

Draft proposal for a European Partnership under Horizon Europe

A climate neutral, sustainable and productive Blue Economy

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About this draft

In autumn 2019 the Commission services asked potential partners to further elaborate proposals for the candidate European Partnerships identified during the strategic planning of Horizon Europe. These proposals have been developed by potential partners based on common guidance and template, taking into account the initial concepts developed by the Commission and feedback received from Member States during early consultation¹. The Commission Services have guided revisions during drafting to facilitate alignment with the overall EU political ambition and compliance with the criteria for Partnerships.

This document is a stable draft of the partnership proposal, released for the purpose of ensuring transparency of information on the current status of preparation (including on the process for developing the Strategic Research and Innovation Agenda). As such, it aims to contribute to further collaboration, synergies and alignment between partnership candidates, as well as more broadly with related R&I stakeholders in the EU, and beyond where relevant.

This informal document does not reflect the final views of the Commission, nor pre-empt the formal decision-making (comitology or legislative procedure) on the establishment of European Partnerships.

In the next steps of preparations, the Commission Services will further assess these proposals against the selection criteria for European Partnerships. The final decision on launching a Partnership will depend on progress in their preparation (incl. compliance with selection criteria) and the formal decisions on European Partnerships (linked with the adoption of Strategic Plan, work programmes, and legislative procedures, depending on the form). Key precondition is the existence of an agreed Strategic Research and Innovation Agenda / Roadmap. The launch of a Partnership is also conditional to partners signing up to final, commonly agreed objectives and committing the resources and investments needed from their side to achieve them.

The remaining issues will be addressed in the context of the development of the Strategic Research and Innovation Agendas/Roadmaps, and as part of the overall policy (notably in the respective legal frameworks). In particular, it is important that all Partnerships further develop their framework of objectives. All Partnerships need to have a well-developed logical framework with concrete objectives and targets and with a set of Key Performance Indicators to monitor achievement of objectives and the resources that are invested.

Aspects related to implementation, programme design, monitoring and evaluation system will be streamlined and harmonised at a later stage across initiatives to ensure compliance with the implementation criteria, comparability across initiatives and to simplify the overall landscape.

All candidate partnerships are published on the [website](#) of the European Commission as a part of an online publication of draft partnership proposals for partnerships planned to start in 2021/2022. The publication of proposals will provide transparency of the preparation phase and therewith ensures better alignment and planning through mutual access among partnerships and Member States;

The initial SRIA development process should be completed within a period of 6 months. This relatively short timeframe is realistic as the work can rely for a large part on the extensive analysis, priority setting, and stakeholder consultation performed while developing the strategic agendas of regional and pan-European initiatives.

In case you would like to receive further information about this initiative, please contact:

¹ https://www.era-learn.eu/documents/final_report_ms_partnerships.pdf

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1 Summary

The partnership will catalyse the transformation of Europe’s ocean economy towards climate neutral status by 2050. By aligning national, regional and EU R&I priorities and bringing together science, industry, governance and society, it will deliver knowledge and solutions to make ocean business sustainable. Responding to national and EU policy goals (e.g. MSFD, Green Deal), the partnership will target a healthy ocean and a sustainable, productive ocean economy and the well-being of citizens.

2 Context, objectives, expected impacts

2.1 Context and problem definition

2.1.1 The need for a climate neutral, sustainable and productive Blue Economy

"A sustainable 'Blue Economy' will have to play a central role in alleviating the multiple demands on the EU's land resources and tackling climate change. The role of oceans in mitigating and adapting to climate change is increasingly recognised. The sector can contribute by improving the use of aquatic and marine resources and, for example, by promoting the production and use of new sources of protein that can relieve pressure on agricultural land. More generally, lasting solutions to climate change require greater attention to nature-based solutions including healthy and resilient seas and oceans."²

Ursula Von der Leyen, President of the European Commission

Europe is a maritime continent. At 22 million km², the Exclusive Economic Zone (EEZ) of the European Union (including EU overseas territories) is the largest in the world; twice as large as that of the USA. In 2018, the EU Blue Economy directly employed close to 5 million people, generating more than €750 billion of turnover.

The potential of a climate neutral and sustainable Blue Economy to deliver innovation, value creation and employment is high, and its role in addressing global challenges such as energy security, healthy environment, climate change and sustainable food provision is substantial. Seas and oceans also impact on human health and wellbeing in ways we are only beginning to understand³, meaning that we need to take a wider view on how to foster sustainable and

² European Union: European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of Regions on the European Green Deal*, 11 December 2019, COM (2019) 640 final. Available at: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

³ See EU H2020 Project, Seas, Oceans and Public Health in Europe (SOPHIE) Strategic Research Agenda: <https://sophie2020.eu/strategic-research-agenda/>

resilient coastal enterprise and communities. The OECD (2016) projected that the value added by ocean industries would double by 2030 relative to 2010 (Fig. 1), based on a scenario that assumes business as usual with respect to trends, policies, technological or environmental developments.

The projection does not factor in neither the COVID-19 crisis, nor potential additional value creation from ambitious and transformative change towards a climate neutral, sustainable and productive Blue Economy that is central to the objectives of this Partnership. The COVID-19 pandemic is expected to impact economic growth, employment, societal priorities and political agendas worldwide for a period of several years. This will also affect the Blue Economy, bearing both risk and opportunity. Comprehensive and innovative results from the Partnership may be timely to support the re-establishment of socioeconomic structures in an ecologically and economically more sustainable and resilient way. There is a risk, however, that long-term sustainability could be put on hold to deal with immediate concerns. The Partnership can help intervene here by streamlining public and private development and recovery investments towards reducing risks from critical market failures and underpinning Blue Economy development with data and assessment tools. Considering that the global economy is highly dynamic and other parts of the world also turn to the ocean for economic development, the Partnership may generate solutions with a global appeal.

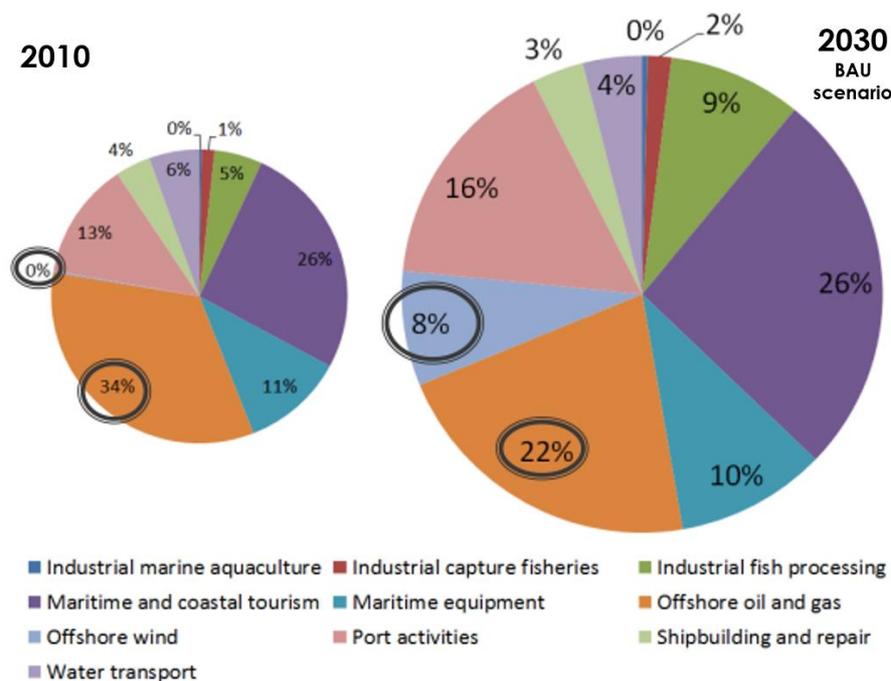


Figure 1: Size and composition of the global ocean economy in 2030 relative to 2010. Projections under a business as usual (BAU) scenario foresee a doubling of value addition and a shift in importance between sectors (OECD, 2016).

Seas and oceans do not stop at political borders and neither do the challenges they face. They are host to complex systems of globally interlinked commercial activities, often competing for the same dynamic space and resources (Fig. 2). It is therefore fundamental to understand the natural and social systems underlying the ocean economy and to enable policy makers, businesses and citizens to make sound decisions based on evidence and scientific knowledge.

About 70% of the ocean is experiencing increasing cumulative anthropogenic impacts⁴. Reducing the environmental impact of ongoing activities and ensuring that future economic developments do not repeat past mistakes will be central to the vision of this Partnership. To

⁴ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2019

that effect, the ecosystem approach to management (EAM⁵) will be promoted as an integrated, systemic conceptual framework by which the trade-offs between different objectives and interests are identified, understood and managed.

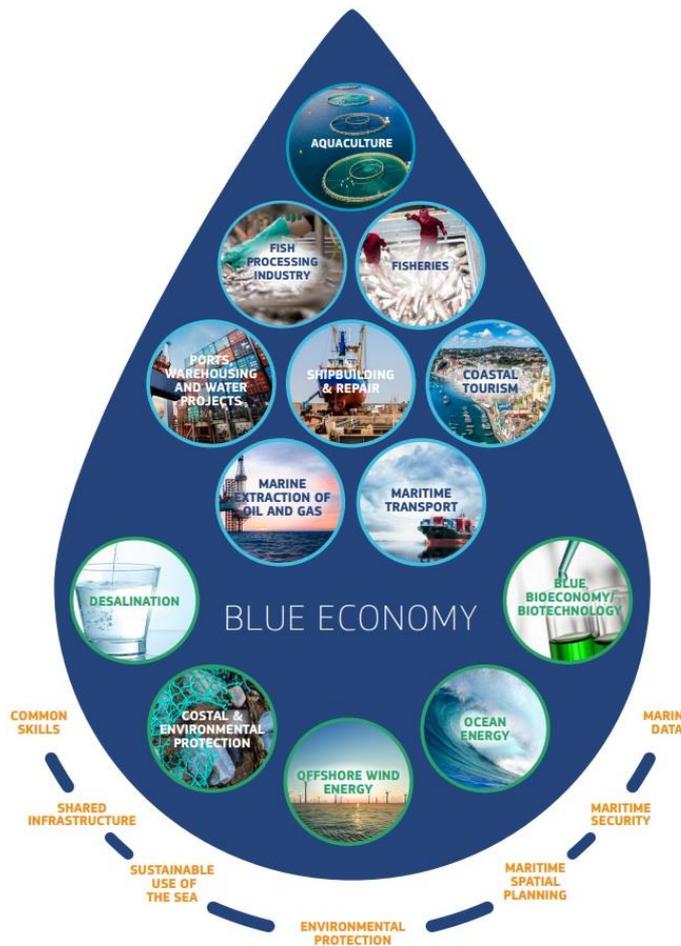


Figure 2: Schematic from the 2018 annual economic report on the EU Blue Economy⁶ illustrating the main economic activities subsumed under the term Blue Economy. Blue circles contain established sectors with long-term proven contribution to the economy, green circles depict new sectors with high potential for future development. Yellow phrases describe enablers of the Blue Economy.

2.1.2 Bottlenecks and market failures

A number of bottlenecks and market failures that slow down the development of the Blue Economy and its transition to climate neutral and sustainable practices can be addressed. The R&I landscape is overall fragmented. In the EU, more than 85% of the investments in Research, Development & Innovation are made at national level (Fig. 3). In 2010, EU Member States (MS) agreed to increase their total R&D spending to 3% of GDP by 2020. This has not been achieved, but alignment of public R&I funding can at least maximise the impact of the investments and contribute significantly to the strengthening of a functioning and high-performing European Research Area (ERA) in the Blue Economy domain.

⁵ [From Borja et al. 2016] The Ecosystem Approach [defined in CBD (2000)] is a management and resource planning procedure that integrates the management of human activities and their institutions with the knowledge of the functioning of ecosystems” (“a resource planning and management approach that integrates the connections between land, air and water and all living things, including people, their activities and institutions” (cf., Farmer et al., 2012, for a review of the concept of ecosystem approach in marine management). EAM is the underlying principle for environmental management strategies as formulated in the EU Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD), Maritime Spatial Planning Directive (MSPD) and the Common Fisheries Policy (CFP).

⁶ European Commission (2019). *The EU Blue Economy Report*. 2019. Publications Office of the European Union, Luxembourg. Available at: <https://op.europa.eu/en/publication-detail/-/publication/79299d10-8a35-11e8-ac6a-01aa75ed71a1>

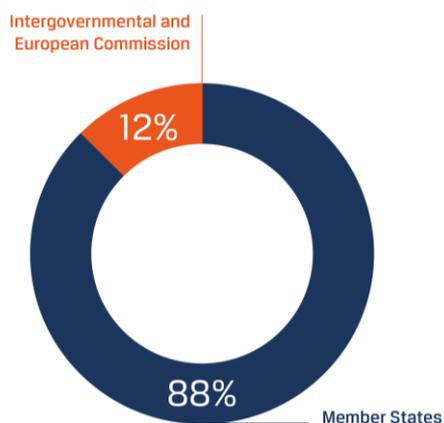


Figure 3: Estimate of the overall R&I spending split between the Member States and the EC (2013)⁷. International cooperation comes with a transaction cost, necessitating incentives by the EU to support transnational cooperation mechanisms to enable the objective of the ERA. Under Horizon 2020 this has been addressed through Coordination and support actions (CSA). Similar support schemes will be important also under Horizon Europe.

Policy responsibilities, R&I disciplines and industry sectors⁸ are often compartmentalised or siloed. This issue is common to all levels: global, EU, regional, national and local. The Report of the independent High-Level Group on maximising the impact of EU Research & Innovation Programmes in 2016 notes that this discourages cooperation across socioeconomic sectors and disciplines, which ultimately prevents provision of knowledge for a “green” development of and transformation to an evidence and knowledge based Blue Economy.

Other shortcomings are a lack of harmonised definitions, results and frameworks around ecosystem services, thus limiting their contributions to the valuation of services and measurements of the impacts of interventions. To that effect, a multi-stakeholder Partnership can promote the needed common understanding, culture and language across Blue Economy sectors, disciplines and stakeholders.

Sustainable growth and jobs necessitate that results of research on one hand and the potential investors on the other must be bridged, for innovation to come out of the lab and onto the market. Studies have shown that private investors generally lack familiarity with the Blue Economy investment landscape⁹. The Partnership can address this by upscaling and expanding models such as the BlueInvest¹⁰ platform that support investment readiness and access to finance for early-stage businesses, SMEs and scale-ups in the Blue Economy.

2.1.3 Need for transformative change

"The EU's Blue Economy is consistently growing over the last decade and the potential for the future is promising... we can double the sector in a sustainable way by 2030."

Karmenu Vella, EU Commissioner for Environment, Maritime Affairs and Fisheries, launching the 2018 Blue Economy Report.

Transformative change to unlock the potential of the Blue Economy while ensuring a climate neutral and sustainable growth requires the active contribution and interaction of several strands. The triple helix innovation framework of the three sectors academia, industry and government offers a good design concept for the Partnership. To ensure adequate consideration of environmental and societal needs and socio-ecological interactions, the Partnership supports the extended quintuple helix concept (Fig. 4). It reflects the needs and opportunities for a knowledge society and knowledge economy that enables innovation for sustainable climate neutral development.

⁷ Evaluation of Joint Programming to Address Grand Societal Challenges, Final Report of the Expert Group, European Commission, 2016, ISBN 978-92-79-56974-6.

⁸ OECD (2016), *The Ocean Economy in 2030*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264251724-en>.

⁹ Accenture, 2017: The case for Principles for Sustainable Investment in the Blue Economy.

¹⁰ Maritime Forum - European Commission. 2020. *BlueInvest*. [online] Available at: <<https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1451>> [Accessed 19 May 2020].

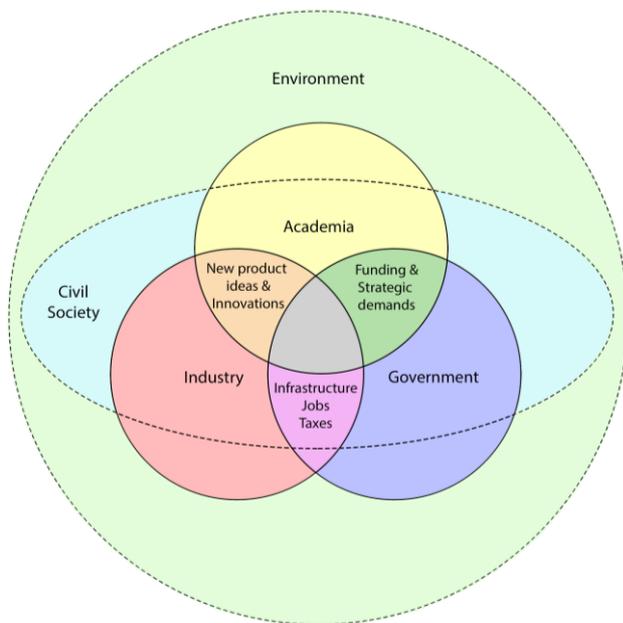


Figure 4: The five Helices of the Quintuple Helix concept. It is based on the triple and quadruple helix models and adds as fifth helix the natural environment. The quintuple helix views the natural environments of society and the economy as drivers for knowledge production and innovation. (figure adapted and extended from Kimatu, 2016)¹¹.

2.1.4 The crucial role of and implications for R&I

To responsibly unlock, demonstrate and enable sustainable use of oceans and seas in and around Europe, it is crucial to increase the evidence-base for knowledge, information and know-how to pursue sound policies and regulatory frameworks for sustainable business opportunities and solutions. This cannot be solved by national R&I programmes focused on a particular area of knowledge or theme.

Despite efforts to rationalise the marine and maritime R&I landscape, it still consists of a substantial variety of organisations, initiatives and networks with specific functions. In addition, Member States (MS) and Associated Countries (AC) have their own socio-political priorities and accordingly often specific foci of their R&I investments. A R&I programme for sustainably mobilising the potential of the Blue Economy needs to span across borders, disciplines and sectors with an unprecedented degree of commitment and integration.

Filling gaps in R&I and overcoming obstacles for developing a climate neutral, sustainable and productive Blue Economy will be a fundamental part of the process to build the Strategic Research and Innovation Agenda (SRIA). The SRIA will build on existing mature and inclusively developed pan-European and regional strategic frameworks. The Partnership will deploy instruments and actions, including - but going beyond - joint calls for R&I proposals.

The Partnership will help reduce fragmentation by linking existing activities and efforts to combine and align pan-European, regional and national investments and the identified socio-political priorities for R&I. This will offer a value proposition that signifies high return on public R&I investment through collaboration and prospect for sustainable economic development.

Synergies between programmes, instruments and investments at EU, regional and national levels and an openness to collaboration with the private sector and philanthropy (cf. 3.1.1 – 3.1.2) will be essential. It will enhance collaboration, knowledge transfer and sharing of resources, expertise and experience across geographic and cultural regions to address pan-European as well as global challenges in line with the ‘Clean Planet for All’ strategy, the European Green Deal and its commitment to global climate action under the Paris Agreement.

¹¹ Kimatu, J.N. *Evolution of strategic interactions from the triple to quad helix innovation models for sustainable development in the era of globalization*. J Innov Entrep 5, 16 (2016)

2.1.5 Co-creation and broad involvement of stakeholders

Co-creation among providers of knowledge, research and technology and the users from industry or policy will be actively sought from planning to implementation. This will generate ownership, shared ambitions and provide a ground for innovative solutions, thereby ensuring uptake by the public and private sector, decision makers and society at large.

Many of the opportunities for the Blue Economy and for ensuring sustainability and climate neutrality are situated at the interfaces of the marine and maritime space with other sectors and disciplines. These include climate change (and impact mitigation), land-based economies, freshwater management, terrestrial ecology, biodiversity, bioeconomy, biotechnology, ports and shipping, agriculture, urban and coastal planning and others. The constellation with parallel partnerships in Horizon Europe, offers ample opportunity for effective R&I collaboration across sectors and disciplines to substantiate the transformation of the economy and societies. The multi-sector Partnership can act as a catalyser and bridge builder to prompt users to commit to a net positive conservation impact as part of their social license to operate.

Social and technological innovation enables transformative governance. Research and education supported by an innovative and competent private sector are central to ensuring a workforce with cutting-edge professional skills. This includes information and communication technologies (ICTs), which have driven productivity gains and growth in Europe. Blue Economy sectors play active roles and seize the opportunities of the digital transformation called for by the 2021-2027 Digital Europe Programme, e.g. by developing effective tools for environmental monitoring, management and governance and by engaging in developing maritime ICT capacity and skill.

The primary beneficiaries of healthy and productive seas and oceans are citizens. Almost half of the EU population lives less than 50 km from the sea; the majority is concentrated in urban areas along the coast. Our coastal assets and communities might become more vulnerable to extreme events and sea level rise. A further loss of marine biodiversity and ecosystem services may critically decrease oxygen levels and CO₂ sequestration capacities in our seas and ocean, and we might experience a significant loss of our protein, food and feed supply and other marine bio-based products.

Marine and coastal tourism, for example, is one of the key assets of the Blue Economy, accounting overall for 62 % of the jobs, 41 % of the GVA and 34 % of the profits in the EU Blue Economy in 2018¹², but to sustain this sector sustainable green tourism needs to be promoted. This requires involvement of those operating and living in the coastal space. These communities need new opportunities for income, thus becoming key players in developing solutions for a more sustainable Blue Economy.

The fishing and seafood industry are fundamental to securing food and nutritional well-being of humans. In addition to the cultural and social relevance of fisheries in coastal regions, fisheries-auxiliary and port-related industries account for up to 80% of GDP in areas closely linked to the sea. Fisheries have among the lowest carbon footprints in terms of protein production. However, 33% of marine fish stocks are already being overfished, 60% are fished at the maximum sustainable rate and just 7% remain below that¹³, leaving little room for sustainable growth of wild catch. As 20% of the worldwide catch of wild marine fish are

¹² European Union, *The EU Blue Economy Report 2020*, (2020)

¹³ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2019

processed to fishmeal and fish oil as major feed for marine aquaculture, increased resource efficiency at reduced CO₂ emissions and bycatch are urgently required to sustain the required nutrition from seafood. The Partnership will consider the recommendations set out in the SAPEA report on Food from the Ocean¹⁴.

Other key and emerging sectors that can only thrive on the basis of a social licence include for example deep sea mining and construction. Deep sea mining is a sector with great potential for both, “blue growth” but also for massive impact on the ocean floor. Marine construction, both coastal and offshore, has already affected a seafloor area of 3.2% of the EEZ¹⁵. Eco-engineering is burgeoning both as a scientific discipline and as an industry with great potential for combining blue economic growth with marine sustainability.

2.1.6 Building on the results and lessons learned from previous Partnerships

This Partnership will build on efficient and established structures (cf. Annex 2) of the ERA to avoid duplication and to enhance the added value, relevance and impact of the Partnership.

On a pan-European level, JPI Oceans was launched by the Council of the EU in 2011, implemented and supported by MS, AC and the EC as a pan-European partnership in its own right. Thematically, a number of strategic frameworks developed in the remit of the Blue Economy have also been developed.

On a macro-regional scale European countries have, with strong support from the European Commission (EC), created five sea-basin specific transnational networks for coordinated international R&I efforts to address challenges and opportunities in the marine and maritime realm (Fig. 5). These networks are already implementing or are in the process of developing sea basin specific SRIAs, Implementation Plans, key areas for research and innovation needs, and/or joint actions to be implemented by the existing actors and organisations. These include the R&I initiatives of the Baltic and the North Sea (BANOS CSA; Nov 2018-Apr 2021), the BlueMed Initiative and its supporting Coordination and Support Action (Bluemed CSA; Oct 2016- Mar 2021), the Blue Growth Initiative for Research and Innovation in the Black Sea (Black Sea CONNECT CSA; Oct 2019-Sep 2022) and the Atlantic Ocean Research Alliance Support Action (AORAC-SA CSA Mar 2015-Feb 2020) and All AtlaNtic Cooperation for Ocean Research and innovation (AANChOR CSA, Oct 2018-Sep 2022). The regional initiatives are important to ensure the due consideration of basin-specific priorities, e.g. on resources, environmental and societal challenges, and economic smart specialisation strategies. The Partnership clearly recognises the Regional Sea Conventions¹⁶ (RSC) as intergovernmental efforts at regional level meant to implement the directives and EAM. Links will also be sought with the territorial regional R&I systems under the Structural Funds and INTERREG, with the Conference of Peripheral Maritime Regions (CPMR) and their Geographical Commissions (the Atlantic Arc, the Baltic Sea, the North Sea, the Inter-Mediterranean, the Balkan and Black Sea and the Islands).

¹⁴ SAPEA, Science Advice for Policy by European Academies. (2017). Food from the oceans: how can more food and biomass be obtained from the oceans in a way that does not deprive future generations of their benefits? Berlin: SAPEA. Available at: <https://www.sapea.info/topics/foodfromtheoceans/>

¹⁵ Airolidi L, Beck MW, Firth LB, A, Steinberg P, Dafforn KA. 2020. Emerging solutions to return nature to the urban ocean. Annual Review of Marine Science, in press.

¹⁶ This include the Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention), the (Baltic Marine Environment Protection Commission (Helsinki Commission), the Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention), Barcelona Convention for the Protection of the Mediterranean Sea against pollution and the Common Fisheries Policy. The EAM was formally adopted by OSPAR and HELCOM in “The Bremen Statement” in 2003. The Bucharest Convention, signed in Bucharest in 1992 and ratified by all six legislative assemblies of the Black Sea countries in 1994, is the basic legal framework for regional cooperation to protect the coastal and marine environment. The Barcelona Convention was adopted in 1995 and has given rise to seven Protocols addressing specific aspects of Mediterranean environmental conservation.

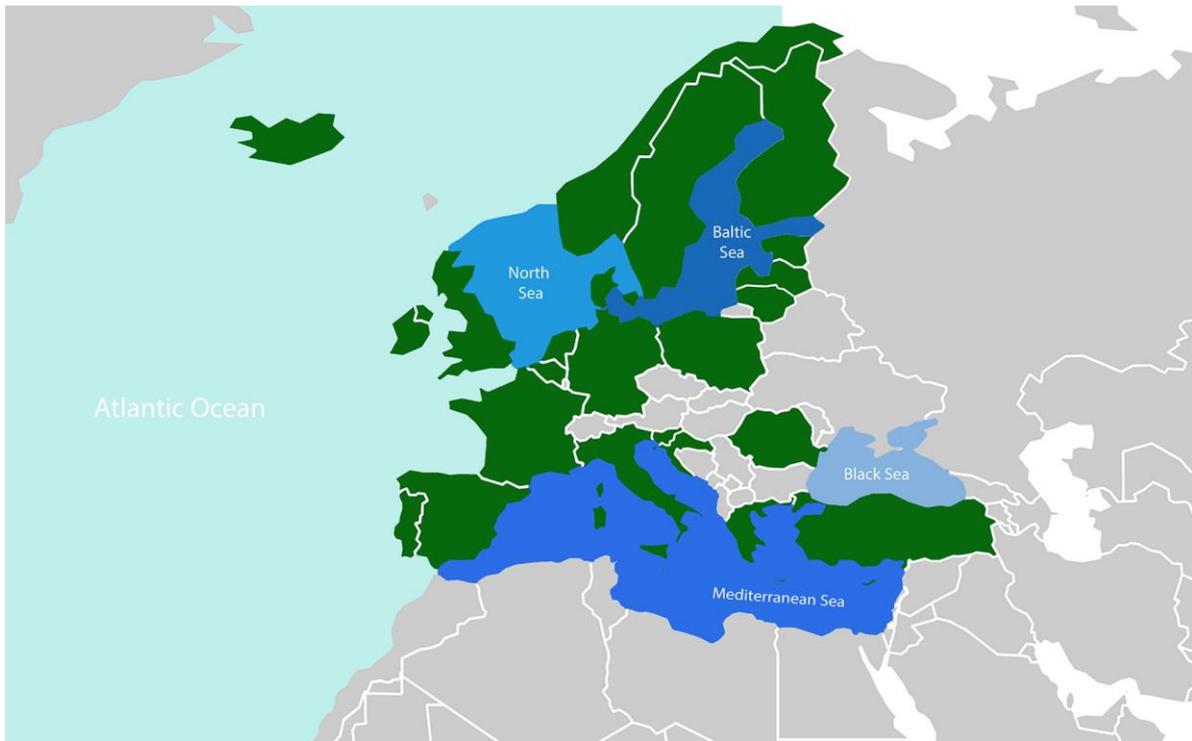


Figure 5: Map showing the pan-European countries in green that are the currently potential candidates for constituting the Partnership. The five sea and ocean basin regions that constitute structural elements of the regional partnership are shown in different shades of blue. This offers unique opportunities for aligning investments in R&I across regions and facilitating collaboration to develop and openly exchange knowledge and innovation.

Reviewing the content of these existing strategic frameworks will be the first step towards developing the SRIA and Annual Work Programme(s) (cf. Annex 1). MS and AC will in addition be actively encouraged to contribute to nationally commissioned studies and analyses as basis for the strategic and operational priorities of the Partnership.

2.1.7 Contribution to policy obligations and international agendas

Europe and its countries and regions are faced with the massive challenge of transforming their societies to a mode that ensures an intact resource base for the livelihood, economic wellbeing and sustainable development of future generations. At the heart of this process is the transformation of economies as a motor for both innovative change and sustained wellbeing. This contributes to the EC's strategic priorities for developing "an economy that works for people" and for a "European Green Deal" that builds a modern, resource-efficient and competitive economy on a sustainable and climate neutral path. Eight deeply transformative policies have been specified for the latter, of which those on climate, pollution, food, ecosystems, biodiversity, circular economy and energy are immediately relevant to this Partnership.

The Partnership will be well-positioned to support the marine and maritime aspects of the Green Deal, with impactful, collaborative R&I actions that generate a strong evidence-base of knowledge, information and know-how to pursue sound policies and regulatory frameworks to underpin sustainable Blue Economy transformation. Such policies also contribute to the implementation of international commitments, like the Agenda 2030 and Paris Agreement.

While EAM is the fundamental process in order to obtain a sustainable Blue Economy, gaps between current policies and governance are impeding the systematic implementation of EAM.

To make EAM operational, an adaptive and constantly evolving management approach needs to be developed. This must draw on multiple fields of science and practice that a strong partnership can successfully mobilise. Dedicated R&I projects can advance the required systemic understanding of the complexity of marine ecosystems, environmental dynamics, interactions with land processes and socio-economic feedbacks that sit at the base of EAM.

The Partnership will also MS and AC to fulfil multiple policy targets and obligations e.g. the Integrated Maritime Policy (IMP), Marine Strategy Framework Directive (MSFD), EU Water Framework Directive (WFD), EU Biodiversity Strategy, Common Fisheries Policy (CFP), Food 2030, Maritime Spatial Planning (MSP) Directive and the Recommendation on Integrated Coastal Zone Management. An overview of relevant policies that are already in place for the implementation and support of EAM and other European policy goals and objective that the Partnership may contribute to are presented in Annex 3-4.

Several global assessment reports have made it very clear that societies and economies must and still can profoundly transform themselves in order to minimise socio-environmental impacts and irreversible losses to biodiversity¹⁷ and the ocean-cryosphere system¹⁸, and that there are feasible pathways towards a sustainable Blue Economy¹⁹ and pathways towards achieving the UN Sustainable Development Goals (SDGs)²⁰. The SDGs are the universal call for action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. Many of the goals are strongly interlinked (Fig. 6). Having analysed planetary boundaries and social needs has provided a concept to scale the societal and political ambitions and targets.

Globally, the Partnership aligns with the UN Decade of Ocean Science for Sustainable Development (2021-2030), which aims to reverse the cycle of decline in ocean health and to gather ocean stakeholders worldwide behind a common framework in support of ocean science for sustainable development. The Partnership will aid a concerted European contribution to the implementation of the ambitions of the Ocean Decade and its societal outcomes. The Partnership represents a unique opportunity for Europe, together with its international partners to show leadership in addressing the global ocean health and sustainability challenges and contribute to realising “A stronger Europe in the world”.

¹⁷ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2019

¹⁸ IPCC. 2019. *Special Report On The Ocean And Cryosphere In A Changing Climate*. [online] Available at: <<https://www.ipcc.ch/srocc/>> [Accessed 19 May 2020].

¹⁹ OECD (2016), *The Ocean Economy in 2030*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264251724-en>.

²⁰ Independent Group of Scientists appointed by the Secretary-General, *Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development*, (United Nations, New York, 2019). Available at: https://sustainabledevelopment.un.org/content/documents/24797GSDR_report_2019.pdf

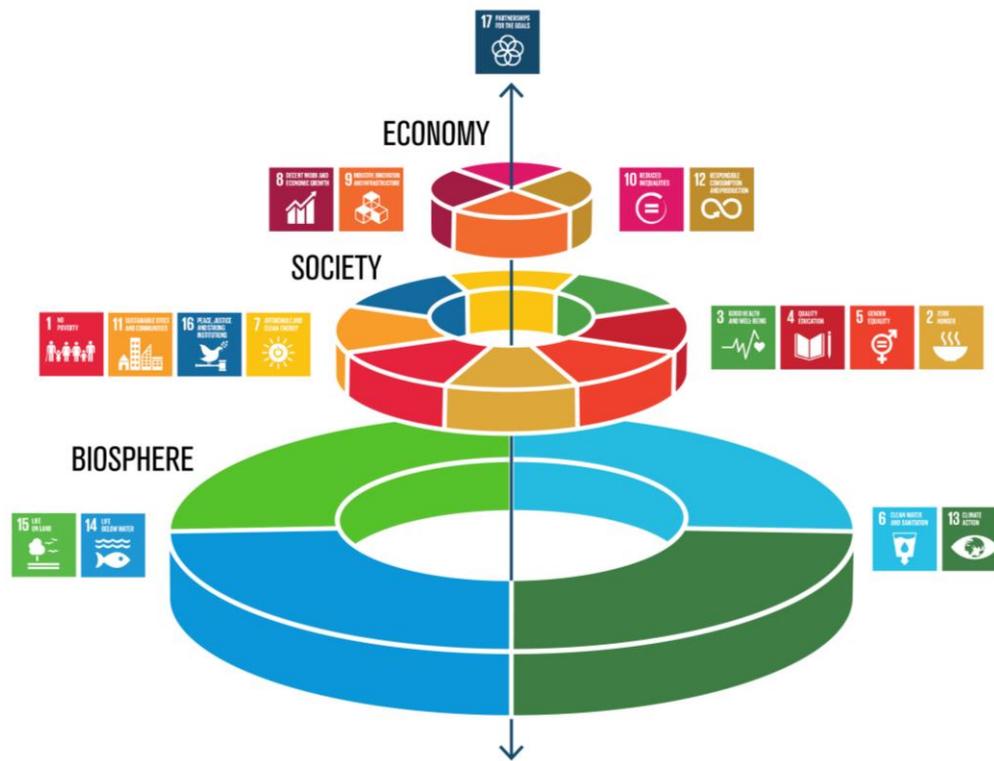


Figure 6: Sustainable Development Goals and their illustrated connections to aspects related to economy, society and biosphere.

2.2 Common vision, objectives and expected impacts

The **vision** of this partnership is expressed in its title, i.e. to help achieve:

A climate neutral, sustainable and productive Blue Economy

The Blue Economy bears substantial potential for “green” economic development for Europe. Development potential includes growth in volume and associated jobs and standard of living especially in emerging sectors such as renewable ocean energy, aquaculture, biotechnology, eco-engineering and aqua tourism. Development of the Blue Economy also includes an opportunity and necessity to transition the Blue Economy to a “green” economy that is climate neutral, protects marine biodiversity, sustains the functioning of the ecosystem, and therefore can remain productive over decades and for generations.

Through the concerted effort of this Partnership, R&I can deliver the cross-sectoral collaboration, evidence, knowledge generation, and knowledge infrastructures that are needed to build the substrate and tools for a blue economic transition driven by creative ideas and solutions, information access, and knowledge based policies. The Partnership vision is accordingly congruent with leading the “blue” marine and maritime aspects of the European Green Deal towards a transition from the current, widely non-sustainable ocean economy to a Blue Economy that serves the people by being productive, not in spite of, but because being climate neutral and sustainable.

The Partnership will work as an ambitious and expanding cross-sectoral collaboration initiative that aligns European, national and regional efforts and resources behind joint activities to co-design, co-develop and co-deliver the R&I basis consisting of information, knowledge, infrastructure, and literacy needed for the blue economic transition.

This vision reflects the notion of the Partnership’s central global initiative, the UN Decade of Ocean Science, that “the only possibility to move from the ‘ocean we have’ to the ‘ocean we want’ is to convince key stakeholders that the world requires a transformational, large-scale, innovative campaign of ocean science and partnerships to improve delivery²¹.

2.2.1 Objectives

To fulfil its vision the Partnership aims to lay foundations for a climate neutral, sustainable and productive Blue Economy in Europe that will enable the successful economic transition over the coming decade and potentially beyond. The members of the partnership therefore commit to four high-level general objective and several thematic and operational objectives to be achieved through an array of fit-for-purpose tools and openness to collaboration with a wide range of stakeholders from the public sector, private sector and society.

The four broad **general objectives** that the Partnership aims to achieve are:

- General objective A: *Alignment* of priorities and investments across Europe
- General objective B: *Cooperation* across socioeconomic sectors and disciplines
- General objective C: *Provision of knowledge* for a “green” development of the Blue Economy
- General objective D: *Transformation* to an evidence and knowledge based Blue Economy

²¹ United Nations Decade of Ocean Science for Sustainable Development 2021 – 2030, Implementation Plan zero draft for peer review, 18 March 2020

The general objectives A-D are depicted as a logical sequence of value creation from priority alignment to transformative impact (Fig. 7). Their sequence is a seamless continuum. This does, however, not imply that they are addressed one after the other but will be pursued in parallel.

Each general objective has been interwoven with four **specific objectives** (Fig. 8,9,10,11) that form the basis of an **intervention logic** for each general objective. The full basis of the intervention logic is presented in table format in Annex 6.

The general objectives are centred around **frameworks, tools, solutions** and **integration**, as elaborated in the following. More detailed specific objectives under each general objective is provided as part of the intervention logic.

1) *“Integration” - To promote interlinked approaches and systemic thinking for integrated information for the Blue Economy transition*

This includes agenda co-design and co-production, transfer of knowledge, sharing of resources, infrastructures, expertise and experience across sectors, and collaboration on cross-domain challenges and solutions between land and sea-based sectors, between ocean and climate, and across all water resources.

2) *“Solutions” - To stimulate innovation through science-informed solutions*

This includes solutions for societal demands by stimulating innovation in the Blue Economy and unlocking, demonstrating and enabling sustainable harvesting and circular utilisation of Europe’s oceans and seas and related resources in key sectors such as food and nutrition, recreation and health, bio-based products and energy, technology, climate mitigation and adaptation, and others.

3) *“Tools” - To offer tools and information to enable climate neutrality and sustainability of Blue Economy activities*

This includes policy guidance, monitoring, and scientific information for Good Environmental Status, establishment of EAM and MSP, forecasting of climate change effects, information on the marine carbon cycle, early warning for various risk factors, expert knowledge and information and data access on smart water management, aquaculture systems, restoration and other nature-based methods, and several other aspects at the interface of economy and ecology. ICT tools such as predictive analytics and big data, cloud and edge computing, data visualization, etc. can support the underlying methodology.

4) *“Frameworks” - To ensure supportive framework conditions for the Blue Economy to thrive in a climate neutral and sustainable way*

This includes contributing to the implementation of EU Policies, the EU Mission Areas and Regulatory Frameworks as well as regional and international conventions and global initiatives contributing to a strengthened ocean governance, but also ethics for responsibility in the use of the oceans, as well as societal awareness and ocean literacy on the potential and challenges of the Blue Economy, multi-use of seas, and synergies and trade-offs between interlinked economic and environmental sectors.

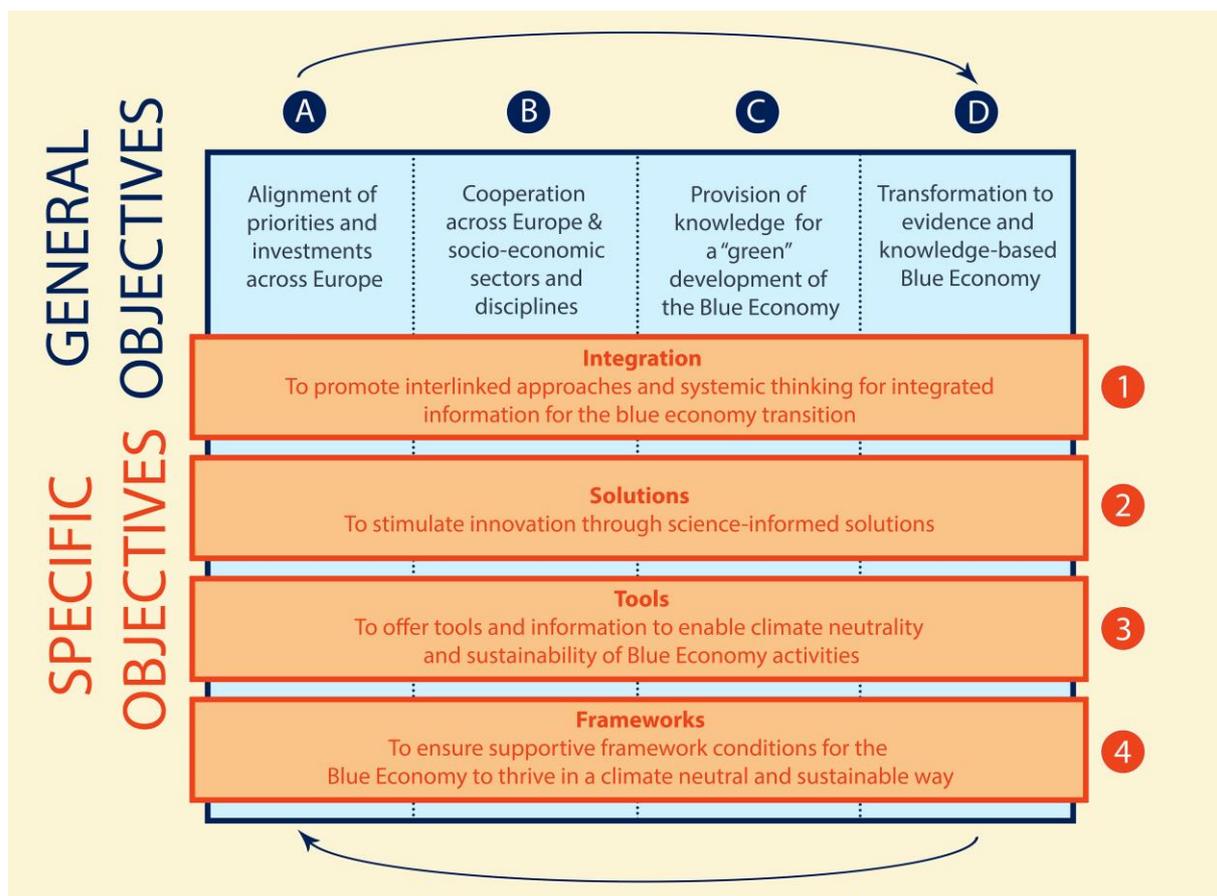


Figure 7: Schematic illustration of the matrix formed by the seamless sequence of strategic general objectives A-D and four specific objectives.

The reality of the evolution of a successful Partnership will evidently also have a feedback loop of continuous learning and adjustment where transformative progress (D) will affect and modulate priorities (A). This evolutionary learning loop will be taken into account explicitly at systematic checks of SRIA timeliness and during the development of the annual work plans.

Intervention logic to achieve the general objectives

An overview of the aims of the respective general objective (A-D) and an illustrated summary of the intervention logic based on **thematic objectives, inputs, activities and outputs** are presented in the following:

General objective A: Alignment of priorities and investments across Europe

We aim for a powerful alignment and structuring among the EU's, MS's and AC's R&I priorities, resource allocations, activities and programmes in Blue Economy domains where research and innovation needs converge across Europe, regional sea basin areas and international partners.

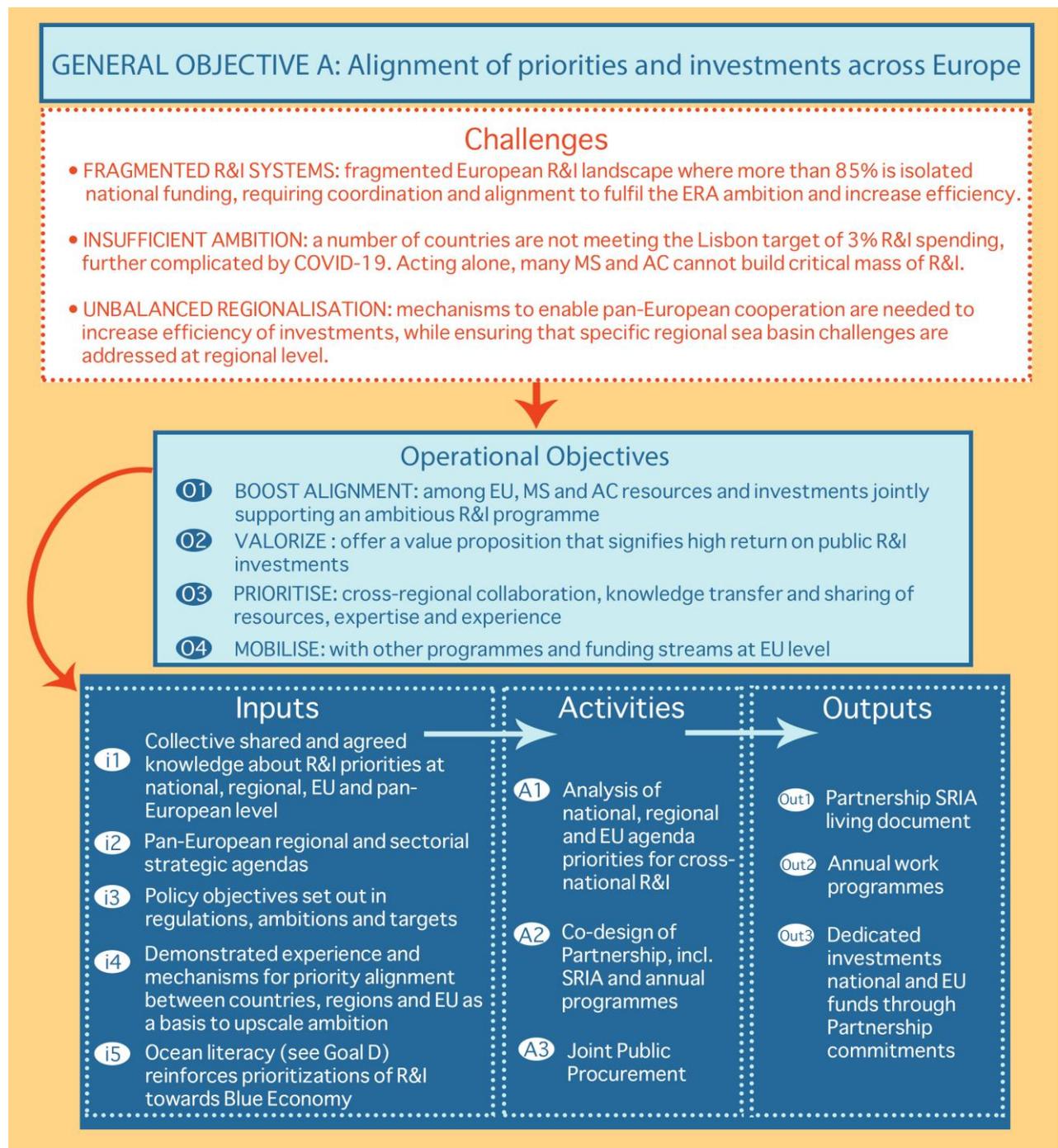


Figure 8: Schematic illustration of intervention logic for general objective A.

General objective B: Cooperation across socioeconomic sectors and disciplines

We aim for a pan-European and international research and innovation cooperation at an unprecedented level of integration that includes all relevant socioeconomic sectors and cultures from industry to education and science diplomacy. The community involved is open and growing, inclusive of international partners, in particular those bordering Europe’s seas and oceans.

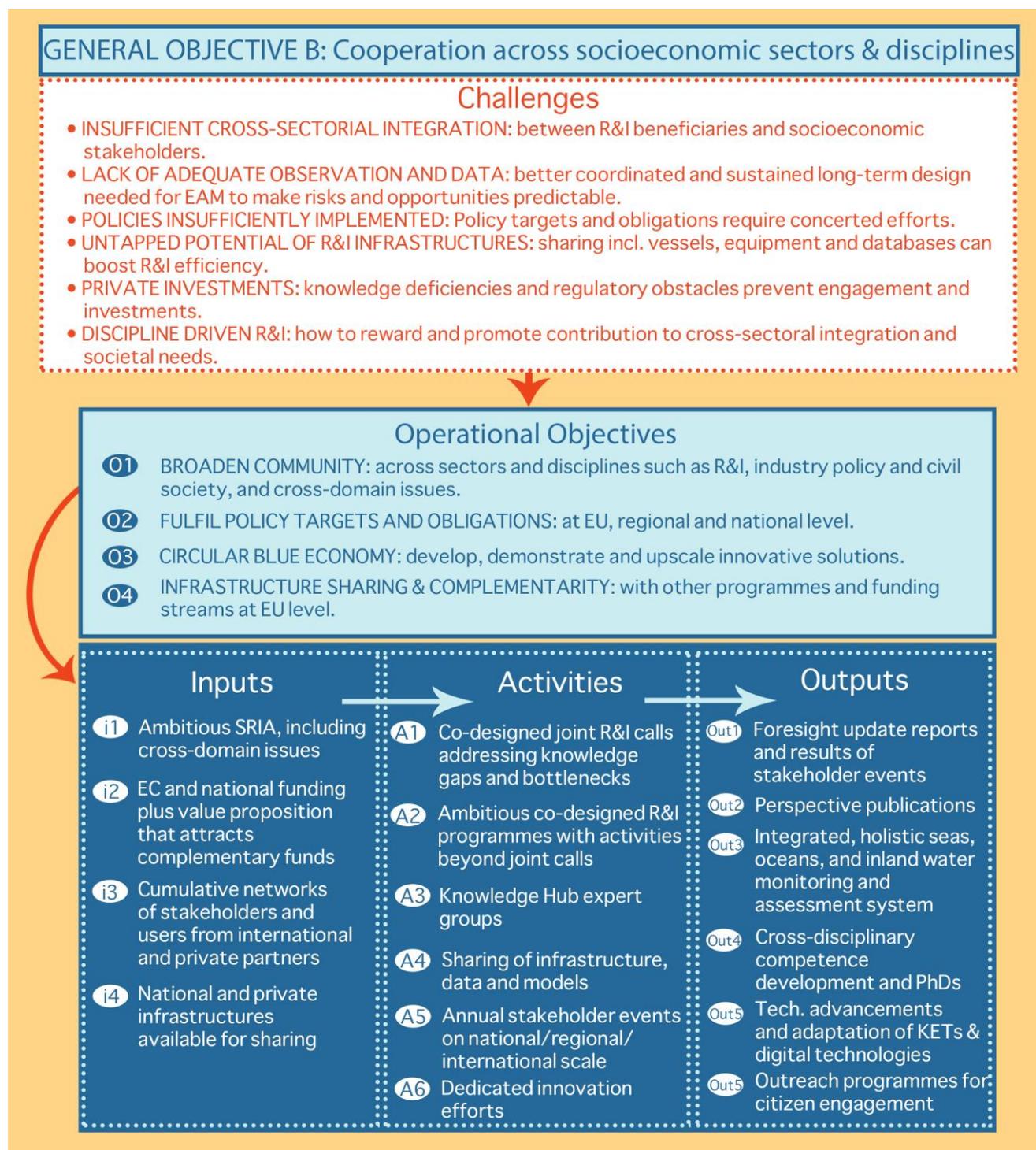


Figure 9: Schematic illustration of intervention logic for general objective B.

General objective C: Provision of knowledge for a “green” development of the Blue Economy

We aim to generate of a strong evidence-base of knowledge, information and know-how to pursue sound policymaking, regulatory framework, sustainable Blue Economy business opportunities and solution generation. This will contribute to unlock, demonstrate and enable sustainable and responsible use of the full socioeconomic potential, within the boundaries of healthy and resilient ecosystems of seas and oceans.

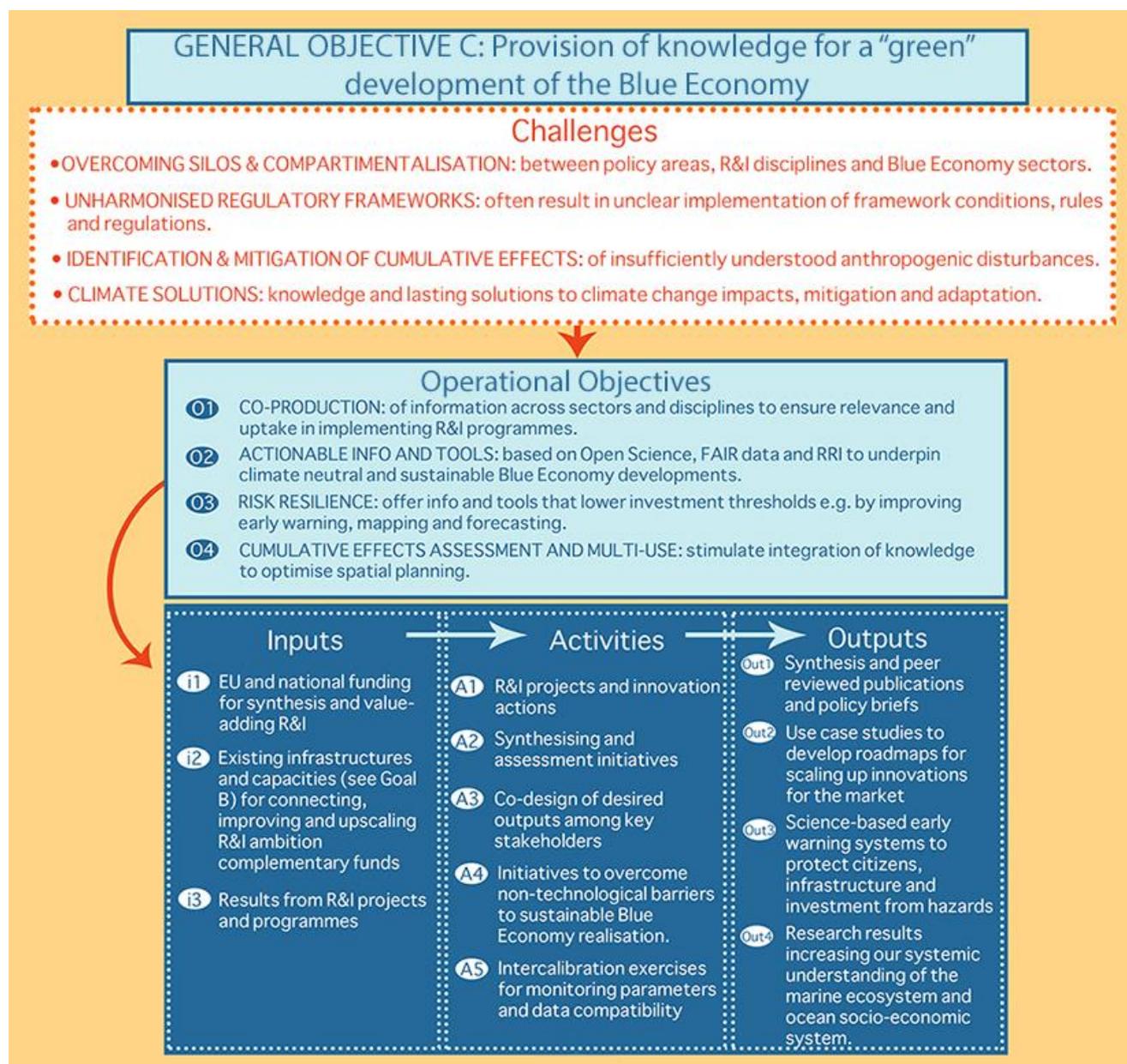


Figure 10: Schematic illustration of intervention logic for general objective C.

General objective D: Transformation to an evidence and knowledge based Blue Economy

We aim to facilitate a rapid progress over the next decade towards transitioning to a Blue Economy that by mid-century is climate neutral, ecologically sustainable, competitive and productive to improve people’s wellbeing and reduce risks to nature, thus achieving objectives such as job and value creation and biodiversity conservation, complying with policy requirements under the IMP, MSFD, WFD, MSP while contributing to strategic priorities of the EC (e.g. European Green Deal, Cohesion Policy, Circular Economy Action Plan, FOOD 2030, Bioeconomy Strategy and Biodiversity Strategy) and the UN SDGs.

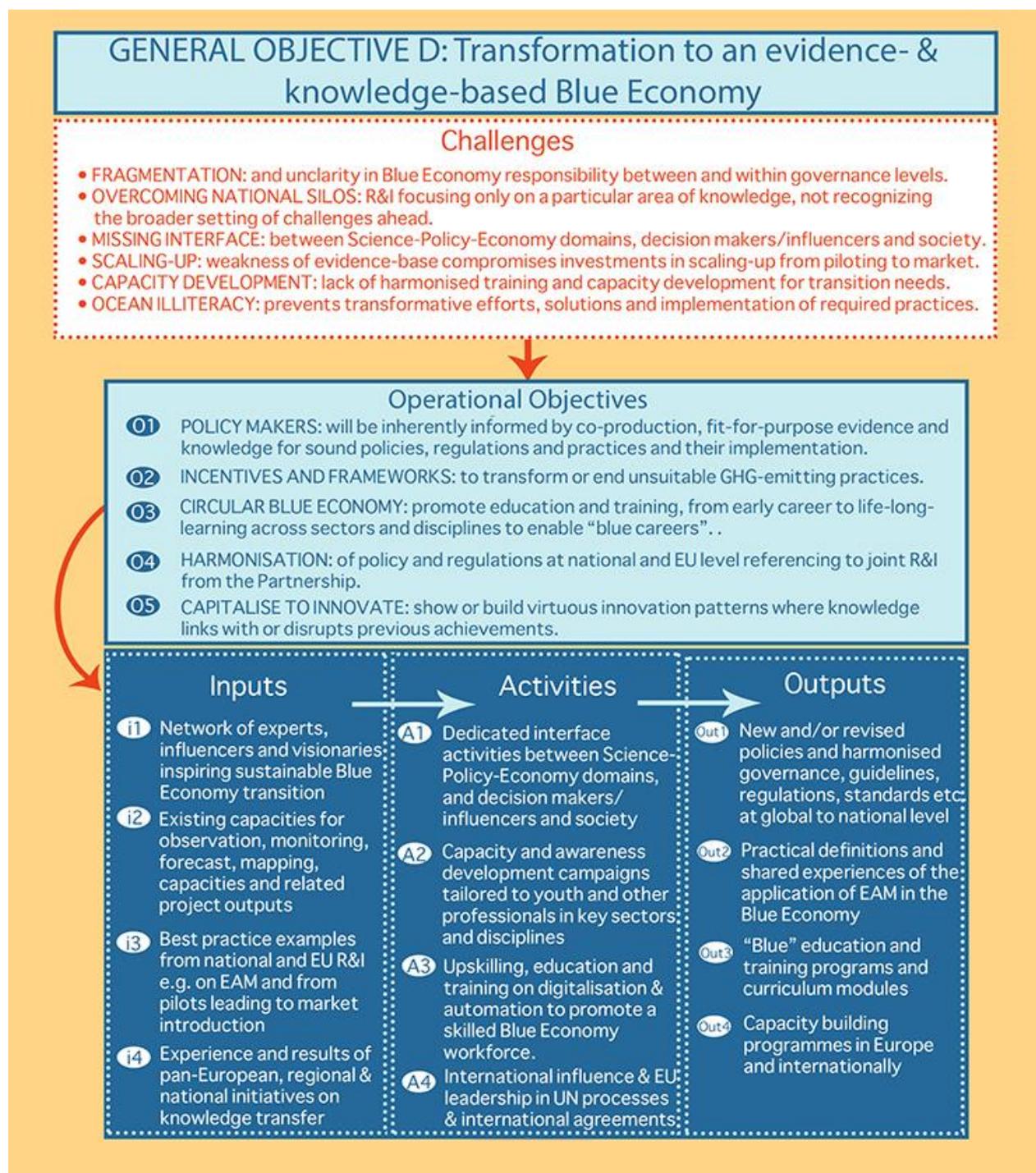


Figure 11: Schematic illustration of intervention logic for general objective D.

2.2.2 Expected Impact

The Partnership is expected to generate positive impact in favour of significant advances in the transformation to a climate neutral, sustainable and productive Blue Economy. In detail, by 2027 the Partnership expects to have had concrete impacts on R&I, policy, society and economy, with positive environmental impacts (as suggested in the Key Impact Pathways monitoring concept for EU Framework Programmes), as well as structuring impacts on the R&I landscape and intervention mode .

A number of suggested indicators on the programme level of the Partnership is proposed below. These, including their methodologies must be further elaborated during the SRIA process, also considering the scope of the Partnership and its ultimate composition.

Structuring impact

The Partnership is expected to result in a step change for the collaborative alignment mechanisms for priorities across all relevant scales of Blue Economy R&I, including national, macro-regional, EU, pan-European and international levels. This is anticipated to result in a tripling of collaboration investments to fuel joint activities, with potential for significant complementary contributions from external private sector collaborators. The Partnership will grow a diverse and vibrant community across research disciplines and socioeconomic sectors. This community is expected to become the innovation engine for the anticipated transition indispensable to develop a sustainable Blue Economy.

KPIs to monitor structuring impact

- i. The overall number of entities and amount of new R&I investments in the Blue Economy in priority areas of the Partnership SRIA are increasing vs. H2020
- ii. Investment in collaborative European endeavours is gradually increased and by the end of the Partnership at least tripled
- iii. Minimum of 6 Joint Calls undertaken
- iv. Participating countries align 80 percent of their national R&I budgets on topics encompassed by the Partnership SRIA by 2025/ Level of R&I investment (in cash; in kind) – Target: 150 Mio € in cash and 300 Mio € in total cost by 2025
- v. Established 10 Working Groups on specific, strategic or operational tasks with tailored mix of experts
- vi. Developed tailored governance frameworks for sustainable use of vulnerable and essential habitats
- vii. Effective Partnership governance and implementation structures (including science-policy, science-society and science-economy interfaces) are in place with established appropriate coordination systems at regional, national and sub-national levels as appropriate (to be assessed in proposal evaluation, 2025 and 2027)
- viii. Number of Public Procurements in the areas covered by the Partnership by 2025 and 2027
- ix. Minimum 10 international partners engaged in activities, including joint calls
- x. Minimum 10 new agreements by governmental and private owners on sharing R&I infrastructures at increased amount of joint investments
- xi. Basic ocean observations (essential ocean variables, essential climate variables, variables for policy needs) are done in a coordinated and sustainable way by 2025
- xii. Number of concerted actions initiated between the European Partnership, EMFF and LIFE and MS/AC actions

- xiii. Number of joint or concerted actions between this European Partnership and other Partnership(s) and Mission(s), with investment by other initiatives by 2025 and 2027.
- xiv. Number of R&I Ministries / agencies / foundations, and/or Environment Ministries / agencies / Tourism ministries and/or agriculture ministries or others actively engaging with the European Partnership
- xv. Enhanced capacity of countries to access financial resources from appropriate funds
- xvi. Support the development of national policies addressing environmental aspects of ocean carbon sequestration
- xvii. Increased number of North-South and East-West collaborations

Actions performed and funded by the Partnership

Scientific Impact

The Partnership will have an irreversible transformative impact on the structure and culture of the way R&I can be approached in the marine and maritime sector. Cross-sectoral and cross-disciplinary R&I cooperation will increasingly be an established design. This will be eased by personal and institutional contacts and encouraged by successful collaborations and new opportunities opened by the Partnership. Such opportunities may for example arise from advancement and realisation of digital ocean concepts and from the promotion of Europe-wide systems for integrated monitoring, observation, data, modelling and forecasting capacities.

KPIs to monitor scientific impact

Creating high-quality new knowledge

- i. Increased number of activities/projects across multiple quintuple helix domains, with routine participation of Social Sciences and Humanities (SSH) by 2025
- ii. Increased number and geographical scope and impact (e.g. impact factor, citations) of scientific publications and patents and other upscaling of scientific outputs
- iii. 80% of EOVs parameters included in long-term observation and monitoring by 2025
- iv. Minimum 15 foresight/synthesis/assessment reports produced/mobilised on key emerging issues by 2027
- v. Developed tailored governance frameworks for sustainable use of vulnerable and essential habitats
- vi. Promoted response-strategies and policies on large-scale land-based oil/chemical spills
- vii. Support countries to develop and implement integrated coastal policy to enhance resilience of marine and coastal ecosystems and reduce impacts of disasters and conflicts

Strengthening human capital in R&I

- viii. Number academic degrees (Master, PhDs, etc.) and post-doc positions on Blue Economy topics from 2020 to 2027
- ix. New teaching modules and Master courses have been introduced into academic education
- x. Coordinated blue human capacity building programmes are regularly launched (from 2025)

Fostering diffusion of knowledge and Open Science

- i. Demonstrated the increased use of Open Science, FAIR data and RRI principles by the European R&I community, and its benefits for results uptake (80% FAIR data by 2025)

Societal Impact

Societal impacts of the partnership will partly come through (i) informing policies that benefit citizens and (ii) supporting fulfilment of existing obligations in the nexus of ocean health,

climate change and sustainable economic development. The Partnership will further equip society with advanced methodologies for developing their sustainable future, such as through systematic spatial planning (MSP, MPA) and management tools (EAM) and with direct services such as early-warning systems to support citizens' wellbeing and development potential. Environmental policy impacts will stem from the development of innovative actions and nature-based solutions that help reverse the deterioration of aquatic and marine resources, improve sustainable practices, and increase the resilience of ocean ecosystems in the face of change. The Partnership will mainstream marine biodiversity conservation and contribute to a new deal for nature and people.

KPIs to monitor societal impact

Addressing EU policy priorities & global challenges through R&I

- i. For each policy related R&I action undertaken, number of proved influence/uptake in national, European and international policy and/or regulation and/or legislation and their operational implementation processes of 50% of results by 2025, 80% by 2027
- ii. Partnership has contributed 10 activities, formally endorsed by the UN-Ocean Decade, to the achievement of SDG 14
- iii. By 2027 synergies and complementarities between scientific community and other monitoring actors (public or private) will be fully worked out for efficiency gains in long-term observation parameters related to national, European (like for the MSFD) or international policy, contributing to the Digital Ocean
- iv. Number of R&I contributions and budget investment to the transformation to carbon neutral practices according to the 2030 climate & energy framework
- v. Number of specific R&I actions contributed to Good Environmental Status of EU marine waters in accordance with MSFD obligations by 2030, including harmful contaminants and nutrients, marine litter, noise, and integrity of sea-floor and ecosystems
- vi. European-wide science based early warning systems to protect citizens, infrastructures and investments by 2030
- vii. All partners have demonstrated the implementation of EAM at different scales e.g. local, regional, national, EU as a standard methodology
- viii. EU-level blue growth sector organisations and their members have engaged with the marine scientific fora on setting up methods to monitor and assess their possible impact on marine biodiversity and determine how this can be minimised, with as a result a sector commitment to act on these methods.” + idem for vulnerable species if known
- ix. Increased of resilience with respect to climate change impact of fisheries and aquaculture
- x. Eco-innovative nature-based solutions have become the preferred approach in sectors such as coastal defence and engineering
- xi. Quantification of the carrying capacity of ecosystems has resulted in its implementation in national and regional governance models
- xii. Number (incl. coverage) of national, regional and local hubs for marine litter monitoring and reduction engaged by the Partnership

Strengthening the uptake of R&I in society

- xiii. Success stories of effective knowledge transfer on key issues impacting decision making derived from Partnership activities

- xiv. Inputs from the Partnership's Advisory Board and citizens consultations have resulted in concrete innovative activities and outputs
- xv. All partners have undertaken an increase in regular education, Ocean Literacy, training and citizens engagement activities (e.g. through citizens science, art projects, campaigns)
- xvi. Number, size and composition of stakeholder events; (1) at least one Bi-annual stakeholder event at pan-European scale, (2) at least one annual stakeholder event at regional level, (3) at least 1000 citizens have attended a stakeholder engagement activity
- xvii. Enhanced Ocean Literacy has resulted in more environmentally sustainable practices and behaviour, including businesses measuring and valuing their impacts on ocean health
- xviii. Developed coherent National Plans of Action addressing national strategies for governance of marine and coastal biodiversity and ecosystems in alignment with EU protocols
- xix. Mainstreamed blue economy issues and concepts into financial planning and management processes
- xx. Provided technical support to countries and regions to meet global marine and coastal biodiversity targets
- xxi. Enhanced capacity of countries and regions to engage in adaptive ecosystem-based marine and coastal management incl. fisheries and aquaculture, restoration of MPA
- xxii. Promoted integration of climate change adaptation measures in planning and budgeting processes
- xxiii. Enhanced capacity of countries to develop integrated marine spatial management systems, including mainstreaming MPAs and marine biodiversity into comprehensive development and resource planning and addressing environment linkages
- xxiv. Enhanced government capacities to assess, manage and reduce risks posed to human health

Economic Impact

Economic impacts on the Blue Economy domain, but also radiating beyond that, are at the heart of the partnership. While the overall transition of the current Blue Economy to a fully carbon neutral and sustainable mode will continue well beyond a decade, the Partnership will impact the process by laying required foundations and delivering innovation stimulus. Foundation elements for a sustainable Blue Economy will include informed policies and governance architectures, an array of available infrastructures and information access, also educational elements to ensure Ocean Literacy, capacity and skill among society, enablers and workforce. In addition, the partnership is expected to deliver stimuli for concrete innovative solutions, best practice and pilots in all relevant economic sectors. This will attract creativity, investments and entrepreneurship to develop the climate neutral, sustainable and productive Blue Economy.

KPIs to monitor economic impact

Generating innovation-based growth

- i. Increased value of sustainable Blue Economy businesses and emerging sectors according to international, EU, national indexes by 50 percent by 2030
- ii. Twenty pilots which led to large scale use and successful market introduction
- iii. Underpinned a 20% increase in valorisation of food and feed from aquatic sources, driven by sustainable fisheries and aquaculture

- iv. Programmes to include mitigating run-off from land-based activities impacting the coastal environment and reducing waste management in conjunction with nutrient reduction programmes are implemented by 2025
- v. Facilitated partnerships with Regional fisheries management organisations (RFMOs) for reconciling marine conservation and natural resource use
- vi. European-wide science based early warning systems to protect citizens, infrastructures and investments by 2030
- vii. Promoted national, regional, and international cooperation to reduce the quantity of hazardous substances and waste disposed at sea
- viii. Assisted development of national policies addressing environmental aspects of fisheries
- ix. Empowered communities through institutional structures and legislation to restore essential fish habitats, sustain productive ecosystems, social-resilience and long-term food security for populations relying on fisheries and aquaculture
Reduced carbon footprint by 15 percent with respect to climate change impact of fisheries and aquaculture by 2030

Creating more and better jobs

- x. Number of sustainable blue jobs in Europe has doubled to 10 million by 2030
- xi. Number of registered Blue Economy businesses increased with 25 percent by 2030

Leveraging investments in R&I

- xii. Increased number/amount of new investments in the Blue Economy based on R&I in priority areas of the Partnership SRIA by 2025 25 percent

2.2.3 Exit strategy

The Partnerships are time-bound efforts that will carry out activities during the lifespan of Horizon Europe. The agreed vision and objectives, however, are reaching much further. To prepare for building on and further developing the legacy of the Partnership, self-assessments, learning mechanisms and horizon scanning exercises will be built into the partnership roadmap as reflective milestones during and towards its conclusion.

MS, AS and international partners, represented by JPI Oceans and its respective legal entity in form of an ‘International non-profit association’ (i.e., AISBL; abbrev. ‘JPI Oceans’), will maintain, strengthen and further develop activities beyond the Partnership. The Partnership may sustain and capitalise on their cooperation beyond Horizon Europe for which the structure of JPI Oceans provide an established platform.

Long-term legacy impacts of the Partnership may include a large multi-stakeholder community, a culture where co-design across sectors is the norm rather than the exception, sustainability and climate awareness among investors, entrepreneurs and consumers, an evolving toolbox of methods for integrated ecosystem assessments, and a societal recognition for the value and benefits of the marine environment for many aspects of their wellbeing. These irreversible improvements will be the new foundation on which a successor arrangement to the Partnership can build, taking into account also new, as of yet unforeseeable developments.

2.3 Necessity for a European Partnership

The Partnership provides a strengthened overall coherent framework, formally mandated, which brings a large number of strategic agendas under one umbrella for concerted action. This approach will help the MS and AC to more efficiently implement major EU policies and

regulatory frameworks. More specifically, the unique advantages of a Partnership over other mechanisms/instruments of Horizon Europe are:

- Overcome fragmentation by giving direction to deliver more efficiently on EU and global policies
- Generate speed through EU support (additionality) over and above what can be done by a single country in line with the ERA
- Support the implementation of EAM and increased Ocean Literacy at levels in the society and in all sectors
- Increased coordination among MS, AC and other international partners working under the same umbrella to achieve GES and SDGs
- Builds on previous EU initiatives and results towards a holistic impact on climate neutral sustainable and productive Blue Economy
- Allow the consolidation and convergence of previous framework interventions and results
- Foster horizontal cooperation (inter-ministerial/DGs) on cross thematic areas (e.g. between climate biodiversity and blue (circular) economy and with society)
- Foster the links at regional level (outermost regions included), including to its regional programmes
- Increase global dimension and impact of R&I towards EU science diplomacy with the neighbouring countries and beyond
- Increase the transnational knowledge transfer and the market uptake of results as different actors are working under the same umbrella

2.3.1 Additionality

The partnership will provide an overarching platform to foster seamless collaboration and integration of R&I programmes and monitoring schemes for which resources will be aligned between the European, regional, national and local levels at an unprecedented magnitude. Concerted efforts will give speed, steer and direction to generate critical mass needed in a cost-efficient manner. This will offer a value proposition that signifies high return on public R&I investment through collaboration and prospects for sustainable economic development.

Through alignment of in-kind contributions, the Partnership will also contribute to optimise the use of research infrastructures and of transfer mechanisms for knowledge and technologies. This may include ingestion of data and know-how from companies operating at sea, in the ocean or in inland waters, to complement academic knowledge and public monitoring systems. Openness and access to commercial facilities for education, testing, demonstration or technology transfer purposes will provide science extension services and contribute to an increased public awareness and societal involvement.

The Partnership will provide the necessary longer-term perspective, as well as flexibility and capacity, and capability to integrate a wide range of activities that are needed. Adaptive programme management will be done in close cooperation with third parties and relevant stakeholders to achieve specific objectives and targets in a timely and fit-for-purpose manner.

2.3.2 Directionality

The Partnership will steer and align the R&I efforts of EU, MS and AC to accelerate the transformation to climate neutral, sustainable and productive Blue Economy according to the agreed objectives.

The necessary interventions will build on pan-European and sea basin specific strategic agendas and implementation plans, which are already laying a basis of aligned priorities across the countries involved. Particular attention will be devoted to identifying and addressing cross-region and region-specific agenda priorities for collaboration, knowledge transfer and sharing of resources, expertise and experience across geographic and cultural regions to address pan-

European as well as global challenges, while ensuring that regional specificities are addressed at regional level where necessary. When significant convergence between the national priorities of several member countries is identified these can be aligned into joint activities, adding value beyond the limitations of national capacities.

Cooperation with all the countries bordering the Atlantic Ocean and the European seas will be sought as well as with other partners who have developed marine/maritime SRIAs and who commit to the objectives of this Partnership approach will also be strengthened.

Potential associated members or third-party collaborators are listed in chapter 2.4.

2.4 Partner composition and target group

The core group of the formal members and signatories to the partnership agreement is comprised of ministries and funding agencies for R&I from the participating countries, in addition to organisations such as JPI Oceans. The intention for the membership of this partnership is to consider Europe in a broad manner: all MS and AC will be welcomed. Widening will be promoted by encouraging collaboration and integration with international partner countries.

Sea basin specific transnational networks for coordinated international R&I share a number of themes and priorities. The partnership should also be connected to the macro-regional strategies where these coincide with the sea-basins. It offers a framework for the networks to join forces and create a common programme based on a joint vision.

As Blue Economy applies a quintuple helix approach the target group comprises not only the triple helix actors, but also actors representing society and environment. To achieve the general objectives and expected impacts the partnership will work in a participatory manner through involvement and close cooperation with key stakeholders from industry, academia, philanthropy, NGOs, civil society and governmental authorities. Actors from these sectors will contribute to the co-design, shaping and sharpening of the themes and research/technology needs and are welcomed as partners for supporting and contributing to activities.

Potential associated members or third-party collaborators are described in sub-chapter "3.4.1 Stakeholder engagement". Exactly whom and how to engage with these broader stakeholder groups will be defined in the implementation phase, depending on the scope and composition of the Partnership as well as the rule of participation.

3 Planned Implementation

The implementation of the Partnership builds on the assets of learning and experience gained in the involved regional sea basin initiatives and in JPI Oceans extending in several cases over a decade or more. While the Blue Economy Partnership aims to scale up ambitions related to participation, funding and impact, its principle elements of trans-national alignment, network building, co-funding, activity management as well as impact-enabling, value-adding activities have been explored, applied and developed, and the efficiency of the successful processes has been demonstrated.

A) Detailed implementation documents:

Implementation will be guided by

- a **SRIA** for the partnership clearly outlining the strategic scope of activities. It will provide a basis for aligning regional SRIAs and pan-European strategy frameworks and their priorities, also allowing specific sea basin challenges to be addressed regionally and provide a policy voice for the Blue Economy. The suggested process for developing the SRIA, fully taking into account several already existing mature and inclusively developed strategy frameworks, is elaborated in Annex 1
- **Annual Work Programmes (WP)** that translate the SRIA into annual priorities and activities. Co-creation, forward-looking planning and prioritization are critical. The proposed annual WPs must be planned with a sufficient time horizon for the funders and give necessary perspective to the beneficiaries, implementers and stakeholders
- The **Partnership Agreements**, Grant Agreement (GA) and Consortium Agreement (CA), that will guide the legal and operational implementation of the Partnership

For the SRIA and each Annual Work Programme, the parts with their different actors and implementation mechanisms will need to be defined. Thematic priorities, and key instruments for implementation, including the agenda and the budget will be detailed and negotiated and agreed with the EC services.

Certain activities will be implemented by the participating MS and AC by aligning national funds, others will be co-funded with EC contributions and, on a case-by-case basis, with contributions from third parties such as international partners, private sector, and philanthropy. Potential joint activities with other Partnerships or programmes (for instance joint calls, working groups etc.) is also foreseen.

B) KPIs and SMART²² general objectives and objectives:

Overall and specific KPIs will be further developed defined and evaluated throughout the Partnership to ensure that general objectives, objectives and impacts are measured.

The nature/quality of these general KPIs and by what terms they are different from specific KPIs, shall be defined by the start of the Partnership. This process shall consider Horizon Europe regulations and guidelines on KPIs, recommendations put forward by the Task Force on Monitoring & Evaluation of the JPIs²³ and the national rule and regulations and expectations among the members of the Partnership.

C) Implementation execution:

In line with the expected implementation of Partnerships, an operational management could be organised with the support of JPI Oceans and the structures implementing the regional seas'

²² Smart, Specific, Measurable, Achievable, Relevant, Timebound

²³ https://www.era-learn.eu/documents/final_report_task_force_m-e_jpis_dec2018.pdf

programmes. Close interaction will be required with multi-stakeholder platforms, such as the Waterborne or EATiP and with Partnerships (on biodiversity, food systems, water for all, waterborne transport, etc.); as well as the missions in the area of oceans, cities, and climate, since ocean observations and oceanography will be of direct relevance to these

D) Synergies:

Implementation needs to address how to mobilise the different synergies/interfaces with other Partnerships (and possibly other processes).

3.1 Activities and expected output

- The partnership will deploy a range of instruments and actions, including - but going much beyond - joint calls for R&I proposals. This includes an array of impact-enabling activities, such as systematic impact monitoring and assessment of the supported R&I, thematic clustering of R&I projects, calls on common research gaps, synthesis calls, innovation calls supporting output of higher TRL, international cooperation, stakeholder involvement and engagement, communication and dissemination, foresight exercises, evidence-based policy recommendations, open science and open innovation, Coordination and Support Actions, seed funds/"glue money" to cover transaction costs, Demonstration Actions, Expert Reviews, Assessments and Syntheses, Challenge based Awards, strengthening of citizen science and ocean literacy
- Different actions and instruments will be proposed for the respective objectives that will be further described and identified through the SRIA process and the annual workplans. The actions and instruments possible to undertake will depend on the members of the partnership and its agreed scope
- KPIs will be further refined and agreed to ensure maintaining direction for achieving the expected impact
- Studies (including evaluations, assessments etc.) on socioeconomics, analysis and quantification of the operation and impact of the Partnership will be supported and endorsed to ensure that relevance and fit-for-purpose is maintained. Such deliverables shall be considered public unless justified otherwise
- Flexibility throughout the life cycle of the partnership is required to amend the Partnership by incorporating recommendations from own experience and new knowledge and assessments undertaken. This flexibility would include revising objectives expected impacts

3.1.1 Instruments

- Joint Calls (IA/RIAs) for cross-national research and innovation (with or without EU cofunding, different principles e.g. common pot, variable geometry, fair return), to be further elaborated when clarity on partner compositions is reached
- National research and innovation funds as part of national contributions;
- Joint Public Procurement of knowledge demands
- Knowledge Hubs, Synthesis Calls, Policy Labs, or Sandpits²⁴ to address e.g. knowledge gaps and policy challenges
- Research Infrastructure sharing and cooperation i.e. cooperation on collection, storage and dissemination of surveillance and monitoring data of the marine environment and ecosystems, for public use for industry, academia and governments - including guidance on how to make use of the data

²⁴ <https://epsrc.ukri.org/funding/applicationprocess/routes/network/ideas/whatisasandpit/>

- Capacity development, including mobility and repatriation schemes e.g. for early-career researchers and professionals, science-policy and ocean literacy programmes;
- Capacity building in the blue sector through academia-industry interaction (researcher/student/company mobility), continued education schemes, thematic business-research matchmaker events also to attract talent to the sector
- Fully capitalise on “key exploitable results” from completed projects
- Knowledge Transfer & exploitation initiatives
- Initiatives to overcome non-technological barriers to Blue Economy realisation;
- Hackathons and prize competitions to stimulate innovation on specific topics;
- Structured coordination among relevant sea basin Programmes, Strategies and Initiatives
- Regional investments through regionally focused entities such as PRIMA;
- Instruments aimed at TRL above 6
- EU business tools and platforms such as in the Start-up Europe initiative for stimulating innovation at local and SMEs scale

3.1.2 Synergies

The Partnership facilitates synergies between the **EU funding programmes** (e.g. Horizon Europe, structural regional and investment funds and other research, innovation and competitiveness-related mechanisms) to strengthen the ERA. Alignment of **national investments** (financial and in-kind contributions) will help increase the impact of both national and European investments in R&I towards more effectively addressing global challenges and achieving European policy objectives. **Private sector** investments and **philanthropy** will be sought where applicable.

The partnership will strive to combine and coordinate flexible and concerted collaboration through a systematic approach to **identify, involve, develop and integrate thematic funding opportunities and generic financial programmes** of relevance at e.g. national, regional and EU level. The ambition should be to systematically share knowledge and best practice with the other initiatives.

Mechanisms will be deployed to ensure synergies with relevant national and sea basin strategies related to inter alia, maritime economy/enterprise development, climate action, research & innovation, marine environment and biodiversity, marine data, models and knowledge, and human/public health.

Formalization of the collaboration with other mechanisms/programmes/schemes through regular activities will be considered, including invitations to participate in Advisory Board meetings, hosting joint events and policy related working group meetings.

Below is a review of potential interfaces, overlaps, modes of interactions, collaborations, coherences and synergies with programmes and mechanisms, including:

- a) European Partnerships, including other P2Ps, PPPs and EIT KICs
- b) Mission Areas
- c) Elements of Horizon Europe
- d) EU innovation funds
- e) EU structural funds
- f) National programmes

A. European Partnerships, including other P2Ps, PPPs and EIT KICs

An overview of main related Partnership candidates, potential interfaces and modes of interaction is presented below (Table 2) and Fig. 12.

Partnership	Potential interfaces	Possible mode of interaction
Zero-emission waterborne transport	Efficient maritime transport plays an essential role in growth and sustainable development as almost 90% of the EU's external freight trade is seaborne.	<ul style="list-style-type: none"> - Waterborne transport and related services are among the core Blue Economy sectors and among the main influencers on the marine environment and a relevant stakeholder for EAM. - The development and demonstrations deployable zero-emission solutions will contribute to a sustainable Blue Economy. - Emerging sectors such as ocean energy could be of particular relevance.
Protecting and restoring biodiversity to safeguard life on Earth	Aims to align and integrate European R&I efforts in developing and upscaling solutions to stop biodiversity loss and guide actions to protect, restore and sustainably manage ecosystems as natural capital. It will help mainstreaming of biodiversity and represents an important contribution to a new deal for nature and people.	<ul style="list-style-type: none"> - Topics such as marine biodiversity and marine protected areas are relevant for the Blue Economy and fundamental in the implementation of EAM. - Marine Protected Areas as a management approach for halting biodiversity loss, incl. analysis of successes and failures in relation with blue economic activities. - Nature-based solutions to protect coasts from erosion and sea level rise. - Eco-engineering solutions inspired by or mimicking nature for "blue-green" artificial marine structures. - Full implementation of the Ballast Water Management Convention in all European commercial ports.
Safe and Sustainable Food Systems for People, Planet & Climate	Building the Safe and Sustainable Food Systems of tomorrow is central for the transition to a 'Sustainable Europe by 2030', and key to meeting the IPCC climate targets and operating within planetary boundaries	<ul style="list-style-type: none"> - Food from the ocean - Role of ocean-based solutions in climate mitigation and adaptation - Implementation of EAM (biodiversity and human wellbeing) <p>To be explored at a later stage given a proposed start in 2023/2024.</p>
Water4All	Aims at securing all water demands in terms of quality and quantity, and that both economic and natural systems, as well as people are protected from water-related hazards	<ul style="list-style-type: none"> - Topics such as hazardous substances, litter (including plastics), eutrophication and bioremediation technologies - Land sea interface - Management of waste products from desalination plants

An overview of other related Partnership candidates, potential interfaces and modes of interaction is presented below (Table 3).

Partnership	Potential interfaces	Possible mode of interaction
EIT Climate-KIC²⁵	Partnership of companies, scientific institutions and universities, city authorities and other EU public bodies working on innovation to mitigate or adapt to climate change and accelerate the deployment of new solutions to market.	<ul style="list-style-type: none"> - Funding to innovative start-ups relevant to the Blue Economy.
Driving urban transitions to a sustainable future	(i) early, organise workshop(s) to evaluate issues of common interest regarding urban biodiversity and Nature-based Solutions, (ii) organise regular meetings to exchange on workplan development and identify possible synergies, and (iii) implement joint activities as appropriate.	<ul style="list-style-type: none"> - Strategic plan, co-designed by both Partnerships, identifying common priorities and explaining how to address these e.g. implementation of EAM (MPA with focus on the coast, mitigation of emissions of pollutants and litter from land). - Possibly implementation of a joint R&I programme on impacts of sea level rise on urban areas (subject to SRIA)
Clean Energy Transition	Will foster joint actions between Horizon Europe and national funding programmes on common R&I priorities, building on – and bringing forward – the work carried out in the European Strategic Energy Technology SET-Plan.	<ul style="list-style-type: none"> - Ocean energy technologies that currently being developed to exploit the potential of tides and waves as well as differences in temperature and salinity is an integrated part of the Blue Economy. - Ocean energy however requires marine and maritime space and impact the surrounding environment, thus sustainable practices is important to develop.
Circular and Climate Neutral Industry	Transforming European process industries, including materials and recycling sectors, to make them circular, clean and climate neutral by 2050, and to enhance their technological leadership at global level and international competitiveness.	<ul style="list-style-type: none"> - It is important that the Blue Economy industries and other stakeholders contribute the overall industrial goals and objectives. - Utilisation of marine resources and ocean energy may contribute particularly to the targets.
Circular Bio-based Europe (follow-up of BBI JU)	Aims to support sustainability driven innovation in creating new local value from waste and biomass.	<ul style="list-style-type: none"> - Promote synergies on topics such as the valorisation of aquatic (“blue”) biomass.

²⁵ Several EIT communities may of relevance to the partnership, incl. EIT Food (aquatic food), Digital (digital transformation), Raw materials (deep sea resources).

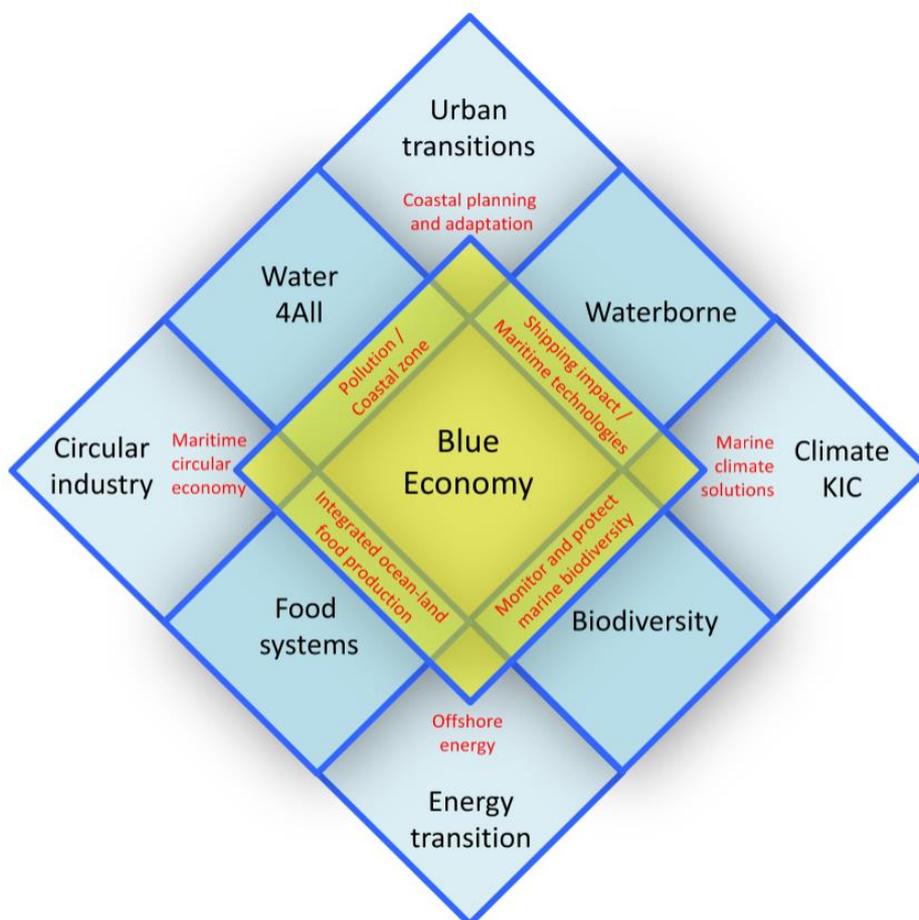


Figure 12: Complementary scopes of Partnerships at the fringes of the Blue Economy Partnership and opportunities for novel collaboration across sectors on topics of shared interest (in red).

Joint Programming Initiatives

Joint Programming Initiatives (JPIs) constitute well-established pan-European intergovernmental platforms aiming to increase efficiency and impact of R&I. A JPI with potential interface with the Partnership includes in the first instance JPI Oceans.

Recognizing that joint coordination of R&I strategies generates clear additional value, JPI Oceans established an independent legal entity in form of an ‘International non-profit association’ (i.e., AISBL; abbrev. ‘JPI Oceans’) to organise, implement and validate joint activities on behalf of its members and partners. JPI Oceans will continue to implement Joint Actions and activities independently and seek complementarity with, the scope and activities undertaken through the Partnership.

Other JPIs include:

- JPI Climate: climate mitigation (blue carbon) and adaptation (e.g. coastal risk) topics
- JPI HDHL: oceans and human health, food and nutrition security
- FACCE-JPI: food security and agricultural impacts on the ocean
- Water JPI: water quality and pollution of coastal and inland waters

ERA-NET Cofunds

The ERA-NET Cofund scheme of Horizon 2020 will be discontinued under Horizon Europe. However, several ERA-NET Cofunds will overlap or offer valuable exchange of experience for the Partnership, particularly in terms of joint calls. This include:

- MarTERA²⁶: Strengthening the ERA in maritime and marine technologies and Blue Growth, with a focus on technologies (instead of sectors) due to their potentially large impact of applications on the Blue Economy. End date Nov-2021
- BlueBio²⁷: Strengthening Europe's position in the blue bioeconomy by identifying new and improve existing ways of bringing bio-based products and services to the market and find new ways of creating value from in the blue bioeconomy. End date Nov-2023
- AquaticPollutants²⁸: Strengthening the ERA in the field of clean and healthy aquatic ecosystems and leverage new collaboration between the freshwater, marine and health research areas. End date Dec-2024
- BiodivERsA²⁹: Offering innovative opportunities for the conservation and sustainable management of biodiversity and is instrumental for the development of the Rescuing biodiversity to safeguard life on Earth Partnership. End date Oct-2025

B. Mission Areas

Although the modus operandi of the Missions initiative has not been formally finalized, current activities put forward concrete solutions to challenges facing European citizens and society. The Partnership complements the missions through stakeholder engagement, e.g. by involvement of end-users in R&I-calls and ensure that the missions are based on current scientific knowledge, as well as the actions/measures and the process to reach the objectives.

The **Mission Area on Healthy Oceans, Seas, Coastal and Inland Waters** is of particular relevance. Its overall goal is to contribute to the transition to a resilient Europe. The objective is to greatly increase resilience and capacities to cope with inevitable impacts of climate change and accelerate transformative change to build a better future in regions and communities across the EU. With the intention to concentrate its efforts, the Mission will focus on the most fundamental systems. Activities of the Partnership that complement the Mission Area on Healthy Oceans, Seas, Coastal and Inland Water could include:

- Systemic solutions for the prevention, reduction, removal and mitigation of marine pollution, including plastics and noise
- Transition to a circular and Blue Economy
- Adaption to and mitigation of climate change in the ocean
- Sustainable use and management of ocean resources
- Protection of and mitigation for biodiversity
- development of new materials, including biodegradable plastic substitutes, new feed and food
- Urban, coastal and maritime spatial planning
- Ocean governance
- Ocean economics applied to maritime activities

The Mission Area will be invited to nominate a representative to the Blue Economy Advisory Board.

Potential links with other Mission Areas (upstream and downstream) include:

- **The Mission on Climate Neutral and Smart Cities**; coastal cities, as well as impact of climate change adaption. Collaboration with coastal communities are of special interest for development of the R&I projects within the blue sector, e.g. tourism, sea and land based marine aquaculture and test environments

²⁶ <https://www.martera.eu/start>

²⁷ <https://bluebioeconomy.eu/>

²⁸ <https://aquaticpollutants.ptj.de/>

²⁹ <https://www.biodiversa.org/>

- **The Mission on Adaptation to Climate Change including Societal Transformation;** mitigation and adaptation to climate change is a pervasive issue that has to be integrated and further developed in coastal and ocean management
- **The Mission on Soil Health and Food;** soils provide a range of ecosystem services which are important for e.g. clean water, preventing pollution and eutrophication

Links to the respective missions will be re-evaluated once the scope, focus, activities, and resourcing and means of implementation have been finalised.

C. Elements of Horizon Europe:

- **Cluster 6 “Food, Bioeconomy, Natural Resources, Agriculture and Environment”**, provides opportunities to balance environmental, social and economic goals and sets human activities on a path to sustainability. The Work Programmes consist of “Destinations” addressing for example, biodiversity and ecosystem services, food systems, circular and bioeconomy, clean environment and zero pollution, climate action, resilience, environmental observation, and innovative governance

Other relevant clusters include:

- **Cluster 5 Climate, Energy and Mobility;** addressing climate change, improve the competitiveness of the energy and transport industry as well as the quality of the services that these sectors provide
- **Cluster 4 Digital, Industry and Space;** addressing important aspects concerning KETs, technological and industrial capacities for industrial competitiveness, digitized, circular, low-carbon and low-emission economy
- **Cluster 1 Health;** by reducing the ecological footprint of the Blue Economy as well as aquatic food and nutrition security and its impact on human health (combating malnutrition and obesity), oceans and human health etc.

Particularly relevant thematic funding schemes

Thematic synergies have been identified with funding schemes such as:

- European Maritime and Fisheries Fund Aquaculture Fund (2021-2027), which supports the coastal economy
- The Programme for Environment and Climate Action (LIFE), which provides partial funding for projects in fields such as renewable energy, natural resource management, and managing natural disasters
- The European Space Programme, which will manage the EU’s joint efforts with the European Space Agency, such as the Copernicus and Galileo satellite navigation systems
- European Structural and Investment Funds (ESIF), including European Territorial Cooperation, in particular the relevant INTERREG programmes
- The Bio-Based Industries Joint Undertaking (BBI-JU), which funds projects aimed at bridging key sectors, creating new value chains and producing innovative bio-based products to ultimately form a new bio-based community and economy
- The EIT Climate-KIC, which supports innovation for climate action, possibly also EIT Food and EIT Digital
- The European Cooperation in Science & Technology (COST), that funds cross-border scientific networking
- The BlueInvest Fund dedicated to finance the innovative Blue Economy

Close interaction will be required with **technology platforms** such as Waterborne and the Aquaculture Technology and Innovation Platform (EATiP).

D. EU innovation funds

Research is necessary, but not sufficient, to fuel innovation and value creation³⁰. While R&I funding up to a certain Technology Readiness Level (TRL) can develop ideas from basic research to design (the innovation element), other programmes are better placed to put ideas into practice and scale up new products and services. By addressing the gaps and bottlenecks the Blue Economy Partnership's investments and activities will strengthen the attention towards the Blue Economy and the innovators' opportunities to benefit from industry neutral programmes.

Important programmes for **innovation** and **scaling up industrial solutions** include:

- The Enhanced EIC pilot, which will support top-class innovators, entrepreneurs, small companies and scientists with bright ideas and the ambition to scale up internationally;
- The Digital Europe Programme, which will see the EU buy advanced digital technologies like AI and high-performance computing and make them available to small businesses and universities
- InvestEU, which provides guarantees for European Investment Bank Blue Bond loans, including for research and innovation
- The Emissions Trading Scheme, which promotes carbon offsetting and includes an Innovation Fund for low-carbon technologies
- EUREKA, which promotes and supports market-oriented international R&D&I project generation
- EUROSTARS, which funds market-oriented R&I with the active involvement of research and development- performing small- and medium-sized enterprises (R&D-performing SMEs)

Programmes of particular relevance will be invited to contribute to the preparation and/or implementation of Partnership activities.

E. EU structural funds

Spreading excellence and widening participation is essential to achieve a truly integrated ERA. Programmes with a regional perspective play a useful part in promoting and widening R&I and include:

- The European Regional Development Fund which aims to develop regional economies and has a particular emphasis on research, innovation, and technological development
- The Interreg cooperation across borders through project funding, which aims to jointly address common challenges and identify shared solutions in fields such as health, environment, research, education, transport, and sustainable energy

F. National programmes

Complex transformations require not only strengthened coordination, but stronger integration of national funding programmes. The Partnership should contribute to the strategic objectives for a deepened ERA in which MS and AC demonstrate willingness to further integrate their resources and policies also in the domain of Blue Economy to fulfil the objectives of the Partnership.

The participating countries are requested to actively seek coherence and synergies with national programmes and investments and demonstrate this in their commitments to the Partnership to avoid duplication of efforts and maximising impact.

³⁰ LAV – FAB – APP: Investing in the European future we want

3.2 Resources

Two dedicated pillars of activities within the partnership are needed resourced:

1. Implementation of joint R&I activities, with or without EU co-funding
2. Transaction and coordination costs

The EU contribution will be defined at a later stage, taking into account the scope and scale of the agreed SRIA, and the commitments from participating states.

The principal resources required for delivering on the objectives will in terms of **multiannual national investments (financial and in-kind)** from the **MS** and **AC**, and their related ministries, funding agencies and R&I organisations. Financial contributions mainly involve R&I funding from funding programme owners and programme managers while **in-kind contributions** have a wider scope, i.e. personnel, research infrastructures, established stakeholder networks, citizen science and business platforms).

Exact commitments from participating states will be defined at a later stage, taking into account the scope and scale of the SRIA and the EUs criteria for participation and implementation. MS and AC have since 2010 invested more than 250³¹ mill. EUR through P2Ps. Ambitions for the Partnership go above and beyond this amount.

Participation in and/or commitments to the Partnership shall not impact on the participating partners' entitlement to take part in other P2P instruments that may be considered within the thematic scope of the Partnership, such as the activities of JPIs or ERA-NET Cofunds (as long as current Cofunds are operational).

Role of the EC

The **EC** also has a central role in the Partnership, in an advisory capacity with in-kind skills regarding policy-level requirements and uptake. The EC will be represented as a full member in the governing structures.

The EC engages strategically with the partnership across multiple relevant DGs, in the detailing of the formal partnership agreement and the development of each year's annual work plan. Operational engagement is through the co-funding of calls and other activities and the dissemination of knowledge and advice into relevant European and global policy processes.

3.2.1 Resource commitments to implementation actions

Resources from the MS and AC will come from relevant national ministries, funding agencies and research organisations, **committing on a multiannual basis funding** (mainly R&I funding) and **in-kind contributions**. Contributions can also include already ongoing activities where top up from the Partnership to develop critical mass and synergies could generate mutual benefit. The absolute and relative contributions of cash and in-kind investments will be detailed for the respective areas and activities in the annual work programmes. This should include a mechanism of soliciting and robust accounting of the in-kind contributions.

3.2.2 Transaction and coordination costs

Seed funding or "**glue money**" to cover transaction costs and coordination, management and implementation costs is essential for the efficient functioning of the Partnership. Such funds need to be sufficient in amount to fulfil the ambitions of the Partnership endeavours and flexible to accommodate diverse and changing priorities and needs through the implementation period. Glue money will also be needed to engage the crucial stakeholder network outside of the core participants of the Partnership by funding stakeholder outreach activities, e.g. the Blue Economy Advisory Forum, stakeholder dialogue and co-creation through events and

³¹ The ~250 mill. EUR consists of national investments in JPI Oceans, including the ERA-NET Cofunds AquaticPollutants, BlueBio and MarTERA (~155 mill. EUR since 2011), BONUS (50 mill. EUR 2011-2020), SEAS-ERA (~2,5 mill. EUR 2010-2014), COFASP (15 mill EUR 2013-2017) and Marine Biotechnology ERA-NET (~21 mill. EUR 2013-2017).

consultations. It is envisaged that EU contributions towards the transaction costs are sufficient to leverage national investments.

Mobilisation of key **national** analytical functions and capacities within institutions and agencies contributing to activities such as mapping, foresight and scoping exercises, may also form part of the in-kind contributions to Partnership achievements. **Synergises and coherence with other programmes**, notably structural and investment funds will be sought, ref. list in chapter 3.1.2 above.

In-kind contributions from public as well as private contributors can also occur in the form of access to research infrastructure, including test and demonstration facilities, research vessels, maritime vessels that can be used for collection of data, databases, museum collections, networks of monitoring or experimental study sites, informatics infrastructures, etc. Further contributions can be through access to established knowledge brokerage, science-policy interfacing and citizen science networks and platforms.

3.2.3 Additional funds from non-partnership partners

The Europe 2020 strategy had set the target of 'improving the conditions for innovation, research and development', in particular with the aim of 'increasing combined public and private investment in R&D to 3% of GDP' by 2020. The biggest gap to actually reaching the 3% was the lack of private sector R&I investment³². Mobilising and encouraging financial and in-kind investments and contributions from the **private sector, civil society** and **philanthropy** is essential to achieve the aspired direct impacts and transformative changes.

Contributions could include data collection and use, expertise and know-how, knowledge sharing and knowledge transfer to turn the knowledge into ocean solutions, capacity building, ocean literacy and to connect donors with local science and conservation projects.

3.3 Governance

Most of the capacities to deliver and implement R&I are at national level. The Partnership therefore relies on long-term predictable national commitments and broad participation, in addition to the additional leverage from EU support. The Partnership further aims to enable international participation and collaboration to maximise the leverage of R&I investments and impact on public policies and Blue Economy development. It is important to establish a mechanism that ensures the inclusion of the private sector and philanthropy both in the strategic, operational and advisory pillars of the Partnership.

At its outset, the Partnership will include [xx] **full members** from [xx] from MS and AC (ministries and funding agencies), as well as the **European Commission**, possibly also JPI Oceans, eligible sea basin entities, international partners beyond the EU, multi-stakeholder platforms representing the private sector, including industry and philanthropy. Additional partners may join throughout the Partnership period.

The Partnership will implement a governance model that combines (i) a **strategic pillar** composed of pan-European, regional and national levels as well as advice from a diverse array of stakeholders and (ii) an **operational pillar** that combines the existing secretariat capacities of JPI Oceans and the regional sea basin initiatives and is supported by operational roles carried out by core and associated partners of the partnership (Fig. 13).

³² https://ec.europa.eu/commission/sites/beta-political/files/budget-may2018-investeu-impact-assessment_en.pdf

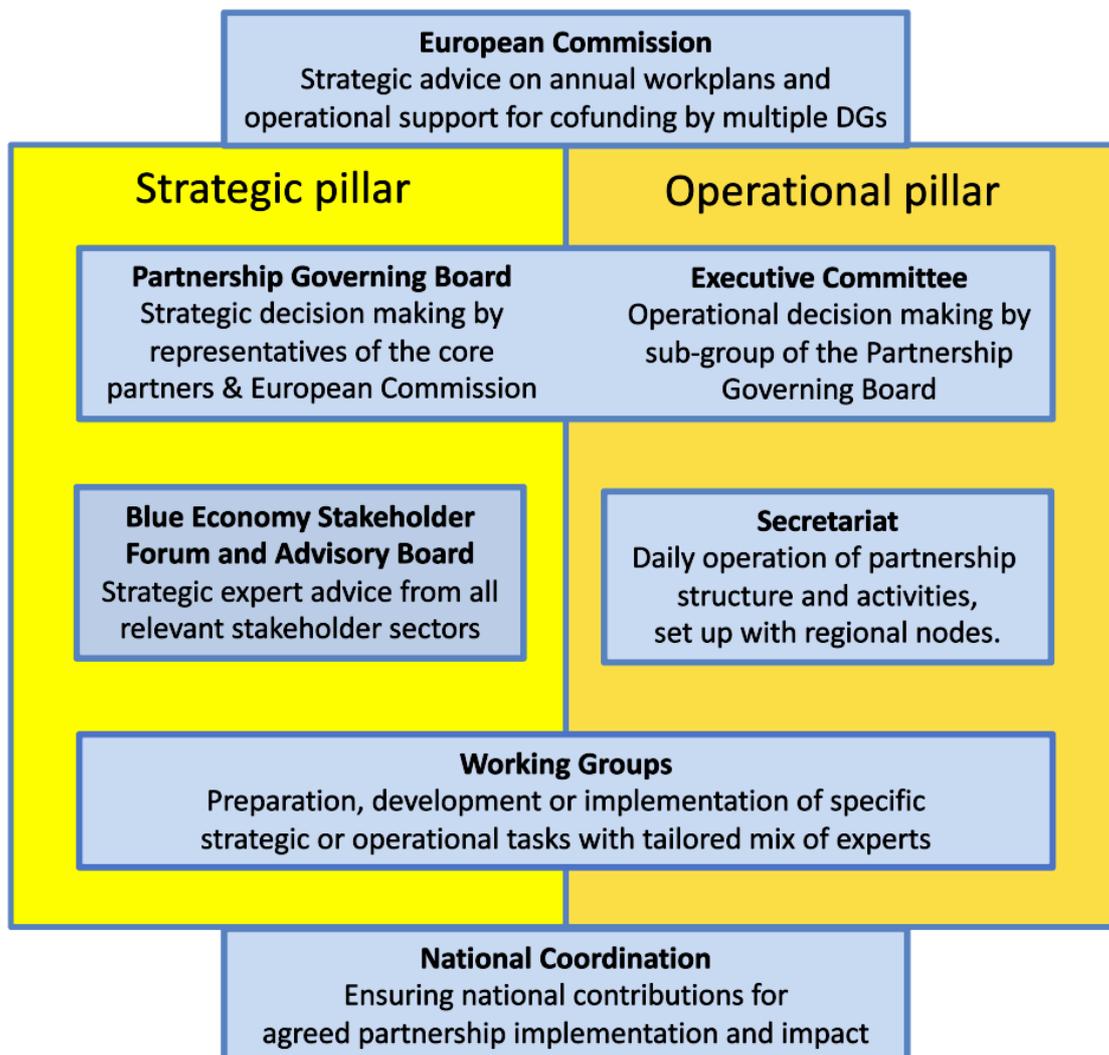


Figure 13: Proposed governance structure for the partnership, building on a strategic and an operational pillar, which are well connected.

Strategic governance

Overall strategic governance comes from a **Partnership Governing Board** consisting of national representatives from all participating MS and AC and key services of the European Commission. The representatives are expected to bring political and financial decision authority to implement R&I programmes at the international, regional and national level. To ensure broad participation beyond the Board representation, participating countries must establish national coordination and contact points with clear mandates and alignment as well as communication and dissemination at national level.

While not all parties to the Grant Agreement will be formally considered members of the Partnership Governing Board with voting rights, all parties to the Grant Agreement will have the right to take part in any meetings and access any documentation concerning the Partnership Governing Board.

Additional observers may also be considered, including representatives from regional sea basin R&I initiatives not being legal entities and representatives from private sector, multi-stakeholder platforms or philanthropy.

A Blue Economy **Advisory Forum** provides expert advice and stakeholder input of strategic and operational nature, and on specific activities and instruments. The Advisory Forum consists of stakeholders from business, politics, society, cross-disciplinary research fields, philanthropy

and finance, with attention to balanced geographic, sectoral, career-stage and gender representation. The Advisory Forum will be established from the outset of Partnership and will play an advisory role already in the SRIA process. An open call for nominations will be arranged, and the decision will be taken by the Partnership Governing Board.

Operational management secretariat (OMS)

The participating MS and AC, and coordinator, will mandate the implementation to a jointly governed operational management structure partly composed of JPI Oceans in cooperation with the structures of the regional sea basin initiatives and national partners (Fig. 13).

This cost-efficient solution will consider re-configurations towards the Partnership design while also ensuring immediate operationality, at different special scales, without the need to establish a new structure from scratch. The OMS will be steering by high-level operational decisions from the Executive Committee, a sub-group of the Partnership Governing Board.

The core tasks of the OMS include management of Partnership activities, in particular efficient coordination between the different bodies and supporting the exchanges between them. It will also coordinate communication and support in facilitating the implementation of activities and take care of monitoring key issues such as GDPR, ethics, gender balance, etc.

The exact number of staff must be defined at a later stage; depending on the final scope, ambition, size and ultimate composition of the Partnership. However, based on experiences with coordination structures it could comprise in the order of five to ten FTEs. This could include e.g.:

- Managing Director
- Senior Policy Officers specialising in different areas of programme implementation, also including monitoring and evaluation, thematic policy interface, coordination with members, stakeholders and other partnerships/programmes.
- Additional Policy Officers and Administrative Support staff for secretariat tasks (preparation of meetings, follow-up of procedures and deliverables, financial and legal matters, maintaining databases, etc.)

The personnel resources for the OMS will be provided by the participating countries either directly to the Partnership or through their financial investment into entities tasked to implement the partnership. While the financial guarantees will be given by the country of the coordinator the personnel resources could be formally employed/contracted by any participating or subcontracted entity of the Partnership. The EU will provide a contribution to personnel costs through a reimbursement of up to 50 percent.

Dedicated **Task Groups** across the whole operational management structure may be established throughout the partnership period to assist both strategic and operational tasks. Such tasks could include:

- SRIA drafting/revision
- Stakeholder engagement
- Launch and management of specific joint calls through a funders group
- Optimisation of the use of specific instruments such as joint calls
- Monitoring and evaluation
- Communication and outreach
- Ad hoc expert advisory groups for elaboration of selected priority topics

All participating entities are invited to take the lead for implementing activities or instruments prioritised in the SRIA and annual work plans.

3.4 Openness and transparency

Clear and transparent governance (as described in section 3.3) will be set-up from the beginning of the Partnership, allowing the participation from a broad range of actors, with no unjustified barriers. The Blue Economy in itself is a highly diversified area with a broad sectorial diversity. An objective of the Partnership is therefore to bring together the key sectors around priority topics to engage in activities towards realising a climate neutral, sustainable and productive Blue Economy.

The SRIA co-design for the Partnership will build on the combined stakeholder communities and relevant achievements of JPI Oceans, the regional sea basins, the EC, relevant collaborative partnerships, and the national networks of MS and AC. This offer an entry point for the inclusion of new relevant European as well as international partners.

Participation in the partnership will be based on the principle of variable geometry, recognising that not all participating entities may have the capacity to engage in every aspect of the Partnership. Specific efforts will be developed to encourage a good geographic coverage within the Partnership, with special focus on countries in Europe not (sufficiently) represented.

Policy for enlargement Partnership and inclusiveness

The Partnership will remain open to new members throughout its lifetime. A pro-active policy will be set-up to widen and mobilize additional partners, applying the principle of variable geometry to:

- improve the geographical coverage of the Partnership within and around Europe: if some countries are not participating in the Partnership, it will actively try to engage with them and to convince them to become members, with a view to improving the joint programming and the integration of resources and policies in the ERA R&I;
- ensure that ministries, R&I funders and other eligible partners are represented. The wide participation is crucial to ensure a link between research, innovation and policy, to better take into account and integrate research and policy making temporalities and to improve the uptake of knowledge to support policies and actions. Pro-active actions will be taken to attract certain types of actors which might initially be missing from some countries;
- enlarge the Partnership with third countries through a pro-active and step-by-step approach; the Partnership will first engage with these countries through specific activities, such as joint calls. Successful collaboration might consequently lead to full membership, upon decision of the Partnership Governing Board.

Withdrawal

The Partnership Governing Board will agree on a procedure for the scenario under which participating entities wish to withdraw.

3.4.1 Stakeholder engagement

The Partnership will base its stakeholder engagement strategy on thorough analytical mapping of the broad stakeholder landscape and relevant consultations and dialogue tools (Fig. 14). The first round of such mapping will be done already during the preparatory phase, in order to form the Interim Advisory Forum and achieve efficient stakeholder engagement during preparation of the Partnership SRIA (cf. Annex 1).

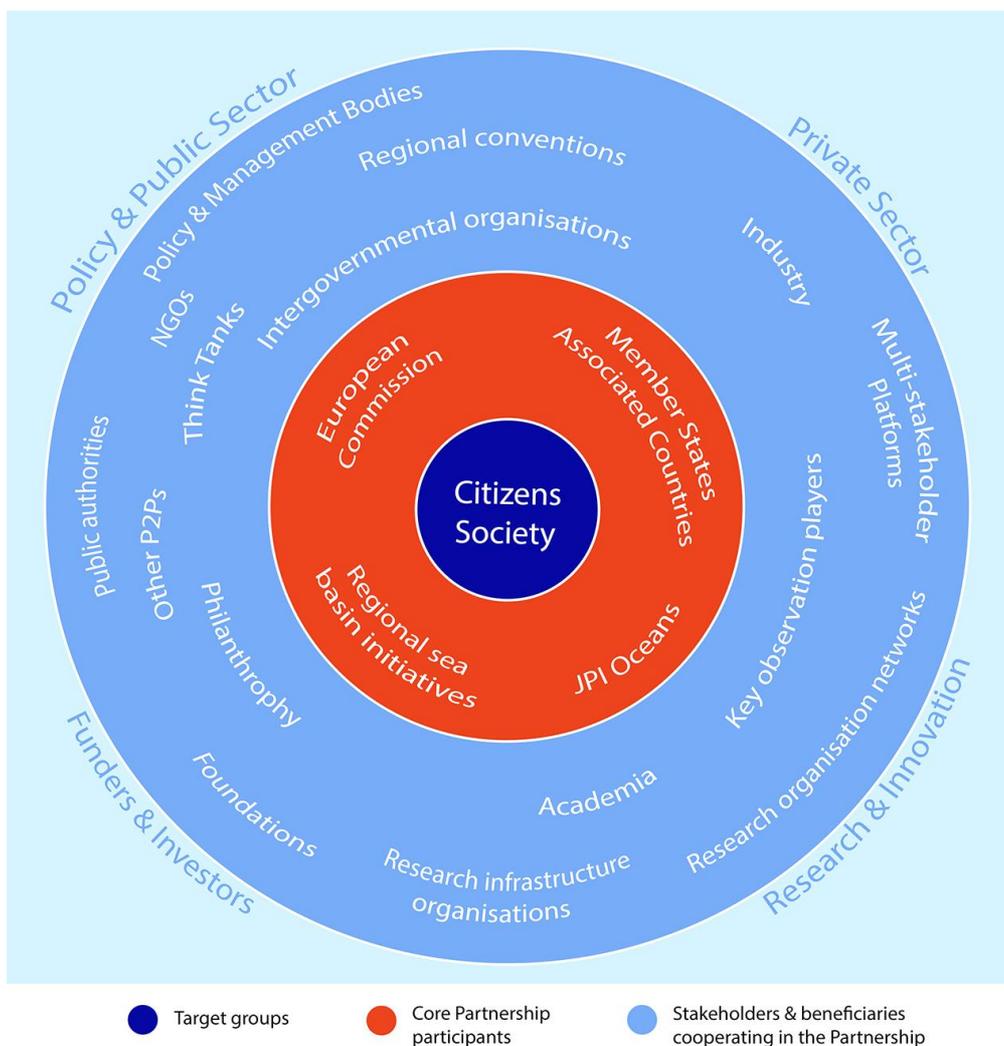


Figure 14: Illustration of the tiered structure of involvement in the Partnership. Citizens and society, depicted in the “bull’s eye”, are the central target group for benefitting from the achievements of the Partnership from economic growth and jobs, from opportunities brought by the transformational economic development and from long-term generational sustainability of both a healthy marine environment and the ecological basis of the new Blue Economy. The orange circle depicts the core Partnership participants and the outer circle the diverse ecosystem of stakeholders and beneficiaries from the public, private, funding and R&I sectors which the Partnership will seek to involve at all levels.

Overall strategic advice will draw on the insights of a **Blue Economy Advisory Forum** that consists of diverse experts and stakeholders to ensure open dialogue and the co-design, shaping and sharpening of the themes and the research and technology needs. It will stimulate close cooperation and engagement with collaborations as identified below at different levels, with different EU DGs and with international organisations and platforms.

Observers will be invited to strategic and detailed programming workshops, including the SRIA process and annual work plans. Participating countries will be encouraged to undertake consultations and stakeholder engagement activities at national level.

Transnational collaborators may include (Fig 14):

- Policy and Management bodies such as the Standing Committee on Agricultural Research (SCAR), notably SCAR-FISH and SCAR-FOOD
- Relevant regional conventions (i.e. HELCOM, OSPAR, Barcelona and Bucharest)

- Enabling organisations such as research infrastructure organisations (ERICs like Euro-ARGO, EMSO ERIC, EMBRC-ERIC,), European Fisheries and Aquaculture Research Organisation (EFARO) and the European Space Agency (ESA)
- Key observation players (EuroGOOS, Global Ocean Observing System, COPERNICUS and JERICO) and data access facilitators (EMODnet, SeaDataNet) and the developing European Ocean Observing System (EOOS) initiative
- Research organisation networks, the European Marine Board, EuroMarine, and the European Fisheries and Aquaculture Research Organisation (EFARO)
- Other Partnerships (biodiversity, food systems, water4all, zero emission waterborne transport, and others described in chapter 3.1.2)
- Mission Areas on: Healthy Oceans, Seas, Coastal and Inland Waters; Climate Neutral and Smart Cities; Adaptation to Climate Change including Societal Transformation; and Soil, Health and Food
- Multi-stakeholder platforms such as Waterborne Technology Platform; the European Aquaculture Technology and Innovation Platform (EATiP), the European Technology Platform (ALICE); the European Fisheries Technology Platform EFTP; European Technology and Innovation Platform for Ocean Energy (ETIP Ocean); and policy support mechanisms such as the EU Maritime Spatial Planning Platform
- P2Ps such as JPIs (Climate, Water, FACCE, Antimicrobial Resistance, Urban, Healthy Diets Healthy Lives), ERA-NET Cofunds (MarTERA, BlueBio, Aquatic Pollutants), BiodivERsA and the Bio-based Industries Joint Undertaking (BBI JU)
- Knowledge transfer organisations such as the Partnership for Observation of the Global Oceans (POGO)
- Intergovernmental organisations such as the Union for the Mediterranean, Mediterranean Science Commission (CIESM), the International Council for the Exploration of the Sea (ICES), the General Fisheries Commission for the Mediterranean (GFCM-FAO), IOC-UNESCO (particularly relevant for the UN Decade of Ocean Science), the UN Environment Programme (UNEP), the Intergovernmental Panel on Climate Change (IPCC)
- Societal stakeholders such as philanthropy, foundations, NGOs, and Think Thanks

Some of the identified collaborators above may become formal members of the Partnership.

Access to information

The Partnership will launch a dedicated website which will give an overview of its SRIA, Work Programmes, and of ongoing and finished activities. For finished projects, the website will entail the main results and deliverables. The website will also give the possibility to provide feedback on the SRIA, Work Programmes and the rolling detailed activity plans through surveys and will show what feedback has (not) been taken up and why. The Partnership will undertake actions that will increase the impact from its activities and the supported R&I, including ensuring broad awareness within key bodies.

The Partnership will establish a visual identity to stimulate participation to its activities by organising conferences, workshops, social media accounts e.g. Twitter, newsletters, and press releases.

3.4.2 Widening

The partnership actively strives to widen participation on the basis of:

- Increased participation of EU-13 with development of appropriate measures;
- Collaboration opportunities for Europe with **neighbouring countries** and **international** partners including further implementation of the goals of the Galway and Belém statements and the Valletta Declaration

- Openness to collaboration with third country entities in the trans-Atlantic and Adriatic-Ionian regions, North Africa, the Middle East, the eastern Baltic, Black Sea and possibly the Arctic regions. Such countries may be considered as formal partners in the Partnership or invited to take part in activities following the principle of variable geometry
- **Science Diplomacy** for the promotion of marine and maritime career skill development and knowledge exchange;
- Support for Europe and its countries, for meeting **international commitments**
- Contributions to international processes, such as the UN Decade of Ocean Science for Sustainable Development and ambition to fulfil the UNFCCC Paris Agreement
- Contributions to global science collaborations through mechanisms, such as Belmont Forum, Future Earth, Global Funders Forum (GFF), Global Research Council GRC) and International Research for Development Funders Forum (IRDF)

3.4.3 Open Science

The Partnership commits to **Open Science**, i.e. the practice of science that others can collaborate and contribute, and reuse, redistribute and reproduce the research and its underlying data and methods. **FAIR data principles**³³ (findable, accessible, interoperable and reusable) as outlined in the European Open Science Cloud Declaration (2017) will be mandatory. Data generated in activities implemented by the partnership shall be made available to the scientific community. Furthermore, cooperation with the European Open Science Cloud with existing **data sharing initiatives** (e.g. SeaDataNet, EMODnet, Copernicus Marine Service, Regional Sea Convention's databases) will be explored and developed to enable the most efficient open access to research data obtained through the Partnerships. The cooperation with information sharing organisations (e.g. EurOcean, POGO) and their info bases (e.g. Marine Knowledge Gate, Marine Research Infrastructure Database) will be examined to reduce fragmentation of access to information. Responsible Research and Innovation (**RRI**) as outlined in the EU's Framework Programmes will be fundamental. This implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society. In line with **Plan S**³⁴, making full and immediate Open Access a reality, **Open Access** to publications will be encouraged.

³³ <https://www.go-fair.org/fair-principles/>

³⁴ <https://www.coalition-s.org/>

Annex 1 Process towards SRIA and annual Work Programme(s)

A clear and transparent processes will be implemented for developing the SRIA and the Annual Work Programmes (Fig. 15). The process will be steered by the Partnership Board.

The SRIA will be developed based on the inputs from the members of the Partnership, as well as the **Blue Economy Advisory Forum**.



Figure 15: Diagram outlining the process & timeline for the development of the Partnership SRIA

Objective of SRIA

The SRIA will address the main objectives and activities of the Partnership and consider the developments in the policy landscape as well as the progress in relevant areas of R&I.

Blue Economy Stakeholder Forums will be held at least bi-annually, in addition to specific topical ones, in person or virtually, to solicit ideas for thematic priorities and implementation modalities (including identifying contemporary barriers, bottlenecks etc.).

The proposed activities in the SRIA will be expected to clearly specify for each proposed activity:

- Types of instruments to be used
- Expected results
- Synergies
- Priority/urgency as input to the annual Work Programmes

Process outline

The initial SRIA development process should be completed within a period of 6 months. This relatively short timeframe is realistic as the work can rely for a large part on the extensive analysis, priority setting, and stakeholder consultation performed while developing in the strategic agendas of, regional and pan-European initiatives.

Phase I – September-October 2020: Analysis and desktop research

By whom: Taskforce drafting team led by JPI Oceans, with participants from regional R&I initiatives, MS, AC, multi-stakeholder platforms and EC services.

1. Solicit ideas and priorities from the potential members and partners to the Partnership
 - Review and analysis of existing relevant strategic frameworks, incl. defined priorities in the SRIAs of, BANOS, BlueMed, Black Sea CONNECT, JPI Oceans, The Seas, Oceans and Public Health in Europe project (SOPHIE), other Partnerships, and stakeholder platforms to avoid duplications and maximise synergies
 - Consider effective instruments
 - Solicit thematic priorities nationally
 - Solicit cross-regional commonalities
 - National consultation on emerging topics and priorities by the participating countries
2. Dialogue with the EC
 - Ensure coherence and complementarity with EU funding instruments
 - Guidance on potential cofunding
 - Guidance on how to design fit-for-purpose activities to meet policy obligations with competent policy DGs and/or agencies
3. Nomination and establishment of Blue Economy Interim Advisory Forum

Phase II – November 2020: Towards a first draft

1st draft SRIA

- Prepared by task force with input of the Blue Economy Advisory Forum.

Phase III - November 2020: Consultation

1. To ensure an inclusive process and identify key comments and suggestions the first draft SRIA will be opened for consultation in two steps:
2. Open stakeholder consultation
 - Online consultation survey
 - Thematic (online) workshops

While the consultation will be open for the public to respond, the main target audience of the consultation will be consisting of the following groups:

- Policy makers
 - o International Organisations
 - o Policy and Regional Sea Conventions
 - o EU Institutions
 - o Regional Sea Basin Initiatives
- Marine and maritime science community
 - o European Scientific Organisations and Associations
 - o International Programmes
 - o Infrastructure Initiatives and Organisations

- Multi-stakeholder platforms, bringing in e.g. Technology, Industry, Innovation & Economic Associations
- Civil society and philanthropy

The full list of approximately 90 stakeholders is based on the initial stakeholder mapping conducted by the FP7 CSA Oceans project in 2014 and updated in 2020 by JPI Oceans.

To ensure a transparent process, the results of these consultations will be published online.

Phase IV - December 2020 - Winter 2021 Based on the input of the consultation the draft will be revised by the taskforce and Blue Economy Advisory Board

- The revised version will be reviewed by the Advisory Board and open for final comments and suggestions by the Partnership Board
- Taskforce polishes Final Draft
- Partnership Board approves SRIA

Annual Work Programme(s)

1. Consultation and engagement with partners (EU/national/others) on implementation tools (incl. funding) as basis for prioritisation of 1st Annual Work Programme. For each of the envisaged activities the members will decide on a set of KPIs to monitor and evaluate the actions.
2. Draft 1st Annual Work Programme.
3. In consultation with the Blue Economy Advisory Forum the Partners will be asked to prioritize among these topics. The priority groups of topics for future flagship programmes and calls will be considered when developing the Annual Work Programmes.
4. Approval of 1st Annual Work Programme by Partnership Board.

Annex 2 Overview of existing pan-European and macroregional R&I initiatives and their relevant strategic agendas

JPI Oceans was launched by the Council of the EU in 2011, implemented and supported by MS, AC and the EC as a pan-European partnership in its own right. Since then, JPI Oceans has expanded its membership and network, developed its toolbox of effective instruments to coordinate and align marine and maritime R&I funding, and established in 2018 a legal entity (AISBL) that is self-funded by its members to maintain an operational secretariat. Contrary to the Joint Actions it takes forward, JPI Oceans is not timebound. This enables JPI Oceans to act as a core operational entity in the implementation of the Partnership and to follow up on its legacy (cf. 2.2.3 Exit strategy). JPI Oceans developed its SRIA for the period 2015-2020 and is currently developing its strategy framework beyond 2020.

Black Sea CONNECT CSA was launched to support the update of the SRIA through a wider stakeholder base, co-develop joint actions and deliver an Implementation Plan. The SRIA aims to guide stakeholders from academia, funding agencies, industry, policy and society to jointly address fundamental Black Sea challenges, to promote blue growth and economic prosperity of the region, to build critical support systems and innovative research infrastructure and to improve education and capacity building. It builds on four main pillars on which a new set of R&I actions can be developed: (1) Addressing fundamental Black Sea research challenges - Black Sea Knowledge Bridge; (2) Developing products, solutions and clusters underpinning Black Sea Blue Growth - Black Sea Blue Economy; (3) Building of critical support systems and innovative infrastructures - Key Joint Infrastructure and Policy Enablers; and (4) Education and capacity building - Empowered Citizens and Enhanced Blue Workforce.

BlueMed addresses R&I through a multi-disciplinary approach, linking economy, environment and humans, to build sustainable Blue Growth by means of networks of actors and science diplomacy efforts. Recognizing the environmental and socio-economic peculiarities of the area, the BlueMed SRIA revolves around four pillars of key challenges, i.e. knowledge, economy, technology and policy, prioritizing climate change and pollution as major environmental threats and addressing solid key activities such as the sustainable production and consumption of food from the sea, tourism, green transport as well as emerging ones like marine renewable energies and blue biotech. Strongly promoting MSP and quadruple helix synergies as its *modus operandi* (quintuple including the environment, see Fig 4) BlueMed focuses efforts to bridge the human capacity development and spot systems gaps.

BONUS has evolved since 2004: in the beginning as an ERA-Net involving the key research funders of all coastal states including Russia, then as an ERA-Net Plus, and finally, as TFEU Art. 185 action. Its SRIA is being systematically updated based on policy landscape analysis, and thoroughly consulted on with stakeholders through repeated strategic orientation workshops. BONUS has implemented 64 co-funded transnational multidisciplinary R&I projects and multitude of impact enabling and stakeholder engaging activities. The dedicated legal entity implementing BONUS EEIG is the coordinator of BANOS CSA.

BANOS building a SRIA, implementation mechanisms and the impact enabling strategies for the future joint Baltic Sea and North Sea R&I programme that will involve all countries surrounding the two "sister seas". The three BANOS strategic objectives, including (1) Healthy Seas and Coast, (2) Sustainable Blue Economy, and (3) Human Wellbeing, all have strong

emphasis on the integral long-term sustainability and resilience of the marine ecosystem and its biodiversity, including the development of ecosystem-based management approaches. The programme intends to contribute to all components of the European Blue Growth Strategy (BGS), i.e. high-potential sectors such as aquaculture, coastal tourism, biotechnology and ocean energy; essential components such as marine knowledge, maritime spatial planning and sea basin strategies in two out of seven listed maritime areas. The programme will also commit to combatting climate change, new circular solutions, climate change threats to human wellbeing such as sea level rise and securing safe food and feed supply.

Trans-Atlantic cooperation in R&I is largely based on the Atlantic Sea Basin Strategy³⁵ (2011) and its associated Atlantic Action Plan (2013), the Galway Statement on Atlantic Cooperation for the North Atlantic (2013), and the Belém Statement on Atlantic Research and Innovation Cooperation for the South Atlantic (2017). The two Statements reflect significant steps towards a joint, integrated approach to research and development across the entire Atlantic Ocean and its bordering countries. Their implementation is supported through two CSAs providing scientific, technical and logistical support:

- The **AORAC-SA** (Mar-2015-Feb-2020) has contributed, through mapping and connectivity assessments and detailed/sectoral analysis, to aligning the planning and programming of trans-Atlantic research activities on topics such as Ecosystem Approach to Ocean Health & Stressors, Ocean Observation, Seabed and Benthic Habitat Mapping, Marine Biotechnology, Aquaculture, Ocean Literacy and assessed the Shared Access to Research Marine Infrastructures
- The **AANChOR CSA** (Oct-2018-Sep-2022) brings together and systematically connects all relevant actors across the Atlantic Ocean to identify concrete research and innovation activities with a long-lasting potential and impact across a range of six key areas; Climate Variability, Oceans Resources, Ocean Observation, Ocean Technology, Emerging Pollutants and Polar Research

Thematically, a number of strategic frameworks were developed in the remit of the Blue Economy. These include:

- Blue Bioeconomy Roadmap³⁶ (2018) developed a common understanding of the status of blue bioeconomy in Europe and to collectively identify strategic developments, market opportunities, appropriate financial assistance, regulatory actions and research priorities

³⁵ European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions developing a Maritime Strategy for the Atlantic Ocean Area. Comm (2011) 0782 final. Available at:

https://ec.europa.eu/maritimeaffairs/policy/sea_basins/atlantic_ocean_en & the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Action Plan for a Maritime Strategy in the Atlantic area Delivering smart, sustainable and inclusive growth. COM(2013) 0279 final Available at: <https://atlanticstrategy.eu/en/content/atlantic-strategy>

³⁶ European Commission Directorate-General for Maritime Affairs and Fisheries Directorate A: Maritime Policy and Blue Economy & Executive Agency for Small and Medium-sized Enterprises Unit A.3 European Maritime and Fisheries Fund, 2019. *Blue Bioeconomy Forum Roadmap For The Blue Bioeconomy*. [online] Luxembourg: European Commission. Available at: <<https://op.europa.eu/en/publication-detail/-/publication/7e963ebb-46fc-11ea-b81b-01aa75ed71a1/language-en/format-PDF/source-115609569>> [Accessed 19 May 2020].

- The EU Blue Economy Report³⁷ (2019) analyses the scope and size of the Blue Economy in the EU, solidifying a baseline to support policymakers and stakeholders in the quest for a sustainable development of oceans, seas and coastal resources
- Strategic Research Agenda for Oceans and Human Health (OHH) in Europe³⁸ (2020), developed by the Seas, Oceans and Public Health in Europe programme (SOPHIE), recommends OHH research that will answer fundamental questions, provide evidence to policy, and increase OHH literacy in Europe and beyond
- Strategic Research Agenda for the European Waterborne Sector³⁹ (2019), presenting solutions to transform waterborne transport into a clean, green, safe and more secure mode of transport through the development of dedicated technologies and concepts that will eliminate all harmful emissions from the sector by 2050
- EFARO's recommendations on research & innovation gaps and needs beyond Horizon 2020 (2019)
- EATiP Vision and Strategic Research and Innovation Agenda (2012) and Review of the SRIA (2017), identifying gaps and topics of importance for European aquaculture.
- Strategic Research Agenda for Fisheries, Aquaculture and seafood Processing by the COFASP ERA-NET (2016)
- Ocean Energy Forum Strategic Roadmap⁴⁰ (2016) and Strategic Research and Innovation Agenda for Ocean Energy (2020)⁴¹, proposing actions to facilitate the emergence of a market for ocean energy in Europe. Ocean energy is particularly important due to the expected growth and claims for marine and maritime space

³⁷ European Commission (2019). The EU Blue Economy Report. 2019. Publications Office of the European Union. Luxembourg. Available at: HYPERLINK "https://prod5.assets-cdn.io/event/3769/assets/8442090163-fc038d4d6f.pdf" <https://prod5.assets-cdn.io/event/3769/assets/8442090163-fc038d4d6f.pdf>

³⁸ H2020 SOPHIE Consortium (2020) A Strategic Research Agenda for Oceans and Human Health in Europe. H2020 SOPHIE Project. Ostend, Belgium. ISBN: 9789492043894 DOI: 10.5281/zenodo.3696561 Available at: https://marineboard.eu/sites/marineboard.eu/files/public/publication/SOPHIE%20Strategic%20Research%20Agenda_2020_web_0.pdf

³⁹ Waterborne (2019) Strategic Research Agenda for the European Waterborne Sector, January 2019. Available at: https://www.waterborne.eu/images/pdf/190121-waterborne_sra_web_final.pdf

⁴⁰ Ocean Energy Forum (2016). Ocean Energy Strategic Roadmap 2016, building ocean energy for Europe. Available at: https://webgate.ec.europa.eu/maritimeforum/sites/maritimeforum/files/OceanEnergyForum_Roadmap_Online_Version_08Nov2016.pdf

⁴¹ EATiP Ocean (2020) Strategic Research and Innovation Agenda for Ocean Energy. Available at: <https://www.oceanenergy-europe.eu/wp-content/uploads/2020/05/ETIP-Ocean-SRIA.pdf>

Annex 3 Relevant policies are already in place for the implementation and support of EAM

This Annex presents an overview of relevant policies already in place for the implementation and support of EAM, that may be supported through the activities of the Partnership.

- Integrated Maritime Policy (IMP)⁴² (2007) sets the EU level framework by providing a more coherent approach to marine and maritime issues, as well as increased coordination between different policy areas. It consists of five transversal policy instruments: (1) Blue growth, (2) Marine data and knowledge, (3) Maritime spatial planning, (4) Integrated maritime surveillance and (5) Sea basin strategies.
- The Marine Strategy Framework Directive (MSFD) (2008) is the environmental pillar of IMP. The MSFD aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. Since GES has not been achieved on time by 2020, it will be promoted through the Partnership by addressing the sources of marine environmental degradation and by strengthening and harmonising monitoring and assessment capacities.
- The EU Water Framework Directive (WFD) (2002) is an integrated approach to the management for good status of all waters including the marine transitional (estuaries and lagoons) and coastal waters. The WFD creates a holistic view of human interaction with aquatic environments and links land and water management by involving different stakeholder groups such the collaboration between the Blue Economy and Water4All partnerships.
- The REACH Regulation⁴³ (2006) specifically concerning hazardous substances further contributes to the protection of marine and coastal ecosystems.
- The EU Biodiversity Strategy (2011), based on the Convention on Biological Diversity (CBD), aims to halt the loss of biodiversity and ecosystem services in the EU. Five of six targets are relevant for the marine environment and this partnership: (1) protecting species and habitats; (2) maintaining and restoring ecosystems; (3) making fishing more sustainable and seas healthier; (4) combatting invasive alien species and (5) contributing to stop the loss of global biodiversity. The Birds and Habitats Directive and Natura 2000⁴⁴, are some of the specific instruments which further contribute to the protection of marine and coastal ecosystems.
- The Common Fisheries Policy (CFP) (1983) is the EU's instrument to manage the annual quotas of fish and shellfish in EU waters. It provides access for European fishing fleets to EU fishing grounds and allows fishermen to compete fairly. The CFP stipulates

⁴² Communication from the Commission COM (2007) 575 & Regulation (EU) No 508/2014, OJ L 149, 20.5.2014, p. 1–66

⁴³ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, OJ L 396, 30.12.2006, p. 1-856

⁴⁴ The aim of the Natura 2000 network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive:

https://ec.europa.eu/environment/nature/natura2000/index_en.htm

that fish catch limits should be set at Maximum Sustainable Yield (MSY) and that overfishing and illegal, unreported and unregulated fishing (IUU) should be halted to ensure the long-term viability of fish stocks. The CFP further calls for sustainable aquaculture to meet the growing demand for seafood. All these aspects will benefit from the partnership's cross-disciplinary R&I and co-design with practice.

- Food 2030 (2015) has the aim to future-proof the European food system. The food system approach is part of the FOOD 2030 policy initiative to promote a systems approach to R&I, to better structure, connect and scale up R&I globally, to step up EU investment ambition and to mobilise international stakeholders. The Blue Economy partnership will contribute expertise and assessment capacity to ensure that food and feed from the ocean will be fully considered in configurations of food system development.
- The Maritime Spatial Planning (MSP) Directive⁴⁵ (2014), and the Recommendation on Integrated Coastal Zone Management⁴⁶ (2013) highlight the urgency of efficient spatial management among expanding Blue Economy sectors. MSP is among the key tools the Partnership aims to further develop in practice. By optimizing the use of maritime space and limiting activities in or near ecologically sensitive areas, MSP can enable the development of the sustainable Blue Economy, the implementation of environmental legislation and ultimately the achievement of GES.

⁴⁵ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning, OJ L 257, 28.8.2014, p. 135–145

⁴⁶ Recommendation 2002/413/EC of the European Parliament and of the Council of 30 May 2002 concerning the implementation of Integrated Coastal Zone Management in Europe, OJ L 148, 6.6.2002, p. 24–27

Annex 4 Relevant European policy goals and objective that the Partnership may contribute to

Overview of most important high-level policies driving the Partnership and its potential contribution its efforts can deliver.

Policy	Related policy issue	Partnership contribution
Strategic priorities of EC's Strategic plan for Horizon Europe, with a focus on the European Green Deal	<p>Aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy, incl. no net emissions of greenhouse gases in 2050 and economic growth decoupled from resource use.</p> <p>It also aims to protect, conserve and enhance the EU's natural capital and protect the health and well-being of citizens from environment-related risks and impacts.</p>	<ul style="list-style-type: none"> - Healthy, functional and resilient seas and oceans fundamental to establishing a resource-efficient and competitive economy and a fair and prosperous society by implementation of EAM and support for ocean literacy. - Develop, demonstrate and upscale innovative solutions for circular economy, incl. novel bioresources (e.g. products, food, feed, energy, chemicals, pharmaceuticals.). Innovate use and reduction of waste and by-products that also relieve pressure on agricultural land. - Promoting the production and use of new sources of protein to relieve pressure on agricultural land. - Promoting the use of nature-based solutions to increase coastal resilience to climate change
European Research Area (ERA)	<p>System of scientific research programmes integrating the scientific resources of the EU launched in 2000. The structure has been concentrated on European cooperation in the fields of medical, environmental, industrial, and socio-economic research. The ERA can be likened to a research and innovation equivalent of the “European Single Market”⁴⁷.</p>	<ul style="list-style-type: none"> - Accelerate, strengthen and encourage implementation of ERA priorities by promoting complementarity with other programmes and funding streams at national and EU level - Foster cross-sectorial and interdisciplinary R&I that connect a diverse set of stakeholders, competence and infrastructures. - Act as transnational hub for defining R&I needs and implementation, strengthening the ERA additionality and directionality in the Blue Economy.
Paris Climate Agreement	<p>Aims to strengthen the global response to climate change, including to limit global warming to well below 2°C. To reach this, appropriate financial flows,</p>	<ul style="list-style-type: none"> - Contribute to develop carbon-neutral blue industries and a truly blue circular economy. - Exert European global leadership in meeting the targets for societal and economic decarbonisation.

⁴⁷ The European Single Market is characterised by the free movement of goods, capital, services, and labour. More details: https://ec.europa.eu/growth/single-market_en

	a new technology framework and an enhanced capacity building framework will be put in place.	- Promote ocean-based solutions to mitigation and adaptation goals.
Agenda 2030	Sustainable Development Goals, particularly SDG 14, but also others such as SDGs 2 (hunger), 3 (health), 7 (clean energy), 8 (economic growth), 9 (innovation), 11 (cities), 12 (consumption and production), 13 (climate), and 15 (land).	<ul style="list-style-type: none"> - Driving necessary infrastructures and innovative solutions that enable Europe and countries to achieve the goals. - Exert European leadership in knowledge based socio-economic transformation.

Annex 5 List of abbreviations and acronyms

AANChOR	All Atlantic Cooperation for Ocean Research and Innovation
AC	Associated Countries
AEI	Spanish National Innovation Agency
AI	Artificial Intelligence
AISBL	International Association without lucrative purpose (Association Internationale sans but lucrative)
ALICE	European Technology Platform
ANCS	Romanian Ministry of Research and Innovation
ANI	Portuguese National Innovation Agency
ANR	French National Research Agency (Agence Nationale de la Recherche)
AORAC-SA	Atlantic Ocean Research Alliance Coordination and Support Action
BANOS	Baltic and the North Sea
BANOS CSA	The Baltic and North Sea Coordination and Support Action
BGS	European Blue Growth Strategy
BONUS	The joint Baltic Sea research and development Programme
BONUS EEIG	BONUS European Economic Interest Grouping
BONUS EPSS	BONUS Electronic Programme Service System
BBI-JU	Bio-based Industries Joint Undertaking
BELSPO	Belgian Federal Science Policy Office
BiodivERsA	Pan-European network for research on biodiversity and ecosystem services
BLE	German Federal Office for Agriculture and Food
BLUEMED	Research and Innovation Initiative for blue jobs and growth in the Mediterranean Sea
BMBF	German Federal Ministry of Education and Research
BMEL	German Federal Ministry of Food and Agriculture
BMWi	German Federal Ministry for Economic Affairs and Energy
CDTI	Spanish Ministry for Science and Innovation
CFP	Common Fisheries Policy
CIESM	Mediterranean Science Commission
CMEMS	Copernicus Marine Environmental Monitoring Service
CMMI	Cyprus Marine and Maritime Institute
CNR	Italian National Research Council
Black Sea CONNECT	Black Sea Coordination and Support Action
COPERNICUS	European Union's Earth Observation Programme
COVID 19	Coronavirus Disease 2019
COST	European Cooperation in Science & Technology
CRPM	Conference des Régions Périphériques Maritimes
CSA	Coordination and support actions
DEFRA	Department for Environment, Food and Rural Affairs of the United Kingdom
DG RTD	Directorate-General for Research and Innovation
DG	Directorate-General
EATiP	European Aquaculture Technology & Innovation Platform
EC	European Commission
EEZ	Exclusive Economic Zone
EFARO	European Fisheries and Aquaculture Research Organisation
EFTP	European Fisheries Technology Platform

EGD	European Green Deal
EIC	European Innovation Council
EIT	European Institute for Innovation and Technology
EMBRC	European Marine Biological Resource Centre
EMODnet	European Marine Observation and Data Network
EMSO	European Multidisciplinary Seafloor and water column Observatory
EOOS	European Ocean Observing System
ERA	European Research Area
ERA-NET	European Research Area Net
ERIC	European Research Infrastructure
ESA	European Space Agency
ESIF	European Structural and Investment Funds
EATiP	European Aquaculture Technology and Innovation Platform
ETIP Ocean	European Technology and Innovation Platform for Ocean Energy
EU	European Union
EUREKA	Intergovernmental organisation for pan-European research and development funding and coordination
Euro-ARGO	European Research Infrastructure Consortium for Observing the Ocean
EurOcean	European Centre for information on Marine Science and Technology
EuroGOOS	European Global Ocean Observing System
EUROSTARS	Joint EUREKA-EC funding and support programme for research-performing SMEs
FACCE-JPI	Joint Programming Initiative on Agriculture, Food Security and Climate Change
FCT	Portuguese Foundation for Science and Technology
FOOD 2030	EU research and innovation policy response to the recent international policy developments including the SDGs and COP21 commitments
FORMAS	Swedish Research Council for Sustainable Development
FCT	Foundation for Science and Technology (Portugal)
FRCT	Regional Fund for Science and Technology (Azores region)
FWO	Flanders Research Foundation
GES	Good Environmental Status
GFCM	General Fisheries Commission for the Mediterranean
GFF	Global Funders Forum
GOOS	Global Ocean Observing System
GRC	Global Research Council
GSRT	Greek General Secretariat for Research and Technology
HE	Horizon Europe
HELCOM	Helsinki Commission - Baltic Marine Environment Protection Commission
HRZZ	Croatian Science Foundation
ICES	International Council for the Exploration of the Sea
ICT	Information and Communications Technology
IMP	Integrated Maritime Policy
IN	Innovation Norway
INTERREG	EU instrument for interregional cooperation through project funding
IOC-UNESCO	Intergovernmental Oceanographic Commission of UNESCO
IPCC	Intergovernmental Panel on Climate Change
IRDFE	International Research for Development Funders Forum
IZM	Latvian Ministry for Education and Sciences

JERICO	Joint European Research Infrastructure network for Coastal Observatory
JPI	Joint Programming Initiative
JPI HDHL	Joint Programming Initiative - A Healthy Diet for a Healthy Life
JPI Oceans	Joint Programming Initiative - Healthy and Productive Seas and Oceans
KET	Key Enabling Technologies
KIC	Knowledge and Innovation Community
KPI	Key Performance Indicator
LNV	Dutch Ministry of Agriculture, Nature and Food quality
MarTERA	Maritime and Marine Technologies for a new ERA
MECP	Maltese Ministry for the Environment, Climate Change and Planning
MI	Marine Institute Ireland
MIUR	Italian Ministry of Universities and Research
MMM	Ministry of Agriculture and Forestry of Finland
MPA	Marine Protected Areas
MSFD	Marine Strategy Framework Directive
MS	Member States
MSP	Marine Spatial Planning
MSPD	Marine Spatial Planning Directive
MSY	Maximum Sustainable Yield
MZO	Croatian Ministry of Science and Education
NERC	Natural Environment Research Council of the United Kingdom
NGO	Non-Governmental Organisation
NWO	Netherlands Organisation for Scientific Research
OECD	Organisation for Economic Co-operation and Development
OHH	Oceans and Human Health
OSPAR	Protection of the Marine Environment of the North-East Atlantic
P2P	Public-to-Public Partnerships
POGO	Partnership for Observation of the Global Oceans
PRIMA	Partnership for Research and Innovation in the Mediterranean Area
PtJ	Project Management Juelich, Juelich Research Centre GmbH, Germany
RANNIS	Icelandic Centre for Research
RCN	Research Council of Norway
RSC	Regional Sea Conventions
R&D&I	Research, Development and Innovation
R&I	Research and Innovation
RRI	Responsible Research and Innovation
RWS	Directorate-General for Public Works and Water Management of the Netherlands
SCAR	Standing Committee on Agricultural Research
SCAR-FISH	Strategic Working Group on Fisheries and Aquaculture
SCAR-FOOD	Strategic Working Group on Food Systems
SDG	Sustainable Development Goal
SDG14	SDG14 (i.e. Conserve and sustainably use the oceans, seas and marine resources)
SeaDataNet	Pan-European Infrastructure for Ocean and Marine Data Management
SET-Plan	European Strategic Energy Technology Plan
SMART	Specific, Measurable, Attainable, Relevant, and Time-Bound
SME	Small and Medium-sized Enterprise
SOPHIE	Seas, Oceans & Public Health in Europe
SRIA	Strategic Research and Innovation Agenda

TRL	Technology Readiness Level
TÜBİTAK	Scientific and Technological Research Council of Turkey
UEFISCDI	Executive Unit for Higher Education, Research, Development and Innovation Funding of Romania
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
IUU	Illegal, unreported and unregulated (fishing)
VLAIO	Flanders Innovation & Entrepreneurship
WFD	Water Framework Directive
WP	Work Package

Annex 6 Basis of the intervention logic for achievement of general objectives A-D

	General objective A: Alignment of priorities and investments across Europe	General objective B: Cooperation across socioeconomic sectors and disciplines	General objective C: Provision of knowledge for a “green” development of the Blue Economy	General objective: Transformation to an evidence and knowledge based Blue Economy
Aim	We aim for a powerful alignment and structuring among the European Union’s, Member States and Associated Countries' R&I priorities, resource allocations, activities and programmes in Blue Economy domains where research and innovation needs converge across Europe, regional sea basin areas and international partners.	We aim for a pan-European and international research and innovation cooperation at an unprecedented level of integration that includes socioeconomic sectors, disciplines and cultures relevant to the Blue Economy, including industry, education and science diplomacy. The community involved is open and growing, inclusive of international partners, in particular those bordering Europe’s seas and oceans.	We aim to generate a strong evidence-base of knowledge, information and know-how to underpin sound policies and regulatory frameworks for solutions and business opportunities in the Blue Economy to unlocking and enabling sustainable and responsible use of the full socioeconomic potential, within the boundaries of healthy and resilient ecosystems of seas and oceans.	We aim to facilitate a rapid progress over the next decade towards transitioning to a Blue Economy that by mid-century is climate neutral, ecologically sustainable, competitive and productive to improve people’s nutrition, and wellbeing and thus achieving objectives such as job and value creation, complying with policy requirements under the IMP, MSFD, WFD, MSP while contributing to strategic priorities of the EC (e.g. European Green Deal, Circular Economy Action Plan, FOOD 2030, Bioeconomy Strategy and Biodiversity Strategy) and the UN SDGs.
Challenges	<p>i. FRAGMENTED R&I SYSTEMS where more than 85% is isolated national funding, requiring coordination and alignment to fulfil the ERA ambition, resulting in inefficiency and unnecessary high costs for investments e.g. in infrastructures</p> <p>ii. INSUFFICIENT ERA AMBITIONS: a number of countries are not meeting the Lisbon target of 3% R&I spending target and are facing financial pressure from the</p>	<p>i. INSUFFICIENT CROSS-SECTORIAL INTEGRATION: disconnect between R&I beneficiaries and socioeconomic stakeholders, as an obstacle to unleash the potential impact of R&I efforts</p> <p>ii. LACK OF ADEQUATE OBSERVATION AND DATA: A better coordinated and sustained long-term design for observation, monitoring, data integration (incl. ecological and socioeconomic data) and assessment systems is needed for EAM to make investment risks and opportunities predictable.</p> <p>iii. POLICIES INEFFICIENTLY IMPLEMENTED: Policy targets and</p>	<p>i. OVERCOMING SILOS AND COMPARTMENTALISATION: knowledge and information is often generated in disconnected and compartmentalised policy areas, R&I disciplines and Blue Economy sectors</p> <p>ii. UNHARMONISED REGULATORY FRAMEWORKS: lack of integrated approach and planning nationally and cross-border often results in unclear implementation of framework conditions, rules and regulations</p> <p>iii. IDENTIFICATION AND MITIGATION OF CUMULATIVE EFFECTS: anthropogenic</p>	<p>i. FRAGMENTATION: governmental responsibilities for Blue Economy development are often fragmented, unclear and overlapping between and within global, European regional, national and local levels</p> <p>ii. OVERCOMING NATIONAL SILOS: seas and oceans challenges cannot be solved by research programmes focused only on a particular area of knowledge while not recognizing the broader setting of challenges ahead</p> <p>iii. MISSING INTERFACE: insufficient and in-efficient interface between Science-Policy-Economy domains, and decision makers/influencers and society.</p>

	<p>COVID-19 crisis - acting alone many MS and AC cannot build critical mass of R&I</p> <p>iii.UNBALANCED REGIONALISATION: mechanisms to enable pan-European cooperation across-regional sea basins are needed to increase efficiency of investments, while ensuring that specific regional sea basin challenges are addressed at regional level</p>	<p>obligations including MSFD, WFD, MSP, CFP, EU Biodiversity Strategy etc.</p> <p>iv.UNTAPPED POTENTIAL OF R&I INFRASTRUCTURES: sharing incl. vessels, equipment and databases can boost R&I efficiency</p> <p>v.PRIVATE INVESTMENTS: knowledge deficiencies and regulatory obstacles prevent engagement and investments from the private sector.</p> <p>vi.DISCIPLINE DRIVEN R&I: academic focus and rewards based on disciplinary publications and specialisation rather than contribution to cross-sectoral integration and societal needs</p>	<p>disturbances on ecosystem components and functioning and insufficiently understood and quantified.</p> <p>iv.CLIMATE SOLUTIONS: knowledge and lasting solutions to climate change impacts, mitigation and adaptation require greater attention to resilience by nature-based solutions and ecosystem services</p>	<p>iv.SCALING-UP: weakness of evidence-base compromises confidence in prospects of sustainable Blue Economy innovation and connected investments for scaling-up from piloting to market</p> <p>v.CAPACITY DEVELOPMENT: lack of harmonised training and capacity development for transition needs</p> <p>vi.OCEAN ILLITERACY: prevents transformative efforts, solutions and implementation of required practices</p>
Operational objectives	<p>i.BOOST ALIGNMENT among EU, Member States, and Associated Countries resources to jointly support an ambitious programme of R&I on Europe's seas and oceans</p> <p>ii.VALORIZE: offer a value proposition that signifies high return on public R&I investment through collaboration and prospect for sustainable economic development</p> <p>iii.PRIORITISE: identify and address cross-region and region-specific agenda priorities for collaboration, knowledge transfer and sharing of resources, expertise and experience across geographic</p>	<p>i.BROADEN COMMUNITY of engaged stakeholders across sectors and disciplines such as R&I, industry, policy and civil society, and cross-domain issues like land-sea, ocean-climate, ocean-inland waters, seafood-energy.</p> <p>ii.FULFIL POLICY TARGETS AND OBLIGATIONS: such as IMP, MSFD, WFD, CBD, MSP, CFP, EU Biodiversity Strategy and regional sea conventions</p> <p>iii.CIRCULAR BLUE ECONOMY: develop, demonstrate and upscale innovative solutions for circular economy, including novel bioresources (e.g. food, products, chemicals, pharmaceuticals, feed and energy) and innovative use and reduction of waste and by-products.</p>	<p>i.CO-PRODUCTION: with sectors and disciplines such as R&I, industry, policy and civil society to ensure relevance and uptake in implementing R&I programmes.</p> <p>ii.ACTIONABLE INFORMATION AND TOOLS: based on Open Science, FAIR data and RRI to underpin climate neutral and sustainable of Blue Economy developments</p> <p>iii.RISK RESILIENCE: offer risk management information and tools that lower investment threshold into sustainable Blue Economy opportunities, e.g. by improving early warning, mapping and forecasting</p> <p>v.CUMULATIVE EFFECTS ASSESSMENT AND MULTI-USE:</p>	<p>i.POLICY MAKERS: will be inherently informed by co-production, fit-for-purpose evidence and knowledge for sound policies, regulations and practices and their implementation</p> <p>ii.INCENTIVES AND FRAMEWORKS FOR END-USERS: e.g. industry to facilitate innovative sustainable economic practices and phasing out of ecologically unsustainable and GHG emitting practices</p> <p>iii.CAPACITY DEVELOPMENT: promote education and training, from early career to life-long-learning across sectors and disciplines to enable "blue careers"</p> <p>iv.OCEAN LITERACY: increased awareness among decision-makers and in society to enable a more responsible and informed behaviour towards the ocean and its resources</p>

	<p>and cultural regions to address pan-European and global challenges and generate critical mass and speed</p> <p>iv. MOBILISE integration of less conventional programmes and funding streams at national and EU level</p>	<p>iv. INFRASTRUCTURE SHARING AND COMPLEMENTARITY: incl. inventories on infrastructure capacities incl. databases, fleet and equipment that are interoperable</p>	<p>stimulate integration of knowledge on cumulative impacts and multi-use to optimise spatial planning</p>	<p>v. HARMONISATION: of policy and regulations at national and EU level referencing to joint R&I from the Partnership</p> <p>vi. CAPITALIZE TO INNOVATE: show or build virtuous innovation patterns where new knowledge links with or disrupts previous achievements</p>
Inputs	<p>i. Collective shared and agreed knowledge about R&I priorities on national, regional, EU, and pan-European level</p> <p>ii. Pan-European, regional and sectorial strategic agendas</p> <p>iii. Policy objectives set out in regulations, ambitions and targets</p> <p>iv. Demonstrated experience and mechanisms for priority aligning between countries, regions and EU as a basis to upscale ambitions</p> <p>v. Ocean literacy (see General objective D) reinforces prioritizations of R&I towards Blue Economy.</p>	<p>i. Ambitious SRIA that lays out a plan for efficient support of the Blue Economy transition including cross-domain matters</p> <p>ii. EU and national funding and a forward-looking value proposition to attract participation of and co-funding by ambitious stakeholders and international partners</p> <p>iii. Cumulative networks of stakeholders and users at all levels</p> <p>iv. National and private infrastructures available for sharing</p>	<p>i. EU and national funding for synthesis and value-adding R&I</p> <p>ii. Existing infrastructures and capacities (see General objective B) for connecting, improving and upscaling R&I ambition</p> <p>iii. Results from R&I projects and programmes</p>	<p>i. Network of experts, influencers and visionaries inspiring sustainable Blue Economy transition</p> <p>ii. Existing capacities for observation, monitoring, forecast, mapping capacities and related project outputs</p> <p>iii. Best practice examples from national and EU R&I e.g. on EAM and from pilots leading to market introduction</p> <p>iv. Experience and results of pan-European, regional and national initiatives on knowledge transfer</p>
Activities	<p>i. Analysis of national, regional and European agenda priorities for cross-national research and innovation</p> <p>ii. Co-design of Partnership, incl. SRIA and annual programmes</p> <p>iii. Joint Public Procurement</p>	<p>i. Co-designed joint calls that address knowledge gaps and bottlenecks of Blue Economy actors</p> <p>ii. Ambitious co-designed R&I programmes with activities beyond joint calls, incl. education, training, technology development and science diplomacy</p>	<p>i. R&I projects and Innovation actions</p> <p>ii. Synthesising and assessment initiatives</p> <p>iii. Co-design of desired outputs among key stakeholders</p> <p>iv. Initiatives to overcome non-technological barriers to sustainable Blue Economy realisation</p>	<p>i. Dedicated interface activities between Science-Policy-Economy domains, and decision makers/influencers and society</p> <p>ii. Capacity and awareness development campaigns tailored to youth and other professionals in key sectors and disciplines</p> <p>iii. Upskilling, education and training on digitalisation and automation to promote a skilled Blue Economy workforce</p>

		<ul style="list-style-type: none"> iii. Knowledge Hubs, e.g. trans-national and trans-sectoral and trans-disciplinary and pan-European expert groups iv. Sharing of research infrastructure, data and models and other cooperation projects contributing to the European Open Science Cloud (EOSC) v. Annual Partnership R&I and stakeholder conference events (European/regional/international) as platforms for interaction and community building vi. Dedicated efforts to stimulate innovation and create engagement, e.g. hackathons and living labs 	<ul style="list-style-type: none"> v. Intercalibration exercises for monitoring parameters and data compatibility 	<ul style="list-style-type: none"> iv. International influence and European leadership in UN processes, e.g. the UN Decade of Ocean Science, and international agreements
Outputs	<ul style="list-style-type: none"> i. Partnership SRIA living document ii. Annual work programmes iii. Dedicated investments national and EU funds through Partnership commitments 	<ul style="list-style-type: none"> i. Foresight update reports and other stakeholder event results ii. Perspective publications e.g. opinion papers, policy papers, white papers, etc. iii. Integrated oceans, seas and inland waters monitoring and assessment system for a holistic view of the environmental impact of human activities (as part of ESFRI hydrosphere efforts) iv. Crossdisciplinarity competence development and PhDs programmes v. Technology advancements and adaptation of KETs and digital technologies vi. Outreach programmes for citizen engagement 	<ul style="list-style-type: none"> i. Synthesis and peer reviewed publications and policy briefs ii. Case-studies and use cases to develop roadmaps for scaling-up innovations for the market iii. Advancement in science based early warning systems to protect citizens, infrastructures and investments from hazards such as extreme weather, sea-level rise, pollution, harmful algal blooms deoxygenation. iv. Research results increasing our systemic understanding of the marine ecosystem and the ocean socioeconomic system 	<ul style="list-style-type: none"> i. New and/or revised policies and harmonised governance documents, guidelines, regulations, standards etc. at global, EU, regional and national level ii. Practical definitions and shared experiences of the application of EAM in the Blue Economy iii. "Blue" education and training programmes and curriculum modules iv. Capacity building programmes in Europe and internationally