

Strategic Plan Blue Economy

1.1. GENERAL CONTEXT – SETTING THE SCENE

In recent years, the Blue Economy has manifested itself as a rapidly growing sector. According to a study by the OECD (2016), the global added value of the ocean-based industry could double to 3 trillion dollars by 2030. The emergence of new knowledge- and innovation-intensive sectors, such as offshore (wind) energy, marine biotechnology and aquaculture 4.0, play a crucial role in this regard. It is clear that the Blue Economy is also a huge asset for Flanders, accounting for almost 154,000 full-time jobs and 5.2% of the Flemish Gross Domestic Product (GDP) (Bilsen et al. 2019). Moreover, Flanders can not only rely on a solid maritime economic basis, but also on a longstanding tradition in marine scientific research. In 2021, no less than 82 marine research groups were active at Flemish university associations and scientific institutions, and this in a wide range of research disciplines (Pirlet et al. 2021).

Since its creation in 1999, Flanders Marine Institute (VLIZ) has played a central role in the marine scientific landscape and serves as a coordination platform for Flemish marine and coastal research. In the 2017-2021 covenant between VLIZ and the Flemish Region, the scope of the institute was considerably expanded: in addition to fulfilling science-supporting tasks, VLIZ was also mandated to conduct research activities itself, taking into account certain preconditions. Furthermore, companies were included as a specific target group of the institute and policy advice & valorisation of research towards the Blue Economy was assumed as a core task. This path was further pursued with an increase of the VLIZ budget for basic research linked to the priorities of the Flemish Blue Economy (2018) and the establishment of the VLIZ Marine Robotics Center (2019). The activities of VLIZ in the context of the Blue Economy were summarized in the 'Strategic Plan Policy Advice Blue Economy (2017-2021)'. The current document is the successor of the aforementioned strategic plan for the 2022-2026 covenant period.

In 2018, VLIZ was one of the key players in the establishment of The Blue Cluster (DBC), which – as a partnership of companies, knowledge institutes and government administrations – focuses on the development and promotion of economic activities at sea. DBC is one of the seven spearhead clusters of Flemish innovation policy and, as such, has access to earmarked innovation resources from VLAIO. Based on its mandate, VLIZ chairs the scientific advisory board of the cluster and in that capacity is also a member of the steering group and the board of directors (the latter as observer). VLIZ and DBC have concluded a collaboration agreement which aims at non-exclusive cooperation in the field of project operations, internationalization (including participation in international projects), research, scientific support and representation in the governance bodies of DBC, joint events and communication.

Since 2018, the blue innovation landscape in Flanders has boomed significantly and also the role of VLIZ in this field has expanded. There is already a remarkable increase in collaborations between VLIZ and industrial partners from the Blue Economy in the context of research and development (R&D) projects and initiatives. It is clear that these VLIZ-activities in the Blue Economy are an integral part of the quadruple helix approach (science, policy, industry, society) that is anchored in the VLIZ-DNA and in which every VLIZ-division has its role.

In this strategic plan, a vision for the collaboration between VLIZ and the industrial partners from the Blue Economy is further developed for the period 2022-2026. The aim is to provide clarity and transparency about how VLIZ positions itself as an active participant in the innovation landscape and to explain how this will be substantiated within the institute. Below, a strategic framework is outlined, in which a number of basic principles are laid down that clarify the philosophy and the position of VLIZ in the Blue Economy landscape. In this way, new opportunities can be created in a targeted manner and current assets can be strengthened, without compromising the VLIZ-philosophy.

1.2. STRATEGIC FRAMEWORK

1.2.1. GENERAL FRAMEWORK

The activities of VLIZ towards the Blue Economy are part of the broader societal role that VLIZ has assumed since its inception. In addition to its supporting tasks, such as initiating policy-supporting research or working as a knowledge broker between industry and science, VLIZ also takes on a fast-growing role as an active participant in the innovation landscape and the institute enters into collaborations with industrial partners. Comparable to the traditional service-oriented tasks of VLIZ towards the general public, the marine research field and the policy level, it is also necessary to carefully examine how the added societal value can be optimally realized for projects and initiatives together with industry.

As a starting point, we take the mission of the institute: *“The Flanders Marine Institute (VLIZ) promotes accumulation of marine knowledge and excellence in marine research in Flanders. The marine research areas are the ocean and seas, the coast and the tidal systems. The target groups for knowledge accumulation are the marine research community as well as educational institutions, the general public, policy makers and the industry (within the scope of the Blue Economy).”*

Following this mission, VLIZ - as a scientific institution - focuses primarily on knowledge building. In doing so, we start from the existing research and innovation potential within the Blue Economy, and strive for a mutually reinforcing system in which companies are not only fed by research, but also enrich this same research by exchanging (industrial) expertise and setting up unique experiments, developing joint projects, etc. The commercialization of this knowledge is not a goal in itself, but the transfer of the accumulated knowledge to actors who can valorize it, is.

1.2.2. THREE LEADING PRINCIPLES FOR COLLABORATIONS AND INITIATIVES

Currently, VLIZ already takes on a significant number of collaborations and initiatives with industrial partners from the Blue Economy. It is expected that this will further intensify in the coming period, without losing sight of the identity and objectives of VLIZ. Therefore, it is important that the choice to participate in these initiatives and collaborations is well-considered. Based on the legal framework, and referring to the role of VLIZ as a scientific institute and service provider within the marine research and innovation landscape, the following three principles will be evaluated for collaborations and initiatives that VLIZ may take up within the Blue Economy:

REGULATIONS REGARDING KNOWLEDGE AND TECHNOLOGY TRANSFER TOWARDS THE BLUE ECONOMY (INCL. STATE AID)

VLIZ is a research and knowledge dissemination organisation (as defined in the European Framework for State aid for research and development and innovation). This qualification has consequences for the way in which and the extent to which VLIZ participates in collaborations and initiatives with companies. From a **state aid** perspective, a number of important boundaries and **preconditions** are imposed on the innovation field. For VLIZ, the state aid framework for services towards the Blue Economy was elaborated in detail in [Buts et al. 2018](#). This state aid framework is not only essential to avoid improper state aid, but also to prevent an unwanted disruption of the existing Blue Economy landscape.

STRIVING TOWARDS BROAD VALORISATION

The added value of collaborations and initiatives VLIZ sets up with companies from the Blue Economy must be seen in the context of added value for the innovation potential of the entire (Flemish) Blue Economy landscape. In concrete terms, VLIZ strives for collaborations and initiatives that maximally fulfill the criteria below, and will only commit to initiatives and collaborations if at least two out of the three criteria below are met:

- The project or collaboration increases the innovation potential for Flanders:
There is a knowledge and/or technology exchange between science and companies from the Blue Economy, which leads to new valorisation opportunities;

- Strategically interesting for VLIZ:

This is specifically linked to:

- Contribution to the knowledge accumulation within VLIZ (IP);
 - Financing essential activities for the institute;
 - Contribution to the image and profile of VLIZ;
 - Potential for outreach and education;
 - Possibility of follow-up programs;
 - Strategic importance of the consortium;
 - Connection with the strengths and ambitions of VLIZ;
 - Contribution to a sustainable use of the coast and sea;
 - Strengthening the (unique) position of VLIZ within the innovation landscape.
- Increasing the knowledge base of the Marine Research Groups (MRGs) in Flanders and Belgium (collaborative nature):
The collaboration with actors from the Blue Economy leads to a broad scientific knowledge building in which various marine research groups are involved.

An important aspect is that these criteria are qualitative in nature and that maximization of these criteria is never a goal in itself.

PRESERVING THE SCIENTIFIC INTEGRITY AND IDENTITY OF THE INSTITUTE

VLIZ has unique and strongly growing knowledge and expertise. In its relations with the Blue Economy, the institute starts from its own developments and strengths, without neglecting the flexibility and broad interest that are specific to the VLIZ-DNA. In addition, VLIZ will at all times maintain its scientific integrity in order to assume its role in society (see also: <http://vliz.be/nl/wetenschappenelijke-integriteit-het-vliz>). It is therefore important that a number of considerations are carefully examined for each new initiative.

In addition to scientific integrity, the core values of the institute must also be taken into account in this deliberation. This includes the possibility of implementing the principles of open data and open science ('as open as possible, as closed as necessary'), safeguarding broad valorisation opportunities as well as the neutrality of research results (e.g. science washing of unsustainable practices). These considerations serve to prevent proliferation, to set priorities and to safeguard the assets and uniqueness of VLIZ (the so-called VLIZ-DNA).

1.3. ROLE OF VLIZ DIVISIONS

The Flemish marine innovation landscape has increased considerably over the last years. It is to be expected that this growth will consolidate and may even further increase in the coming decade. Grand societal challenges such as the climate crisis or marine litter pollution, strategic and industrial developments (e.g. construction of new offshore wind farms) as well as emerging sectors (e.g. the marine robotics field in Ostend) ensure a significant impetus for the future. It is the explicit ambition of VLIZ to further assume its expanding role in this increasing Blue Innovation landscape. As mentioned above, the initiatives of VLIZ towards the Blue Economy are considered a transversal activity within VLIZ. As such, every VLIZ division may take up an active role in collaborations with partners from industry. In the following, the central role of the Policy and Innovation division in this context, as well as the basic research lines of the research department towards the Blue Economy will be further elaborated. Furthermore, intense collaboration will be established with the national liaison officer of VLIZ in order to ensure the broad valorisation towards the MRGs in Flanders/Belgium.

1.3.1. POLICY AND INNOVATION DIVISION

The Policy and Innovation division assumes the coordinating role within VLIZ concerning the initiatives towards the Blue Economy. It is the mission of the division to provide marine knowledge valorisation to science, companies (within the context of Blue Economy) and policy. The division actively invests in the development of a scientific knowledge base and the detection of knowledge gaps and innovation needs, with a view to scientifically underpin the policy for the coast and sea, and to enhance the marine innovation capacity in Flanders and beyond.

More specifically the following activities towards the Blue Economy will be taken on:

THE DEVELOPMENT AND COORDINATION OF AN INSTITUTIONAL FRAMEWORK WITH REGARD TO VALORISATION AND INNOVATION.

This includes both the elaboration and coordination of the overall valorisation strategy for VLIZ (starting from the current Strategic Plan Blue Economy), as well as focusing on the necessary knowledge building on intellectual property (IP), state aid, collaboration modalities, etc. In the context of the institutional valorisation strategy, thematic focus points are identified in order to align the strengths of the institute with the needs from the Blue Economy in a more systematic way. For these thematic dossiers, the division will invest in the active monitoring of the state of affairs and knowledge building (both methodological and thematic) with a view on valorisation opportunities for marine research.

THE PROACTIVE CREATION OF VALORISATION OPPORTUNITIES FOR MARINE RESEARCH TOWARDS THE BLUE ECONOMY.

The division will initiate, facilitate, prepare and implement collaborations, initiatives and (innovation) projects in relation to Blue Economy (and marine policy). The aim is to transfer scientific knowledge and expertise to end-users from industry. In this regard, the division will also actively contact, mobilize and bring together partners from the marine research and innovation landscape (stakeholder management) in order to create new valorisation opportunities. The organisation of the Blue Economy Science Summit (BESS) together with The Blue Cluster (DBC) (and the science support department of VLIZ) is an excellent example in this context.

Furthermore, VLIZ has also concluded a collaboration agreement with the Province of West Flanders and POM West Flanders . One of the focus points in this agreement is the support of the West Flemish Blue Economy community by initiating industry-relevant research and innovation projects and supporting research infrastructure such as the Blue Accelerator platform.

ACT AS REPRESENTATIVE OF THE FLEMISH MARINE RESEARCH COMMUNITY IN FORMAL CONSULTATION PLATFORMS WITH REGARD TO THE BLUE ECONOMY.

In this capacity, the Policy and Innovation division assumes a role in various consultation platforms linked to Blue economy or innovation activities. An important partnership in this respect is the cooperation agreement between The Blue Cluster (DBC) and VLIZ. VLIZ has a seat on the board of directors of DBC, as an observer member. VLIZ also assumes the chairmanship of the scientific advisory council (WAR) that provides scientific support for the operation of DBC and has a seat on the cluster's steering group on behalf of the WAR.

VLIZ can provide free and targeted policy-relevant information (with regard to the Blue Economy), both on request of its targets groups as well as on its own initiative (for example in Policy Informing Briefs). The content of this advice is based on up-to-date scientific insights and objective information and data. VLIZ relies as much as possible on the expertise of coastal and marine scientists from marine research groups in Flanders/Belgium, and the international network. For the identification of relevant themes, the division actively monitors policy-relevant dossiers with regard to the Blue Economy and also acts on specific requests from policy.

1.3.2. VLIZ RESEARCH DEPARTMENT

The VLIZ research department initiates and performs innovative and multidisciplinary research, with the aim of understanding processes and interactions in changing marine and coastal environments. It maximally collaborates with and complements other Flemish, Belgian and international (marine) research groups to strengthen the marine sciences in Flanders. At the start of the new VLIZ research mandate (since 2017), a [VLIZ Research Framework](#) has been developed, setting out the research themes and operational outlines for research at VLIZ. Especially since the expansion of the research department in 2019, an important part of the research **strengthens the scientific base for innovation in the Flemish Blue Economy.**

It is an explicit objective of the department to perform basic research, situated upstream in the innovation chain, which supports economic valorisation through cross-fertilization and spill-over effects. Due to the developed expertise and knowledge base, the VLIZ-researchers can also stimulate and/or take part in innovation projects in collaboration with Blue Economy stakeholders. In first instance, connections were made between the VLIZ-research agenda and the innovation domains of the Blue Cluster (DBC). In particular links have been established with the transversal DBC-innovation priorities (i.e. Ecosystem Approach and Smart Sea) although other sectoral domains were also in scope (e.g. Coastal protection and use of mineral resources, sustainable seafood and marine biotechnology, blue tourism, ocean pollution and waste solutions). During the upcoming covenant period (2022-2026), specific emphasis will be placed on the climate-ocean-biodiversity-nexus, which evidently holds (additional) valorisation opportunities towards the Blue Economy-actors in Flanders and beyond. Targeted knowledge transfer efforts will be planned (for example by means of joint innovation projects) in order to fully realise this potential.