions, private sector representatives and civil society in the dissemination and implementation of ARTEMIS results.
Method of calculation	Total number of stakeholder engagement activities organised during the reporting period, including consultation meetings, stakeholder forums, participatory workshops and multi-actor dialogue sessions.
Data source	- Stakeholder engagement reports - Workshop reports - Attendance lists - Consultation records - Plan Bleu implementation reports
Unit of measurement	Number of activities
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	4.5, 5.2
Alignment with international frameworks	GBF Target 22 (participation), Barcelona Convention, SAP BIO, Aarhus Convention (public participation principles).

Table 37. F04 – Capacity-building and training activities

Field	Description
Indicator code and name	F04 – Capacity-building and Training Activities
Description	Measures the capacity-building activities organised or facilitated by Plan Bleu to strengthen the technical and institutional capacities of competent authorities, restoration practitioners and other stakeholders for the application of ARTEMIS methodologies and recommendations.
Method of calculation	Total number of training activities delivered during the reporting period, including workshops, technical training sessions, webinars, field demonstrations and knowledge exchange events. Each activity is counted once.



Data source	• Training reports • Attendance lists • Training programmes • Evaluation forms • Plan Bleu implementation reports
Unit of measurement	Number of activities
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.6, 5.1, 5.3
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Barcelona Convention; SAP BIO; Kunming–Montreal Global Biodiversity Framework (Target 21); UN Decade on Ecosystem Restoration.

Table 38. F05 – Dissemination Materials Produced from ARTEMIS Outputs

Field	Description
Indicator code and name	F05 – Dissemination Materials Produced from ARTEMIS Outputs
Description	Measures the preparation and dissemination by Plan Bleu of communication and implementation materials derived from ARTEMIS outputs. The indicator refers exclusively to materials based on existing ARTEMIS deliverables and does not include the development of new methodologies or technical guidance.
Method of calculation	Total number of dissemination products prepared and distributed during the reporting period, including policy briefs, factsheets, technical summaries, implementation guides, communication materials and training resources derived from ARTEMIS outputs.
Data source	• Dissemination materials • Publications • Factsheets • Technical guidance documents • Plan Bleu communication records
Unit of measurement	Number of dissemination products
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.1, 1.3, 1.5, 2.1, 2.2, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 5.1
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Barcelona Convention; SAP BIO; EU Biodiversity Strategy for 2030; Kunming–Montreal Global Biodiversity Framework (Target 21).



Table 39. F06 – Technical Assistance and Advisory Support Provided

Field	Description
Indicator code and name	F06 – Technical Assistance and Advisory Support Provided
Description	Measures the technical assistance and advisory support provided by Plan Bleu to facilitate the application of ARTEMIS methodologies, recommendations and technical outputs by competent authorities and relevant stakeholders.
Method of calculation	Total number of documented advisory interventions delivered during the reporting period, including technical consultations, methodological advice, implementation support and technical reviews of restoration-related documents.
Data source	• Technical assistance records • Advisory reports • Technical review reports • Mission reports • Plan Bleu implementation records
Unit of measurement	Number of advisory interventions
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.1, 1.3, 1.4, 1.5, 2.1, 2.3, 3.2, 3.5, 4.2, 5.3
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Barcelona Convention; SAP BIO; EU Biodiversity Strategy for 2030.

Table 40. F07 – Partnerships and Cooperation Mechanisms Facilitated

Field	Description
Indicator code and name	F07 – Partnerships and Cooperation Mechanisms Facilitated
Description	Measures the partnerships, collaborative initiatives and cooperation mechanisms facilitated by Plan Bleu to strengthen coordination among Mediterranean organisations involved in seagrass restoration and the uptake of ARTEMIS outputs.
Method of calculation	Total number of formal cooperation mechanisms facilitated during the reporting period, including partnership agreements, working groups, technical networks and collaborative initiatives involving two or more organisations.
Data source	• Memoranda of Understanding (MoUs) • Cooperation agreements • Working group records • Partnership documentation • Plan Bleu implementation reports
Unit of measurement	Number of partnerships or cooperation mechanisms
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.2, 2.5, 4.3, 4.5, 5.2



Field	Description
Alignment with international frameworks	Barcelona Convention; SAP BIO; Union for the Mediterranean; Kunming–Montreal Global Biodiversity Framework (Targets 20 and 21).

Table 41. F08 – Funding and Investment Promotion Initiatives Facilitated

Field	Description
Indicator code and name	F08 – Funding and Investment Promotion Initiatives Facilitated
Description	Measures the initiatives undertaken by Plan Bleu to facilitate dialogue between restoration stakeholders, funding bodies and investors with the aim of promoting investment opportunities based on ARTEMIS outputs. This indicator measures facilitation activities only and does not assess the amount of funding secured or investments committed.
Method of calculation	Total number of funding and investment promotion initiatives organised during the reporting period, including donor meetings, investor dialogues, funding workshops, matchmaking events and financial information sessions.
Data source	• Meeting reports • Investment forums • Funding workshop reports • Donor meeting records • Plan Bleu implementation reports
Unit of measurement	Number of initiatives
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	3.6, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; EU Sustainable Finance Framework; Kunming–Montreal Global Biodiversity Framework (Target 19); Sustainable Blue Economy principles.

Table 42. F09 – Communication and Outreach Activities

Field	Description
Indicator code and name	F09 – Communication and Outreach Activities
Description	Measures the communication and awareness-raising activities implemented by Plan Bleu to increase the visibility, accessibility and dissemination of ARTEMIS outputs among target audiences throughout the Mediterranean region.
Method of calculation	Total number of communication activities implemented during the reporting period, including newsletters, web publications, social media campaigns, videos, press releases and other communication products.



Data source	• Communication plans • Website analytics • Social media reports • Newsletters • Press releases • Communication monitoring reports
Unit of measurement	Number of communication activities
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.2, 2.5, 5.1, 5.2
Alignment with international frameworks	Barcelona Convention Communication Strategy; SAP BIO; Kunming–Montreal Global Biodiversity Framework (Target 21); UN Decade on Ecosystem Restoration.

Table 43. F10 – Knowledge Transfer Coverage

Field	Description
Indicator code and name	F10 – Knowledge Transfer Coverage
Description	Measures the geographical and institutional coverage achieved through Plan Bleu's knowledge transfer activities, reflecting the extent to which priority Mediterranean countries, institutions and stakeholder groups have been reached by the dissemination of ARTEMIS outputs.
Method of calculation	Percentage of identified priority countries and target institutions reached through one or more knowledge transfer activities during the reporting period. Coverage is calculated as the proportion of target entities participating in dissemination, training or technical support activities.
Data source	• Participant databases • Attendance records • Stakeholder databases • Event reports • Plan Bleu implementation records
Unit of measurement	Percentage (%)
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	5.1, 5.3
Alignment with international frameworks	Barcelona Convention; SAP BIO; Nature Restoration Regulation (EU) 2024/1991; Kunming–Montreal Global Biodiversity Framework (Target 21).



9.6.2 Uptake Indicators (U)

Table 44. U01 – National Restoration Plans Incorporating ARTEMIS Recommendations

Field	Description
Indicator code and name	U01 – National Restoration Plans Incorporating ARTEMIS Recommendations
Description	Assesses the extent to which ARTEMIS policy recommendations are incorporated into National Restoration Plans or equivalent national restoration strategies prepared by Mediterranean countries.
Method of calculation	Number of officially adopted National Restoration Plans that explicitly incorporate one or more ARTEMIS recommendations during the reporting period.
Data source	• National Restoration Plans • Official government publications • Ministry websites • National biodiversity strategies
Unit of measurement	Number of National Restoration Plans
Reporting frequency	Biennial
Desired trend	Increasing
Applicable actions	1.1, 1.5
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; EU Biodiversity Strategy for 2030; SAP BIO; Kunming–Montreal Global Biodiversity Framework (Target 2).

Table 45. U02 – Marine Spatial Plans Incorporating ARTEMIS Approaches

Field	Description
Indicator code and name	U02 – Marine Spatial Plans Incorporating ARTEMIS Approaches
Description	Assesses the extent to which ARTEMIS methodologies, restoration priorities or planning recommendations are incorporated into Marine Spatial Plans or equivalent marine planning instruments.
Method of calculation	Number of Marine Spatial Plans formally incorporating ARTEMIS approaches or restoration recommendations.
Data source	• Marine Spatial Plans • Maritime planning authorities • Official planning documents
Unit of measurement	Number of Marine Spatial Plans
Reporting frequency	Biennial
Desired trend	Increasing
Applicable actions	1.3
Alignment with international frameworks	Maritime Spatial Planning Directive (2014/89/EU); Nature Restoration Regulation; MSFD; ICZM Protocol.



Table 46. U03 – Restoration Projects Applying ARTEMIS Methodologies

Field	Description
Indicator code and name	U03 – Restoration Projects Applying ARTEMIS Methodologies
Description	Assesses the extent to which restoration projects voluntarily apply one or more ARTEMIS methodologies, including restoration prioritisation, restoration implementation guidance or associated technical approaches.
Method of calculation	Number of restoration projects demonstrating documented application of one or more ARTEMIS methodologies.
Data source	- Restoration project reports - Project deliverables - LIFE and Horizon Europe project documentation - Project websites
Unit of measurement	Number of projects
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.4, 2.1, 2.2, 2.3, 2.5
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Habitats Directive; UN Decade on Ecosystem Restoration.

Table 47. U04 – Restoration Projects Applying Harmonised Monitoring and MRV Approaches

Field	Description
Indicator code and name	U04 – Restoration Projects Applying Harmonised Monitoring and MRV Approaches
Description	Assesses the extent to which restoration projects apply the harmonised monitoring and MRV approaches promoted through ARTEMIS.
Method of calculation	Number of restoration projects implementing monitoring and MRV approaches consistent with ARTEMIS recommendations.
Data source	- Monitoring plans - Project monitoring reports - MRV reports - Project technical documentation
Unit of measurement	Number of projects
Reporting frequency	Annual
Desired trend	Increasing



Field	Description
Applicable actions	2.3, 3.1, 3.2
Alignment with international frameworks	Nature Restoration Regulation; Marine Strategy Framework Directive; Habitats Directive; UNEP/MAP IMAP.

Table 48. U05 – Projects Applying ARTEMIS Ecosystem Service Assessment Approaches

Field	Description
Indicator code and name	U05 – Projects Applying ARTEMIS Ecosystem Service Assessment Approaches
Description	Assesses the extent to which restoration projects or planning processes apply ARTEMIS ecosystem service assessment approaches to support restoration planning, monitoring or decision-making.
Method of calculation	Number of projects or planning initiatives applying the ARTEMIS ecosystem service assessment methodology.
Data source	- Ecosystem service assessments - Project reports - Environmental assessment reports - Project deliverables
Unit of measurement	Number of projects or planning processes
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	2.4, 3.3
Alignment with international frameworks	SEEA-EA; MAES; Nature Restoration Regulation; IPBES Conceptual Framework.

Table 49. U06 – Institutions Applying Ecosystem Accounting Approaches

Field	Description
Indicator code and name	U06 – Institutions Applying Ecosystem Accounting Approaches
Description	Assesses the extent to which competent authorities, public institutions or restoration programmes apply ecosystem accounting approaches promoted through ARTEMIS to support planning and investment decisions.
Method of calculation	Number of institutions applying ecosystem accounting approaches consistent with ARTEMIS recommendations.
Data source	- Ecosystem accounting reports - Institutional reports - National ecosystem accounting programmes



	Official publications
Unit of measurement	Number of institutions
Reporting frequency	Biennial
Desired trend	Increasing
Applicable actions	3.4
Alignment with international frameworks	SEEA Ecosystem Accounting; Nature Restoration Regulation; EU Biodiversity Strategy 2030.

Table 50. U07 – Organisations Applying the ARTEMIS Seagrass Credits Methodology

Field	Description
Indicator code and name	U07 – Organisations Applying the ARTEMIS Seagrass Credits Methodology
Description	Assesses the extent to which organisations adopt or pilot the ARTEMIS Seagrass Credits methodology to support restoration finance or blue carbon initiatives.
Method of calculation	Number of organisations formally applying or piloting the ARTEMIS Seagrass Credits methodology during the reporting period.
Data source	- Seagrass Credits project documentation - Methodology application reports - Blue carbon project reports - Organisation reports
Unit of measurement	Number of organisations
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	3.6
Alignment with international frameworks	Voluntary Carbon Markets; Nature Credit initiatives; Kunming–Montreal Global Biodiversity Framework (Target 19).

Table 51. U08 – Public Funding Programmes Referencing ARTEMIS Approaches

Field	Description
Indicator code and name	U08 – Public Funding Programmes Referencing ARTEMIS Approaches
Description	Assesses the extent to which public funding programmes incorporate ARTEMIS recommendations, methodologies or priority criteria within funding calls or investment frameworks.
Method of calculation	Number of public funding programmes or funding calls explicitly referencing ARTEMIS approaches.
Data source	- Funding programme documentation - Calls for proposals - Grant guidelines - Official funding programme websites



Unit of measurement	Number of programmes
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.5, 4.1, 4.2, 4.4, 4.6
Alignment with international frameworks	Nature Restoration Regulation; EU Sustainable Finance Framework; EU Biodiversity Strategy; GBF Target 19.

Table 52. U09 – Organisations Engaged in ARTEMIS-based Restoration Initiatives

Field	Description
Indicator code and name	U09 – Organisations Engaged in ARTEMIS-based Restoration Initiatives
Description	Assesses the extent to which private sector organisations, NGOs and other non-governmental actors engage in restoration initiatives inspired by or applying ARTEMIS outputs.
Method of calculation	Number of organisations participating in restoration initiatives that make use of ARTEMIS methodologies, recommendations or technical outputs.
Data source	- Restoration project documentation - Partnership agreements - Organisation reports - Project websites
Unit of measurement	Number of organisations
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	4.2, 4.3, 4.4, 4.5, 5.2
Alignment with international frameworks	TNFD; ESRS E4; Nature Restoration Regulation; Kunming–Montreal Global Biodiversity Framework (Target 15).

Table 53. U10 – Institutions Formally Adopting ARTEMIS Outputs

Field	Description
Indicator code and name	U10 – Institutions Formally Adopting ARTEMIS Outputs
Description	Assesses the extent to which competent authorities, regional organisations, research institutions or other relevant organisations formally adopt, endorse or integrate ARTEMIS methodologies, recommendations or technical outputs into their institutional procedures or guidance documents.
Method of calculation	Number of institutions demonstrating formal adoption or institutional integration of one or more ARTEMIS outputs through official decisions, procedures, guidance documents or institutional frameworks.



Field	Description
Data source	• Official institutional decisions • Policy documents • Technical guidance documents • Institutional reports • Official websites
Unit of measurement	Number of institutions
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.1, 1.2, 1.4, 2.5, 3.5, 5.1, 5.2, 5.3
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Barcelona Convention; SAP BIO; EU Biodiversity Strategy for 2030; Kunming–Montreal Global Biodiversity Framework (Target 21).

9.7 Mediterranean Progress Indicators (M),

Table 54. M01 – Area Under Restoration

Field	Description
Indicator code and name	M01 – Area Under Restoration
Description	Monitors the cumulative area of Mediterranean seagrass ecosystems where restoration actions have been initiated, including both active and passive restoration interventions. The indicator provides an overview of restoration efforts implemented across the region but is not directly attributable to the Action Plan.
Method of calculation	Sum of the surface area (ha) where restoration actions have officially commenced during the reporting period. Restoration areas should be mapped using GIS polygons and validated by the responsible authority or project developer.
Data source(s)	National Restoration Plans; project technical reports; GIS databases; Copernicus; EMODnet; national environmental authorities.
Unit of measurement	Hectares (ha)
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	2.2, 2.3
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Habitats Directive; SAP BIO; GBF Target 2; UN Decade on Ecosystem Restoration.

Table 55. M02 – Area Under Improved Protection or Passive Restoration

Field	Description
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Indicator code and name	M02 – Area Under Improved Protection or Passive Restoration
Description	Monitors the area of seagrass habitat benefiting from pressure reduction, protection measures or passive restoration, where natural ecological recovery is expected without active planting or transplantation.
Method of calculation	Sum of the surface area (ha) where effective protection or pressure reduction measures have been formally implemented and ecological recovery is expected.
Data source(s)	Marine Protected Area management plans; Marine Spatial Plans; national restoration programmes; GIS datasets; national environmental authorities.
Unit of measurement	Hectares (ha)
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	1.4
Alignment with international frameworks	Nature Restoration Regulation; Marine Strategy Framework Directive; Habitats Directive; SAP BIO; GBF Target 2.

Table 56. M03 – Ecological Condition of Restored Seagrass Meadows

Field	Description
Indicator code and name	M03 – Ecological Condition of Restored Seagrass Meadows
Description	Monitors the ecological condition and recovery of restored seagrass meadows using harmonised ecological assessment metrics already applied by national monitoring programmes. Rather than prescribing a single methodology, the indicator provides a common reporting framework allowing countries to use nationally recognised ecological assessment methods while ensuring regional comparability.
Method of calculation	Ecological condition shall be assessed using one or more recognised ecological assessment metrics adopted by the competent authority. The reported value should represent the ecological status of restored meadows according to the selected methodology.
Data source(s)	National monitoring programmes; project ecological monitoring reports; UNEP/MAP IMAF; scientific monitoring reports, NRP, National Article 17 reporting, MSFD reporting,...
Supporting metrics	• Shoot density (shoots/m²) • Meadow cover (%) • Survival rate (%) • Meadow expansion (m²/year) • Patch fragmentation (Index) • EBQI (where applicable) (Index) • PREI (where applicable) (Index) • Leaf Area Index (optional) (m²/m²)
Unit of measurement	Ecological Status / Index Score



Field	Description
Reporting frequency	Every 3 years
Desired trend	Improving
Applicable actions	1.4, 2.1, 2.2, 2.3, 3.1, 3.2
Alignment with international frameworks	Nature Restoration Regulation (EU) 2024/1991; Marine Strategy Framework Directive; Water Framework Directive; Habitats Directive; UNEP/MAP IMAP.

Table 57. M04 – Restoration Areas Benefiting from Pressure Reduction Measures

Field	Description
Field	Description
Indicator code and name	M04 – Restoration Areas Benefiting from Pressure Reduction Measures
Description	Monitors the extent of restored or protected seagrass areas where effective pressure reduction measures have been implemented to improve ecological recovery.
Method of calculation	Sum of restored or protected surface area where one or more pressure reduction measures have been formally implemented.
Data source(s)	Marine Protected Area management plans; Marine Spatial Plans; restoration project reports; GIS analyses.
Supporting metrics	Pressure reduction measures implemented. Examples: Anchoring restrictions; Fishing restrictions; Water quality improvement; Coastal development control; Navigation management; Sediment management
Unit of measurement	Hectares (ha)
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	2.1
Alignment with international frameworks	

Table 58. M05 – Blue Carbon Recovery

Field	Description
Indicator code and name	M05 – Blue Carbon Recovery
Description	Monitors the recovery of blue carbon stocks and sequestration capacity resulting from the protection and restoration of Mediterranean seagrass ecosystems.



Method of calculation	Total tonnes of CO ₂ equivalent (tCO ₂ e) represented by recovered or newly sequestered carbon within restored or protected seagrass ecosystems, calculated using recognised blue carbon methodologies.
Data source(s)	Blue carbon assessments by restoration projects, verified carbon projects reports, scientific studies, national greenhouse gas inventories, published datasets; project monitoring reports; recognised carbon accounting methodologies; scientific publications.
Supporting metrics	• Above-ground carbon • Below-ground carbon • Sediment carbon • Carbon sequestration rate
Unit of measurement	Tonnes of CO ₂ equivalent (tCO ₂ e)
Reporting frequency	Every 3–5 years
Desired trend	Increasing
Applicable actions	2.4, 3.3, 3.6, 4.4
Alignment with international frameworks	IPCC Wetlands Supplement; Nature Restoration Regulation; Paris Agreement; UNFCCC; Blue Carbon Initiative; GBF Target 8.

Table 59. M06 – Biodiversity Status of Restored Seagrass Ecosystems

Field	Description
Indicator code and name	M06 – Biodiversity Status of Restored Seagrass Ecosystems
Description	Monitors biodiversity recovery associated with restored seagrass meadows using nationally recognised biodiversity assessment methods.
Method of calculation	Biodiversity shall be assessed using recognised ecological monitoring methodologies adopted by the competent authority.
Data source(s)	National biodiversity monitoring; project monitoring; scientific surveys.
Supporting metrics	• Species richness • Species abundance • Fish biomass • Macroinvertebrate abundance • Protected species • Threatened species • Indicator species • Habitat complexity • Nursery function
Unit of measurement	Biodiversity Status
Reporting frequency	Every 3 years
Desired trend	Improving
Applicable actions	All restoration actions
Alignment with international frameworks	Habitats Directive; MSFD; GBF; SAP BIO.



Table 60. M07 – Restoration Finance Mobilised

Field	Description
Indicator code and name	M07 – Restoration Finance Mobilised
Description	Monitors the volume of public, private and blended finance mobilised to support Mediterranean seagrass restoration initiatives, regardless of the source of funding.
Method of calculation	Total financial resources (€) formally committed to seagrass restoration projects during the reporting period. Funding from different sources may be aggregated provided double counting is avoided.
Data source(s)	Funding programme records; project budgets; investment reports; donor databases; national restoration programmes, LIFE database, Horizon Database, National funding programmes.
Unit of measurement	Euros (€)
Reporting frequency	Annual
Desired trend	Increasing
Applicable actions	2.4, 3.4, 3.6, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6
Alignment with international frameworks	Nature Restoration Regulation; EU Sustainable Finance Framework; GBF Target 19; Sustainable Blue Economy; TNFD.

Table 61. M08 – Mediterranean Countries Reporting Restoration Progress

Field	Description
Indicator code and name	M08 – Mediterranean Countries Reporting Restoration Progress
Description	Monitors the number of Mediterranean countries regularly reporting restoration progress using harmonised reporting arrangements.
Method of calculation	Number of Mediterranean countries submitting restoration progress information during the reporting period.
Data source(s)	National Restoration Plans; Barcelona Convention reporting; UNEP/MAP reporting.
Unit	Number of countries
Frequency	Biennial
Desired trend	Increasing
Applicable actions	1.1, 1.2, 5.1
Alignment	Nature Restoration Regulation; Barcelona Convention; SAP BIO.



Table 62. M09 – Restoration Projects Using Harmonised Monitoring Approaches

Field	Description
Indicator code and name	M09 – Restoration Projects Using Harmonised Monitoring Approaches
Description	Monitors the number of restoration projects implementing harmonised monitoring approaches consistent with ARTEMIS recommendations.
Method of calculation	Number of restoration projects reporting ecological monitoring using ARTEMIS-compatible methodologies.
Data source(s)	Project monitoring reports; national restoration databases.
Unit	Number of projects
Frequency	Annual
Desired trend	Increasing
Applicable actions	3.1, 3.2, 5.3
Alignment	Nature Restoration Regulation; MSFD; IMAP.

Table 63. M10 – Contribution to Mediterranean Restoration Targets

Field	Description
Indicator code and name	M10 – Contribution to Mediterranean Restoration Targets
Description	Monitors the cumulative contribution of restoration actions supported through the implementation of ARTEMIS outputs to the regional restoration objectives established under European and Mediterranean policy frameworks.
Method of calculation	Number of restoration actions, programmes or projects explicitly contributing to restoration targets established under the Nature Restoration Regulation, SAP BIO or equivalent national restoration commitments.
Data source(s)	National Restoration Plans; restoration project reports; official reporting systems.
Unit of measurement	Number of contributing restoration actions
Reporting frequency	Biennial
Desired trend	Increasing
Applicable actions	All Strategic Lines
Alignment with international frameworks	Nature Restoration Regulation; SAP BIO; Barcelona Convention; GBF Target 2.



10Planification

10.1 Implementation approach

The implementation of the Mediterranean Seagrass Restoration Action Plan is conceived as a progressive and adaptive process rather than as a sequence of isolated actions. As the Action Plan is primarily intended to facilitate the uptake and long-term application of the ARTEMIS project outputs, most actions evolve over time, moving from dissemination and institutional engagement towards practical uptake, replication and long-term consolidation.

Accordingly, the implementation roadmap is organised into three complementary time horizons:

- **Short-term (2026–2027):** establishment of the enabling conditions required for implementation, including dissemination of ARTEMIS outputs, institutional dialogue, knowledge transfer and capacity building.
- **Medium-term (2028–2029):** wider application of ARTEMIS methodologies by competent authorities, restoration practitioners, funding bodies and other stakeholders, accompanied by increasing institutional uptake and replication.
- **Long-term (2030 onwards):** consolidation of ARTEMIS approaches as standard practice within Mediterranean restoration policies, planning instruments, restoration programmes and financing mechanisms, supported by continuous knowledge exchange and adaptive management.

The implementation roadmap should therefore be understood as a dynamic process in which actions continue to evolve as implementation progresses and new restoration initiatives emerge.

10.2 Strategic implementation priorities

The implementation roadmap is complemented by a summary of the strategic priorities associated with each Strategic Line throughout the three implementation phases. Rather than providing a detailed description of individual actions, this overview highlights the primary focus of implementation at each stage of the Action Plan and illustrates how priorities progressively evolve over time.

During the short-term phase, implementation focuses on creating the enabling conditions required for the effective uptake of ARTEMIS outputs through knowledge transfer, awareness-raising, institutional dialogue and capacity building. As implementation progresses into the medium-term phase, the emphasis shifts towards facilitating the practical application of ARTEMIS methodologies, strengthening collaboration among stakeholders and promoting their integration into planning, governance, monitoring and financing processes. Finally, the long-term phase aims to consolidate these approaches as established practice across the Mediterranean, supporting continuous learning, adaptive management and long-term regional cooperation.

The strategic priorities presented below should therefore be interpreted as complementary implementation objectives rather than sequential activities. Although each Strategic Line has a different thematic focus, they are implemented in parallel and reinforce one another throughout the implementation period, ensuring that policy integration, restoration planning, monitoring, financing and knowledge transfer collectively contribute to the long-term restoration of Mediterranean seagrass ecosystems.



Table 64. Strategic Implementation Priorities

Strategic Line	Short-term priority	Medium-term priority	Long-term priority
SL1 Policy integration and governance	Promote awareness of ARTEMIS recommendations and support their consideration within policy and planning processes.	Facilitate integration into National Restoration Plans, Marine Spatial Plans and governance frameworks.	Consolidate ARTEMIS approaches as recognised references supporting policy implementation and adaptive governance.
SL2 Restoration planning and implementation	Disseminate restoration methodologies and prioritisation approaches.	Facilitate their application and replication by restoration practitioners and competent authorities.	Promote their long-term mainstreaming within restoration planning and implementation.
SL3 Monitoring, assessment and knowledge uptake	Disseminate harmonised monitoring, MRV and ecosystem service assessment methodologies.	Support their practical application and harmonised reporting.	Promote continuous methodological improvement and long-term use within restoration programmes.
SL4 Financing and investment	Raise awareness of financing opportunities and investment approaches supporting restoration.	Facilitate collaboration between restoration stakeholders and funding organisations.	Promote the long-term integration of restoration into sustainable financing mechanisms.
SL5 Knowledge transfer, capacity building and stakeholder engagement	Establish knowledge transfer mechanisms, engage stakeholders and deliver capacity-building activities.	Expand regional cooperation, technical exchange and stakeholder participation.	Maintain a permanent Mediterranean knowledge network supporting continuous learning and collaboration.

10.3 implementation schedule

The indicative implementation schedule provides a visual overview of the expected progression of the Action Plan throughout the three implementation phases. Rather than representing fixed implementation dates, the Gantt chart illustrates the periods during which each action is expected to receive the greatest implementation effort, while recognising that most actions continue to evolve beyond their initial phase.

The schedule reflects the progressive nature of the Action Plan. During the early years, implementation focuses primarily on the dissemination of ARTEMIS outputs, stakeholder engagement and the establishment of enabling conditions. As implementation advances, increasing emphasis is placed on facilitating the uptake of ARTEMIS methodologies by competent authorities, restoration practitioners and other stakeholders. In the longer term, the



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focus shifts towards the consolidation of ARTEMIS approaches as recognised practices supporting Mediterranean seagrass restoration through continuous knowledge exchange, adaptive management and regional cooperation.

The implementation schedule should therefore be interpreted as an indicative planning tool rather than a fixed programme of activities. The timing and intensity of individual actions may evolve in response to policy developments, funding opportunities, implementation progress and emerging restoration priorities across the Mediterranean region.



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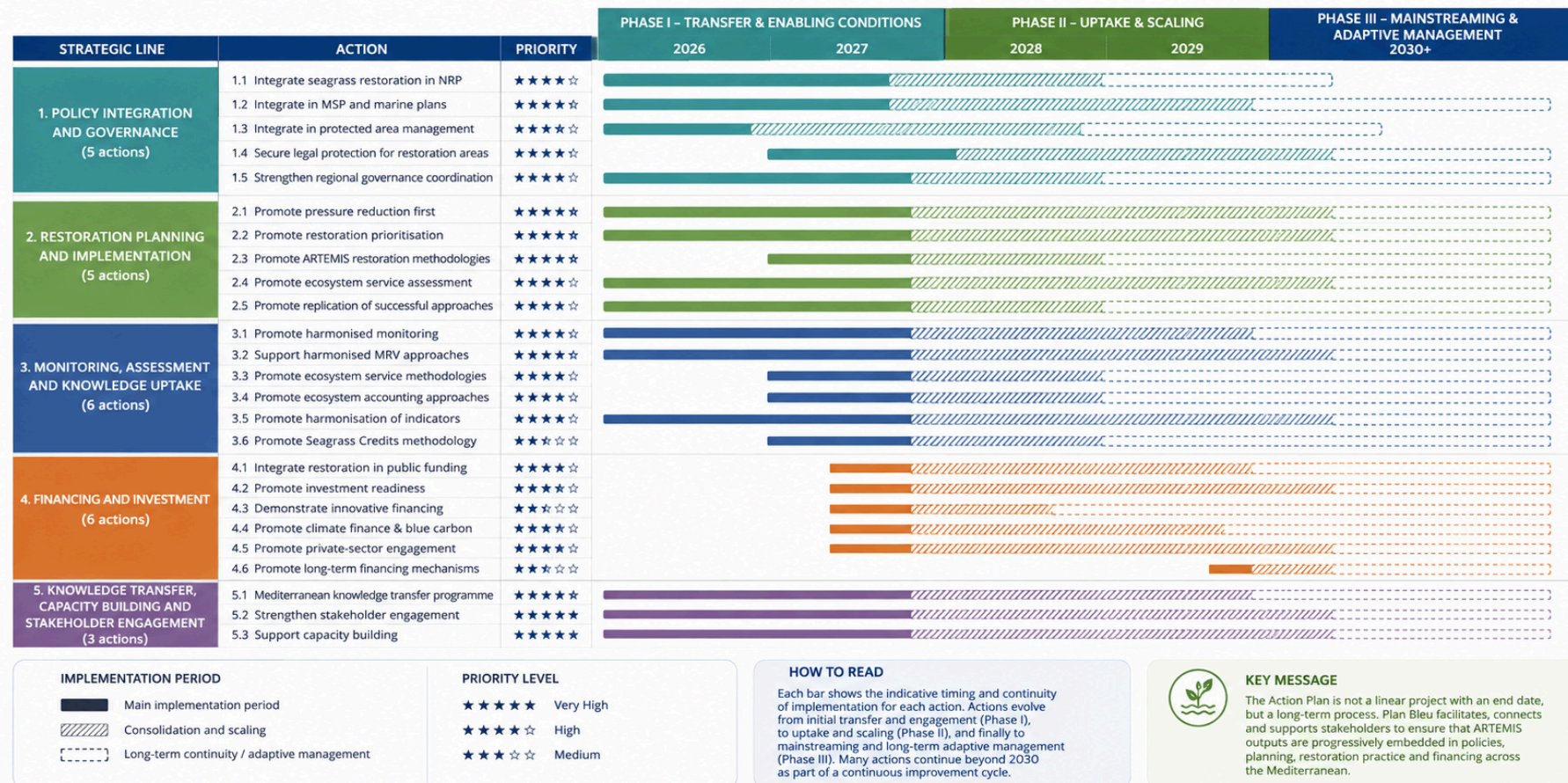


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Table 65. Action Plan Implementation Roadmap

Figure 11.2 | ACTION PLAN IMPLEMENTATION ROADMAP (GANTT)

Phased implementation of the 25 actions across the three implementation phases



Note: Years are indicative and may be adjusted according to emerging opportunities, resources and policy developments.



The implementation roadmap demonstrates that most actions are not limited to a single implementation phase but continue to evolve throughout the lifetime of the Action Plan. Early activities focus primarily on dissemination, stakeholder engagement and capacity building, while subsequent phases progressively emphasise the practical application, replication and institutional integration of ARTEMIS outputs. This phased approach reflects the progressive nature of policy uptake and ecosystem restoration, recognising that meaningful changes in governance, restoration practice and financing mechanisms require sustained engagement over time.

The roadmap also illustrates the complementary relationship between the five Strategic Lines. While each Strategic Line has distinct objectives, their implementation is closely interconnected. Policy integration, restoration planning, monitoring, financing and knowledge transfer reinforce one another throughout the implementation process, creating an integrated framework that supports the widespread adoption of ARTEMIS methodologies across the Mediterranean region.

Finally, the implementation phases provide the operational framework for the Monitoring, and Evaluation system described in Chapter 10. During the early stages of implementation, progress is primarily measured through Facilitation Indicators, reflecting the activities delivered directly by Plan Bleu. As implementation progresses, increasing emphasis is placed on Uptake Indicators, measuring the adoption of ARTEMIS outputs by competent authorities and other stakeholders. Over the longer term, implementation is expected to contribute to improvements captured by the Mediterranean Progress Indicators, providing evidence of broader regional progress towards seagrass restoration objectives. This phased relationship between implementation and monitoring ensures that the Action Plan remains adaptive, measurable and aligned with its long-term strategic objectives.



Figure 4. Action Plan. Implementation phases.

The implementation of this Action Plan should therefore be understood as a continuous facilitation process, where Plan Bleu supports the transfer, uptake and long-term application of ARTEMIS outputs, while implementation and restoration outcomes are progressively delivered



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by the competent authorities, restoration practitioners and other stakeholders responsible for restoring Mediterranean seagrass ecosystems.



11. Conclusions

The Mediterranean Seagrass Restoration Action Plan establishes a practical roadmap for transforming the scientific and technical outputs of the ARTEMIS project into long-term restoration action across the Mediterranean region. Rather than concluding with the completion of the project, ARTEMIS becomes the foundation for a broader process of knowledge transfer, institutional uptake and regional cooperation that can continue supporting restoration efforts well beyond the project's lifetime.

The Action Plan acknowledges that restoring Mediterranean seagrass ecosystems is a long-term challenge requiring coordinated action by governments, regional organisations, research institutions, restoration practitioners, funding bodies and the private sector. No single organisation can achieve these objectives independently. Accordingly, the Plan positions Plan Bleu as a facilitator of cooperation, promoting dialogue, capacity building and the dissemination of ARTEMIS methodologies while supporting the organisations responsible for restoration planning, implementation and monitoring.

One of the principal strengths of the Action Plan is its emphasis on implementation. The proposed actions are not presented as isolated activities but as interconnected processes that progressively evolve from knowledge transfer to practical application and ultimately to long-term institutional integration. This adaptive implementation pathway reflects both the complexity of ecosystem restoration and the need for continuous learning as scientific knowledge, restoration techniques and policy frameworks continue to develop.

Equally important is the Monitoring and Evaluation Framework, which provides a transparent and operational mechanism for assessing implementation progress. By combining facilitation, uptake and regional progress indicators, the framework enables Plan Bleu to monitor not only its own contribution but also the wider adoption of ARTEMIS outputs and their contribution to Mediterranean restoration objectives. The reliance on existing monitoring systems further enhances the feasibility and long-term sustainability of the framework.

The Action Plan is therefore intended to remain a living document. As restoration experience grows, new scientific evidence becomes available and policy priorities evolve, both the implementation roadmap and the monitoring framework should be periodically reviewed and updated to ensure their continued relevance and effectiveness.

Ultimately, the success of this Action Plan will not be measured by the number of activities delivered by Plan Bleu, but by the extent to which the ARTEMIS methodologies, tools and recommendations become routinely applied throughout the Mediterranean. If successfully implemented, the Plan will contribute to strengthening regional cooperation, improving restoration practice and accelerating progress towards the shared objective of restoring Mediterranean seagrass ecosystems for the benefit of biodiversity, climate resilience and future generations.





Annex 1. Glossary

Active restoration – Direct and planned human interventions to rehabilitate a damaged or degraded ecosystem, such as replanting vegetation, removing invasive species or restoring critical habitats.

Seagrass restoration credits - Certificates representing one ton of carbon dioxide (CO₂) or its equivalent captured and stored in coastal and marine ecosystems, such as wetlands, seagrass and salt marshes. These credits are traded in carbon markets to finance the conservation and restoration of these ecosystems.

Seagrass restoration stocks - The amount of carbon stored in coastal and marine ecosystems, such as soils, roots and biomass of wetlands, salt marshes and seagrass beds. These ecosystems act as natural reservoirs that help mitigate climate change by sequestering carbon from the atmosphere.

Blue Economy Funds - Financial mechanisms aimed at supporting sustainable economic activities in marine and coastal environments.

Burial rates - Rate at which organic carbon is deposited and permanently stored in the sediments of marine or coastal ecosystems. It is an indicator that assesses the carbon sequestration potential of seagrass restoration ecosystems.

Carbon Credit Certification: A process that ensures a project meets defined standards for carbon emissions reduction or capture.

Carbon Sequestration - Process of capturing and storing carbon dioxide from the atmosphere in natural systems like forests, soil, or oceans to help slow climate change.

Carbon Storage Variability - Differences in how much carbon various ecosystems can hold, depending on their location and condition.

Digital Carbon Tokens – Blockchain-based digital representations of carbon credits, which allow the transparent registration, transfer and verification of rights associated with emission reductions or carbon storage.

Drivers of Variability - Factors that cause differences in carbon storage, like water temperature, plant health, or human activities.

Ecosystem-based Adaptation (EbA) - The use of biodiversity and ecosystem services to help communities adapt to the impacts of climate change.

Ecosystem Resilience - The ability of an ecosystem to resist or recover from disturbances while maintaining its essential functions.

Ecosystem Services - Direct and indirect benefits that ecosystems provide to human societies, including climate regulation, biodiversity, and coastal protection.

Environmental Stressors – External factors, like pollution or extreme weather, that harm ecosystems and reduce their ability to store carbon.

EU Green Deal - The European Union's action plan to make Europe climate-neutral by 2050, focusing on reducing emissions, preserving nature, and promoting sustainable development.

Financing Mechanisms - Ways to fund projects, such as loans, grants, or investments, ensuring enough resources to restore and protect ecosystems.



Green funds - Investment funds focused on projects and activities that promote environmental sustainability, such as renewable energy, energy efficiency, ecosystem conservation and low-carbon technologies.

Greenhouse Gasses (GHG) – Gases that trap heat in the atmosphere, contributing to the greenhouse effect and climate change. The main greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and fluorinated gases such as hydrofluorocarbons.

Holistic Approaches - Methods that consider ecological, social, and economic factors together to address complex problems like ecosystem restoration.

Inclusive financing mechanisms - Financial instruments designed to ensure that vulnerable people and communities, especially in developing countries, have access to resources for sustainable projects. This includes microcredit, crowdfunding and grants aimed at promoting equity and sustainability.

Loss of Carbon Sinks - The process by which ecosystems release stored carbon, turning into sources of emissions instead of sinks.

Marine Protected Areas (MPAs) - Specific zones in oceans or seas where activities like fishing and drilling are limited to protect marine life and habitats.

Marine Strategy Framework Directive (MSFD) - A European Union law aimed at protecting and improving the health of marine environments by setting goals to achieve sustainable seas.

Mediterranean Marine Protected Areas Network (MedPAN) - A collaborative network that supports marine protected areas in the Mediterranean by sharing knowledge, resources, and best practices for conservation.

Monitoring Protocols - A set of standardized procedures for collecting, analyzing, and reporting data on ecosystem conditions.

Ocean Acidification - A change in seawater chemistry due to the absorption of atmospheric carbon dioxide (CO₂), affecting marine ecosystems.

Passive restoration – Restoration strategies based on the elimination of stress factors to allow an ecosystem to recover naturally, without active human interventions such as replanting or habitat reconstruction.

Payment for Ecosystem services (PES) – Schemes in which the beneficiaries of ecosystem services (such as clean water, carbon sequestration or biodiversity) pay those who manage or conserve the ecosystems that provide these services, providing incentives for environmental sustainability.

Posidonia oceanica meadows - Marine ecosystems formed by this seagrass species, endemic to the Mediterranean, which act as important carbon sinks.

Quantitative Methodologies - Research methods focused on collecting numerical data, like measuring carbon levels in ecosystems, to analyse patterns or outcomes.

Qualitative Methodologies - Research methods that explore non-numerical aspects, such as policies and community perspectives, to understand the broader impacts of an issue.

Sedimentary Dynamics - Processes related to the transport, accumulation, and erosion of sediments in marine and coastal ecosystems.

Voluntary Carbon Market - A system where companies and organizations purchase carbon credits to offset their greenhouse gas emissions on a non-mandatory basis.



Annex 2. Stakeholder consultation findings. Interviews.

1. Introduction

To complement the technical evidence generated by the ARTEMIS project, a dedicated stakeholder consultation process was undertaken during the preparation of this Action Plan. The consultation gathered perspectives from organisations representing public authorities, research institutions, NGOs, regional organisations, Marine Protected Areas, private sector organisations and financing experts across the Mediterranean.

Rather than reproducing individual opinions, this Annex synthesises the main findings emerging from the consultation according to stakeholder categories, highlighting areas of broad consensus as well as issues where different perspectives were expressed. These findings have been used throughout the Action Plan to validate priorities, refine the proposed actions and strengthen the implementation recommendations.

2. Public authorities, Marine Protected Areas and regional organisations

Profile

This category includes representatives from national and regional administrations, environmental authorities, Marine Protected Areas, regional organisations and institutions directly involved in marine policy implementation.

Main findings

Participants consistently identified governance as one of the principal barriers to scaling up seagrass restoration across the Mediterranean. Although the legal framework is progressively strengthening through the EU Nature Restoration Regulation and national initiatives, implementation remains constrained by fragmented institutional responsibilities, lengthy permitting procedures and limited administrative capacity.

There was broad agreement that National Restoration Plans should become the primary strategic framework for coordinating restoration actions, aligning funding priorities and improving cooperation between competent authorities.

Interviewees also stressed that restoration should primarily focus on reducing pressures affecting seagrass meadows, including anchoring, coastal development, pollution and unsustainable fishing practices. Active restoration was generally considered appropriate only where ecological conditions justify intervention and where long-term monitoring can be guaranteed.

From a financing perspective, respondents consistently emphasised that public funding should remain the backbone of restoration programmes, while recognising that complementary private investment may play an increasing role where appropriate governance and environmental safeguards are in place.

3. Research organisations and scientific experts

Profile



This category includes universities, marine research institutes, restoration practitioners and scientific experts with extensive experience in Mediterranean seagrass ecology and restoration.

Main findings

Scientific experts agreed that successful restoration depends fundamentally on robust ecological knowledge. Updated habitat mapping, pressure assessments, historical distribution data and careful site selection were identified as essential prerequisites before active restoration is considered.

A strong consensus emerged that pressure reduction should always precede active restoration, with several experts noting that natural recovery frequently represents the most effective, scalable and cost-efficient restoration strategy.

Interviewees also emphasised the importance of harmonising restoration methodologies across the Mediterranean. ARTEMIS was widely recognised as an important contribution in this regard through the development of common technical guidance, monitoring protocols and restoration methodologies.

Participants repeatedly stressed that restoration should be evaluated over ecological rather than project timescales. Long-term monitoring extending beyond five years (and preferably over one or more decades) was considered essential for assessing restoration success.

4. NGOs and civil society organisations

Profile

This category includes environmental NGOs, conservation organisations and civil society representatives actively involved in marine biodiversity conservation and restoration.

Main findings

NGO representatives highlighted the importance of integrating ecological restoration within broader conservation strategies rather than treating restoration as an isolated intervention.

Participants consistently supported strengthening stakeholder participation throughout project planning and implementation, recognising that community engagement improves long-term stewardship, social acceptance and restoration outcomes.

Many respondents also stressed the importance of communicating the benefits of passive restoration more effectively, noting that reducing pressures often delivers greater ecological impact than highly visible but spatially limited planting initiatives.

While recognising the potential contribution of innovative financing mechanisms, NGO representatives generally considered that environmental integrity, transparency and effective governance should remain the primary objectives of any future financing model.

5. Private sector, finance and restoration practitioners

Profile

This category includes infrastructure operators, environmental consultancies, financial specialists and experts involved in nature finance, ecosystem services and restoration implementation.

Main findings



Private-sector stakeholders recognised growing interest in supporting marine restoration as part of broader sustainability strategies. However, they consistently highlighted that investment decisions require credible methodologies, legal certainty and measurable ecological outcomes.

There was broad recognition that Monitoring, Reporting and Verification (MRV) systems are fundamental for demonstrating restoration performance and increasing confidence among investors and funding bodies.

Views on biodiversity and nature credit mechanisms varied considerably. Some participants considered these instruments capable of mobilising additional investment, while others expressed concerns regarding environmental integrity, market maturity and governance risks. Despite these differences, there was widespread agreement that such mechanisms should only complement (not replace) public funding.

Several interviewees also stressed that blended finance approaches combining public funding, philanthropic investment and responsible private finance are likely to provide the most realistic pathway for scaling restoration over the coming decade.

6. Cross-cutting conclusions

Despite reflecting a wide diversity of institutional perspectives, the consultation revealed a high level of convergence around several strategic priorities.

Across stakeholder categories, there was broad agreement that:

- reducing pressures affecting seagrass meadows should remain the primary restoration strategy;
- public funding will continue to provide the foundation for large-scale restoration across the Mediterranean;
- active restoration should be implemented selectively, based on robust ecological evidence and favourable site conditions;
- harmonised restoration methodologies, common monitoring approaches and long-term MRV systems are essential to improve restoration effectiveness;
- governance coordination and permitting procedures require significant strengthening to facilitate implementation;
- restoration planning should be integrated within National Restoration Plans and other marine policy frameworks;
- knowledge transfer, technical capacity building and regional cooperation should continue beyond the lifetime of the ARTEMIS project;
- innovative financing mechanisms may provide valuable complementary resources, provided that they operate within robust governance frameworks and maintain high environmental integrity standards.

Overall, the consultation confirmed that the strategic priorities proposed in this Action Plan are closely aligned with the practical experience and implementation needs identified by Mediterranean stakeholders, while reinforcing the principal conclusions emerging from the ARTEMIS project.



Annex 3. Stakeholder consultation findings. Questionnaire results

1. Introduction

The questionnaire survey was designed as part of the stakeholder consultation process undertaken during the preparation of this Action Plan. Its objective was to complement the technical evidence generated by the ARTEMIS project by gathering perspectives from organisations directly involved in seagrass restoration, conservation, governance, financing and sustainable marine management across the Mediterranean.

Unlike the technical deliverables developed within ARTEMIS, the questionnaire was intended to capture stakeholder perceptions regarding the practical challenges associated with scaling up restoration, including governance, financing, implementation, monitoring and long-term sustainability. The findings were analysed together with the project deliverables and the semi-structured interviews, providing an additional source of evidence to validate and refine the strategic lines and actions proposed in this Action Plan.

The questionnaire combined both quantitative and qualitative questions, allowing respondents not only to identify priorities and barriers but also to explain the reasons behind their responses and provide recommendations based on their professional experience.

2. Stakeholder representation

The survey received responses from organisations representing the principal stakeholder groups involved in Mediterranean seagrass restoration. To facilitate interpretation, respondents were grouped according to their institutional profile rather than by individual organisation.

The consultation covered five stakeholder categories:

- **Developers and restoration practitioners**, including NGOs, consultancies, academic institutions and private companies directly involved in restoration projects.
- **Public authorities**, including national administrations, regional governments and technical agencies responsible for marine policy, permitting and restoration programmes.
- **Investors and finance organisations**, including verification bodies, financial institutions, legal experts and sustainability consultants.
- **Marine sector representatives**, including organisations operating in sectors interacting with marine ecosystems.
- **Scientific community**, including universities, research institutes and marine ecology specialists.

3. Questionnaire structure

To ensure comparability while recognising the different roles of respondents, tailored questionnaires were developed for each stakeholder category. Although the wording varied according to the institutional profile, all questionnaires explored a common set of strategic themes.



The consultation addressed five principal areas:

- restoration priorities and implementation barriers;
- governance and regulatory frameworks;
- financing mechanisms and investment opportunities;
- technical challenges, monitoring and restoration methodologies;
- future priorities for scaling up Mediterranean seagrass restoration.

Additional questions were included for specific stakeholder groups. For example, investors were consulted regarding investment conditions and financial risk, while scientists provided detailed technical information on restoration methodologies, monitoring requirements and ecological feasibility.

4. Main findings by stakeholder category

a) Developers and Restoration Practitioners

Overview

This stakeholder group includes NGOs, environmental consultancies, academic institutions and private companies directly involved in the planning and implementation of seagrass restoration projects. Their responses provide practical insights into the operational challenges associated with restoring Mediterranean seagrass meadows and the conditions required to scale restoration beyond pilot initiatives.

Current restoration practice

Respondents indicated that restoration activities remain predominantly small-scale and largely focused on *Posidonia oceanica*. Projects are mainly financed through public programmes and are often implemented as pilot initiatives. Passive restoration is increasingly recognised as the preferred approach where pressure reduction alone can facilitate natural recovery, while active restoration continues to be applied selectively due to its technical complexity and high implementation costs.

Implementation barriers

Developers consistently identified long-term funding constraints, permitting delays, high monitoring costs and methodological uncertainty as the principal barriers to scaling restoration. Respondents also highlighted the absence of harmonised restoration protocols and the need for stronger governance coordination to improve project implementation.

Financing perspectives

Public funding was widely recognised as the principal mechanism supporting restoration activities. Private investment was considered a valuable complementary source of finance, provided that projects are supported by robust MRV systems, recognised standards, transparent governance and sufficient regulatory certainty. Carbon credits were generally perceived as more mature than biodiversity credits, although both mechanisms were considered to require further methodological development.

Priorities for scaling restoration



Respondents agreed that future efforts should prioritise technical standardisation, harmonised monitoring methodologies, long-term financing mechanisms, demonstration projects and stronger collaboration between public authorities, practitioners and investors.

b) Public Authorities

Overview

This stakeholder group includes national administrations, regional governments and technical agencies responsible for marine policy, permitting, conservation and restoration programmes. Their responses provide valuable insights into the institutional and regulatory conditions required to facilitate restoration across the Mediterranean.

Governance and regulatory framework

Authorities consistently identified fragmented governance, lengthy permitting procedures and limited coordination between competent authorities as important obstacles to restoration implementation. Respondents also highlighted significant differences between Mediterranean countries regarding regulatory maturity and institutional capacity.

Restoration planning priorities

Participants emphasised the importance of integrating restoration into National Restoration Plans, Marine Spatial Planning and broader biodiversity strategies. Improving ecological mapping, identifying restoration priority areas and strengthening long-term monitoring were also recognised as strategic priorities.

Financing perspectives

Public authorities consistently considered public funding to be the foundation of restoration programmes. While acknowledging the potential contribution of innovative financing mechanisms, respondents emphasised that carbon credits, biodiversity credits and other market-based instruments require stronger legal certainty, harmonised methodologies and clear governance frameworks before they can support restoration at scale.

Priorities for future action

Respondents prioritised strengthening institutional coordination, simplifying permitting procedures, improving ecological data, increasing long-term public funding and creating enabling conditions for responsible private investment.

c) Investors and Financial Institutions

Overview

This category includes financial institutions, verification bodies, legal experts and consultancy organisations with experience in sustainable finance, climate finance and environmental investment.

Investment conditions

Respondents expressed considerable interest in future investment opportunities associated with marine restoration but emphasised that projects must demonstrate technical credibility, regulatory certainty and viable financial structures before attracting significant private capital.

Risks and investment barriers

The principal barriers identified include ecological uncertainty, insufficient project scale, regulatory instability, limited standardisation of MRV systems and the absence of mature



revenue mechanisms. Respondents also highlighted reputational risks associated with poorly governed environmental markets.

Financing mechanisms

Blended finance was consistently identified as the most promising financing model. Public grants, guarantees and concessional finance were considered essential to reduce investment risk, while Payments for Ecosystem Services, blue carbon credits and biodiversity credits were recognised as emerging mechanisms requiring further development.

Priorities for scaling investment

Respondents highlighted the need for harmonised certification systems, stronger MRV frameworks, larger aggregated project portfolios, long-term regulatory certainty and continued public support during project development.

d) Marine Sector

Overview

This category represents organisations operating within marine industries whose activities interact directly or indirectly with seagrass ecosystems.

Perspectives on restoration

Respondents recognised the ecological importance of Mediterranean seagrass meadows and acknowledged that stronger conservation measures will be necessary to reverse ecosystem degradation. Existing regulatory frameworks were considered insufficient to guarantee long-term ecosystem recovery.

Regulatory perspectives

The marine sector generally expressed support for additional management measures, including anchoring restrictions, environmental zoning and enhanced monitoring, provided implementation remains proportionate and predictable.

Financing perspectives

Respondents indicated willingness to contribute financially to restoration initiatives where ecological outcomes can be clearly demonstrated and independently verified. Environmental compensation schemes, public-private partnerships and ecosystem service-based financing mechanisms were considered the most appropriate approaches.

Future priorities

Future initiatives should prioritise transparent governance, measurable ecological outcomes and financing mechanisms capable of balancing conservation objectives with sustainable economic activity.

e) Scientific Community

Overview

This stakeholder group comprises universities, research institutes and marine ecology experts with extensive experience in Mediterranean seagrass conservation and restoration.

Scientific priorities

Respondents consistently emphasised that restoration success depends primarily on reducing the pressures affecting seagrass ecosystems before considering active restoration. Improving



habitat mapping, ecological baselines and site selection were identified as fundamental prerequisites for successful restoration.

Restoration implementation

Scientists recognised active restoration as an important but highly specialised intervention that should only be applied under suitable ecological conditions. Respondents highlighted the importance of species-specific methodologies, appropriate donor material, specialised technical expertise and adaptive management throughout the restoration process.

Monitoring and knowledge needs

Long-term ecological monitoring was considered indispensable for evaluating restoration success. Respondents stressed the need for harmonised monitoring methodologies, robust MRV systems and sustained financial support to enable monitoring over ecological rather than project timescales.

Financing perspectives

The scientific community consistently recognised public funding as the principal mechanism supporting restoration while acknowledging that innovative financing mechanisms may provide complementary resources in the future. However, respondents stressed that scientific credibility, environmental integrity and effective governance should remain the primary conditions for their development.

Future priorities

Priority actions include strengthening ecological knowledge, harmonising restoration methodologies, expanding technical capacity, improving long-term monitoring and integrating restoration within broader ecosystem conservation strategies.

5. Cross-cutting findings

Although each stakeholder category approaches seagrass restoration from a different institutional perspective, several common messages emerged consistently throughout the consultation.

Across all stakeholder groups there was broad agreement that:

- Public funding should remain the foundation of large-scale seagrass restoration, while private investment and innovative financing mechanisms should play a complementary role.
- Reducing the pressures affecting seagrass meadows should remain the primary restoration strategy before considering active restoration.
- Harmonised restoration methodologies, long-term monitoring and robust MRV systems are essential to improve restoration effectiveness and build confidence among public authorities, practitioners and investors.
- Governance fragmentation, permitting complexity and limited institutional coordination continue to hinder restoration implementation across much of the Mediterranean.
- Restoration should be more closely integrated into National Restoration Plans, Marine Spatial Planning and other biodiversity and climate policy frameworks.
- Knowledge transfer, technical capacity building and stronger collaboration between public authorities, researchers, practitioners and the private sector will be essential to scale restoration beyond pilot initiatives.



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Overall, the questionnaire findings strongly reinforce the principal conclusions emerging from the ARTEMIS project and provide additional practical evidence supporting the strategic priorities and actions proposed throughout this Action Plan



Annexe 4. Financing, investment pathways and business models. Investment factsheet

1. Introduction

To complement the strategic recommendations presented in this Action Plan, ARTEMIS has developed a set of Financial Factsheets based on the pilot restoration projects implemented during the project. These factsheets provide practical examples of the financial characteristics of different restoration interventions, illustrating the investment needs, implementation costs, financing requirements and potential funding pathways associated with Mediterranean seagrass restoration.

Rather than representing detailed business plans or investment prospectuses, the factsheets are intended as practical decision-support tools that help public authorities, project developers, funding organisations and potential investors better understand the financial dimensions of restoration projects. They illustrate the typical cost structure of restoration interventions, identify the main financing needs throughout the project lifecycle and present indicative funding opportunities that may support implementation.

The factsheets also contribute to one of the principal objectives of the ARTEMIS project: facilitating the transition from pilot restoration initiatives towards larger-scale implementation. By providing transparent financial information derived from real restoration experiences, they help improve the understanding of restoration economics, support project preparation and promote greater consistency when designing future restoration programmes and funding schemes.

Consistent with the conclusions of ARTEMIS, the factsheets recognise that public funding remains the foundation of Mediterranean seagrass restoration. Innovative financing mechanisms (including blended finance, Payments for Ecosystem Services (PES), blue carbon initiatives and future Seagrass Credit mechanisms) are presented as complementary instruments capable of mobilising additional investment where appropriate governance, robust methodologies and long-term monitoring are in place.

The information presented should therefore be considered indicative rather than prescriptive. Financial requirements will vary depending on ecological conditions, restoration techniques, project scale, local labour costs, monitoring requirements and national regulatory frameworks. Nevertheless, the factsheets provide a common reference framework that can support the preparation, evaluation and financing of future seagrass restoration initiatives across the Mediterranean.

The Financial Factsheets build upon the restoration methodologies, ecosystem service assessments, financing guidance and policy recommendations developed throughout the ARTEMIS project, translating these technical outputs into concise, project-oriented summaries that can facilitate communication with funding bodies, investors and restoration practitioners.



2. Menorca

Action title	Restoration of Posidonia oceanica meadows in Cala Blanca, Ciutadella, Menorca, through active transplantation and ecosystem service-based financing under the ARTEMIS Interreg Euro-MED project.
1. Background and rationale	
Menorca's Posidonia oceanica meadows, covering ~82 km around the island, suffered degradation from a 2010-2012 bentonite spill during Ciutadella desalination plant construction, affecting 1,600 m ² at 20m depth within the Natura 2000 site ESZZ16002 Canal de Menorca. Natural recovery is slow despite limited living clones on dead rhizome mats, highlighting the need for active intervention amid broader Mediterranean declines from anchoring, pollution, and climate impacts. The ARTEMIS project (2024-2026) pilots restoration here to demonstrate scalable, service-based solutions aligned with EU Nature Restoration Regulation targets.	
2. Objectives of the financing mechanism	
Secure sustainable funding for 1,800 m ² restoration, generating verifiable Blue Carbon and Biodiversity Credits while integrating ecosystem service values into policy and corporate frameworks. Aims to bridge the €319M annual Mediterranean Posidonia funding gap by piloting PES schemes that attract blended public-private investment for long-term meadow recovery and resilience.	
3. Description of the financing and investment model	
Type of mechanism	Payment for Ecosystem Services (PES) with nature credits, blending public grants (e.g., Interreg Euro-MED) and private investments for verified Blue Carbon sequestration and biodiversity gains, per SEEA-EA natural capital accounting.
Target ecosystem	Degraded Posidonia oceanica meadow in Cala Blanca (1,800 m ² restored), focusing on dead matte patches for shoot transplantation using natural cuttings.
Ecosystem services considered	Blue Carbon (sequestration/storage) and Biodiversity Preservation (habitat support, species richness); EBQI condition score ~2.9 (bad status), with physical accounts showing carbon stocks and monetary values projected over 35-60 years using social carbon cost or market prices.
4. Governance and institutional arrangements	
Lead coordinating entity	Menorcan Institute of Studies – Socio-environmental Observatory of Menorca (IME-OBSAM), overseeing pilot implementation within ARTEMIS consortium.
Key partners	ARTEMIS partners: HCMR, MEDSEA, ISPRA, Ecoacsa, Plan Bleu, The Green Tank; local stakeholders including Balearic Islands authorities, regional agencies, and fishing/tourism sectors.
Governance structure	Multi-level coordination: regional (Balearic Decree 25/2018), national (Royal Decree 191/2026), EU (NRR, Natura 2000); site-specific stakeholder workshops for PES design, with monitoring by scientific partners.
5. Financing needs and indicative investment size	



Indicative investment needs are provided for **illustrative purposes only**, based on aggregated restoration costs at site level.

Component	Indicative range (€)
Active Restoration (per ha)	516.000-942.000
Monitoring and verification (5 years)	40.000-120.000
Total indicative investment size	556,000 – 1.050.000

Menorca pilot up to €2.5M/ha due to depth/logistics); total pilot approx €1-2M initial outlay, scaling to €336M annual Mediterranean needs vs. €17M current spend.

Indicative investment ranges correspond to medium-scale restoration projects and include the minimum technical, monitoring and governance requirements necessary to deliver restoration projects consistent with the ARTEMIS methodologies. Actual investment requirements will depend on site conditions, restoration techniques, regulatory requirements and monitoring duration.

6. Financing sources and investment pathways

Public funding	Interreg Euro-MED (€7.2M project total), LIFE, EMFAF, ERDF, PNRR; national/regional grants via Balearic Islands for anchoring regulation and monitoring.
Private and semi-public funding	Corporate ESG investments (hotels, fisheries, shipping) via voluntary credits; philanthropy/donors for pilots.
Blended finance structure	Public de-risking (grants/technical standards) leverages private PES/credits; projected €1.3B market by 2050 with credits at €34k–€41k/ha.

7. Indicative business model

Who pays	Beneficiaries: tourism operators (coastal protection), fisheries (nursery habitat), corporates (ESG compliance via CSRD/Taxonomy); public via taxes/subsidies shift.
Who benefits	Local communities (jobs, resilience), biodiversity (EBQI uplift), global climate (carbon storage); 10x ecosystem service returns projected.
Revenue and sustainability	Credit sales (bundled Blue Carbon/Biodiversity) over 60-year flows, discounted NPV via Nature Value Tool; self-sustaining post-pilot via PES agreements (~€2M additional funding).

8. Implementation timeline

Phase	Timeline
Site preparation, stressor removal (anchoring buoys), initial transplantation (Phase 1: 900 m ²)	2026
Full restoration (Phase 2: 900 m ²), MRV baseline, PES piloting	2027
Monitoring/growth (EBQI/MediSkew), credit issuance, scaling to adjacent sites	2028–2029



Full verification, PES contracts, regional programme integration

2030

9. Monitoring, reporting and verification (MRV)

EBQI index (structural/functional metrics), biodiversity indicators (abundance, biomass, Shannon), drone/GIS mapping; annual physical/monetary accounts per SEEA-EA, third-party verified for credits; Nature Value Tool for balance sheets.

10. Replicability and scaling potential

High: Menorca's advanced protection (anchoring rules, mapping) transitions to programmatic restoration; replicable via ARTEMIS guidelines for 10,000 ha Mediterranean target, leveraging NRR/PAFs and €1.3B credit market.

3. Sardinia

Action title Restoration of *Cymodocea nodosa* and *Posidonia oceanica* meadows in Monfalcone-Santa Teresa di Gallura area, Sardinia, through active transplantation, passive protection measures, and PES/credit-based financing under the ARTEMIS Interreg Euro-MED project.

1. Background and rationale

Sardinia hosts extensive *Posidonia oceanica* meadows (~10,000 ha) and *Cymodocea nodosa* beds critical for blue carbon storage, biodiversity, and coastal protection, but facing degradation from anchoring, port activities, tourism pressures, and climate stressors within MPAs and Natura 2000 sites. The ARTEMIS pilot in Monfalcone-Sardinia tests bundled credit generation (carbon + biodiversity) amid Italy's fragmented regional regulations, building on local restoration experience while addressing the €319M Mediterranean *Posidonia* funding gap.

2. Objectives of the financing mechanism

Mobilize €700K-€2.5M for multi-site restoration via PES and blended finance, generating verifiable Seagrass Credits for market sale while de-risking private investment through public guarantees. Targets scaling from pilots to 1,500 ha restored by 2030, aligning with SAP BIO, MPN 2030 Roadmap, and EU NRR.

3. Description of the financing and investment model

Type of mechanism	Blended PES with bundled Seagrass Credits (Blue Carbon + Biodiversity), combining Interreg grants, regional funds, and voluntary market sales per ARTEMIS methodology.
Target ecosystem	Degraded <i>Cymodocea nodosa</i> and <i>Posidonia oceanica</i> in priority Sardinian coastal/MPA sites (e.g., Santa Teresa Gallura), focusing dead matte recovery via shoot transplantation.
Ecosystem services considered	Blue Carbon sequestration, biodiversity (EBQI/MediSkew uplift), coastal protection; bundled credits priced €34k-€41k/ha reflecting 60-year NPV.

4. Governance and institutional arrangements



Lead coordinating entity	MEDSEA Foundation / Municipality of Monfalcone, coordinating within ARTEMIS via regional authorities.
Key partners	RAS (Regione Autonoma Sardegna), ISPRA, ARTEMIS consortium (ecoacsa, HCMR), port authorities, tourism/fisheries sectors.
Governance structure	Regional steering committee (RAS-led) with technical advisory group; aligns with Italian MPA laws, Habitats Directive; iterative co-creation via stakeholder workshops.

5. Financing needs and indicative investment size

Indicative investment needs are provided for **illustrative purposes only**, based on aggregated restoration costs at site level.

Component	Indicative range (€)
Baseline	20.000-60.000
Passive restoration	30.000-200.000
Active restoration	50.000-300.000
Monitoring and verification (5 years)	40.000-120.000
Total indicative investment size	140.000-680.000

Pilot portfolio €700K-€2.55M, scaling to contribute to €336M annual Med needs.

Indicative investment ranges correspond to medium-scale restoration projects and include the minimum technical, monitoring and governance requirements necessary to deliver restoration projects consistent with the ARTEMIS methodologies. Actual investment requirements will depend on site conditions, restoration techniques, regulatory requirements and monitoring duration.

6. Financing sources and investment pathways

Public funding	Interreg Euro-MED, ERDF, PNRR, regional RAS budgets; LIFE/EMFAF for MPAs.
Private and semi-public funding	Port/tourism operators via compensation; corporate ESG (shipping, hotels) for credits.
Blended finance structure	Public grants de-risk restoration; private PES/credits for O&M; projected €1.3B Med market by 2050.

7. Indicative business model

Who pays	Ports/tourism (coastal protection), fisheries (habitat), corporates (CSRD compliance via credits).
Who benefits	Biodiversity (EBQI gains), communities (resilience/jobs), climate (carbon flows).
Revenue and sustainability	Bundled credit sales (10-20yr monitoring); breakeven via diversified revenues, contingency funds.

**8. Implementation timeline**

Phase	Timeline
Baselines, passive measures (eco-mooring)	2026
Active transplantation, PES agreements	2027
Monitoring, credit issuance	2028–2029
Verification, regional scaling	2027–2030

9. Monitoring, reporting and verification (MRV)

EBQI, shoot density, carbon stocks via SEEA-EA; annual reports, third-party audit for credits.

10. Replicability and scaling potential

Model adaptable to Italian MPAs; leverages ARTEMIS tools for MPN-coordinated 10,000 ha Med target via standardized credits.

4. Monfalcone

Action title	Conservation and management of <i>Cymodocea nodosa</i> meadows in Panzano Bay (Gulf of Trieste), Monfalcone, through passive protection (eco-mooring), pressure reduction, and PES preparation under the ARTEMIS Interreg Euro-MED project.
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1. Background and rationale

Panzano Bay features stable *Cymodocea nodosa* meadows (~50% in good condition) rather than *Posidonia oceanica* (historically absent/marginal), facing pressures from port activities, shipyards, anchoring, fisheries, and upstream pollution in a heterogeneous bathymetry (0.5–3m depth). ARTEMIS assesses baselines, maps habitats (*C. nodosa*, *Zostera* spp.), and tests management absent active restoration due to high costs and natural resilience.

2. Objectives of the financing mechanism

Secure €200K–€500K for passive measures and monitoring via public funds/PES, prioritizing pressure reduction (e.g., anchoring regulation) to maintain ecosystem services while informing scalable Adriatic models aligned with NRR, MSFD, and regional climate laws.

3. Description of the financing and investment model

Type of mechanism	PES-focused with public grants (Interreg ERDF) for baseline/MRV; bundled credits (biodiversity/blue carbon) post-restoration, emphasizing passive overactive due to <i>C. nodosa</i> resilience
Target ecosystem	<i>Cymodocea nodosa</i> -dominated meadows in Panzano Bay; relic <i>Posidonia</i> assessed; sandy-silty sediments in protected bay.



Ecosystem considered	services	Coastal protection, biodiversity (EBQI), blue carbon, fisheries nursery, water quality; rapid recovery post-disturbance (1 cm/day growth)..										
4. Governance and institutional arrangements												
Lead coordinating entity	Municipality of Monfalcone, coordinating via ARTEMIS with regional/national input.											
Key partners	ISPRA, SELCA (technical), Efrima (PES), Friuli Venezia Giulia authorities, port operators, Coast Guard.											
Governance structure	Local steering with cross-sector coordination (environment/maritime/port); stakeholder workshops; aligns with Habitats Directive, regional laws (FVGreen); gaps in non-MPA enforcement.											
5. Financing needs and indicative investment size												
Indicative investment needs are provided for illustrative purposes only , based on aggregated restoration costs at site level.												
<table><tr><th>Component</th><th>Indicative range (€)</th></tr><tr><td>mapping</td><td>20.000</td></tr><tr><td>Eco-mooring</td><td>30.000-100.000</td></tr><tr><td>Monitoring</td><td>20.000-80.000</td></tr><tr><td>Total indicative investment size</td><td>70.000-200.000</td></tr></table>			Component	Indicative range (€)	mapping	20.000	Eco-mooring	30.000-100.000	Monitoring	20.000-80.000	Total indicative investment size	70.000-200.000
Component	Indicative range (€)											
mapping	20.000											
Eco-mooring	30.000-100.000											
Monitoring	20.000-80.000											
Total indicative investment size	70.000-200.000											
Scalable to €250K portfolio; lower than Posidonia active restoration (€500K+/ha)												
Indicative investment ranges correspond to medium-scale restoration projects and include the minimum technical, monitoring and governance requirements necessary to deliver restoration projects consistent with the ARTEMIS methodologies. Actual investment requirements will depend on site conditions, restoration techniques, regulatory requirements and monitoring duration.												
6. Financing sources and investment pathways												
Public funding	Interreg Euro-MED (€200K co-financing), ERDF, regional/national (PNRR, FVGreen); LIFE/EMFAF potential											
Private and semi-public funding	Port/shipyard compensation, tourism operators via PES; corporate ESG (CSRD compliance).											
Blended finance structure	Public de-risking for passive measures; PES/credits for O&M; public primary per stakeholders.											
7. Indicative business model												
Who pays	Ports/shipyards (pollution/anchoring), fisheries/tourism (users); public primary.											
Who benefits	Local communities (resilience), fisheries (nurseries), climate (carbon), biodiversity.											



Revenue and sustainability	PES from pressure reducers; low active costs; natural recovery ensures viability; monitoring via MPAs.										
8. Implementation timeline											
<table> <tr> <th>Phase</th><th>Timeline</th></tr> <tr> <td>Baselines, eco-moorings (Panzano field)</td><td>2026</td></tr> <tr> <td>Pressure regulation, PES pilots</td><td>2027</td></tr> <tr> <td>Monitoring, credit baselines</td><td>2028–2029</td></tr> <tr> <td>Evaluation, Adriatic scaling</td><td>2030</td></tr> </table>		Phase	Timeline	Baselines, eco-moorings (Panzano field)	2026	Pressure regulation, PES pilots	2027	Monitoring, credit baselines	2028–2029	Evaluation, Adriatic scaling	2030
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Baselines, eco-moorings (Panzano field)	2026										
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Monitoring, credit baselines	2028–2029										
Evaluation, Adriatic scaling	2030										
9. Monitoring, reporting and verification (MRV)											
EBQI, shoot density/cover, carbon stocks (SEEA-EA); annual stakeholder reports; third-party for PES/credits; MPA gaps outside protected areas.											
10. Replicability and scaling potential											
High for Adriatic lagoons/ports with <i>C. nodosa</i> ; demonstrates passive-first model, PES in non-Posidonia sites; transferable to mixed-seagrass zones via ARTEMIS tools.											

5. Crete

Action title	Seagrass restoration and PES scheme in Atzikiri Bay, Crete. Targets Posidonia oceanica and Cymodocea nodosa recovery through active/passive measures and market-based financing.
1. Background and rationale	
Atzikiri Bay faces seagrass degradation from aquaculture pollution and physical impacts within a Natura 2000 protected area. The ARTEMIS pilot tests restoration viability, addressing a Mediterranean funding gap of €319M/year for Posidonia conservation (€336M needed vs. €17M current). Restoration supports EU Nature Restoration Law, KM-GBF targets, and CSRD disclosures, while generating credits for corporate buyers in fisheries, tourism, and shipping. Pilot data informs scalable PES models.	
2. Objectives of the financing mechanism	
Mobilize blended finance for seagrass recovery; verify ecosystem services (carbon, biodiversity, coastal protection); create sustainable revenue via credits/PES; demonstrate replicability across Natura 2000 sites.	
3. Description of the financing and investment model	



Type of mechanism	Blended finance with PES and nature credits (blue carbon + biodiversity bundled). Voluntary but regulated credits via Mediterranean Seagrass Credit Standard.												
Target ecosystem	Posidonia oceanica and Cymodocea nodosa meadows in degraded coastal zones												
Ecosystem services considered	Blue carbon sequestration; biodiversity (EBQI/MediSkew indexes); coastal protection; fisheries nursery enhancement.												
4. Governance and institutional arrangements													
Lead coordinating entity	Hellenic Centre for Marine Research (HCMR), with Region of Crete.												
Key partners	The Green Tank, Natural Environment Agency, local fisheries, NGOs.												
Governance structure	Steering committee (authorities/scientists); technical advisory group (MRV); lifecycle governance covering pre-restoration to long-term monitoring.												
5. Financing needs and indicative investment size													
Indicative investment needs are provided for illustrative purposes only , based on aggregated restoration costs at site level.													
<table> <tr> <th>Component</th><th>Indicative range (€)</th></tr> <tr> <td>Baseline</td><td>20.000-60.000</td></tr> <tr> <td>Passive restoration</td><td>30.000-200.000</td></tr> <tr> <td>Active restoration</td><td>50.000-300.000</td></tr> <tr> <td>Monitoring and verification (5 years)</td><td>40.000-120.000</td></tr> <tr> <td>Total indicative investment size</td><td>140.000-680.000</td></tr> </table>		Component	Indicative range (€)	Baseline	20.000-60.000	Passive restoration	30.000-200.000	Active restoration	50.000-300.000	Monitoring and verification (5 years)	40.000-120.000	Total indicative investment size	140.000-680.000
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Active restoration	50.000-300.000												
Monitoring and verification (5 years)	40.000-120.000												
Total indicative investment size	140.000-680.000												
Aggregated pilot portfolio: €700K-€2.55M.													
Indicative investment ranges correspond to medium-scale restoration projects (approximately 1–10 ha) and include the minimum technical, monitoring and governance requirements necessary to deliver restoration projects consistent with the ARTEMIS methodologies. Actual investment requirements will depend on site conditions, restoration techniques, regulatory requirements and monitoring duration.													
6. Financing sources and investment pathways													
Public funding	National budgets, EU LIFE/Interreg/EMFAF (€50-150K governance/baseline).												
Private and semi-public funding	Port/tourism operators, fisheries via PES/credits (€300-1M restoration).												
Blended finance structure	Public de-risking (grants) unlocks private credits/PES; stack carbon+biodiversity for 60%+ market value by 2050.												



7. Indicative business model											
Who pays	Public (governance); private (tourism/shipping for services); corporates (ESG credits).										
Who benefits	Ecosystems, fisheries, tourism, communities; reduced erosion/insurance costs.										
Revenue and sustainability	PES (€57-80/ha/year passive); credits (€34K-41K/ha by 2050); breakeven via stacked sales over 10-20 years.										
8. Implementation timeline											
<table> <tr> <th>Phase</th><th>Timeline</th></tr> <tr> <td>Site/baseline assessment, mechanism design</td><td>2026</td></tr> <tr> <td>Stakeholder agreements, passive measures</td><td>2026–2027</td></tr> <tr> <td>Active restoration launch</td><td>2027–2029</td></tr> <tr> <td>MRV, adaptive management</td><td>2027–2030</td></tr> </table>		Phase	Timeline	Site/baseline assessment, mechanism design	2026	Stakeholder agreements, passive measures	2026–2027	Active restoration launch	2027–2029	MRV, adaptive management	2027–2030
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Site/baseline assessment, mechanism design	2026										
Stakeholder agreements, passive measures	2026–2027										
Active restoration launch	2027–2029										
MRV, adaptive management	2027–2030										
9. Monitoring, reporting and verification (MRV)											
Baseline via EBQI, carbon stocks, shoot density; annual monitoring (satellite/in-situ); third-party verification; SEEA-EA accounting for additionality/permanence.											
10. Replicability and scaling potential											
Adaptable to 500+ ha restoration target by 2030; pilots validate for Natura 2000/MPAs; scales via regional credit standard and policy alignment (SAP BIO, MPN Roadmap). Methodology already developed, policy alignment.											



Annexe 5. Bibliographical references

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