A Work Project, presented as part of the requirements for the Award of a Master's degree in Management from the Nova School of Business and Economics.

ACCELERATING THE BLUE BIOECONOMY: A STUDY ON BLUE BIO VALUE, BALANCING SCALABLE INNOVATION AND OCEAN RESTORATION

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13/01/2025

Abstract

This work explores Blue Bio Value's (BBV) key role in accelerating the blue bioeconomy, a critical sector for sustainable ocean solutions. It begins with a case study of BBV's creation and impact, followed by a teaching note on the creation of value and impact on the global blue bioeconomy. The final consulting report provides actionable recommendations to enhance BBV's scalability and visibility. By addressing challenges such as funding gaps and ecosystem limitations, this project highlights the broader potential of accelerators in fostering innovation, creating impact, and driving sustainable growth in the emerging blue bioeconomy.

Keywords: Sustainable Development, Innovation ecosystems, Business acceleration, Blue Bioeconomy, Partnerships for the SDGs, Value creation, Scalability, Sustainable Business Models, Blue Growth Strategies, Regenerative Business, Climate resilience in blue industries, Ecosystem services

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

1. General Context

Blue Economy and Bioeconomy Relevance in Sustainable Development

Oceans cover over 70% of Earth's surface and are vital for global trade, with 80% of trade occurring via ocean routes. They provide essential ecological, economic, and social benefits critical for the survival of all life, including humans.

The term "**blue economy**" was created to address the unsustainable use of oceans in coastal nations and promote sustainable development (Raimi et al. 2022). Driving economic growth, social inclusion, and improved livelihoods preserving environmental sustainability. It seeks to decouple socioeconomic development from environmental degradation through ocean-related industries (World Bank 2017). According to WWF, a sustainable blue economy benefits current and future generations, restores marine ecosystems, and relies on clean technologies, renewable energy, and circular systems for long-term stability (WWF 2015).

The **blue bioeconomy**, a subset of the blue economy, focuses on renewable marine resources like algae and microorganisms to create products and services. Sustainable economic growth in this field depends on ocean health, aligning closely with conservation goals (Ólives 2024).

Marine bioeconomy principles address human-induced impacts such as climate change, pollution, and overfishing. They promote decarbonizing industries, renewable ocean energy, and a circular economy while safeguarding biodiversity. The field also supports sustainable fisheries and food security through responsible practices, offering environmental and economic benefits (European Commission 2021). Its value chain spans bioprospecting, bio-based material harvesting, and bioproduct commercialization (Appendix 7; CIIMAR 2019).

Accordingly, this new paradigm of the blue bioeconomy can play an integral role toward several United Nations Sustainable Development Goals, particularly SDG 14: Life Below Water, which encourages conservation of ocean biodiversity, resources, and habitats. Furthermore, it can contribute to SDGs 2, 3, 8, 9, 12, and 13, fostering responsible consumption, innovation,

and climate action (Appendix 1; United Nations 2015).

Sectoral Overview and Economic Contributions of the EU Blue Economy

The EU blue economy encompasses a wide range of maritime and coastal sectors. These include seven established sectors – marine living resources, marine non-living resources, marine renewable energy, port activities, shipbuilding and repair, maritime transport, and coastal tourism – as well as emerging sectors like blue biotechnology and desalination (Appendix 2). In 2021, these sectors generated €171.1 billion in gross value added, a 35% increase from €126.6 billion (1.0% of GDP) in 2020. The industry's turnover reached €623.6 billion, with employment rising of 17% year-on-year (see Appendix 4).

The EU's energy transition and decarbonization targets are key drivers of the blue economy, attracting significant public and private investment. Marine renewable energy, especially offshore wind, has seen substantial growth, while emerging fields like blue biotechnology and marine living resources are expanding due to rising demand for sustainable technologies.

Germany, France, Spain, Italy, and the Netherlands contributed 70% of the GVA in the EU blue economy, while Spain, Germany, Greece, France, and Italy accounted for 67% of the sector's employment. Insular member states and those with archipelagos, such as Greece, Portugal, and Malta, tend to have a higher share of GVA and employment in the blue economy (see Appendix 4; European Commission 2024).

Key Stakeholders Shaping the Blue Economy Landscape

The blue economy involves a variety of stakeholders which were summarized in Appendix 6. Globally, blue economy initiatives concentrate in major hubs, primarily in Europe (France, Norway, Portugal, Spain, UK, Sweden), India, and North America. While Europe and North America focus on solution development, other regions contribute more significantly to research (Blue Bio Value n.d.; See Appendix 5).

Role of Accelerators in the Blue Economy

Accelerators play a pivotal role in fostering blue economy startups. The EU leads globally, accounting for 39% of blue economy startups and seeing significant increases in early-stage deals. Between 2020 and 2022, Europe experienced an 80% rise in Series A deals and a 47% increase in median deal sizes, reflecting investor confidence (Startup Genome 2023). These programs provide mentorship, funding, and scaling opportunities, enabling innovative solutions to address marine and societal challenges (CIIMAR 2019; Carson et al. 2024).

Growth, Opportunities, and Challenges in the Blue Biotechnology Industry

Blue biotechnology is a key growth area within the blue economy, leveraging marine organisms to develop clean, low-carbon technologies and address environmental challenges, while offering opportunities for economic growth, job creation, and public health improvements (Collins et al. 2020; Jiménez 2024). By applying scientific methods to marine resources such as algae, bacteria, and fungi, blue biotechnology provides solutions for sectors such as pharmaceuticals, food, cosmetics (Blue Bio Value n.d.). Research focuses on the genetic, biochemical, and molecular levels of marine life, and the field spans industries including health, aquaculture, biomaterials, and environmental restoration (OECD 2013).

The major share of the global blue biotech market in 2017 was held by Europe, with over 560 companies and 300 research groups involved (European Commission 2019). The global market for blue biotechnology was valued at USD 6.32 billion in 2023, projected to grow at a 7.2% CAGR, reaching USD 13.59 billion by 2034 (Appendix 8). In 2023, North America dominated with a 44% revenue share, driven by advancements in biotechnology and demand for cosmetics and biofuels, while Europe contributed a 26% share due to robust R&D and demand for natural products (Appendix 9; Precedence Research 2024).

This growth is fueled by Europe’s rich marine biodiversity, rising demand for sustainable resources in industries like cosmetics and food, and advancements in bioprocessing and

genomics that enhance resource utilization (EU Blue Economy Observatory n.d.; Jiménez 2024). Blue biotech also supports conservation by promoting sustainable marine resource use and providing solutions for renewable energy and industrial enzymes (Jiménez 2024).

However, the industry faces challenges such as regulatory inconsistencies, high capital requirements inaccessible to many startups, and scalability hurdles as several technologies remain in early development stages (Precedence Research 2024; EU Blue Economy Observatory n.d.). Careful management is needed to prevent over-exploitation of marine resources. Addressing these issues requires collaboration among stakeholders to establish a supportive ecosystem for sustainable industry growth (Jiménez 2024).

2. The Context of Portugal

Market Overview, Funding Opportunities and Growth

The blue bioeconomy in Portugal is a rapidly growing sector, closely tied to the country's overall economic growth (CIIMAR 2019). Broader estimates on blue economy (note that data doesn't refer to blue bioeconomy specifically) place it as a significant contributor to Portuguese GDP, corresponding to 5.1% in 2018 (see Appendix 10 for evolution) and with 4.1% of employment (see Appendix 11, 12 for sector breakdown and evolution; DGPM 2023).

The industry is supported by several initiatives, including the Growth Blue Fund, which aims to invest €50 million in areas like seafood, biotech, and sustainable marine solutions (DGMAF 2023). Another key project is the Blue Bioeconomy Pact, funded by the Recovery and Resilience Plan with €93.84 million (AMA 2024). This funding will support seven sectors and three transversal initiatives (Appendix 13) to accelerate product development. It includes the establishment of the Portuguese blue biobanks network, a digital platform to valorize marine co-products and boost growth and internationalization of SMEs, which dominate the industry. The investment also aims to position Portugal as a global leader in a sector projected to reach

€200 billion by 2030 (NOVA School of Science and Technology n.d.).

Within the broader blue economy of Portugal, a new wave of subsectors has registered noticeable growth in operations and projects. Since 2015, a total of 11 million euros have been allocated to Portuguese partners in competitive European H2020 calls focusing on the blue bioeconomy, marine biotechnology and marine bioresources (CIIMAR 2019).

Overall, Portugal provides outstanding opportunities for innovation in the blue bioeconomy due to its unique marine biodiversity, long coastline, and maritime tradition. Its capacity to innovate and market marine-based solutions is further enhanced by its network of more than 30 research and development facilities that focus on marine biology and biotechnology (Gulbenkian Foundation n.d.). Strategic investments, such as the Blue Bioeconomy Pact, highlight its commitment to advancing sustainable marine practices and capturing a significant share of the global market (Blue Bio Alliance n.d.; The Portugal News 2023).

Key Stakeholders in Blue Bioeconomy

Key players in the bioeconomy consist of a wide range of entities along the value chain. Primary stakeholders include producers, wholesalers, and researchers directly involved in economic activities. Secondary stakeholders include governmental bodies, associations, and support entities. Most stakeholders in Portugal focus on producing and harvesting bioresources or providing support services, with fewer entities involved in commercialization and market entry. Small and medium-sized enterprises (SMEs) comprise a large proportion of stakeholders in the bioeconomy, suggesting the private sector is a key driver (Appendix 14). Other important stakeholders include academic research entities, associations, incubators, NGOs, and startups. Moreover, entities like public authorities and clusters play a crucial role in implementing supportive actions and informing stakeholders (CIIMAR 2019).

Gaps and Needs of Blue Bioeconomy

Despite the enormous potential of the blue bioeconomy and abundant marine resources,

Portugal and its key players have been facing some important obstacles (Maria Feio, Teams meeting interview, September 24, 2024)

- **Insufficient funding**: a major obstacle for research and commercialization of blue biotech products. Partly due to complex mechanisms to obtain funding, harder and costly access and operation of ocean resources, while the sector can't depend solely on public funding schemes, diversifying capital sources is needed. Moreover, here are disparities across regions and issues with cost-effectiveness of operations.
- **Inadequate infrastructure**: specialized infrastructure, such as equipment for deep-sea exploration, is severely limited, hindering innovation and commercialization of marine biotechnology solutions. Additional obstacles include technical constraints, such as geographical mapping for bioprospecting and deep-sea resource extraction.
- **Human capital and skill gaps**: the disconnection between academic training and industry needs results in a shortage of professionals.
- **Regulatory and legal hurdles**: often fragmented licensing and regulation frameworks, combined with complex intellectual property can slow down innovation.
- **Market barriers and commercialization**: lack of market expertise and commercialization plans deters numerous startups to bring their discoveries to market. Furthermore, blue bio-based solutions implementation is hindered by public skepticism towards new technologies, such as wastewater reuse.
- **Imbalance between land and marine biotechnology**: marine biotechnology is still underdeveloped. The high costs of ocean sampling, difficulty of replicating marine ecosystems in laboratories, and lack of tailored resources for marine startups have created a clear imbalance in the development of marine versus land-based biotech solutions.
- **Lack of collaboration and knowledge transfer:** there is insufficient collaboration between key stakeholders, including research institutions, government agencies, and private

enterprises. This prevents the efficient transfer of knowledge and resources that could drive innovation and industry growth. Moreover, the lack of efficient regulatory incentives for cooperation amplifies the roadblocks of balancing innovation and environmental protection without overexploitation and negative impacts.

These difficulties show that to fully realize the potential of this developing sector, focused interventions and support systems were required (Carson et al. 2024; CIIMAR 2019).

3. Available Options

As the blue bioeconomy landscape came into focus and the need for sustainable ocean-based solutions arose, the demand for initiatives that would spur innovation and drive growth in the sector appeared. Significant obstacles for startups and innovators were remaining, namely in accessing capital, scaling solutions, and connecting with industry partners. Recognizing these, Oceano Azul Foundation was considering the strategic decision to launch Blue Bio Value (BBV), an acceleration program in the blue bioeconomy designed to bridge these gaps. The program aimed not only to accelerate growth for startups but also to create a robust ecosystem. As a result, before launching Blue Bio Value, its founders were faced with multiple options that could shape the direction of the program. These involved considerations about geographical location, funding sources, partnerships with promoters, and program formats.

Geographical Considerations

With 97% of its territory covered by ocean, Portugal offered a natural advantage for a marine-focused program like BBV. It boasted the largest maritime area in the EU, aiming for the extension of the continental shelf (EMEPC 2024), rich marine biodiversity, and strong political and economic support for blue economy initiatives. These factors position Portugal as an ideal hub for marine bioprospecting and sustainable development. However, Portugal's blue biotech sector was still relatively underdeveloped compared to larger economies like the US or UK

(Precedence Research 2024). Other countries showing strong potential include Norway, Iceland, France, and other coastal nations within and outside Europe. While choosing another country could provide access to a more mature market, Portugal's unique marine resources and emerging blue economy offered BBV a distinctive niche that other locations couldn't match. Additionally, some of these countries already have more well-established industry players, or don't have the advantage of blue economy strategies at national level.

Selecting Partnerships to Bring the Program to Life

To create BBV, not only would expertise on the blue biotechnology be necessary, but also business expertise to help bring the innovations into the market. If this capability wasn't developed internally, BBV would need partners to support the program, for which we provide some examples in Appendix 15, including accelerators and startup-hubs, VC firms and other organizations that could provide marine science expertise and connections.

Choosing Promoters and Funding Options

When Oceano Azul Foundation decided to run a blue bioeconomy accelerator, some options regarding additional promoters (table-summary in Appendix 16) could involve collaborating with **private institutions**; while private funding is more flexible, faster and has a quicker decision-making process, there could be a risk of mission drift towards profitability. Partnering with **other foundations** to fund the program with a model of work through philanthropy similarly to Oceano Azul Foundation, focused on ocean conservation and education could be an option. Calouste Gulbenkian Foundation focused on philanthropy, sustainability and social responsibility with great experience as a leading foundation in Portugal and large exposure in the country and abroad.

Another option was Forum Oceano, a private non-profit entity responsible for the ocean economy cluster, which aimed to reinforce collaboration between actors and promote competitiveness. Fundação EDP and Fundação Luso-Americana para o Desenvolvimento

(FLAD) were also considered, but both were less focused on marine biotechnology and BBV's objectives. An alternative type of promoter could be international environmental **NGOs** like WWF and Greenpeace. Although very influential and globally recognized, with exposure and credibility, they might not have a focus on entrepreneurship and economic development. **Large corporate multinational foundations**, focused on sustainability, despite providing expertise, financial stability and access to global markets, could prioritize market returns pushing more towards short term economic gains. On another pathway, **European Union's or other agencies**, such as the European Investment Bank, Portuguese Ministry of Sea and the European Commission would provide access to grants, policy support and alignment. The European Investment Bank was already involved in marine conservation, and the EU's Horizon 2020 programs prioritize funding for blue biotechnology and sustainability projects, which shows interest in the field but have a long waiting list, bureaucratic hurdles, slower decision-making, and a more rigid framework. **Academic or research institutions**, provided R&D expertise, focus on the sector and access to scientific validation and new talent, yet perhaps could be overly aimed at research and publications rather than business scalability. As for **public/government** aid, it could tend to be slower and harder to access, but also able to provide long term sources of capital, for instance the examples of the Growth Blue Fund and the Blue Bioeconomy Pact (Cayuse 2023).

Alternatively, **hybrid models** (combining debt and equity financing) offered a balanced approach of the program's needs, providing flexible funding while diversifying sources. This entails the benefits of having less debt burden and retaining more ownership, also being less dilutive, allowing founders to retain a greater stake. Nonetheless it might bring difficulties in managing stakeholders with differing priorities (Faster Capital 2024; Cayuse 2023).

Choice for Structuring Blue Bio Value's Program

For structuring BBV several options were weighed. Among the most viable ones was an

accelerator program, which could offer a strong combination of funding, mentorship, networking, and other targeted support, enabling startups to scale effectively and sustainably. The impact involves faster growth, improved access to resources, and increased chances of securing further investment. This model addresses the shortcomings of traditional direct funding by providing structured support and guidance, beyond concept stages.

Alternatively, setting up a dedicated **venture fund or public-private investment fund** would provide startups with access to capital in exchange for equity or convertible debt, often suitable for mature startups and combinable with mentorship and other types of assistance (Paliychuk, 2024). There would be significant growth potential, access to industry expertise through the fund's partners, and potential for strategic partnerships. After the 2000s internet crash, venture capitalists became cautious, leaving angel investors to take on financial risks. However, their smaller investments often left startups struggling to secure sufficient funding to launch. This gap paved the way for incubators and accelerators to emerge as a new investment model. While traditional direct funding could offer financial security, it often lacked the structured support that an accelerator provided, leaving startups to navigate scaling challenges on their own (Radojevich-Kelley and Hoffman 2012). Therefore, it could enable initial R&D, proof-of-concept development, and reduced financial burden.

Additional options can be clustered around 2 profiles. The **early-stage development profile**, structuring an incubator program to give access to funds, networking and mentorship, would help overcome early growth obstacles and get companies ready for future fundraising rounds (Paliychuk 2024), along with creating training programs for young scientists enrolled in blue bio-based courses, focusing on entrepreneurship and management. An alternative could be simplifying Portuguese funding schemes by implementing clear, staged processes for project submission, easing access to financial support (Intechno Software Private Limited 2024). In terms of the second, the **growth and innovation profile** fostering R&D partnerships with

academic institutions to access facilities and research would be valuable throughout startup's lifecycle and corporate venture programs in growth stages.

4. The Launch of Blue Bio Value

Program Launch and Location Choice

BBV would be launched in 2018 to address key gaps in Portugal's blue bioeconomy. After considering multiple options for structuring the program, the founders chose both an acceleration and ideation program. The acceleration model was selected because it offered comprehensive support, including mentorship and access to capital, while the ideation program helped bridge the gap between research and commercialization. This dual structure allowed BBV to support startups from early-stage development to scaling. Portugal was chosen as the base for BBV, not only because founders were Portuguese but also due to the country's vast marine resources with 72 official MPAs (MARE 2023), and its growing policy backing for blue economy initiatives including the National Strategy for the Sea 2021-2030. These advantages positioned Portugal as a natural hub for marine innovation (Appendix 17).

How Blue Bio Value Would Address the Sector's Needs

- **Filling funding and infrastructure gaps**: the possibility of providing startups with access to diversified capital through private and public partnerships, helped to overcome the sector's reliance on complex public funding schemes. Additionally, BBV provided critical access to specialized infrastructure such as labs, pilot-scale technologies, and deep-sea exploration tools, crucial for scaling innovations that would otherwise be too expensive.
- **Building human capital and bridging the academia-industry gap:** BBV's Ideation Program was designed to help researchers turn their ideas into viable and marketable solutions. To ensure that the sector's talent pool is prepared to meet commercial expectations, the program offered training, mentorship, and assistance that link academic

research with industry needs. Facilitating collaboration and knowledge transfer to promote innovation, commercialization and overcome the sector's fragmentation would be encouraged by BBV establishing a strong network of players.

- **Restoring the equilibrium between land and marine biotechnology**: BBV focused on marine biotechnology, which has always lagged land-based biotechnology. The acceleration program was designed specifically to offer specialized tools to address the issues faced by marine biotech firms, such as the high cost of ocean sampling and the difficulty of simulating marine settings. This emphasis helped startups leverage the potential of marine bioresources and rebalance the industry.
- **Supporting ocean conservation and sustainable development**: by supporting businesses that promote ocean protection and the wise use of marine resources, BBV's mission was in line with SDGs. While tackling major environmental issues including biodiversity loss and climate change, BBV sleeked to advance sustainable growth.
- **Market opportunity**: BBV was launched in response to a large market opportunity. Portugal was well-positioned thanks to abundant marine biodiversity and growing government support. So, BBV was established to take advantage of these developments, encouraging creativity and drawing finance to guarantee international competitiveness.

5. Final Question

The blue bioeconomy in Portugal had enormous potential and sub-sectors like marine biotechnology were experiencing notable expansion, positioning Portugal as a promising player at the time, in 2018. However, startups in this emerging field faced considerable obstacles such as limited funding, insufficient infrastructure, skills gaps, and high operational costs. Additionally, the complexity of legal frameworks and access to marine resources further complicated the development and scaling of innovations. Addressing them became crucial for

unlocking full potential, which is precisely what BBV aimed to contribute to.

With the foundation and vision of BBV firmly established through its acceleration and ideation programs, the next key step would involve making critical strategic decisions regarding how to position itself in the blue bioeconomy market and who to partner with, to sustain the programs. To thrive in the long-run BBV must focus on building strong partnerships to bring the program into practice, staying aligned with market trends, exploring advanced subsectors, actively shaping blue economy policies and optimizing processes –cornerstones for long-term success. Equally important for BBV in this critical phase of starting the program was to maximize its value creation and deliver impact, all while addressing the needs of its participants. These decisions would be pivotal for shaping BBV's ability to create and sustain a competitive advantage in this rapidly evolving sector. Summarizing, as BBV embarked on this decision-making, the following questions arose to determine its trajectory:

- *How can Blue Bio Value strategically position itself to gain and sustain a competitive advantage in the emerging blue bioeconomy market in Portugal?*
- *How can Blue Bio Value's partnerships and program maximize value creation and impact in the global blue bioeconomy, meeting the needs of the program's participants?*

Appendixes

Appendix 1

The Sustainable Development Goals (SDGs)

Source: https://sdgs.un.org/goals

Appendix 2

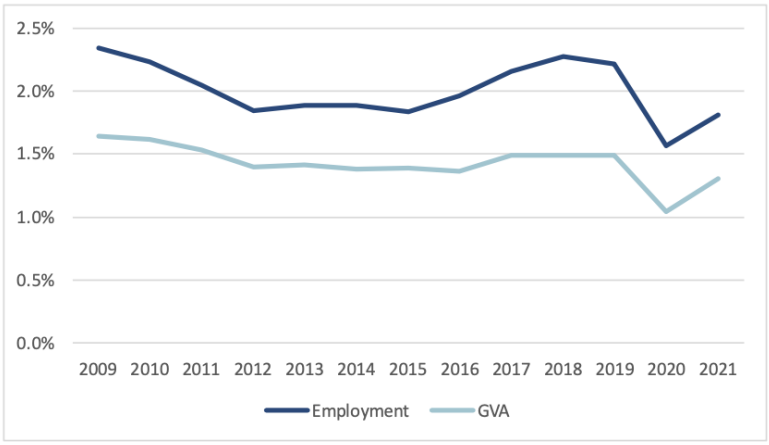
The Established Blue Economy Sectors and their Subsectors

Sector	Sub-sector
Marine living resources	Primary production
	Processing of fish products
	Distribution of fish products
Marine non-living resources	Oil and gas
	Other minerals
	Support activities
Marine renewable energy	Offshore wind energy
Port activities	Cargo and warehousing
	Port and water projects
Shipbuilding and repair	Shipbuilding
	Equipment and machinery
Maritime transport	Passenger transport
	Freight transport
	Services for transport
Coastal tourism	Accommodation
	Transport
	Other expenditure

Source: https://medblueconomyplatform.org/wp-content/uploads/2024/05/the-eu-blue-economy-report-2024.pdf

Appendix 3

Contribution to the Blue Economy to the Overall EU Economy in terms of GVA and Employment

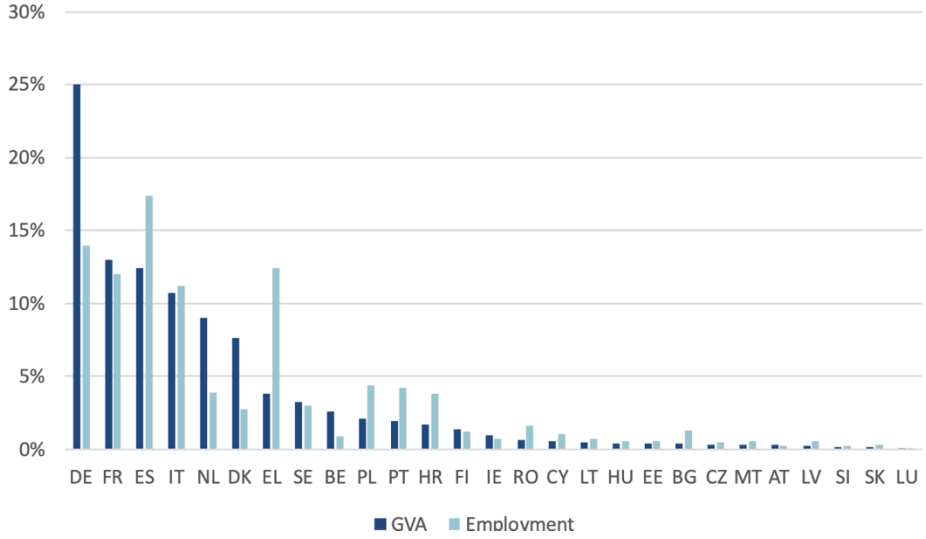


The most recent data from Eurostat for 2021 illustrates the effects of the COVID-19 epidemic in 2020 as well as the EU Blue Economy's 2021 recovery. Coastal tourism in particular continued to be the industry most affected.

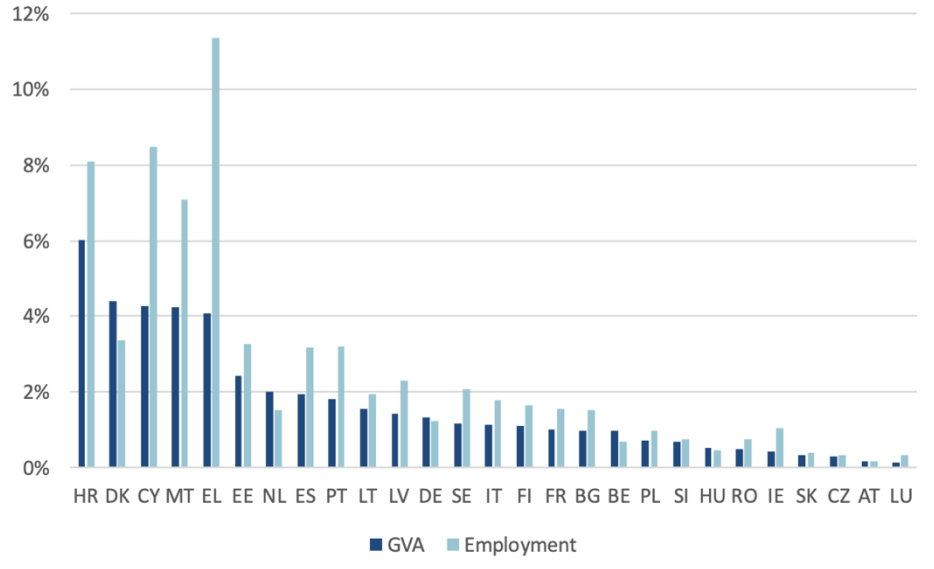
Source: https://medblueconomyplatform.org/wp-content/uploads/2024/05/the-eu-blue-economy-report-2024.pdf

Appendix 4

National Contribution to the EU Blue Economy, Percentage (EU27 = 100%) in terms of Employment and GVA, 2021



Relative Size of the Blue Economy, as Share (percentage) of Blue Jobs and GVA in the National Economy, 2021

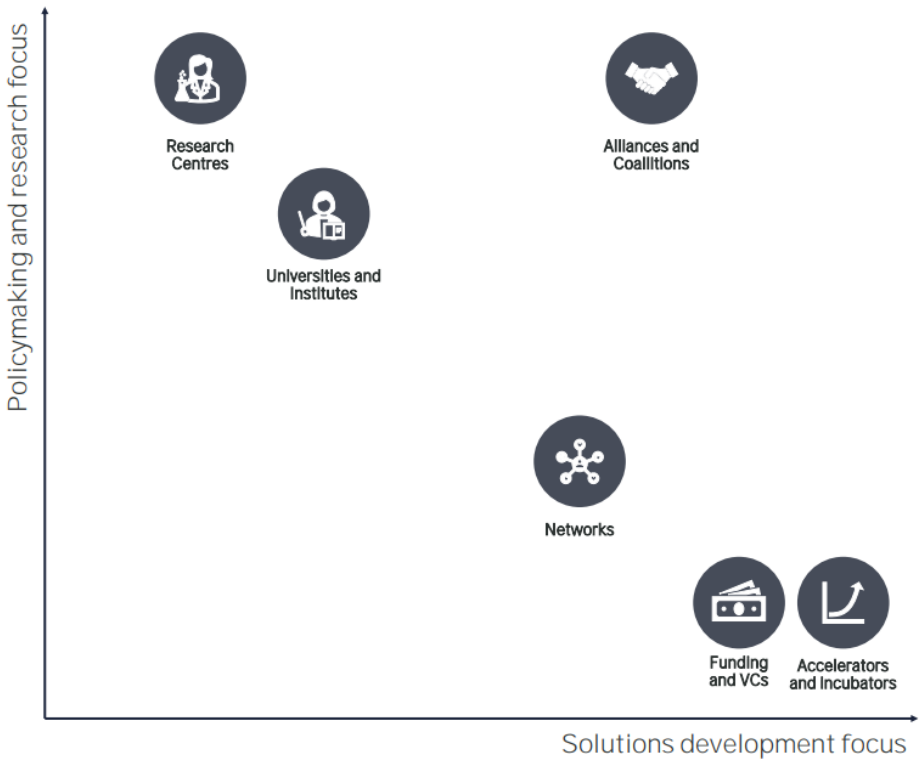


Source: https://medblueconomyplatform.org/wp-content/uploads/2024/05/the-eu-blue-economy-report-2024.pdf

Appendix 5

The Worldwide Ecosystem of Blue Economy: Stakeholder's Distribution

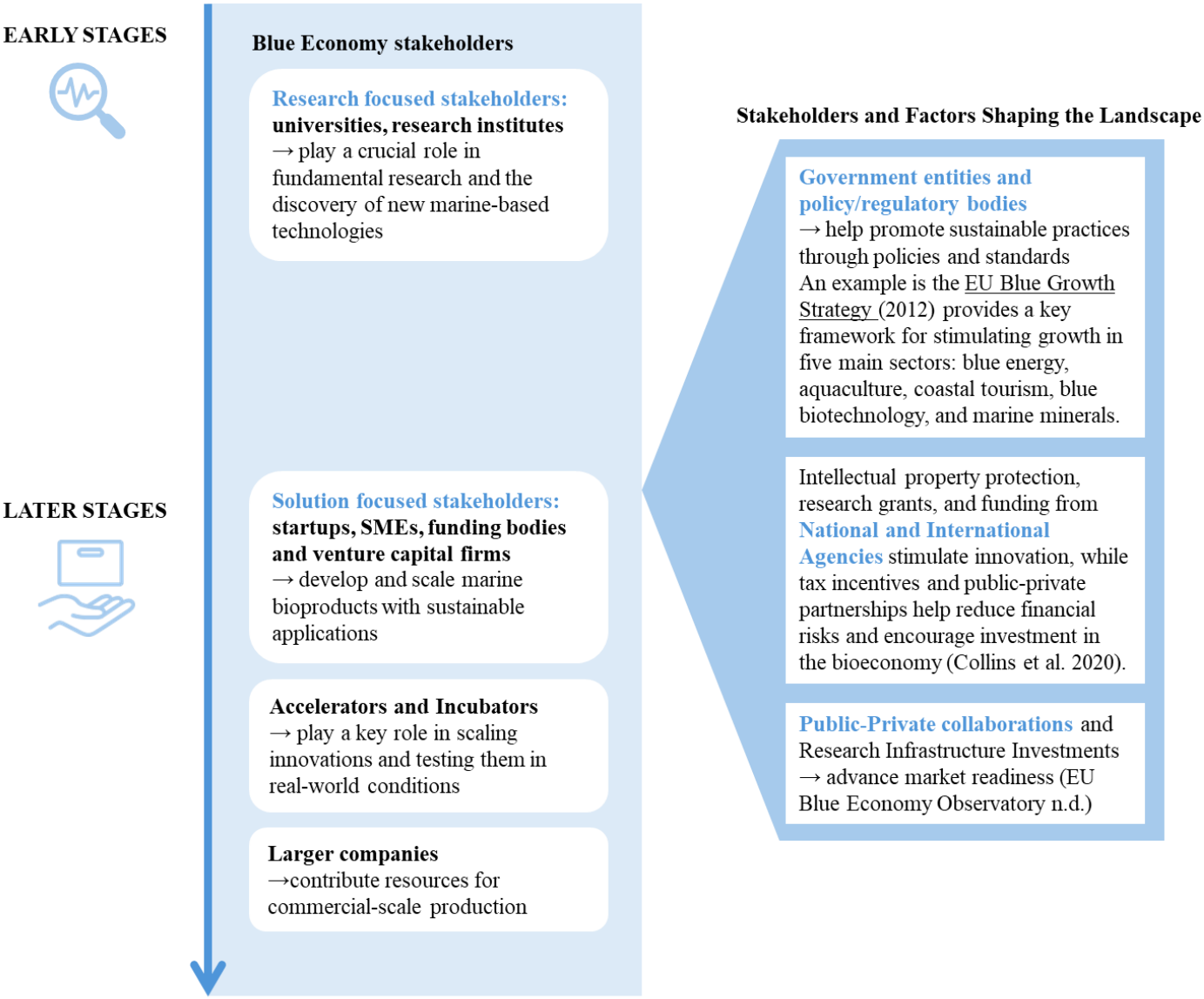
The Worldwide Ecosystem of Blue Economy: Mapping of Stakeholders in Clusters



Source: Blue Bio Value Internal Data

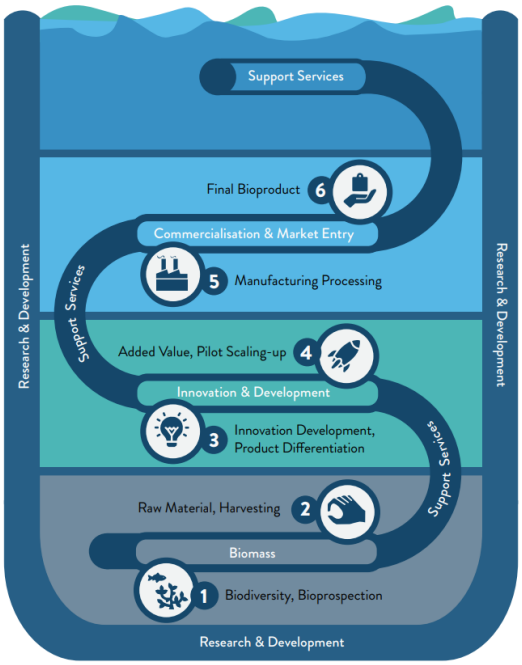
Appendix 6

Key Stakeholders Shaping the Blue Economy Landscape



Appendix 7

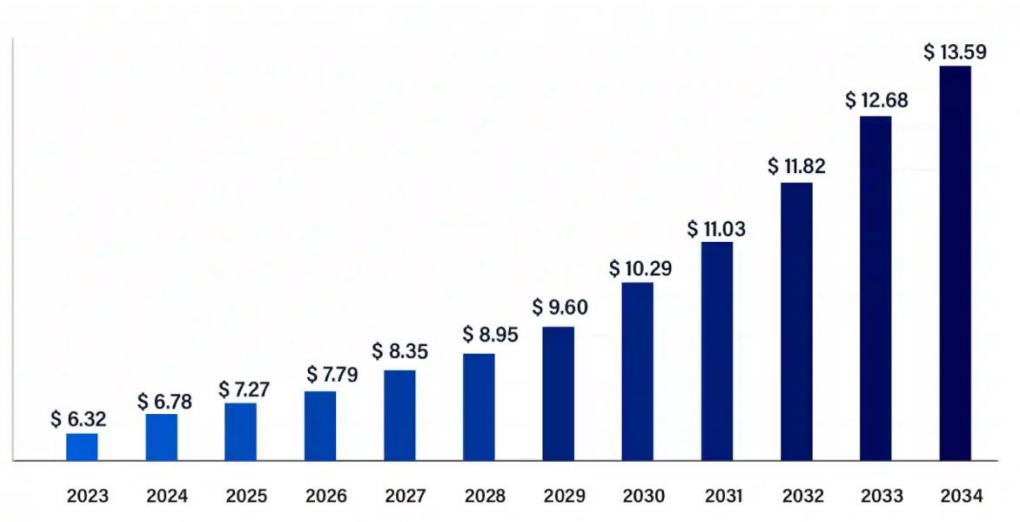
Blue Bioeconomy Value Chain



Source: https://www2.ciimar.up.pt/pdfs/resources/roadmap_digital_hGBit_.pdf

Appendix 8

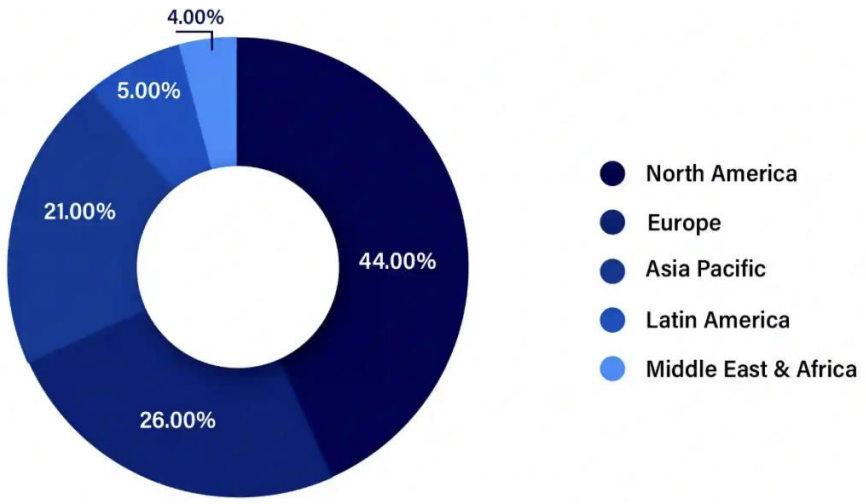
Global Marine Biotechnology Market Size 2023 to 2034 (USD Billion)



Source: https://www.precedenceresearch.com/marine-biotechnology-market

Appendix 9

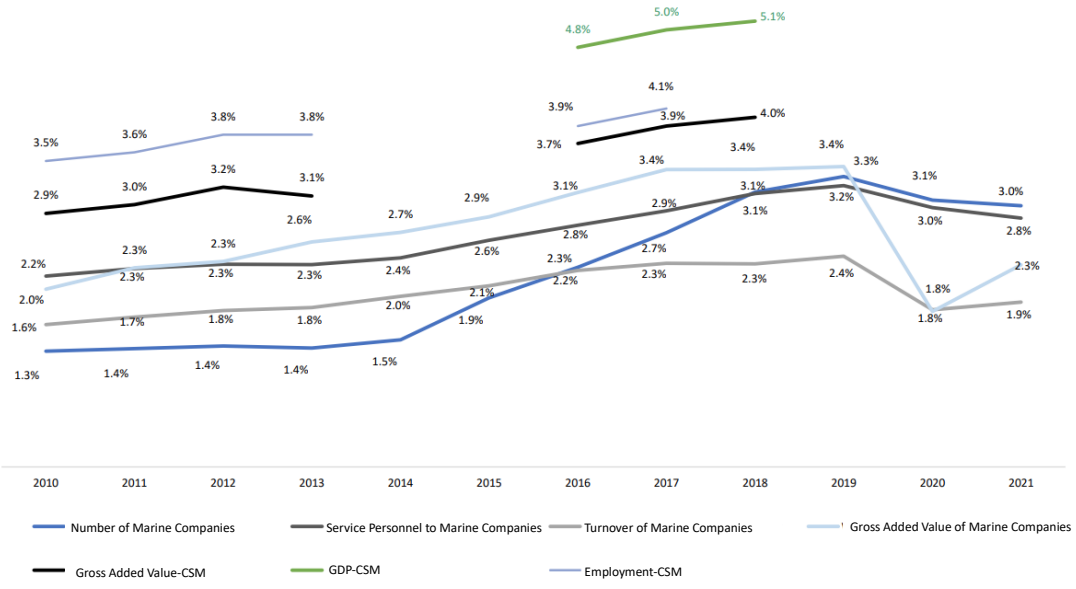
Marine Biotechnology Market Share, By Region, 2023 (%)



Source: https://www.precedenceresearch.com/marine-biotechnology-market

Appendix 10

Evolution of Blue Economy's Weight as a Percentage of Portuguese GDP between 2010-2021

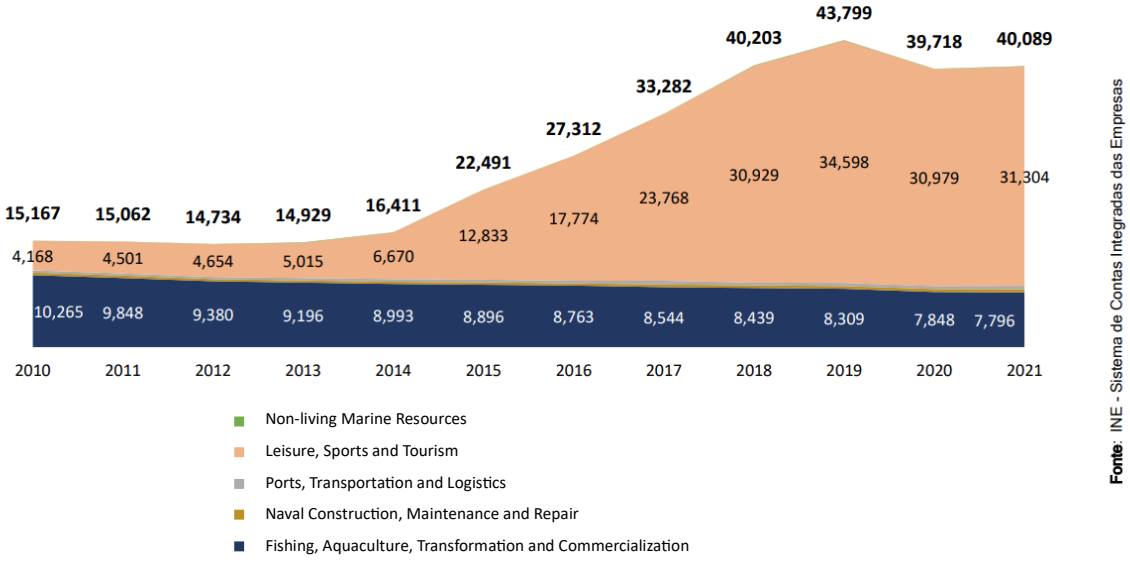


Source: https://www.dgpm.mm.gov.pt/_files/ugd/eb00d2_2e244ab3493842849da025a30405c3e3.pdf

Appendix 11

Number of Companies in Marine Economy

Companies directly related to the major sectors of the Blue Economy (number)

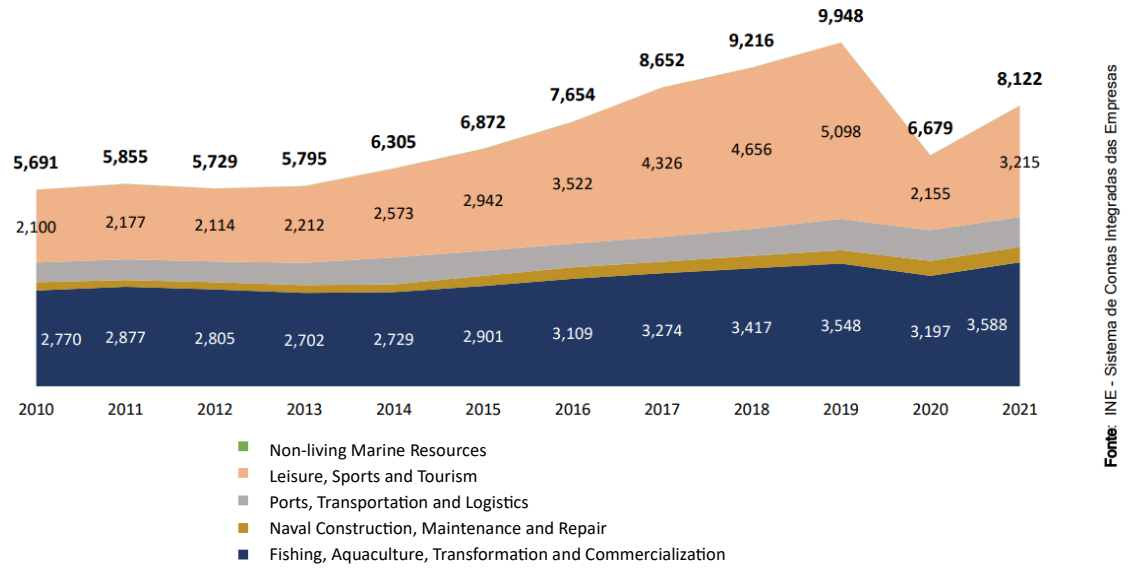


Source: https://www.dgpm.mm.gov.pt/_files/ugd/eb00d2_2e244ab3493842849da025a30405c3e3.pdf

Appendix 12

Turnover of Marine Related Companies

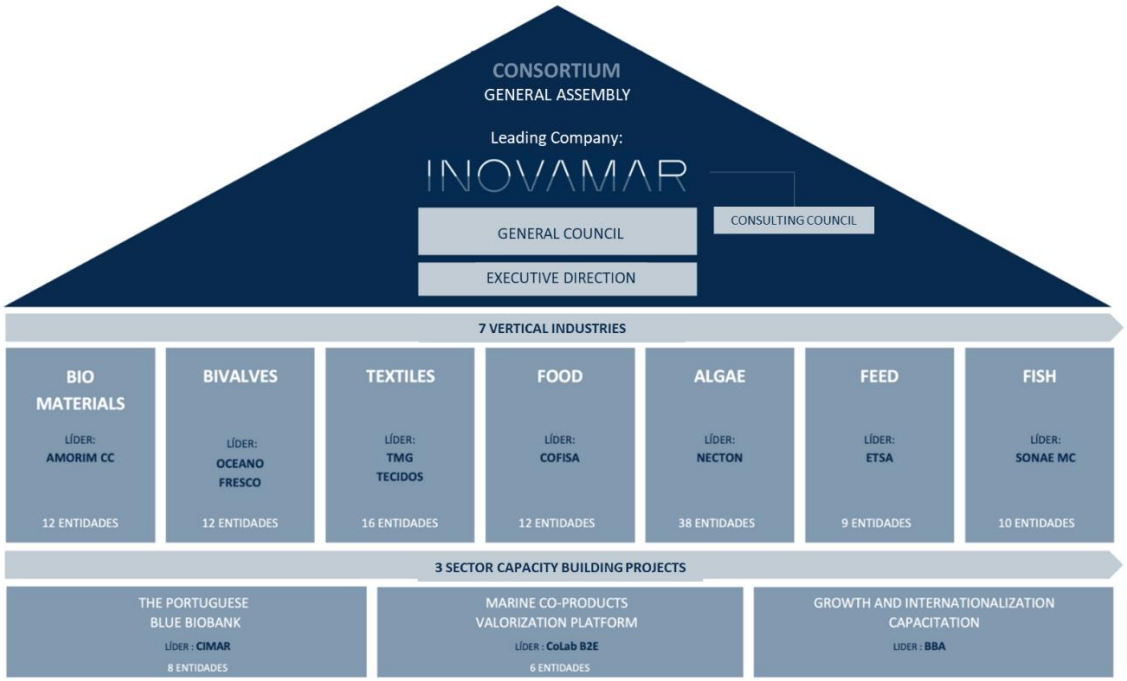
Turnover of companies directly related to the major sectors of the blue economy (M€)



Source: https://www.dgpm.mm.gov.pt/_files/ugd/eb00d2_2e244ab3493842849da025a30405c3e3.pdf

Appendix 13

Blue Bioeconomy Pact: Consortium Structure



Source: https://inovamar.pt/pt/o-pacto-da-bioeconomia-azul

Appendix 14

Distribution of Entities Involved in the Portuguese Blue Bioeconomy

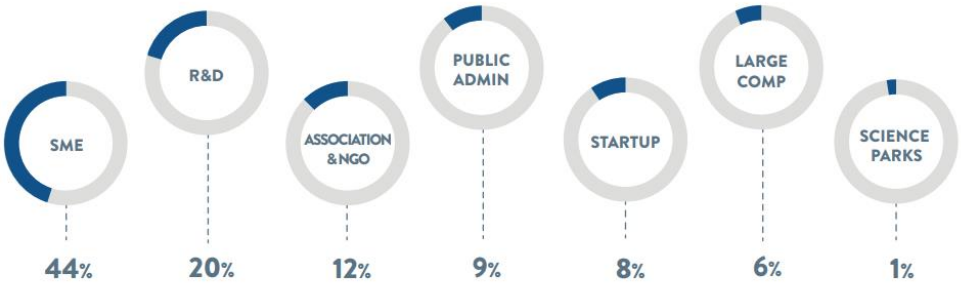


Fig. 2 Distribution of the entities involved in the Portuguese Blue Bioeconomy according to type of organisation.

Source: https://www2.ciimar.up.pt/pdfs/resources/roadmap_digital_hGBit_.pdf

Appendix 15

Possible Partners for Blue Bio Value: Some Examples

Accelerators and startup-hubs	**Fábrica de Startups**	As a business accelerator, it could offer operational and entrepreneurial support that aligned with BBV's goal of fostering innovation and entrepreneurship.
	Unicorn Factory Lisboa (Startup Lisboa)	A flagship initiative from Lisbon to position the city as a leading innovation center in Europe would provide an established ecosystem, technical support, as well as access to international markets and investors
	Beta-I	A well-known accelerator focused on facilitating corporate innovation and building collaborative ecosystems, could enhance cross-collaboration.
	Casa do Impacto	Dedicated to fostering startups with social and environmental missions, as well as providing access to a series of impact investors, collaborative workshops and educational programs
Venture capital firms	**Faber Ventures**	Early-stage VC firm, could provide resources and expertise to startups; the firm strongly believed in mission-driven entrepreneurs developing innovative climate and ocean technology solutions.
	Portugal Ventures	A government-backed venture capital firm, able to provide business expertise and knowledge but as a public venture it might face slower decision-making compared to private VCs like Faber Ventures.
Organizations that could provide marine science expertise and connections	**Blue Bio Alliance**	The association of marine bioresources in Portugal, a non-profit network, could bring all the knowledge needed to advise startups working in the sector. As a big network of companies working in blue bioeconomy, it could also facilitate the connection of startups and potential commercial partners.
	Instituto Português do Mar e da Atmosfera (IPMA)	A public Portuguese institution would have a role for mentorship in marine science and resources, and possibility of access to valuable scientific insights and data for innovation in the blue biotechnology sector.
Others	**EDP Foundation**	Private, non-profit organization dedicated to advancing initiatives, often with a focus on sustainability and community impact, also offered a startup accelerator program (EDP Starter Program) to provide mentorship and expertise, although focused primarily on renewable energy innovation.

Source: individual companies' websites

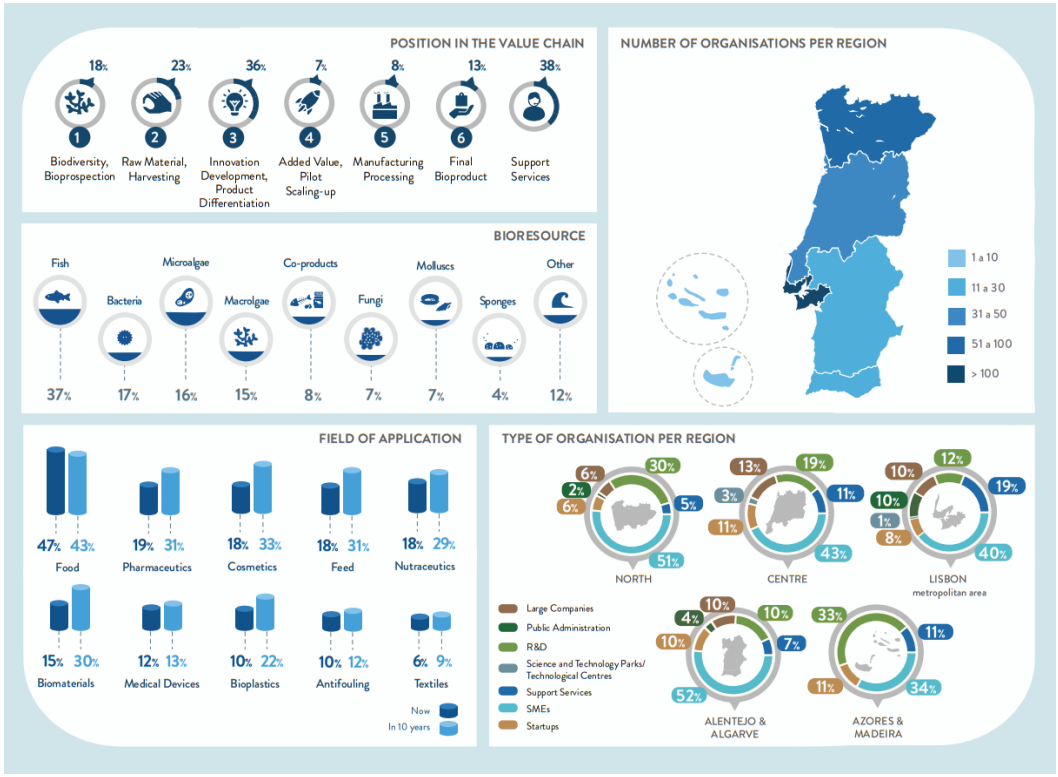
Appendix 16

Table Summarizing the Benefits and Limitations of Each Funding Source Described

Funding Source	Benefits	Limitations
Foundations	- Aligned philanthropic mission - Experience in sustainability and social responsibility (e.g., Calouste Gulbenkian Foundation) - Broad credibility and exposure	- Limited focus on marine biotechnology for some foundations (e.g., Fundação EDP, FLAD) - May lack emphasis on entrepreneurship and economic scalability
Private Funding	- Flexible and faster decision-making - Access to private capital resources	- Risk of mission drift towards profitability - Potential conflicts with program's long-term conservation goals
International NGOs	- Global recognition and credibility (e.g., WWF, Greenpeace) - Strong influence and advocacy	- Limited financial resources for smaller NGOs - Lack of focus on economic development and entrepreneurship
Corporate Multinational Foundations	- Financial stability - Access to global markets - Expertise in sustainability	- Potential prioritization of profitability and short-term economic gains rather than impact
European Union/ Governmental Agencies	- Grants and policy support - Alignment with public initiatives (e.g., Horizon 2020, European Investment Bank) - Long-term funding	- Possible Bureaucratic hurdles - Slower decision-making processes
Academic & Research Institutions	- R&D expertise - Access to talent and scientific validation	- Focus may lean heavily toward research and publications - Limited emphasis on business scalability and commercialization
Public/ Governmental Aid	- Long-term funding support - Potential access to large-scale programs (e.g., Growth Blue Fund, Blue Bioeconomy Pact)	- Slower processes and difficult accessibility
Hybrid Models (Debt & Equity)	- Balanced funding approach - Less dilutive with ownership retention - Flexible funding	- Complex stakeholder management - Higher interest rates can offset reduced dilution benefits

Appendix 17

Mapping of the Blue Bioeconomy in Portugal



Source: https://www2.ciimar.up.pt/pdfs/resources/roadmap_digital_hGBit_.pdf

Appendix 18

List of Abbreviations for Full Work Project

AMA: Agência para a Modernização Administrativa
BBV: Blue Bio Value
BPF: Banco Português de Fomento
CIIMAR: Centro Interdisciplinar de Investigação Marinha e Ambiental
DGMAF: Directorate-General for Maritime Affairs and Fisheries (European Commission)
DGPM: Direção-Geral de Política do Mar
EIB: European Investment Bank
EMEPC: Estrutura de Missão para a Extensão da Plataforma Continental
EU: European Union
GCNP: Global Compact Network Portugal (UN GC)
GDP: Gross Domestic Product
GVA: Gross Value Added
IPMA: Instituto Português do Mar e da Atmosfera
KPI: Key Performance Indicators
MARE: Centro de Ciências do Mar e do Ambiente
MPA's: Marine protected Areas
NGO: Non-governmental organizations
OECD: The Organization for Economic Cooperation and Development
R&D: Research and Development
SDG: Sustainable Development Goals
SME's: Small and Medium Enterprises
UN: United Nations
UN DESA: United Nations Department of Economic and Social Affairs
UN GC: United Nations Global Compact
VC: Venture Capital
WWF: World Wildlife Fund

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PROJECT EVALUATION REPORT

1. Introduction: Overview of Blue Bio Value and Objectives of the Evaluation Report

Blue Bio Value (BBV) has been a pioneering force in the sustainable blue bioeconomy since its launch in 2018. Leveraging Portugal's vast marine resources – 97% of its territory is ocean and home to Europe's largest marine biodiversity – BBV supports ocean-based startups addressing global challenges such as plastic pollution, sustainable food systems, and ecosystem preservation. Its mission is delivered through two complementary programs. Designed for high-potential startups, this 9-week accelerator program has accelerated 96 startups from 31 countries, backed by over 130 mentors to equip startups with essential business skills. Startups also engaged with industry leaders and competed for a €45,000 prize to access specialized facilities in the Blue Demo Network[1], alongside a one-year membership in the Blue Bio Alliance[2]. The ideation program complements and bridges the gap between academic and market-ready innovation in the blue bioeconomy, through a 6-week program, aiding 58 early-stage R&D projects with collaboration and a €10,000 prize[3]. Currently, BBV is led by Oceano Azul Foundation, with Blue Bio Alliance as a scientific partner, and MAZE Impact, a European impact investment firm, helping with implementation of the program (Blue Bio Value n.d.).

This evaluation report explores the research question: *"How can Blue Bio Value's Acceleration Program enhance the scalability and diversity of startups in the blue bioeconomy sector while providing sufficient support and fostering innovation and positive impact in sustainable marine bioresources?*". Building on the Case Study that identified opportunities and gaps at BBV's launch in 2018, this Report now assesses the current challenges facing BBV's acceleration program and provides strategic recommendations to enhance its scalability and diversity.

[1] A Portuguese Network that connects all players in the marine bioresources value chain, and provides participants with access to specialized marine research facilities, testing labs, and industry partners.
[2] A Portuguese association and network of marine bioresources and blue biotechnology.
[3] To be spent on the Blue Demo Network.

2. Context and Problem Statement: Current Landscape and Specific Challenges Faced

Since its launch, BBV has achieved significant growth, expanding its international reach and maintaining a 100% recommendation rate. However, challenges persist within its acceleration program, particularly in scalability and diversity. While many market gaps identified in the case study have been addressed, some remain, hindering the program's full growth potential.

Scalability challenges limit the program's ability to expand its reach and impact effectively. Limited **Funding and Investment,** despite the sector's growing relevance, make it difficult for BBV to provide sufficient support to its startups and expand the program. As the program scales, operational demands increase, requiring more resources and infrastructure, contributing to **Resource and Operational Limitations**. While BBV has a strong mentor network, ensuring a diverse range of specialized mentors who can provide adequate **Mentorship and Skills** remains a challenge. Lastly, expanding BBV's recognition on an international scale is essential to attract a broader pool of startups, yet **Global Reach and Visibility** remains an area for growth.

Diversity challenges relate to BBV's ability to foster a more inclusive and varied landscape of participants within its programs. The **Diversity of Startups' Focus Areas** is critical for addressing diverse environmental and market needs. However, attracting startups from emerging fields remains challenging. Furthermore, BBV's reliance on direct contact for outreach means many applicants learn about the program late in the process, underscoring the need for more **Targeted Outreach and Application Timing**.

Matrix Mapping of Challenges

To map all 6 challenges that BBV is facing and help finding a prioritization strategy, challenges have been evaluated on two dimensions: impact and effort[4] (University of Hull 2024). The mapping exercise (see Appendix 1 for the rationales) in Figure 1 shows that two challenges,

[4] Using a scale from 0 to 5, according to the prospective of the Blue Bio Value team.

specifically Funding and Investment and Limited Global Reach and Visibility, have high impact on BBV's outcomes, although they require significant effort, also due to their dependency on external factors and systemic changes. Similarly, Mentorship and Skill Gaps, was rated as having high impact but moderate effort, highlighting the importance of tailored expertise to address the diverse needs of the startups, followed by Resource and Operational Limitations, ranked as medium priority.

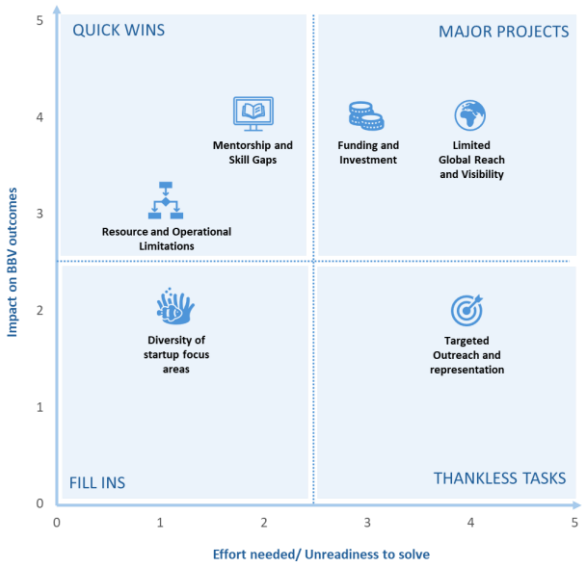


Figure 1: Mapping of Challenges

An additional mapping to locate challenges in each stage of the program and in the startup value chain can be seen in Appendix 22.

3. Data Collection and Methodology

This section outlines the processes used for data collection and the methodology applied to analyze challenges and develop valuable recommendations for BBV.

Data Collection

This study combines qualitative insights and quantitative data, both from internal and external sources. Interviews with Maria Feio, the Project Manager overseeing all BBV's team at Oceano Azul Foundation, and sector experts at the "BLUE BIOECONOMY: A Path Forward Powered by Blue Bio Value" event provided valuable insights into program challenges and vision. Data from BBV's internal reports, participant surveys (2018–2023), and cost division records allowed for detailed evaluations and a cost-benefit analysis of recommendations.

Benchmarking focused on three accelerators, using qualitative and quantitative data from BBV records and external research (Appendixes 2–11). Furthermore, an internal survey (Appendix

16) gathered team perspectives on challenges, while an external survey for blue economy stakeholders (with a limited but accurate sample of 42 responses) contrasted internal views and offered insights into the sector's future (Appendixes 17–21). Additionally, an interview with a senior adviser from the UN Global Compact Ocean Stewardship Coalition explored funding and stakeholder roles. Further research analyzed funding trends from the EIB and World Bank, international conference insights, and emerging blue bioeconomy research trends to align BBV's strategy with future opportunities.

Methodology

The methodology for the evaluation report involved identifying challenges through internal interviews and reports, followed by their evaluation using a matrix to assess their impact, effort, and interconnections. Internal surveys of BBV participants (2018–2023) provided quantitative insights, while benchmarking added external perspectives. Limited Funding and Investment and Global reach and Visibility, identified as the most impactful and interconnected challenges, were selected for targeted recommendations. Eight SMART framework-based recommendations were developed, with a cost-impact matrix, prioritizing two for implementation. The final plan includes detailed timelines, costs, benefits, goals, and KPIs, all reviewed and approved by BBV's internal team to ensure alignment with strategic objectives. This research aims to analyze challenges limiting the scalability and diversity of startups within BBV's program, while delivering actionable recommendations.

4. Analysis

4.1 Overview of the Evaluation Context and Benchmarking

This section assesses the competitive landscape of global blue economy accelerators, focusing on identifying actionable insights for BBV. While BBV's internal benchmark provided

valuable context by examining global accelerator trends, the focus of this report shifts towards a detailed comparison using independently collected data (Appendix 2–11).

General Overview and Global Trends in the Industry of Blue Economy

According to an internal benchmark report shared by BBV in 2022, major hubs of stakeholders can be found in Europe, India, and North America (see Appendix 5 for worldwide distribution of Case Study), with over 500 blue economy initiatives globally. The study also identified 35 active blue economy funding programs and VCs worldwide, and 30 blue economy accelerators and incubators, which have experienced an annual growth rate of 183% since 2016.

Comparative Analysis of Global Accelerators

Building on these industry-wide trends, this following section examines the program and distinctive features of major accelerators around the world, to provide a comprehensive understanding of the global landscape (see Appendix 2 for full comparison): location and sector focus were inquired to highlight thematic and geographic diversity among the players; program structure and cohort size directly relate to scalability and program capacity; finally, the duration of programs offers insights into the depth of support provided. Over half of the 11 analyzed players focus on broader blue economy sectors, contrasting with BBV's niche positioning (Appendix 4). Most programs adopt a hybrid structure, and BBV supports one of the largest cohorts, averaging 16 startups per edition compared to the typical 8–12 (Appendix 3). BBV also offers one of the shortest program durations, which appeals to startups seeking quicker outcomes, but may offer less extensive support than longer programs. Lastly, equity-free funding, featured by 6 of the 11 accelerators, aligns with BBV's approach, further reinforcing its competitive positioning.

Narrowing Down: Focus on Three Comparable Accelerators

To identify actionable strategies for enhancing BBV's scalability and diversity, this section narrows down the focus to three accelerators: OceanHub Africa, Creative Destruction Lab

(CDL), and Bluetech Accelerator. While the broader comparison includes a variety of organizational types, including VCs and investment companies, these three were selected for their alignment with BBV's accelerator model (for full comparison see Appendix 5 and 7). The benchmarking analysis highlights important areas where BBV's acceleration program can evolve to address challenges in scalability and diversity**.**

In terms of Challenge 1: Funding and Investment, BBV excels with the combination of equity-free model and unique €45,000 prize, but it could benefit from expanding its partnerships compared to programs like CDL and OceanHub Africa, which leverage extensive global academic and investor ties. In terms of relative performance, BBV's alumni have raised €19.4M and have supported 96 startups, showing strong outcomes for a niche accelerator. However, there's a need for more diverse investor engagement when comparing to OceanHub Africa, which has raised over €10M for just 32 startups, indicating a higher average fundraising per startup (see comparison in Appendix 6,7). As for Challenge 2: Global Reach and Visibility; while BBV supports startups from 31 countries, reaching the highest geographical reach, half of participants are from Portugal (as seen in Appendix 7 and 9), leaving room for some more diversity. In addition, its social media and event presence is visibly smaller than its peers (see Appendix 7,8); while CDL and OceanHub Africa have a strong presence on all main social media and are members of initiatives such as 1000 Ocean Startups, BBV still lags behind as it is not present on neither Facebook or Instagram, ultimately impacting its visibility and could benefit from a wider event participation. Lastly, for Challenge 3: Diversity of Startups' Focus, BBV's niche focus on blue biotechnology sets it apart, though most startups (42%) focus on Food & Feed (more details in Appendix 10). In contrast, OceanHub Africa and CDL, as generalist accelerators that cover the broader blue economy, also include startups from the blue bioeconomy as part of their portfolios, resulting in a more diverse range of companies also within the blue bioeconomy sub-sector (as seen in Appendix 11). Expanding into other blue

bioeconomy sectors could help diversification and alignment with emerging trends, while broadening its impact.

4.2 **Challenge Research Results and Analysis**

This section examines each of the six identified challenges, drawing insights from internal surveys, reports, and interviews, as well as highlighting key takeaways from the benchmark analysis, which specifically addresses three of these challenges.

Funding and Investment

Limited funding in the blue bioeconomy restricts BBV's ability to scale and expand its investor network. As observed in the benchmark (refer to section 4.1), BBV should improve its performance by raising the average amount of money raised for each startup. Additionally, BBV could adopt innovative strategies to increase incomes for the program, which would result in better support for participants, for instance through success fees, and expand its network of investors. Moreover, BBV's team members stated that "blue biotechnology is a sector with big risk, and it needs a lot of funding for development", and emphasized the need for more investors believing and learning about the area, revealing that uncertainty, lack of awareness and knowledge on the sector might be a cause for lack of funding (Appendix 16).

Resource and Operational Limitation

Startups rated network support highly, with scores of 4.47/5 for network members' support and 4.37/5 for network access, reflecting strong resources. However, logistical challenges were noted, including meeting overload (21 meetings per startup on average), booking issues, and travel difficulties during the in-person week in Portugal. Internal surveys (Appendix 16) reveal that while BBV's operational support meets scaling startups' needs, progress is hindered by the underdeveloped and immature state of the blue bioeconomy ecosystem.

Mentorship and Skills Gaps

Thematic discussions received high ratings (4.2/5), and workshops were rated 4.11/5 on average. However, founders expressed a need for more tailored, sector-specific mentorship. While BBV has engaged over 160 mentors, internal surveys (Appendix 16) suggest that expanding the pool of international mentors could enhance support for diverse startup needs.

Global Reach and Visibility

Global reach and visibility are essential for BBV's scalability. As highlighted in the benchmark (refer to section 4.1), despite its good geographical reach, BBV could further enhance its global visibility through more diversity, stronger event presence and improved social media engagement. Benchmark analysis also revealed peers excel in leveraging high-impact events and global networks, such as the Ocean Innovation Africa Summit and the 1000 Ocean Startups initiative. Internal feedback highlights a significant gap in connecting startups with large economic players, who could scale their solutions effectively (internal survey in Appendix 16).

Diversity of Startups' Focus Areas

BBV's niche focus on blue biotechnology strengthens its identity, but limited representation in environmental solutions and biomaterials highlights opportunities for diversification (Appendices 10, 11). External surveys highlight promising areas for expansion, such as medical and pharmaceutical innovations, nutraceuticals, algae cultivation, and bioremediation (Appendix 18). While peers take generalist approaches for greater diversity, BBV's preference for blue biotechnology and ocean conservation, as noted in internal surveys (Appendix 16), aligns with its specialization. Nevertheless, expanding its focus areas could enhance BBV's adaptability and impact in the evolving blue bioeconomy.

Targeted Outreach and Application Timeline

Most BBV applicants (71%) are directly contacted by the team, with only 11% coming through social media, leaving significant untapped potential in other outreach channels (Appendix 13).

Additionally, most applications are submitted in the final weeks, suggesting late awareness of the program, which could limit the applicant pool. Internal surveys (Appendix 16) indicate BBV's interest in increasing applications to select more focused cohorts aligned with blue biotechnology and ocean conservation.

4.3 **Complementary External Overview: Trends and Foresights**

The future of blue economic growth can highly depend on the existence of robust financial ecosystems favourable to innovation and sustainability in the blue economy: international financial institutions such as the European Investment Bank (EIB) and the World Bank often allocate significant resources; the EIB lent up to €7.3 billion for the period 2019–2023 and launched Portugal Blue with BPF, and The World Bank also has a dedicated portfolio for ocean investments, worth over 8 billion USD (details in Appendix 14). Conferences advance progress in the blue bioeconomy by creating opportunities for its stakeholders to connect, learn and innovate, as is the case of the UN Ocean Conference (see commitments in Appendix 15), World Ocean Summit by *The Economist,* the One Ocean Summit by EU, the event on "Blue Economy: Opportunities and Challenges" by the UN DESA with World Bank Group, and the Sustainable Blue Economy Investment Forum, in Cascais. Lastly, academic and research trends show some emerging topics in ocean research include protection, microplastic pollution and climate change. The overall ocean science collection's output increased more than 3 times in the last two decades, so players in the blue biotechnology can adjust their strategies and expectations to adapt to these trends (Clarivate 2022).

5. Recommendations

The challenges that BBV has encountered have been looked at in detail, from both an internal and external point of view. This section now focuses on suggesting specific recommendations that align with BBV's program.

Selection of Challenges to Address

The 6 challenges, as seen in Figure 1, were categorized by their impact and effort into four different categories, with the "Major Projects" being the most impactful. This report focuses on the two challenges within Major Projects – Limited Global Reach and Visibility, and Funding and Investment – due to their strategic importance and strong interconnections with other challenges (see Appendix 23). Limited Global Reach and Visibility is the most interconnected one, building a foundation for resolving other issues, while e Funding and Investment is critical for BBV's long-term stability, despite its dependency on several external factors. Over time, it will be important for BBV to address all identified challenges. However, prioritizing these two interconnected, high-impact areas offers a focused path toward sustainable progress.

Timeline of Recommendations

The timeline illustrates the implementation periods for each of the proposed recommendations, categorized into short-term (0–6 months), medium-term (6–12 months), and long-term (1–2 years) objectives. Is serves as a roadmap for implementation to guarantee efficient prioritization of challenges and resource allocation.

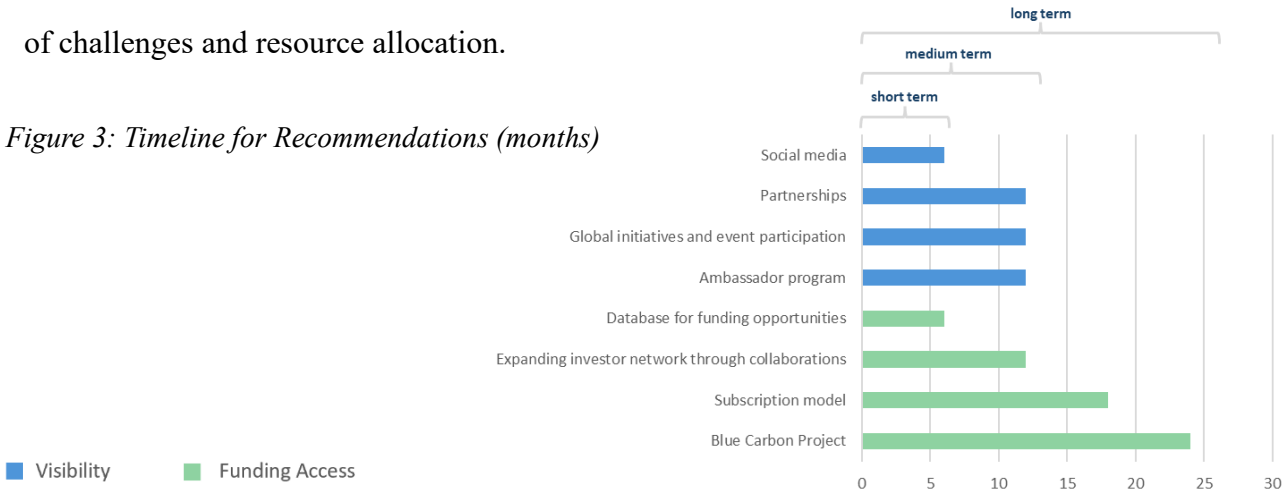


Figure 3: Timeline for Recommendations (months)

The recommendations in the following two sections are arranged based on the estimated time required for their implementation. Please consult Appendix 26 for a full explanation of the recommendation, Appendix 27 for cost justification and corresponding goals, and Appendix 28 for success KPIs.

Recommendations Centered on the Global Reach and Visibility Challenge

To improve its global visibility and attract diverse stakeholders, BBV could work on boosting its social media presence by enhancing content quality and expanding on new platforms, such as Instagram for broader engagement, which would motivate new connections and recognition. Secondly, establishing strategic partnerships with leading universities and blue economy networks, such as NOVA University or the Submariner Network, could allow for joint initiatives and expand BBV's reach. Additionally, participation in global events like the UN Global Compact and the 1000 Ocean Startups initiative would strengthen BBV's credibility and networking potential. Finally, an ambassador program leveraging alumni and mentors could improve trust and visibility, while addressing mentorship gaps through international networks.

Recommendations Centered on the Funding and Investment Challenge

To secure new funding sources for its initiatives and attract new potential investors to support the participants of the acceleration program, BBV may use several strategies. Firstly, it could develop an online database tailored for blue economy startups, simplifying access to regional grants and funding opportunities. Expanding investor and sponsor networks through new collaborations, with initiatives like BlueInvest and Aqua-Spark, would increase funding opportunities for startups. Additionally, a subscription-based post-program support platform could provide ongoing resources and generate a new revenue stream. Lastly, creating a blue carbon offset scheme could channel investments into startups focused on carbon sequestration and ecosystem restoration, though it would require careful planning and execution.

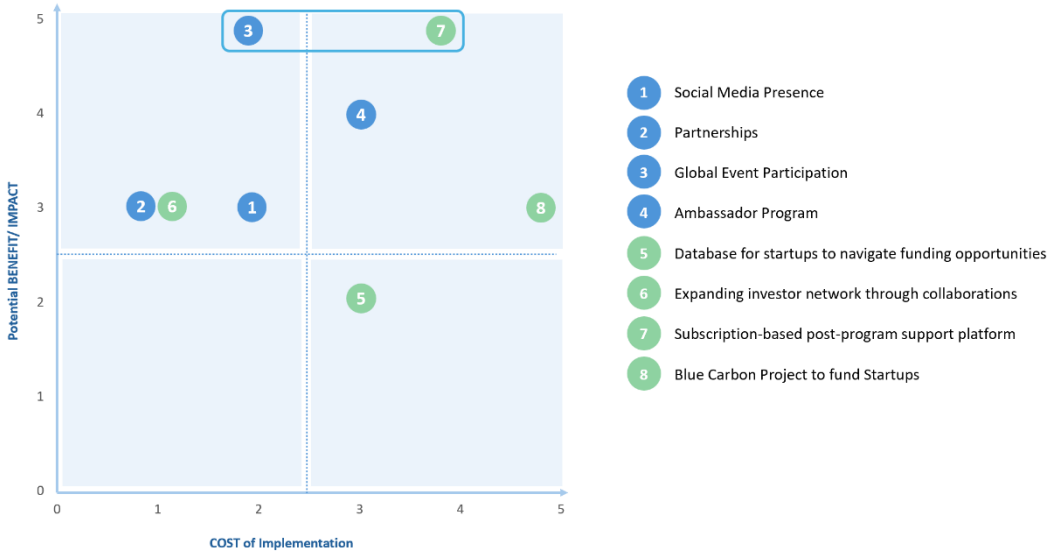
6. Implementation Plan

To select the most effective recommendation for enhancing BBV's program, a Cost-Impact Matrix[5] (in Appendix 24) was employed. This structured approach ensures that the selected

[5] Each criterion was scored on a scale of 1 to 5, with cost measured through desk research and logical estimates, and impact assessed using findings from the thesis, including benchmarking data and surveys.

recommendation is both feasible and aligned with BBV's priorities, balancing practicality and strategic significance.

Figure 4: Cost-Impact Matrix for Recommendations



Based on this analysis, **Global Event Participation** was selected as the most suitable recommendation for BBV's visibility enhancement, since this approach balances moderate costs with the highest visibility impact. Similarly for the funding challenge, the **Subscription-based Post-program Support Platform** appeared to be the most relevant one due to its highest impact, in spite of its higher implementation costs.

Implementation Plan for Global Event Participation

To implement the recommendation for global event participation, BBV should focus on engaging with high-impact initiatives such as the UN Ocean Conferences, the 1000 Ocean Startups initiative by the World Economic Forum, and joining the UN Global Compact Ocean Stewardship Coalition.

First, participating the 1000 Ocean Startups[6] initiative, would enable BBV to enhance its visibility and connect with international stakeholders while aligning with established accelerators like OceanHub Africa, HATCH, and Katapult Ocean. Key activities include joining

[6] A global coalition of incubators, accelerators, competitions, and VC supporters focused on advancing the blue economy.

the platform for a small revenue-based fee (estimated at €2000–€4000), hosting presentations, and showcasing BBV's program and startup successes. This cost-effective initiative would strengthen BBV's global reputation and foster valuable partnerships.

Second, joining the UN Global Compact Ocean Stewardship Coalition (UNGC) would position BBV within a global framework promoting sustainable ocean strategies. In Portugal, the Global Compact Network Portugal (GCNP) facilitates local engagement, requiring an online application, a commitment to the UNGC principles, and annual progress reporting. Specific activities include contributing to policy discussions, participating in workshops, and aligning BBV's objectives with coalition themes. This initiative involves minimal costs, including an annual contribution of €750, travel expenses, and engagement from one or two staff members.

Lastly, participating in UN Ocean Conferences offers BBV an opportunity to network with innovators, investors, and officials. Key activities include delivering presentations, distributing promotional materials, and setting up a booth or exhibit, potentially in collaboration with promoters like the Oceano Azul Foundation. Engaging in panel discussions and connecting with stakeholders will further enhance BBV's visibility. Participation involves a small fee (estimated at around €1000), along with potential travel expenses.

Global event participation will be implemented over 12 months, starting with event research and expense evaluation in the first two months, followed by budget finalization and stakeholder onboarding by the third month. Preparations, including outreach and advertising, will occur between months 4 and 5, with participation in the first international event by month 6. BBV will continue engaging in events and follow-up activities throughout the year (see Appendix 29 for details). Overall, associated costs of these proposed initiatives include participation fees, marketing and travel expenses, totaling for an estimated amount of around €24.000 for one year. Several benefits are expected, including increased visibility, strengthened network, and improved credibility. These benefits can be tracked by setting realistic KPI, such as achieving

a 10-15% increase of new startups applications from 2 to 3 different countries and acquiring around 10 new investors (for full cost-benefit analysis see Appendix 30).

Implementation Plan for Subscription-based Post-program Support Platform

The “Blue Bio Thrive” platform would provide alumni startups with post-program continuity[7], addressing their evolving needs as they transition into new growth stages. This optional subscription-based model would offer tiered plans (basic and premium) with access to resources such as case studies, legal templates, funding leads, exclusive events, and content.

By fostering community building, bridging knowledge gaps, and supporting scaling efforts, the platform would sustain alumni growth, while generating continuous revenue for BBV. Over time, it could serve as an alternative resource for international startups unable to join the core program, and address challenges in sourcing new startups at the right development stage. As noted by BBV's scouting team, Maze has been mapping blue economy startups for four years, resulting in a strong database, which has made it increasingly difficult to find new suitable Portuguese startups. The subscription model could eventually target a broader range of startup stages, securing financing to sustain and enhance the program while evolving into a more comprehensive acceleration platform.

In the first 3 months, BBV should refine the value proposition for “Blue Bio Thrive” by developing core offerings such as a knowledge repository, networking and community forums, and compliance assistance tools. Running focus groups with alumni startups will help identify desired features, needs, and willingness to pay, while collaborating with tech firms can reduce development costs and ensure fair pricing for startup founders. A development team comprising web developers and content curators should build a user-friendly platform and prepare initial content, such as templates, research insights, and best practices, while partnering with mentors and industry experts for exclusive workshops. From months 4 to 7, the prototype and

[7] Besides the already existing 12 week support provided to startups after the end of the acceleration.

subscription management system should be developed and tested to identify usability issues and refine the platform based on feedback. Between months 8 and 10, Blue Bio Thrive can launch a pilot phase with early adopter incentives, focusing on building community momentum. The dedicated platform team should monitor and analyze subscription numbers, engagement metrics and feedback from users to refine the platform. By month 18, a full launch should be rolled out with a targeted campaign emphasizing the platform's value to alumni startups. Regular updates to resources, workshops, and market insights will be crucial to maintaining subscriber interest, with advanced features such as investor matchmaking considered for the future evolution of the platform.

Finally, ongoing adaptation based on user feedback and market conditions will be essential, along with efforts to expand reach and improve revenue generation to reinvest in the BBV program and enhance scalability for startups and the program itself (see Appendix 31 for the full timeline). Benefits can be tracked by setting realistic KPI, such as achieving user engagement rates of 3 hours/week (namely for time spent and resources accessed), number of subscribers growth of 20% after the 1st year, retention rates towards 90%, revenues from subscription breaking even during the second year since the beginning of implementation (consult Appendix 32 for Cost-Benefit analysis), and positive user feedback.

7. Risks and Mitigation Strategies

This section outlines the primary risks associated with the proposed strategies, along with mitigation measures and key factors to monitor.

Global Event Participation: Risk, Limitations and Mitigation Strategies

By taking part in international events, BBV has a great chance to raise its profile. However, challenges include resource constraints, uncertain outcomes, and competitors who are already part of these high visibility networks (such as CDL, Kapult, OceanHub Africa). In addition,

BBV's current reliance on a Portuguese network contributes to these risks and limits its capacity for creating an impact on a worldwide scale. To mitigate these, BBV should prioritize events aligned with its niche focus, collaborate with partners like Oceano Azul Foundation to offset costs, and establish KPIs – such as partnerships formed or startup diversity post-event – to measure success and refine strategies.

Subscription Post-program Support Platform: Risk, Limitations and Mitigation Strategies

A subscription platform could extend alumni engagement, contribute to blue bioeconomy growth, and create a revenue stream. Risks include low adoption due to startup budget constraints, technical challenges, and limited participation. Other limitations might be related with the initial target to alumni startups, which might restrict revenue potential. To mitigate possible difficulties, effective planning and a phased implementation based on revenue and demand are critical, together with adequate communication of unique benefits and flexible pricing. Strategic partnerships, user feedback loops, and appointing dedicated community managers will be needed for engagement and retention (McKinsey & Company 2021).

8. Limitations of the Evaluation Report

The aforementioned analysis acknowledges several limitations in terms of data, methodology, and assumptions that may influence its findings and recommendations. A limited number of challenges were examined due to time and length limitations, allowing for more suggestions to be made on unexplored areas. Survey data was collected from 42 reliable external stakeholder replies, and internal input from BBV team members and alumni. Nevertheless, smaller sample sizes and potential response bias limit the representativeness of these insights. The benchmarking focused on BBV's main competitors, yet variations in data accessibility and program structures may have excluded some key stakeholders or information. Furthermore, the challenge priority assessments primarily relied on the project management viewpoint at BBV,

which may introduce subjectivity. Methodologically, reliance on qualitative inputs like surveys and interviews, and assumptions on blue bioeconomy's sustained expansion, solid legislative frameworks, and successful partnerships with other stakeholders further constrained the analysis. Thus, the analysis can benefit from obtaining more quantitative data and updated results on the industry context. All these factors accentuate the need for iterative evaluation and flexible planning to account for these constraints.

9. Conclusions

The present Evaluation Report has highlighted the need to address several challenges, particularly the access to funding and visibility, to allow BBV to increase its influence in the blue bioeconomy sector, while addressing scalability and diversity. BBV can further establish itself as a leader in sustainable marine innovation throughout several strategies; specific initiatives – like alliances and event participation, or a new creative subscription model – can unlock significant opportunities for startups while strengthening BBV's ecosystem. Due to the rapidly evolving nature of the industry and the interdependencies among all parties, it is crucial for stakeholders to take immediate action. Embracing these changes will not only advance BBV's mission, but also drive transformation and growth within the blue bioeconomy, while addressing global challenges with sustainable solutions.

Appendixes

Appendix 1

Rationale for Mapping the Challenges[8]

Challenge	Rationale		Rank	BBV
Limited Funding and Investment	Impact on BBV	The lack of sufficient investments in the sector is one of the main constraints that limits growth of all players. Without sufficient fundings and investors, accelerators cannot provide full support to entrepreneurs and their startups to scale, ultimately resulting in slowing down potential growth of the marine industry.	High	4
	Effort needed/ Unreadiness	BBV already has a network of 163 investors, which provides a solid foundation, and a compelling final prize for winners of the program; however, attracting additional investors is difficult due to the high perceived risk of this new economy. In addition, creating new funding mechanisms requires significant effort as it depends also on broader market policies and stakeholder collaboration, beyond BBV's direct control.	High	3
Resource and Operational Limitations	Impact on BBV	For any business accelerator, efficient operations are key to deliver value to startups, as well as rapid processes aligned with startup's agile philosophy and adequate resource allocation. This is mostly linked with the design of the program structure and resources available. This type of limitations can be mitigated through partnerships, corporate sponsorships and a program structure focused on measurable outcomes, which is why impact of this challenge was assessed as moderate.	Moderate	3
	Effort needed/ Unreadiness	BBV program is highly structured and its collaborations with Oceano Azul foundation and MAZE robustly back their operations and provide targeted infrastructure support through Blue Demo network, therefore BBV is well equipped with resources to tackle such challenge.	Low	1

[8] Based on research and interaction with BBV

Mentorship and Skill Gaps	Impact on BBV	Tailored mentoring to startups in the program is one of the most crucial aspects for accelerator's success, as experienced and knowledgeable mentors covering business launch and expansion as well as industry specific know-how to support startup scaling.	High	4
	Effort needed/ Unreadiness	BBV has already worked with more than 160 mentors with varied expertise to meet startups' needs.	Low	2
Limited Global Reach and Visibility	Impact on BBV	Expanding global reach and visibility is crucial for attracting diverse and high-potential startups and investors and build a global reputation.	Moderate-high	4
	Effort needed/ Unreadiness	BBV has a strong starting point, with participants from 31 countries and active social media presence. However, majority of the network is composed by Portuguese companies and stakeholders, international visibility can be improved, requiring new partnerships, international events, increased social media presence.	Moderate	4
Diversity of Startup Focus Areas	Impact on BBV	While important, diversity in startups' focus area has more limited direct impact on BBV' overall performance. BBV's current specialization in blue biotechnology already positions it as a niche leader; expanding focus areas would enhance ecosystem representation rather than core program outcomes.	Moderate-high	2
	Effort needed/ Unreadiness	BBV is well prepared to address the challenge; adjusting scouting strategies and adding targeted outreach require lower effort.	Moderate	1
Targeted Outreach and Application Timing	Impact on BBV	The targeted outreach directly affects the degree of awareness of the program in application stages for potential participants. When optimized, it can increase diversity of applicants, by reaching more geographies and representing a bigger variety of sectors, enriching the program's portfolio. A broader talent pool improves the overall caliber of solutions supported by the program and avoids homogeneous cohorts.	Moderate	2
	Effort needed/ Unreadiness	Currently, most participants hear from the BBV program by being directly contacted by the team, and while there is some social media presence, significant efforts would be needed to reach a larger audience for applications in order to increase the number of applicants.	Moderate	4

Appendix 2

Comparison Table: Top Blue Economy Worldwide Accelerator Programs

Name	Location	Sector Focus	Type of Organization[9]	Program Offer	Program Structure	Cohort Size	Number of Editions[10]	Duration	Type of Support
OceanHub Africa	South Africa	Blue Economy Generalist	Accelerator	Acceleration Consulting, Ecosystem Support	Hybrid	~ 7 Startups	5 Editions	6-8 Months	Equity-free Program, with Success Fees
Hatch Blue	Ireland	Aquaculture, Alternative Seafood, Marine Biotechnology, Blue Carbon	Venture Capital Firm	Acceleration, Incubation, VC, Innovation Services	Hybrid	~ 10 Startups	Non-disclosed	8 Months	Equity Funding, via SAFE[11] Note (Simple Agreement for Future Equity)
Katapult Ocean	Norway	Tech in Blue Economy, Transportation, Energy, Harvesting, New Frontiers	Investment Company	Investment, Acceleration	Online	20 Startups	13 Editions	3 Months	Equity Funding, Follow-on Investments
Sea Ahead	USA	Blue Tech, Seafood	Accelerator and Investor Network	Acceleration, Incubation	Hybrid	~11 Startups	4 Editions	Variable (6 Months or 6 Weeks)	Equity Funding (with right to invest in a future rounds); Equity-free Funding
Faros	Italy	Blue Economy Generalist	Accelerator	Acceleration	In Person	8 Startups	2 Editions	4 Months	Equity Funding via Convertible Notes[12]; Potential Follow-on Funding
Ocean Impact Organization	Australia	Blue Economy Generalist	Innovation Ecosystem and Accelerator	Acceleration, Innovation Support	Online	12 Startups	4 Editions	6 Months	Equity Funding
Sustainable Ocean Alliance	USA	Blue Economy Generalist	Network and Advocacy Group	Acceleration, Leadership Development, Microgrants	Hybrid	~10 Startups	5 Editions	4 Weeks	Equity-free Funding

[9] Companies have been classified by type of organization; Accelerators have been highlighted in green.
[10] The "Number of Editions" refers to those concluded to date and does not include ongoing edition.
[11] SAFE (Simple Agreement for Future Equity) is a financial instrument that allows startups to raise funds without setting a valuation at the time of investment, converting to equity in a future funding round.
[12] Convertible Notes are short-term debt instruments that convert into equity at a later date, typically during a subsequent funding round, often with a discount or capped valuation for early investors.

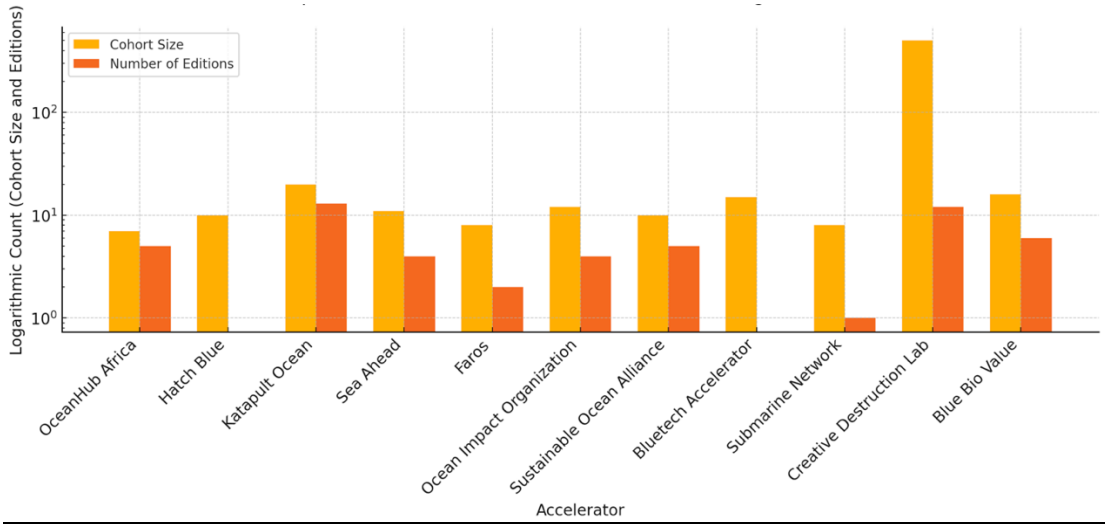
Bluetech Accelerator	Portugal	Blue Economy Generalist	Accelerator	Acceleration, Innovation	Hybrid	~15 Startups	0 Editions	8 Weeks	Equity-free Funding
Submarine Network	Germany	Blue Bioeconomy, Blue Biotechnology	Alliance	Acceleration, Incubation, Project Development	Hybrid	~8 Startups	1 Edition	4 Months	Equity-free Funding
Creative Destruction Lab	Canada	Science and Technology-based Companies	Accelerator	Acceleration	Hybrid	Variable	12 Editions	9 Months	Equity-free Funding
Blue Bio Value	Portugal	Blue Bioeconomy, Blue Biotechnology	Accelerator	Acceleration, Ideation	Hybrid	~16 Startups	6 Editions	9 Weeks	Equity-free Funding, Final Prize

The benchmark among 11 key players in the blue economy industry shows differences in terms of format, program offer, duration, cohort size and type of support. Organizations that can be defined as "accelerators" are highlighted in green, while other ones represent other group of stakeholders, namely VCs, investment companies, networks and alliances.

Source: websites of each company

Appendix 3

Comparison Of Cohort Size and Number of Editions[13]

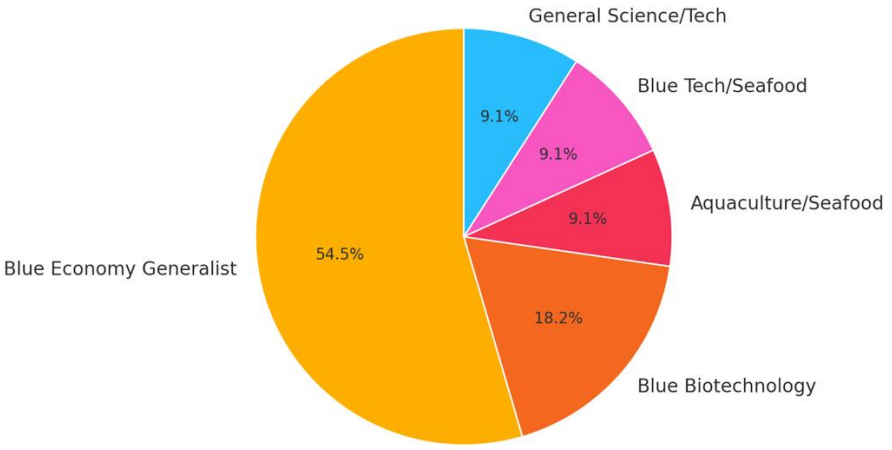


The graph shows that BBV has one of the largest cohort sizes among all players, around 16 startups, comparing to the average of 8-12 startups per cohort.

[13] The y-axis uses a logarithmic scale to accommodate the wide range of values between cohort sizes and editions. This scale highlights relative differences while ensuring smaller values remain visible. The formula log10(Value+1) ensures small values remain visible while preserving proportionality for larger ones. Adding 1 avoids issues with log(0). This graph was built with the assistance of AI tools.

Appendix 4

Distribution of Sector Focus among Accelerators[14]



Appendix 5

Benchmark between Blue Bio Value and Relevant Competitors per Type of Organization[15]

Topic	Metric	Blue Bio Value	OceanHub Africa	Creative Destruction Lab[16]	Bluetech Accelerator
General overview	**Location of Program**	Portugal	South Africa	Canada (global presence)	Portugal
	Foundation year	2018	2019	2012	2019
	Duration/Format	9 weeks; Hybrid	6-8 months; Hybrid	9 months; In Person	8 weeks; Hybrid
	Unique Value Proposition	Focus on Blue Biotech; One Year Membership to Blue Bio Alliance; Final Prize for Blue Demo Network[17]	Pan-African Scope; Eligible for Earthshot Prize[18]	Strong Academic Network with 12 Top Global Business Schools	Portuguese Focus; Collaboration with Portuguese Navy

[14] The pie chart shows the proportion of accelerators focused on different sectors. Each percentage represents the share of accelerators prioritizing a given sector, calculated as: (Count of accelerators in sector X) / (Total number of accelerator)*100

[15] Due to lack of sufficient information, the Accelerator "Faros" has not been included

[16] The data for Creative Destruction Lab (CDL) includes information aggregated across its various program streams, not solely the Ocean Stream. For detailed information about CDL streams, refer to their official website.

[17] The Blue Demo Network is a platform of Portuguese infrastructures and services designed to support startups and SMEs in the blue bioeconomy. The network enables startups to test, demonstrate, and scale innovative solutions in the sector.

[18] The Earthshot Prize is a prestigious global environmental award established in 2020 to encourage and scale innovative solutions to the planet's greatest environmental challenges. Winners receive £1 million to further develop and implement their projects.

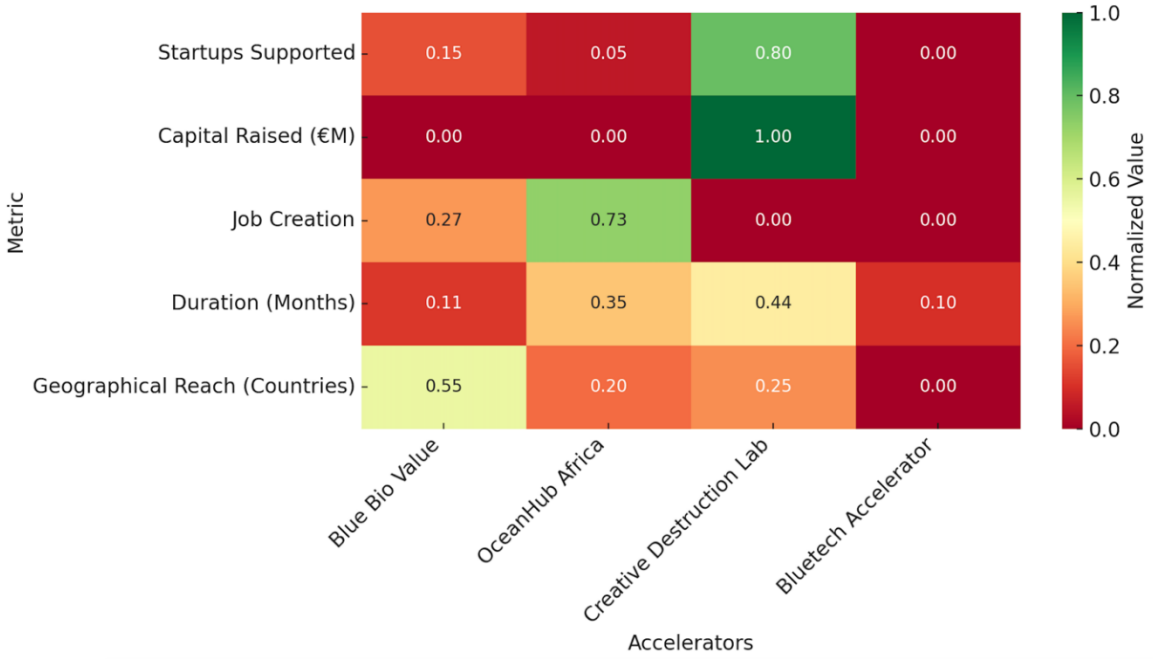
Challenge 1: Access to Funding and Investment	**Funding Sources**	Equity-Free	Equity-Free; Success fees[19]	Equity-Free	Equity-Free
	Final Prize	€45.000 Final Prize	No Final Prize	No Final Prize	No Final Prize
Challenge 2: Limited Global Reach and Visibility	**Startup Geographical Reach**	31 Countries Worldwide	11 Countries in Africa	14 Countries Worldwide	Portugal
	Partnerships	2 Promoters and 2 Funding Partners	Over 20 Partners	Over 10 Funding Partners	4 Program Partners
	Events and Media	Final Pitch Day; Presence on social media	Demo Day; Ocean Innovation Africa Summit; 1000 Ocean Startups[20]; Presence on social media	Final Pitch Day; 1000 Ocean Startups; Presence on social media and Publications	Demo Day
Challenge 3: Diversity of Startups' Focus Areas	**Sector Diversity**	Blue Bioeconomy	Blue Economy Generalist	General Science/Technology	Blue Economy Generalist
	Stage of Startups	TRL[21] 5 or more	No Specific Criteria	No Specific Criteria	MVP/Prototype Ready[22]
Success Metrics (since foundation year)	**Startups Supported**	96 startups supported	32 startups supported	+500 startups supported	-
	Capital Raised by Alumni	€19.4M in equity/grants	+€10M in funding	+$28B in equity	-
	Investors Engaged	163 investors	-	-	-
	Job Creation	117 new jobs	323 new jobs	-	-
	Networking Support	163 investors; +130 mentors	-	+1000 mentors	Collaboration with Portuguese Navy

Source: websites of each company and Blue Bio Value internal data

[19] OceanHub Africa applies success fees of up to 10% on business contracts secured through introductions facilitated by the program and up to 5% on follow-up fundraising efforts. These fees are applicable during the program's term and extend for two years after program completion.
[20] 1000 Ocean Startups is a global initiative showcasing and supporting innovative startups driving sustainable solutions for ocean health and the blue economy
[21] TRL (Technology Readiness Level) is a scale used to assess the maturity of a technology. TRL 5 indicates that the technology has been validated in a relevant environment, with components integrated and tested to demonstrate functionality for the intended application.
[22] MVP (Minimum Viable Product) or prototype ready refers to a product or solution developed enough to demonstrate its core functionality for testing or early user feedback.

Appendix 6

Benchmark Analysis: Relative Performance of Blue Bio Value vs Competitors[23]



The heatmap shows that BBV performs strongly in supporting startups (96 startups) and geographical reach (31 countries) but lags in capital raised, with €19.4M compared to Creative Destruction Lab's $28B. OceanHub Africa also surpasses BBV in job creation, with 323 jobs compared to BBV's 117. The heatmap highlights these gaps and incomplete data for some competitors, like Bluetech Accelerator, limiting full comparisons.

[23] Values are normalized by dividing each accelerator's metric value by the total of all values for that metric, to represent relative performance. This graph was built with the assistance of AI tools.

Appendix 7

Comparison of Accelerators Across Key Challenges

Topic	Metric	Blue Bio Value	OceanHub Africa	Creative Destruction Lab	Bluetech Accelerator
Challenge 1: Access to Funding and Investment	**Funding Sources**	Equity-Free	Equity-Free; Success fees	Equity-Free	Equity-Free
	Final Prize	€45.000 Final Prize	No Final Prize	No Final Prize	No Final Prize
Challenge 2: Limited Global Reach and Visibility	**Startup Geographical Reach**	31 Countries Worldwide	11 Countries in Africa	14 Countries Worldwide	Portugal
	Partnerships	2 Promoters and 2 Funding Partners	Over 20 Partners	Over 10 Funding Partners	4 Program Partners
	Events and Media	Final Pitch Day; Presence on Social Media	Demo Day; Ocean Innovation Africa Summit; 100 Ocean Startups; Presence on Social Media	Final Pitch Day; 100 Ocean Startups; Presence on Social Media and Publications	Demo Day
Challenge 3: Diversity of Startups' Focus Areas	**Sector Diversity**	Blue Bioeconomy, Blue Biotechnology	Blue Economy Generalist	General Science/Technology	Blue Economy Generalist
	Stage of Startups	TRL 5 or more	No Specific Criteria	No Specific Criteria	MVP/Prototype Ready

BBV shows strong performance in funding and investment, leveraging its equity-free model and €45,000 prize (although not fully accurate since other variables should be analyzed, but data was not publicly disclosed), but trails in attracting larger investor networks compared to OceanHub Africa's success fee approach. While BBV benefits from its international reach (31 countries), Creative Destruction Lab surpasses in global partnerships and funding raised. As for challenge 3, more diversity can be implemented within BBV's cohort.

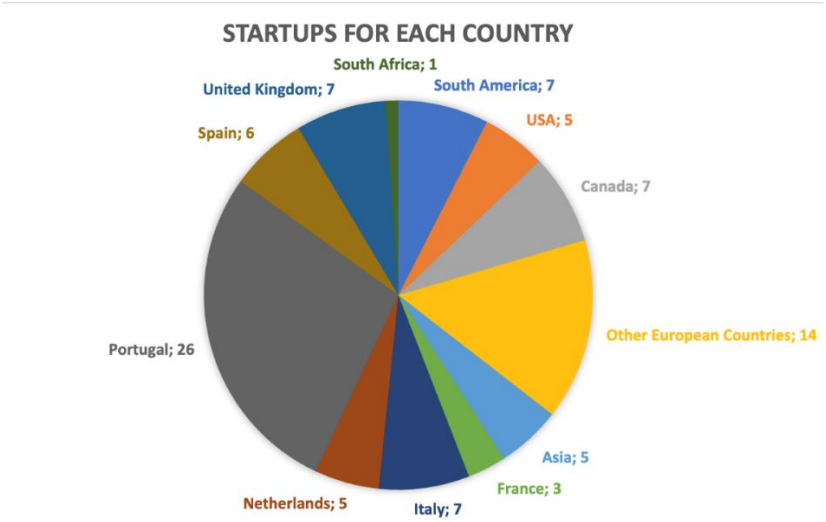
Appendix 8

Social Media Presence

Company	Metric	Facebook	LinkedIn	Twitter	Instagram
Blue Bio Value	Presence	-	✓	✓	-
	Followers	-	4.000	572	-
OceanHub Africa	Presence	✓	✓	✓	✓
	Followers	805	8.175	751	1.465
Creative Destruction Lab	Presence	✓	✓	✓	✓
	Followers	4.340	48.000	14.300	5.060
Bluetech Accelerator	Presence	-	-	-	-
	Followers	-	-	-	-

Appendix 9

Countries of Participant's to BBV's Acceleration Program between 2018-2023



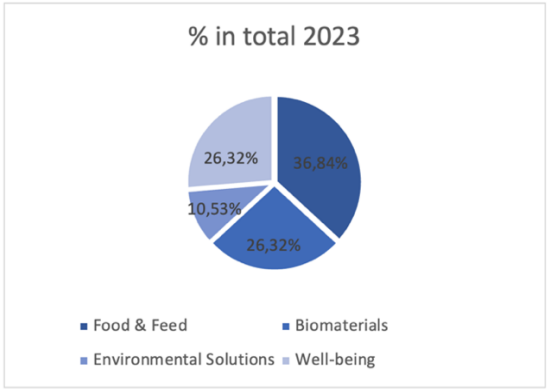
Source: Blue Bio Value Internal Data

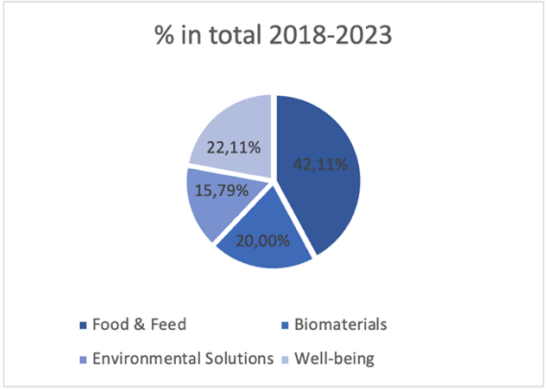
Appendix 10

Proportion of Startup Participants of Blue Bio Value in Each Sector of Blue Bioeconomy

Startups in the acceleration cohort are normally sorted into 4 sectors: Food & Feed, Biomaterials, Environmental solutions and Well-being. On most years, the most prevalent sector tends to be the Food & Feed one.

	2023: 19 startups	Total: 95 startups
Food & Feed	36.84%	42.11%
Biomaterials	26.32%	20.00%
Environmental Solutions	10.53%	15.79%
Well-being	26.32%	22.11%

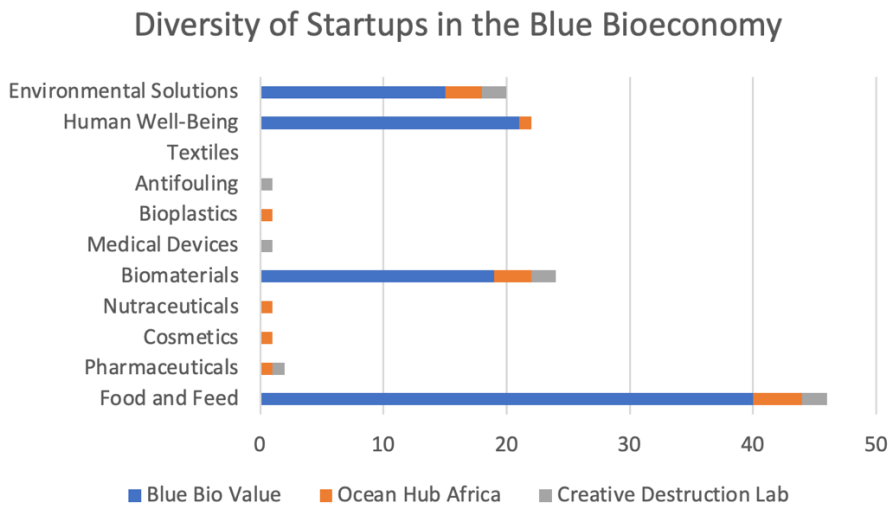




Source: Blue Bio Value Internal Data

Appendix 11

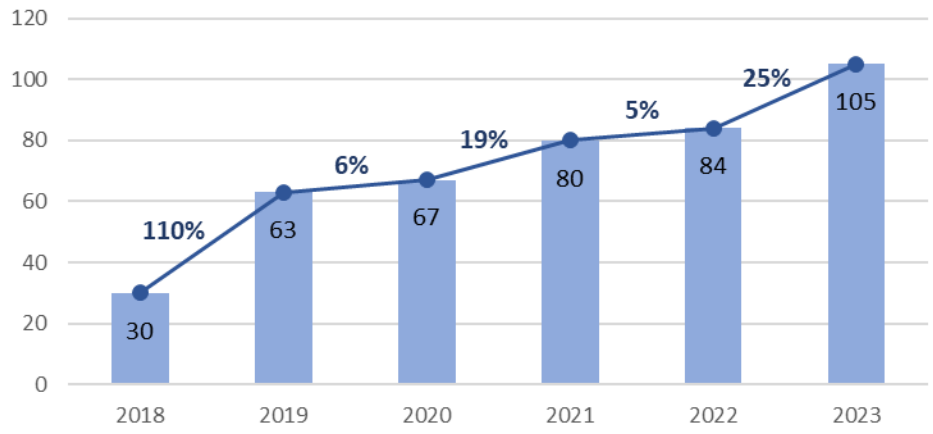
Benchmark of Startup Participants of the Accelerators within the Bioeconomy[24]



BBV showcases strong representation in food and feed, biomaterials, environmental solutions, and well-being, reflecting its cohort composition. In contrast, competitors tend to generalize across broader blue economy or technology sectors. This analysis highlights BBV's niche focus in blue biotechnology while suggesting potential for diversification to enhance its competitive edge and attract a wider range of startups.

Appendix 12

Number of Applications Submitted and Annual Increase (%)

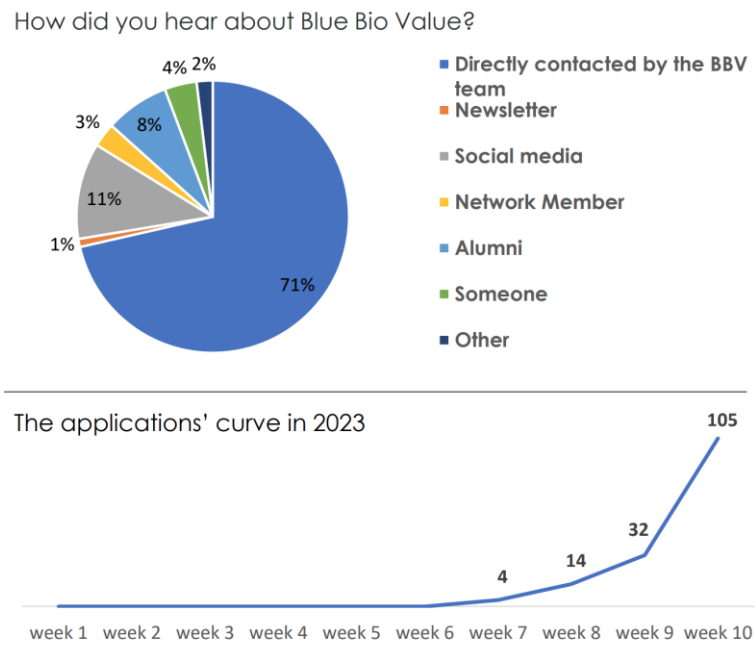


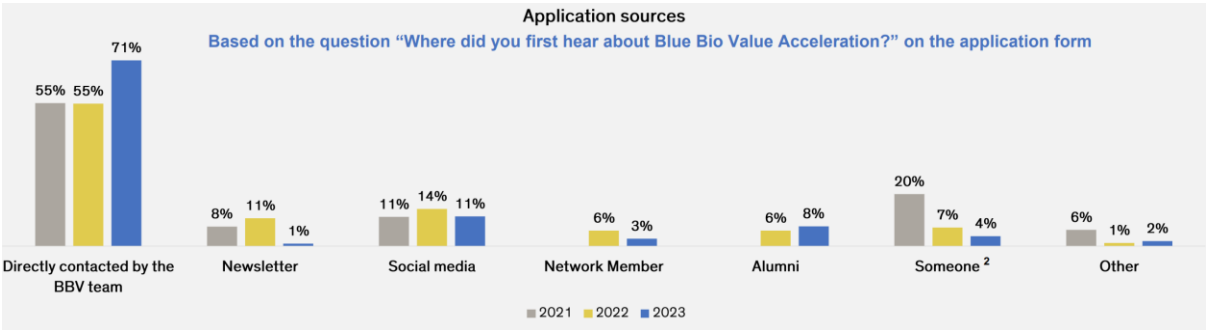
Source: Blue Bio Value Internal Data

[24] Bluetech was not considered due to its lack of data. There is not an official definition of the sectors of Blue Bioeconomy, but according to most recent studies, the ones listed here are the main sources of applications. This graph was built with the assistance of AI tools.

Appendix 13

Applications for the Acceleration Program data for 2023



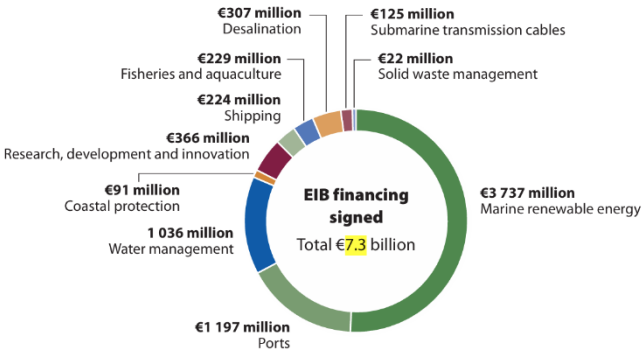


Source: Blue Bio Value internal data

Appendix 14

Funding Landscape and European Investment Bank Support for the Blue Economy by Sector (during the period 2019-2023)

Blue Bio Value's position as a player in the blue bioeconomy will be shaped by the future of global blue economic growth. This future can highly depend on the existence of robust financial ecosystems favourable to innovation and sustainability in the blue economy which can create funding opportunities for initiatives like Blue Bio Value. International financial institutions such as the European Investment Bank (EIB) and the World Bank often allocate significant



resources to support the blue economy. The EIB, one of the largest multilateral green financiers in the world lent up to €7.3 billion for the period 2019-2023 in the areas of low-carbon marine-solutions, coastal resilience to climate change, ocean-related research and innovation, and protection of oceanic natural capital, with marine renewable energy representing the largest portion (breakdown by sector in the figure above). Their financing leveraged €30.8 billion of new investment in the blue economy. The EIB even partners with key actors, for instance in Portugal, the EIB group launched in 2020, Portugal Blue in partnership with Banco Português de Fomento (BPF) and the Portuguese Government, through Fundo Azul, which intends to fund the local blue economy landscape with over €80 million through venture capital and private equity run by teams based in the country. Additionally, the EIB advances EU's policies on the blue economy through Invest EU, the European Commission's Restore our Ocean and Waters and the BlueInvest platform, which will provide capacity building and advisory support for intermediaries targeting investments in the blue economy (EIB 2024).

The World Bank also has a dedicated portfolio for ocean investments, worth over 8 billion USD in active projects as of June 30, 2023, including projects in integrated coastal and marine ecosystem management, circular economy and offshore renewable energy among others. Besides, it also administers PROBLUE, an umbrella multi-donor trust fund that supports the sustainable integrated development of marine and coastal resources in a healthy ocean and its development partners have contributed just over 200 million USD to PROBLUE (World Bank 2024).

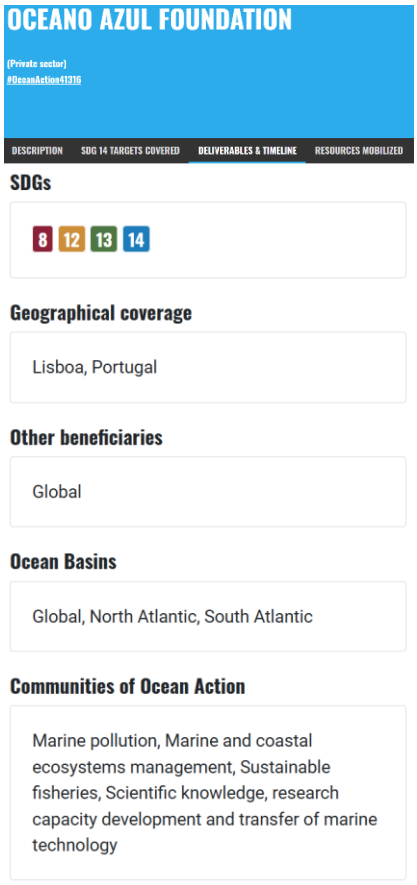
Source:https://www.eib.org/attachments/lucalli/20240073_clean_oceans_and_the_blue_economy_overview_2024_en.pdf

Appendix 15

Ocean Conferences as a Compass for the Industry

Conferences advance progress in the blue bioeconomy by creating opportunities for its stakeholders to connect, learn and innovate, as well as facilitating knowledge exchange, spotlighting rising trends and innovations, attracting investment, influencing policy and standards through discussions, harmonizing global efforts and enhancing public and stakeholder awareness of the sector's importance. One example is the UN Ocean Conference, which mobilizes and engages essential agents for accelerating ocean action and sustainable ocean-based economies transformation. The next edition, in 2025, will take place in Nice, France and be co-hosted by Costa Rica and France with the headline "Accelerating action and mobilizing all actors to conserve and sustainably use the ocean". One of the outcomes from this conference is the engagement in voluntary commitments for the implementation of SDGs (including SDG 14) by stakeholders, which can register on the Ocean Conference website, which already has 2123 commitments (United Nations a). Oceano Azul Foundation, which is

Blue Bio Value's promoter is already registered (as seen in the following figure) (United Nations b), however Blue Bio Value specifically hasn't yet registered its commitment. Other important conferences to take note of regarding oceans and the marine bioeconomy are the World Ocean Summit by *The Economist*, the One Ocean Summit by the EU, the event on "Blue Economy: Opportunities and Challenges" by the UN DESA and the World Bank Group, and the Sustainable Blue Economy Investment Forum (SBEIF) in Cascais, Portugal. Thus, staying attentive and accompanying such events and summits is valuable for players in the sector that wish to be at the forefront of blue economy and its diverse specific fields. Among the most mentioned topics are Marine Biotechnology & Bioprospecting, Innovation, Clean/ Renewable Marine Energy, Waste Management, Plastic and other types of Pollution, Marine Protection of Ecosystems and Biodiversity (MPAs), Financial Support mechanisms for the blue economy, Future risks and challenges for the sector, Climate change adaptation and mitigation, Ocean warming and acidification, Collaboration/ Communities, Sustainable transition, Maritime Justice/Law, Ocean data and Coastal areas.



Source: https://sdgs.un.org/partnerships/oceano-azul-foundation#description

Academic and Research Trends Overview

Staying ahead of industry developments can significantly benefit players in the blue bioeconomy, and in particular research trends regarding blue biotechnology can be relevant for identifying innovations in early stages and obtaining a competitive advantage. In the case of Blue Bio Value, to be prepared to support new types and sub-industries of startups allowing for capacity to receive a more diverse cohort of startups, targeting high-potential participants and tailoring support offerings to be aligned with future needs. This way, the program can stay aligned with its mission of driving sustainable innovation and guide their investment focus with future growth areas in the blue bioeconomy.

Currently some opportunities and emerging topics in ocean research include protection and management, microplastic pollution and climate change, with a large emphasis on clean, resilient and sustainable oceans. The overall ocean science collection's output increased more than 3 times in the last two decades, and US's dominance on ocean research, as well as other members of the G7 has been eroded by a rise in China's research output. So, players in the blue biotechnology can adjust their strategies and expectations to adapt to these trends (Clarivate 2022).

Survey Appendixes

Appendix 16: Internal Survey Responses[25]

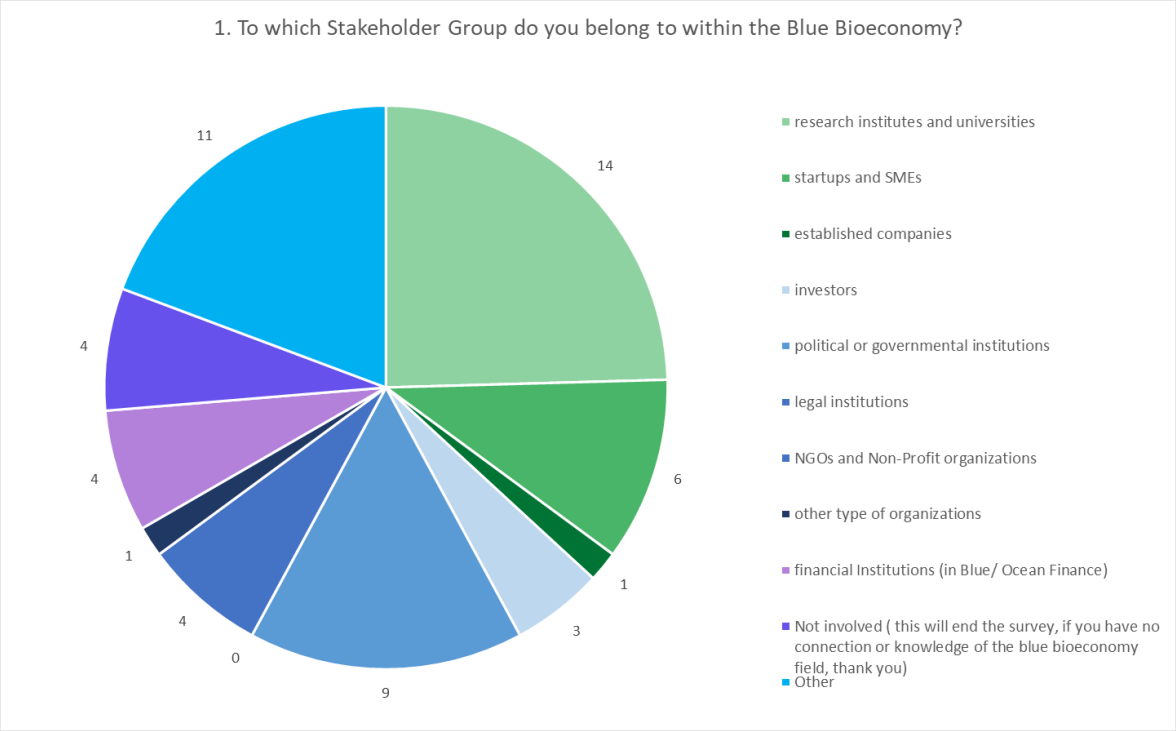
What is your role within the Blue Bio Value team?	**Project Manager** of the whole teams of Blue Bio Value
	I work as **analyst** at Maze Impact and my role in Blue Bio Value is implementing the program and supporting startups throughout their journey in the program.
	Marketing Operations Assistant
From your perspective, what are the main goals for Blue Bio Value's Acceleration Program?	1. Contribute to the development of blue biotechnology applications, that attribute economic value to marine bioresources. 2. Contribute to the scalability of blue bioeconomy startups committed to ocean conservation. 3. Promote Blue Bio Value as a tool to communicate that economic growth can coexist with a healthy ocean. 4. Contribute to the development of the blue biotech ecosystem in Portugal.
	The main goal of the program is to foster the growth of the blue bioeconomy sector in Portugal. Other more specific goals include supporting startups in their journey and providing them with tools, knowledge, and important connections to help them develop their business.
	Accelerate start-ups that want to develop ocean-based, sustainable solutions, giving them the tools to better their performance while looking for investors.
From your perspective, what are the most relevant challenges the Program is facing currently (that may slow down the achievement of the goals you mentioned in the previous question)?	1. Lack of connection between science/innovation/startups with the industry. Right now, big economic groups in different industries are the ones with the power to scale with impact the solutions developed by the startups. The connection between both needs to increase. 2. Lack of funding in the area. Blue biotechnology is a sector with big risk, and it needs a lot of funding for development. We need more investors believing and learning about the area, for it to boost and grow with impact and scale.
	The most prominent challenge is the absence of Portuguese startups in the blue biotechnology sector in Portugal that are at the right stage of development to participate in the program. This is a problem because, even though the program has an international scope, it is still based in Portugal and aiming to scale this economy in its own country. Other challenges are related to an increasing difficulty in finding new startups, since maze has been mapping startups in the blue economy for 4 years now and already has a very strong database.
	N.A.

[25] From 3 Blue Bio Value team members

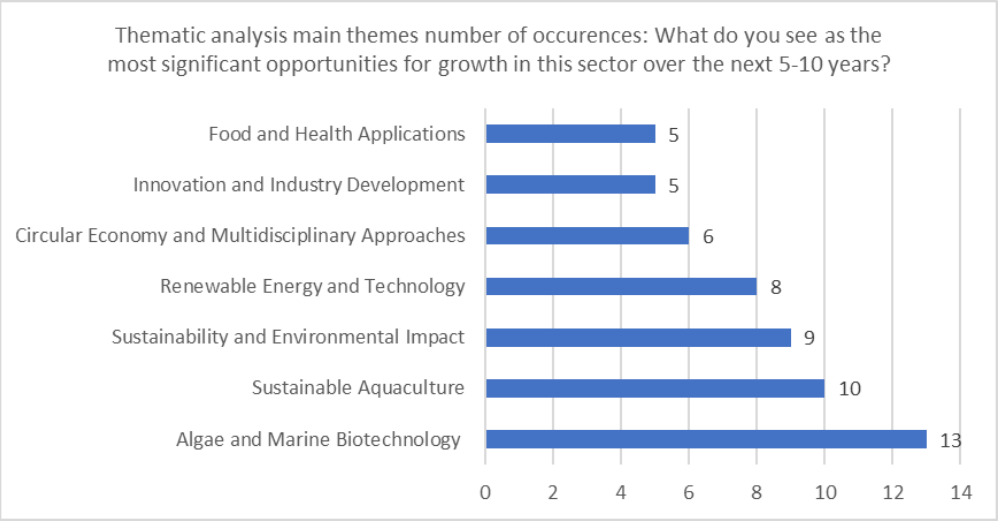
From this set of challenges below, how would you evaluate their **impact** on program outcomes and effect on scalability potential on a scale of 0 to 5 (where 0 means no impact and 5 means a very significant impact on the program)	Access to funding and Investment- **4**, 2, 3
	Resource and Operational Limitations- **3**, 1, 3
	Mentorship and Skill Gaps- **4**, 0, 4
	Limited Global Reach and Visibility- **4**, 3, 3
	Diversity of Startup Focus Areas- **2**, 2, 4
	Targeted Outreach and representation- **2**, 3, 4
From this set of challenges below, how would you evaluate the **effort** BBV requires to face them in terms of resources and readiness to address challenges, on a scale of 0 to 5 (where 0 means no effort, BBV is already ready to solve them and 5 means a significant amount of effort needing to gather resources, expertise, etc. to be ready to face them)	Access to funding and Investment- **3**, 2, 1
	Resource and Operational Limitations- **1**, 2, 1
	Mentorship and Skill Gaps- **2**, 0, 1
	Limited Global Reach and Visibility- **4**, 4, 3
	Diversity of Startup Focus Areas- **1**, 4, 1
	Targeted Outreach and representation- 4, 4, 2
According to your perception, does the operational support and resources provided by the acceleration program fully meet the needs of scaling startups, especially regarding logistics and consistent re	Regarding what the operational support and resources can provide in the program, it meets the needs of the program. The challenge is the dynamic of the ecosystem itself that is still too immature.
	I consider that the operational support and resources provided are very close to fully meeting the startups' needs. Maybe one thing that could be added would be more individual trainings.
	Yes.
According to your perception, are there still gaps in skills and specific mentorship for the startup participants that the program isn't able to fully address currently?	No. We already have worked with more than 160 mentors. We can though increase the number of international mentors.
	In my opinion, the program offers a diverse set of trainings that covers all relevant areas for the startups. Furthermore, we have a very large network with different profiles that also support startups in a range of needs.
	No, I think the program covers the main gaps in skills and specific mentorship needed from the start-ups.
What could be possible reasons that could obstruct potential startup participants from applying to the Blue Bio Value Acceleration Program?	Lack of time to dedicate to the program. The program doesn't invest on startups, and most of the time, startups are looking for funding, and they may not want to lose focus on that.
	Startups might feel less attracted to the program due to the fact that it does not offer financial support. Other aspect is the workload and the obligation to be in Portugal for 2 weeks.
	Lack of perception of what the program actually offers, thinking it is "just another accelerator".

What are the current efforts of Blue Bio Value to attract participants and increase awareness of the program? (Only need answer this question if your role in Blue Bio Value is related with this area/**communication**)	Maze's team is responsible for scouting and, in that sense, for attracting participants. Our efforts have been mainly in automatizing the outreach process so that we are able to increase the pipeline of potential applicants.
Would Blue Bio Value be interested in having a larger number of startups applying/ participating in the acceleration program? Or do you feel it would somehow work against the program's goals? What could be reasons behind it (preference for focus on a few specific fields of startups within blue bioeconomy, insufficient resource capacity, etc.)?	Yes, we would. with more startups applying we could choose better cohorts - more focused in blue biotechnology and ocean conservation.
	No, we believe the program should not have more than 20 startups per cohort and that, ideally, it would only have around 10. The reason for this lies in the tailored support we aim to provide to startups. Having a smaller cohort would allow to be even more targeted in the type of group trainings we offer and to spend more time addressing startups' individual needs.
	I think the current number of start-ups participating is good, in order to guarantee that all of them get the support, mentorship and follow-up needed. It would always be good to have more applications, for it would mean a larger range of opportunities to work with different and better solutions.

Appendix 17: External Survey Segments of Respondents[26]



Appendix 18: External Survey Question 2[27]



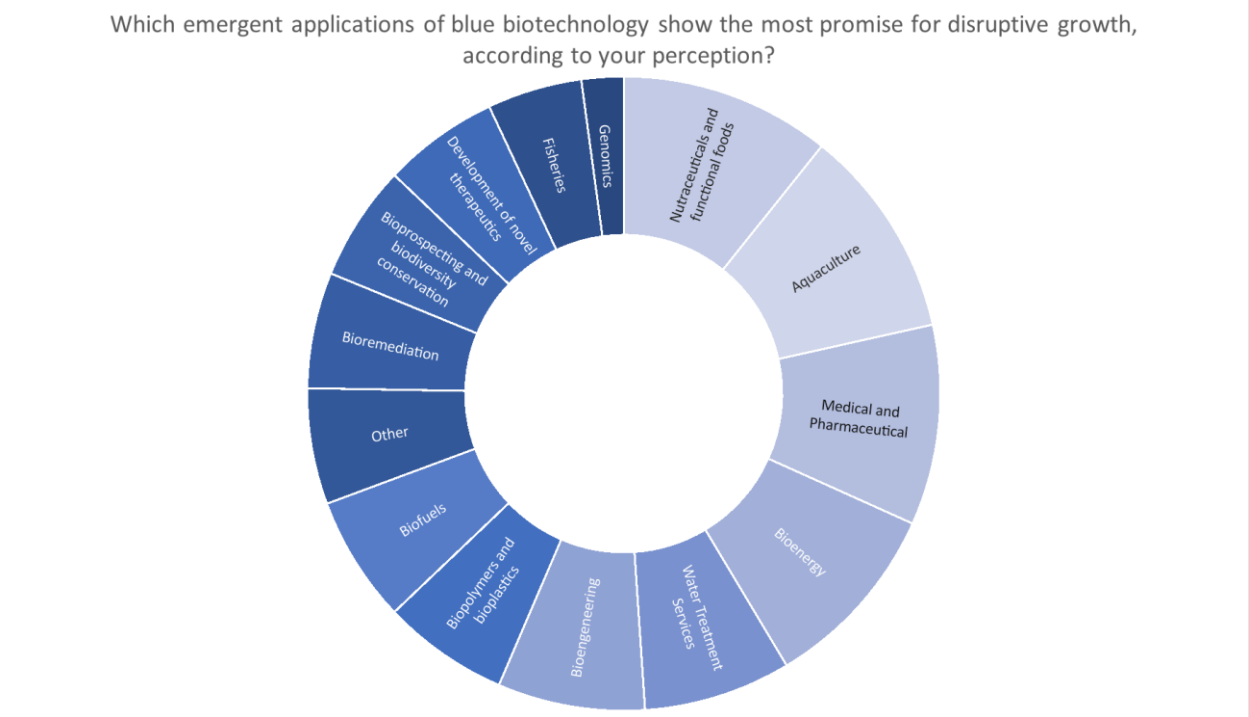
[26] This survey was conducted only to stakeholders in the blue bioeconomy or blue economy and industry experts, thus the reduced number of responses. Additionally, with several open questions to allow for more relevant detailed insights, as for the research a large number of interviews was not possible, due to time constraints of stakeholders. Some quotes will be presented to strengthen comprehension

[27] Based on 42 answers to this open survey question, a thematic analysis of the quantitative data was conducted with the assistance of AI tools to count the occurrence frequency of the most prominent themes identified within the set of responses.

Survey respondents mentioned most times as significant opportunities for growth in the blue bioeconomy as Algae and Marine Biotechnology, highlighting algae cultivation and biotech applications like pharmaceuticals and cosmetics and additionally Integrated Multi-Trophic Aquaculture, Low Trophic Aquaculture expansion, Carbon Capture and offshore wind.

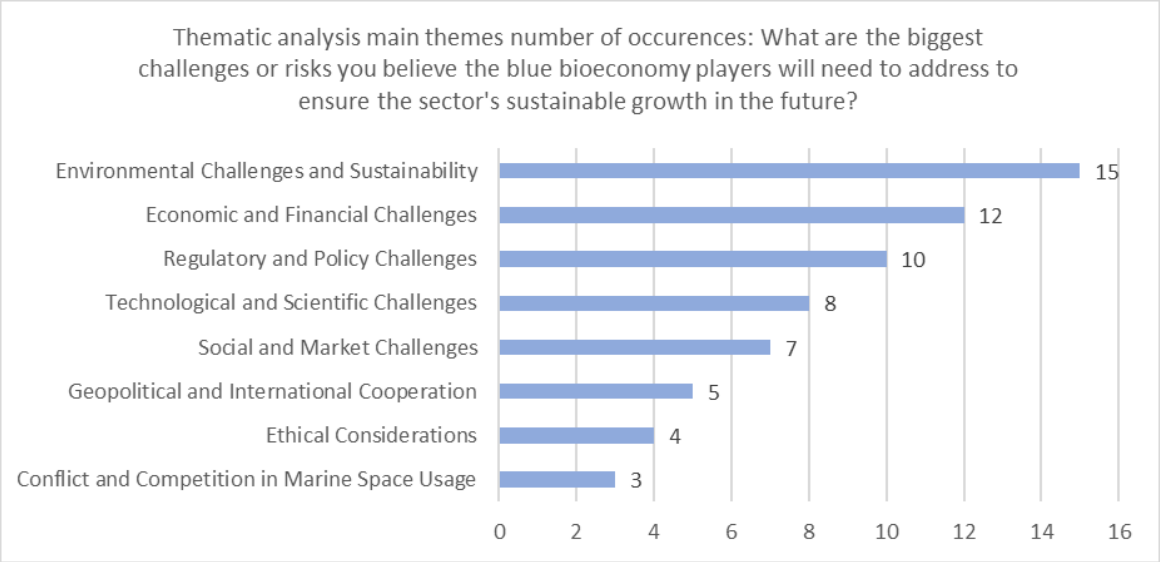
Highlight quotes: "micro-algae for food (additive), but even more for pharmaceutical and cosmetical purposes.", "renewable marine energy.", "convergence between Bioeconomy and Circular Economy sectors.", "valorization of byproducts from marine bio-based industries."

Appendix 19: External Survey Question 3



Based on 45 responses to this multiple-choice survey question, the most answered applications of blue biotechnology were aquaculture, nutraceuticals and functional foods with 20 respondents selecting each of them, followed by medical and pharmaceutical with 19, and bioenergy with 18.

Appendix 20: External Survey Question 4[28]

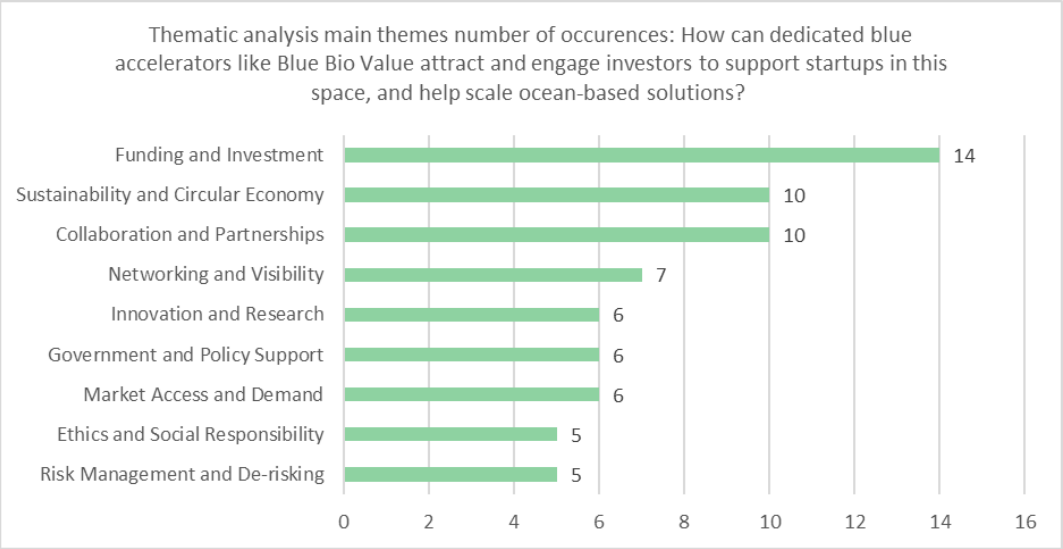


Survey respondents mentioned most times as biggest challenges and risks in the future for blue bioeconomy: Environmental Challenges, including biodiversity loss, overfishing, pollution, and climate change impacts like rising sea levels; Economic and Financial Challenges, namely access to financing and infrastructure, competition with cheaper, less sustainable alternatives, investment challenges and risk perception, among others.

Highlight quotes: "Balancing conservation and exploitation: Regulations need to strike a delicate balance between resource use and protection." "Developing and scaling new technologies for blue bioeconomy sectors can be costly and technically challenging. Securing adequate funding and investment is crucial for innovation and growth." "The bureaucratic/legal constraints for the establishment of new businesses in this area, in Portugal. This includes the time it takes and the difficulty of approving projects/supports in this area." "It will be necessary to ensure consumer acceptance of new products and to encourage different values and consumption motivations." "Geopolitical risks; the two ongoing wars are a risk because, naturally, they redirect priorities and attention away from these less pressing but strategically very important issues." "Ethics, justice, and equity issues, related both to animals, humans, and nations."
As mentioned by the Director-General of Marine Policy in Portugal, the most remarking challenges can be organized in three main areas "Need for training and competencies, (…) Acceptance and capacity to expand in the market, (…)Access to financing and infrastructures (…)"

[28] Based on 42 answers to this open survey question, a thematic analysis of the quantitative data was conducted with the assistance of AI tools to count the occurrence frequency of the most prominent themes identified within the set of responses.

Appendix 21: External Survey Question 5[29]



The survey findings reveal that the ability to secure funding, collaborate across sectors, and focus on sustainability are pivotal for the growth of blue economy startups.
Funding is a key focus, with an emphasis on securing investment at early stages, de-risking investments, and ensuring startups are well-prepared for fundraising. Several quotes stress the need for targeted funding and partnerships with investors to accelerate growth in the blue bioeconomy.
Environmental and economic sustainability is emphasized in many responses to attract investment and long run success. Also, many responses mentioned how collaboration can lead to scaling businesses and de-risking investments as well as connecting research with business. Respondents also suggest that showcasing successful cases, developing a robust online presence, and connecting startups with industry players are very important for building market credibility and investor trust.

Highlight quotes: "They could help de-risk investments and support innovative startups at their early stages of development." "Focus on funding tech or product/business development rather than startup consultancy/training." "Create investment vehicles that combine public and private capital to de-risk investments." "Clearly explain how blue bio can be sustainable and circular in the early years and regenerative in the long run." "Demonstrating the importance of the oceans and showing the investors the potential returns of their investments." "Collaboration with industry leaders: Involve established players in the blue economy to act as mentors, partners, or co-investors." "Creating international networks through platforms for access and information sharing." "It's very important for all kinds of startups to have a support network to promote their ideas and build up cases with visibility and trust." "Improving the ability to explain the potential of biological resources, the science involved, its application and the associated risks."

[29] Based on 39 answers to this open survey question, a thematic analysis of the quantitative data was conducted with the assistance of AI tools to count the occurrence frequency of the most prominent themes identified within the set of responses.

Appendix 22

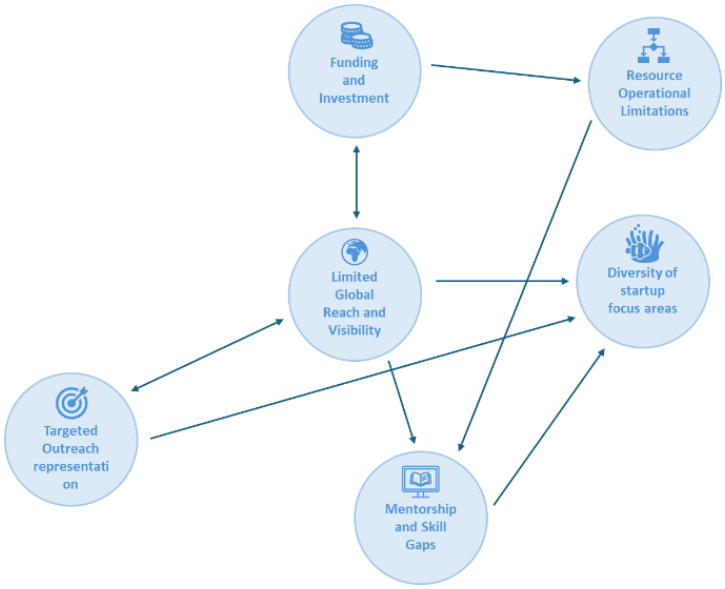
Mapping of Challenges According to Program Stage and Startup's Value Chain.

Challenge / STAGE	1	2	3	4	5	6	Startup Value Chain	Overall BBV functioning & success
Funding and investment							all	×
Resource and Operational Limitations		×	×	×	×	×	all	×
Mentorship and Skill Gaps				×	×	×	ADEFG	×
Global Reach and Visibility	×					×	G	×
Diversity of Startups' Focus Areas	×	×					n.a	×
Targeted Outreach and Representation	×	×					n.a	×

Stages of the Program	Stages of Value Chain for Startups
1. Scouting and applications	A. R&D
2. Diagnostic and onboarding	B. Bioprospection
3. Preparation (before the program's kick-off)	C. Raw material harvesting
4. Online program 7 weeks	D. Innovation development/ product differentiation
5. 3 weeks in Portugal	E. Added value, pilot scaling-up
6. Ongoing Support (for 3 months after the end)	F. Manufacturing Process
	G. Final Bioproduct / market entry

Appendix 23

Interconnection Between each Challenge

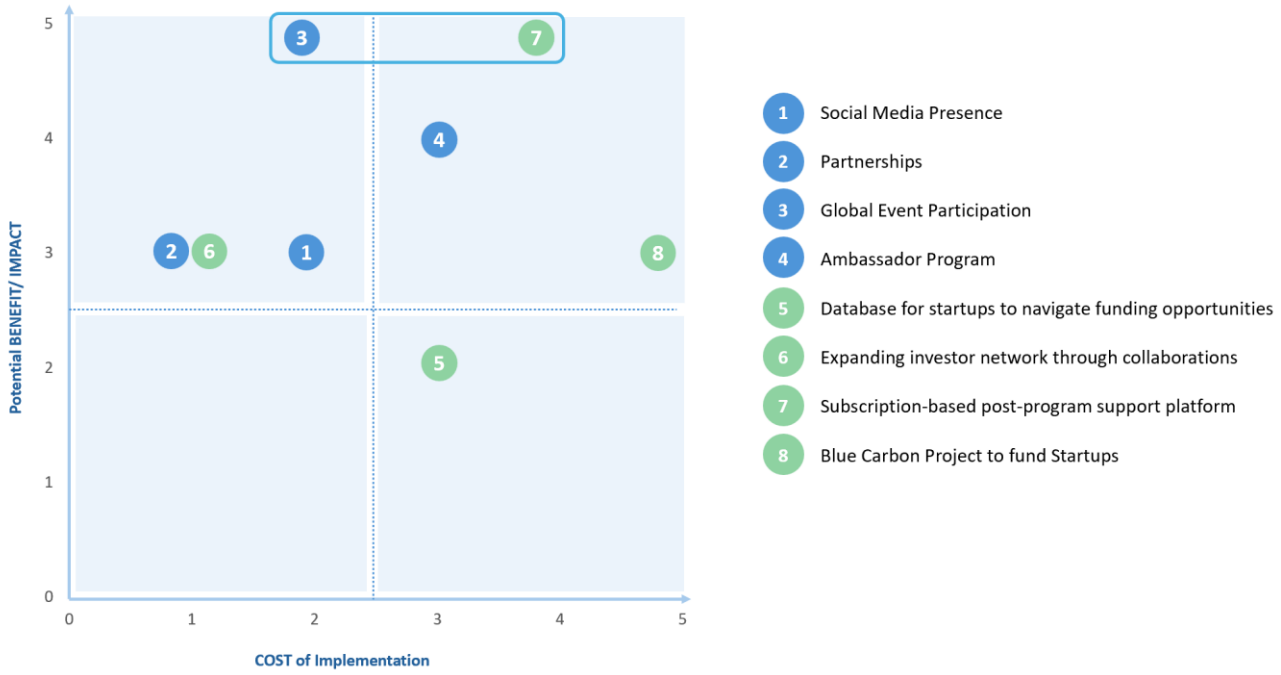


Appendix 24

Cost-Impact Matrix for Recommendations

Recommendations for Visibility	Cost (1-5)	Impact/Benefit (1-5)	Justification
Social Media Presence	2	3	Moderate impact; Already active on social media (Appendix 8), but lacks global reach compared to other recommendations.
Partnerships	1	3	Moderate impact; Partnerships can significantly expand BBV's visibility through joint initiatives, as noted in Appendix 5 and the Project Manager's feedback (Appendix 16).
Global Event Participation	2	5	High impact due to proven benefits of global visibility through strategic partnerships, as seen in competitor analysis (Appendix 5) and UN Global Ambassador's interview.
Ambassador Program	3	4	High impact; Expands BBV's global reach and networks, but requires significant coordination and effort.
Recommendations for Funding	**Cost (1-5)**	**Impact/Benefit (1-5)**	**Justification**
Database for Startups to Navigate Funding Opportunities	3	2	Moderate impact; although the database would facilitate the discovery of funding possibilities for startups and be valuable for the blue economy, it does not guarantee that startups will successfully obtain it.
Expanding Investor Network through Collaborations	1	3	Moderate impact; this can help facilitating access to funding for the startups by having a wider diversity and quantity of investors. It has also been referred by the team as an area for improvement.
Subscription-based Post-program Support Platform	4	5	High impact; Improves overall funding of the program by creating a new revenue stream and aids startups to enter and continue to a growth-stage with support both financially related. Also improves data collection, scalability and community building.

Blue Carbon Project to fund Blue Bio Value Startups	5	3	Uncertain Moderate impact; this recommendation incentivizes ecosystem restoration and appeal to investors and contribute to a sustainable funding stream, but with upfront investment it represents a risk for the program.



Appendix 25

Timeline of Recommendations

Appendix 26

Detailed Explanation of Recommendations

1. ***Recommendations centered on the Global Reach and Visibility Challenge***

Boost Social Media Presence

Enhancing BBV's media presence is critical for expanding its global visibility and attracting diverse startups, mentors, and investors. Based on insights from benchmarking (Appendixes 7 and 8), BBV could further build its presence on LinkedIn and establish a new presence on Instagram, which helps engaging broader audiences. Creating high-quality, engaging content and launching targeted campaigns will boost visibility.
Given BBV's size, improving its presence on social media platforms requires relatively **low to moderate costs** and it could be rolled out within the **first three months**.

Create New Partnerships

Collaborations with Portuguese universities and research institutes, such as NOVA University or CIIMAR, or other recognized institutions like the University of Plymouth (UK) for its expertise in marine science or Wageningen University (Netherlands) for sustainable biotechnology, would not only result in access to shared lab facilities and other resources, but also in co-development opportunities and joint programs to enhance visibility. Partnering with blue economy networks, such as the Submarine Network, for Blue Growth, a network focused on connecting stakeholders from the Baltic regions and players within the blue bioeconomy and biotechnology, would also allow for greater exposure and global reach.
While specific costs for establishing partnerships cannot be estimated due to varying scopes and industries, **costs** can often remain **low** due to shared resources, joint initiatives, and mutually beneficial goals (Pwc 2009). As outlined in the timeline, partnership development could be initiated within the next **6 months**, with concrete milestones to reach a formal agreement within 12 months (Thriwin 2023).

Global Initiatives and Event Participation

Participating in global initiatives and events is a cost-effective way for BBV to enhance its visibility and credibility, while expanding its network of international stakeholders. Insights from the Senior Advisor to the UN Global Compact suggest that smaller players, like BBV, can benefit significantly from engaging in networks such as the United Nations Global Compact (UNGC), participating in UN-themed conferences, or joining the 1000 Ocean Startups initiative. All these platforms allow smaller players to contribute to policy discussions, showcase their contributions to the blue economy, and build a stronger network, resulting in increased visibility. Engaging in these global initiatives involves relatively low financial costs, with **low to moderate** annual membership fees, and moderate effort, making it a short-term, high-impact strategy for enhancing visibility and credibility (United Global Compact Portugal 2024; 1000 Ocean Startups, 2024). Expected time of implementation is around **6-12 months**.

Create an Ambassador Program

Implementing an Ambassador Program can significantly improve BBV's global visibility and credibility by leveraging the networks of its alumni, mentors, and industry stakeholders. Ambassadors would serve as trusted representatives, actively promoting BBV’s mission, sharing success stories, and fostering trust among startups, investors, and strategic partners (Forbes Communications Council 2023). The program could focus on alumni who have successfully scaled their startups, offering them incentives such as exclusive access to BBV events, public recognition, and mentorship opportunities to maintain engagement. This strategy

not only builds trust but also strengthens BBV's global reputation, as ambassadors promote its unique focus and success stories. Leveraging this program could also address BBV's mentorship gaps by encouraging ambassadors to connect with international experts in their networks, improving the diversity of BBV's mentor pool.
The Ambassador Program would require **moderate costs** and effort. Such programs have been shown to generate higher engagement compared to traditional marketing approaches, making them a cost-effective strategy, with an implementation achievable in relative short period of time, **from 6 to 12 months** (Flevy 2023; Clearview Social 2023).

2. Recommendations Centered on the Funding and Investment Challenge

Creating Database for Better Navigating Funding Opportunities for Startups

Blue Bio Value already implements several strategies to aid startups in navigating funding, still, financial support for proof-of concept validation of prototypes and projects (pre-incorporation) which help ensure viability of solutions for later seeking larger-scale funding.
BBV could develop an online database to help startups navigate grants, loans, and funding programs specific to the blue economy, designed to provide comprehensive, easy-to-access information categorized by region, funding type, and stage of development. Startups could better identify and apply for opportunities, ultimately increasing their capacity to scale.
For Blue Bio Value to develop this online navigable database platform it would have **moderate cost**, besides design, development and updating. There could be a full public launch by **month six** (Crowdbotics 2024).

Expansion of the Investor and Sponsor Networks through Collaborations

Since Blue Bio Value is an equity-free acceleration program, it aims to facilitate access to funding for startups by increasing their exposure to a wide network of potential investors. Through partnering with players with own investor networks could expand the program's potential investor amount and diversity and create synergies, besides strengthening ecosystem credibility. For this, we propose as partners: BlueInvest Community, (providing business-to-investment matchmaking among other benefits) together they could host joint pitching sessions to EU networks (BlueInvest n.d.); and alternatively, Aqua-Spark, with a global network of investors focused on sustainable aquaculture (more than 300 from 25+ countries) could be invited to pitch events as well as the networking opportunities, increasing the possibility for aquaculture related startups to obtain financing (Aqua-Spark n.d.).
The partnership would represent relatively **low costs** for Blue Bio Value and once terms negotiation is concluded, within **less than a year** the expanded investor network can be implemented.

Subscription Model for Post-program Support Platform

Blue Bio Value could provide a monthly subscription-based model, optional for startups that have participated in the program, which besides ensuring ongoing engagement and follow-up on their progress (beyond 12 weeks post-program), would be generating revenue to self-sustain, improve and expand the ecosystem's infrastructure and resources.
The digital platform would include as features: a knowledge repository (best practices, research and market insights), interactive community forums, templates, workshops, feature to assist regulatory compliance and IP management and networking opportunities. This could contribute to facilitating infrastructure, fostering inter-sector-support and knowledge sharing to expand the pool of resources for biotech startups. Implementing this would require **moderate to high**

costs. Overall, to implement this recommendation it could take around **1 to 1.5 years**, doing a pilot phase and full launch.

Applying Blue Carbon Offset Scheme to Fund Blue Bio Value Startups

Creating a blue carbon offset scheme could provide BBV with a funding stream for startups focused on restoring and enhancing carbon sink ecosystems like seagrasses, or algae species that capture and sequester CO2, for example. BBV would need to identify target ecosystems with high carbon sequestration potential and develop methodologies for quantifying it, either by using established frameworks like Verified Carbon Standard, or partner for accurate carbon accounting. This scheme could be supported by corporate partners, by offering companies blue carbon offsets to meet sustainability goals, highlighting benefits of biodiversity conservation and coastal resilience. The next step would be to reinvest in startups by channeling funds from the offset investment into BBV startups engaged in developing restoration technologies, creating bio-based products from restored ecosystems or monitoring and sustainability solutions. This would fortify marketability and financial sustainability of BBV's startups. Setting up such a system could prove to be highly costly and complex, (Economist Impact 2024). All steps considered, this would be a risky project with **high initial investment** and effort, taking approximately **1 to 2 years** (World Bank 2023).

Appendix 27

Recommendations Table with Corresponding Goals, Cost justification and Time to Implement

Recommendation	Time	Cost	Goals[30]
Boost Social Media Presence	3-6 months	**Low to moderate costs**: Depending on their objectives and target market, small businesses usually spend $500 to $5.000, with expenses mostly for content production, simple analytics tools, and modest ad campaigns (Sprout Social 2024). Regular posting, audience interaction, and campaign performance analysis are all necessary tasks that can be handled by a small team or contracted out to agencies at affordable prices.	- Establish new presence on Instagram - Reach 5.000 followers on LinkedIn and 2.000 on Instagram (a reasonable goal compared to peers' performance).
Partnerships	6-12 months	**Low costs**: Although difficult to quantify, they often remain low due to shared resources, joint initiatives, and mutually beneficial goals (Pwc 2009).	- Reach at least 1-2 new partnerships within a year (a reasonable goal, based on BBV's current size of network of over 130 mentors, and 163 investors).

[30] Costs and goals have been determined based on market averages, desk research, and reasonable assumptions. It is important to note that the goals set forth should be revisited and adjusted in accordance with BBV's actual performance and results.

Global Initiatives and Event Participation	6-12 months	**Low to moderate costs**: Low annual membership fees around €1.500, and additional travel costs.	- Participate in at least one global initiative or event within 12 months (based on the time and preparation that these platforms require).
Create an Ambassador Program	6-12 months	**Moderate costs**: Based on market research, similar programs typically cost between $2,500 and $10,000 annually for setup and management, depending on the size and scope (Collier 2024). BBV could reduce implementation costs by leveraging alumni and mentors as ambassadors in exchange for non-monetary incentives.	- Recruit at least 10 ambassadors from different countries within 12 months (based on reasonable assumptions of alumni and mentors willing to participate).
Database for Navigating Funding Opportunities for Startups	6-12 months	**Moderate costs**: $20.000 to $30.000, besides design, development and updating (Crowdbotics 2024).	- Include at least 50 curated funding opportunities at the time of database launch (based on the number of investment deals between 2018-2023 in blue biotech and aquaculture, 114 and 279 respectively, which jointly average at 65.5 deals a year; Directorate-General for Maritime Affairs and Fisheries 2024).
Expansion of the Investor and Sponsor Networks through Collaborations	6-12 months	**Low cost**: Although difficult to quantify, costs would include initial negotiation and agreement costs. Since the partnership doesn't involve major operations, only traveling costs for networking, it would represent relatively low costs.	- Onboard at least 15 to 30 new investors or sponsors within 12 months through targeted outreach and partnerships with relevant initiatives (considering estimating from a baseline of 163 investors in 2023 and the size of other blue investment networks).
Subscription Model for Post-program Support Platform	1-1.5 years	**Moderate to high cost**: This would entail building a digital platform, maintenance costs, creating content, as well as marketing and subscription management, with initial costs between $5.000 to $150.000 (estimating $30.000 initially for BBV) (Aalpha n.d.).	-Target at least 70 alumni startups as initial subscribers or ideally 193 of past applicants (for estimations rationale see Appendix 32).
Blue Carbon Offset Scheme to Fund BBV Startups	1-2 years	**High cost**: Setting up such a system could prove to be highly costly and complex, with added costs of hiring experts, certification and establish a dedicated fund (potentially costing above and beyond $75.000 just initially) and with ongoing costs for monitoring (Economist Impact 2024).	- Breakeven (to generate funding for BBV startups on top of initial investment) 1 year post successful implementation, meaning at least 5000m tons of CO_2 to be removed in the first year (assuming average price of 15$ and depending on the sequestration ecosystem area; CarbonCredits 2024).

Appendix 28

Success Metrics for Each Recommendation – KPIs

Social Media Presence	- Social Media engagement metrics, including likes, shares, comments, and follower growth on LinkedIn and Instagram - Content posting frequency - Reach of social media campaigns, measured by impressions and audience demographics - Conversion rate from social campaigns to applications or inquiries
Partnerships	- Number of partnerships established with organizations such as Blue Horizon, Algae4Future, and Portuguese research institutions - Startups benefiting from partner expertise or resources - Partnership impact surveys indicating value added for startups (internal perception) - Resources leveraged from partnerships (funding, lab access, technical support)
Global Initiatives and Event Participation	- Number of events attended annually by BBV representatives. - Media coverage and mentions post-events showcasing BBV's visibility - Increase in international applications after participation in events - Strategic collaborations initiated following event participation
Ambassador Program	- Number of ambassadors recruited and actively promoting BBV - Engagement rate of ambassador-led activities - Applications and partnerships attributed to ambassador outreach efforts - Ambassador retention rate, indicating sustained commitment
Database for Startups to Navigate Funding Opportunities	- Database usage metrics, including number of users and interactions with database - Feedback from startups on the database's utility - Number of funding applications attributed to database resources - Rate of database updates and new entries
Expansion of the Investor and Sponsor Networks	- Amount of funding secured by startups through the expanded network (€) - Growth in investor participation during pitching events - Diversity of investors in terms of geography and specialization - Number of joint initiatives or co-investments resulting from collaborations
Subscription Model for Post-program Support	- Number of subscribers to the platform - Revenue generated from subscriptions - Engagement metrics on the platform, such as active users and participation in forums - User satisfaction, based on surveys or feedback
Blue Carbon Offset Scheme to Fund BBV Startups	- Revenue generated from carbon credits for reinvestment - Startups funded through blue carbon initiatives - Number of corporate partners investing in the blue carbon scheme/ Carbon credits issued and sold, measured in metric tons of CO2-equivalent - Environmental impact metrics, such as hectares of restored ecosystems

OVERALL Program KPIs and corresponding Goals

31

Growth in Applications: Increase in number and diversity (focus areas) of startups applying to BBV

- Baseline: number of applications 105 in 2023
- Goal: at least doubling number of applications since 2023 after full successful implementation of visibility initiatives
- Goal: increase of participants in biotech and ocean conservation sectors to 60% of cohort composition after full successful implementation of visibility initiatives

[31] KPIs will serve as a tool to monitor progress and can evolve/ be adapted over time.

Increase in funding raised: Total capital secured by startups during and after the program

- Baseline is 22.8 million in capital, 6.7 million in revenue, 299 full time jobs generated for startups cumulative over the 6 years of the program from 2018 to 2023 (source: internal evaluation report)
- Goal: increasing on top of baseline 5 million more generated capital upon implementation of recommendation

Geographic diversity: Spread of applicants and partners across regions

- Baseline: Most startups from UK, Spain and Portugal over the (6 years)
- Goal: growth in international and intercontinental participants, new participant nationalities after implementation of recommendation

Expansion of mentor pool: Growth in the number, nationalities and expertise of mentors

- Baseline: more than 160 mentors
- Goal: 20% international mentors, after implementing global visibility recommendations

Program alumni success stories: Number of alumni achieving significant milestones (market readiness)

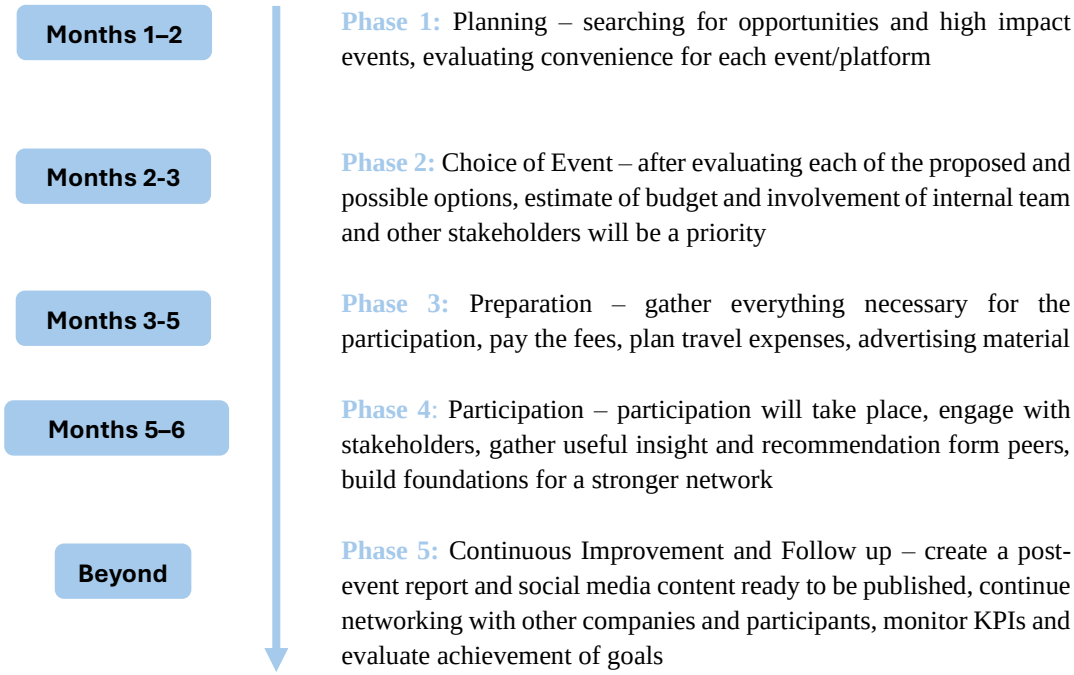
- Baseline: After the program 57% of startup respondents have market ready products or solutions in total over last editions until 2023 (source: internal evaluation report)
- Goal: In next edition after implementing recommendations, have 70% of startups with market ready products or solutions post-program

Enhanced BBV brand awareness:

- Baseline: 4517 LinkedIn followers
- Goal: Increase in social media impressions and interactions, LinkedIn and Instagram followers, with active consistent posting of quality content, implementing recommendations, around 15%-25% increase in linked in followers leading to 5195-5646 for the next year
- Goal: Increase in Event attendance by potential investors, potential corporate partners in blue economy and policy makers

Appendix 29

Timeline Roadmap for Global Event Participation



Appendix 30

Cost-Benefit analysis for Global Event Participation

COSTS	Y1
Participation Costs	
Event participation fee[32]	1500
Marketing[33]	3000
Subtotal	4500
Other ongoing Operational Costs	
Social media marketing[34]	2000
Team[35]	11562,5
Regional events travel expenses[36]	2000
International events travel expenses	4000

[32] This is the average between the cost of participating to GNGP (€750), the estimated cost of participating to 1000 Ocean Startups (€3000), and the assumed cost of participating to UN Conferences (€1000 or less).
[33] This cost entrails costs to prepare materials for the participation, such as brochures, pitch deks or customized applications, as well as social media management and advertisement costs. It was estimated and aligned to the cost of Marketing activities of BBV of 2023 (€20.000) sponsored by Ocean Azul Foundation.
[34] This cost entrails ongoign expenses such as social media engagement and campaign, preparation of reports, stakeholder's communication
[35] Based on average salaries of BBV implementation team (185k divided by 16 team members), assuming one person would be fully dedicated to the event organization and participation.
[36] Travel expenses are calculated for two employees, assuming their participation in events to represent BBV. The costs are based on market average prices, including flights and accommodation for a few days.

Subtotal		19562,5
TOTAL COSTS		24062,5
BENEFITS (intangible)	Description	KPI (Y1)
Increased visibility	Broader global awareness through high-profile event participation	+ 10-15 % applications[37]
Increased awareness	Increased social media presence	+ 1000 followers[38]
Increased diversity in applicants	Improved geography and sector diversity of startups	+2/3 new countries[39]
New potential investors	Exposure to potential funders and VC firms	+10 new investors[40]
Other Intangible Benefits (not measurable)		
Stakeholder engagement	Strengthened relationships with policymakers, academic institutions, and NGOs	
Increased credibility	By reinforcing reputation and showing commitment	
Increased brand awareness	To become top worldwide accelerator in the blue economy	

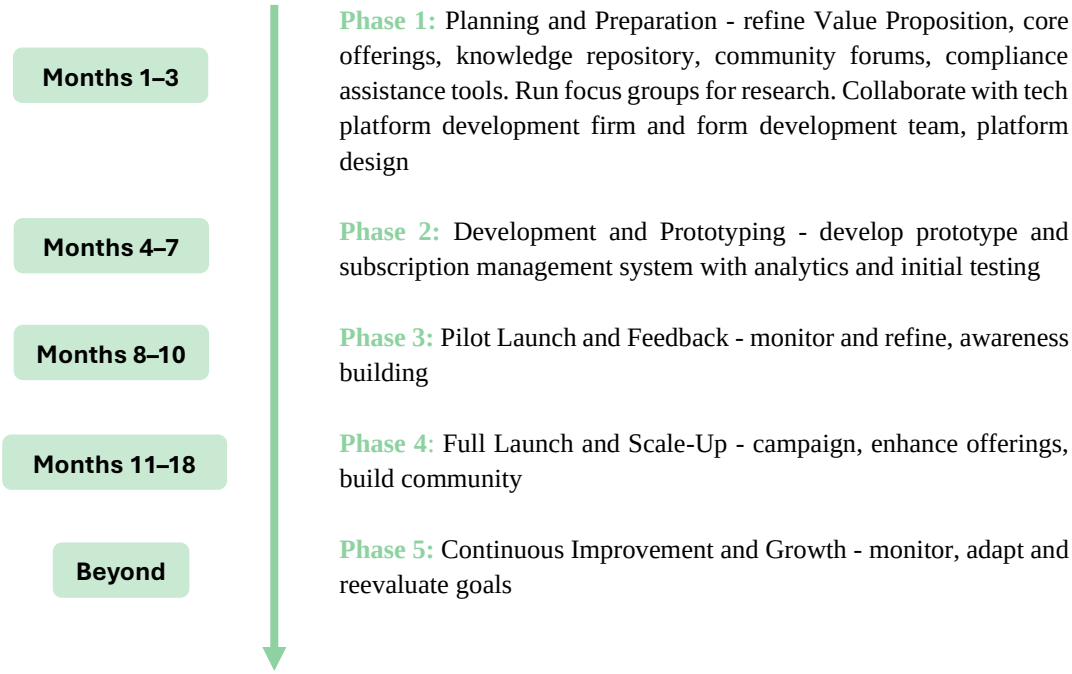
Key considerations and Limitations

- The estimation of costs is based on reasonable assumptions, market average prices, and available information on internet; however, costs should be revisited based on actual performance
- Costs may vary significantly depending on the location and scope of events, as well as exchange rate fluctuations for international travel
- Due to the intangible nature of the benefits and the lack of data, it was not possible to quantify them; however, some KPIs have been set with specific targets, based on the benchmark, BBV's performance and cost of the program of 2023
- This estimation does not consider other unexpected expenses
- Some benefits, such as increased visibility or stronger networks, may only materialize over a longer period, beyond the timeframe of the cost-benefit analysis
- The realization of benefits depends on external factors, such as event attendance, global market trends, and stakeholder engagement, and may be revisited

[37] Expected 10–15% annual increase in applications was set as a conservative but reasonable target based on BBV's 25% application growth in the past year (Appendix 12).
[38] With ~4,000 LinkedIn followers currently (Appendix 8), BBV can target a growth of 1,000 followers annually (25%), aligning with competitor benchmarks such as Ocean Hub Africa's 8,000 connections.
[39] This metric was set based on BBV's current reach of 31 countries (Appendix 9)
[40] In its 6 years of operation, BBV has built a network of 163 investors. Building on this foundation, event participation can realistically aim to generate 10 new investor leads annually.

Appendix 31

Timeline Roadmap for Subscription-Model Platform Implementation



Appendix 32

Cost-Benefit Analysis for Subscription Model Recommendation

COSTS	Y1	Y2	Y3	Y4
Development Costs				
Platform development[41]	30000			
Content creation	10000			
Marketing[42]	5000	(goes to general marketing expenses)		
Subtotal	45000			
Ongoing Operational costs (per year)				
Updates (technical and content)	8000	9000	10000	10000
Team[43]	34687.5	34687.5	46250	46250
Subtotal	42687.5			
TOTAL COSTS	87687.5	43687.5	56250	56250
BENEFITS	Y1	Y2	Y3	Y4
Subscribers (alumni)[44]	70			

[41] Source: https://crowdbotics.com/posts/cost-to-build/content-subscription-app/

[42] Based on a quarter of marketing expenses

[43] Based on average salaries of BBV implementation team (185k divided by 16 team members) and multiplying by 3 employees for platform development, increases to 4 employees on year 3.

[44] Assuming 60% of alumni try the platform initially.

Subscribers (applicants)[45]	193	238	283	328
Number of alumni in total	117			
Number of applicants till 2023	429			
Pricing model				
Basic	29	29	29	32
Premium	46	46	50	50
Basic with pilot discount (-40%)	17.4			
Premium with pilot discount (-40%)	27.6			
Subscription Revenue Conservative basic[46]	14861.34	82841.4	98501.4	125971.2
Subscription Revenue Optimist premium[47]	23573.16	131403.6	169830	196830
Average projected Scenario Revenue	19217.25	107122.5	134165.7	161400.6

Intangible Benefits
Alumni engagement, long-term loyalty
Brand differentiation, comprehensive support
Diversifies income, reduced dependence on funding
Potential to expand platform offerings (e.g., investor matchmaking) and expand to international startups

Net Estimated Benefits-Costs	-68470.25	63435	77915.7	105150.6
		BEP		

Key considerations and limitations

- Growth or decrease in user base and features can impact returns, positively or negatively
- Initial losses and platform adoption risks need to be accounted for and need robust feedback loops and marketing
- Potential to evolve into a global resource, enhancing BBV-s market position and attractiveness
- This is an estimation of approximate costs and benefits of implementing the subscription model, assuming a stable pricing, therefore, it is to consider that price might vary across years and depend on willingness to pay (to be estimated with startup focus groups) and features available
- This estimate doesn't account for unexpected expenses
- Pricing was assumed from benchmark of other subscription platforms
- Intangible Benefits potential monetary impact is not accounted for

[45] Assuming 45% of the applicants from past years try the platform (assuming more 100 applicants a year).
[46] Assuming all subscribers choose basic; 3 pilot months and 2 full months in Y1 and chose to target not just alumni but also applicants not accepted.
[47] Assuming all subscribers choose premium; 3 pilot months and 2 full months in Y1 and chose to target not just alumni but also applicants not accepted.

Appendix 33

Financial Costs of the Blue Bio Value program- Entirely paid by Oceano Azul Foundation[48]

COSTS	
Remuneration for the implementation team associated with Maze and BLUEBIO ALLIANCE	185 000€
Award voucher for winning startups	45 000€
Marketing and Communications	20 000€
Events and Operations	40 000€
Stipends to participants	60 000€
Total costs	350 000€

Appendix 34

List of Contacted Entities for External survey[49]

INTERNATIONAL ORGANISATIONS

United Nations Environment Program

- Daniel Mwima, Coordination and Partnerships
- Letícia Carvalho, Senior Coordinator / Head of Marine and Freshwater Branch
- Lígia Noronha, UN Assistant Secretary-General and Head of the New York Office

United Nations Global Compact

- Peter Thomson, UN Secretary-General's Special Envoy for the Ocean
- Suzanne Johnson, UN Global Compact Senior Advisor for the Ocean

The World Economic Forum

- Alfredo Giron, Head of the World Economic Forum's Ocean Action Agenda and Friends of Ocean Action
- Ronald Tardiff, Acting Lead, Ocean Innovation, Ocean Action Agenda

INVESTORS

EEAGRANTS

- Programa Crescimento Azul - The Blue Growth Program
- Programme operator – Direção Geral de Política do Mar - Marisa Lameiras da Silva

[48] The financial promoter of the program
[49] Blue economy stakeholders that were sent interview requests or survey requests.

Ocean Invest Portugal - oceaninvest.pt

Ocean Risk Alliance

- Melissa Walsh, Director, Blue Finance and Scaling

Programa MAR 2030 - MAR 2030 Program- financed by the European Maritime, Fisheries and Aquaculture Fund for Portugal.

NON -PROFIT ORGANISATIONS AND NETWORKS

B2E − blue Bioeconomy CoLAB

Maria Coelho, Coordinator | Ana Rita Ribeiro, Innovation and Project Manager | Diana Bicho, Project Manager | Joana Tomé, Innovation Management and Business Development | Hugo Barros, Innovation Management| José Barbosa, Innovation Management | Rute Moreira, Innovation Management | Tânia Almeida, Innovation Management | Taynara Franco, Innovation Management & LCA | Ana Braga, Knowledge Transfer Manager

BlueBioClusters project

BlueBioMatch

European Network of Maritime Clusters

The **European Network of Maritime Clusters (ENMC)**

EU4Ocean

FORUM OCEANO

- Rúben Eiras, Secretary-general; Francisco Beirão, Blue Consultant; Gonçalo Santos, Internationalization Coordinator; Lorella Ciuti, Blue Executive Assistant - Atlantic Strategy and the WestMed initiative; Rui Azevedo, Blue Strategic Consultant
- Hub Azul Team at Forum Oceano: Alice Dellavalle, Digital Platform and Internationalization Manager; Gonçalo Faria, Hub Azul Lead Manager; Margarida Macedo, Blue Financial Officer

Iceland Ocean Cluster

INOVSEA: Álvaro Sardinha, consultant in blue economy and sustainable regenerative development.

Réseau Transnational Atlantique - Executive Comittee

RISE UP

SEABED 2030: Jamie McMichael - Phillips, Director of The Nippon Foundation-GEBCO (The General Bathymetric Chart of the Oceans) Seabed 2030 Project

The Submariner Network

RESEARCH CENTERS AND UNIVERSITIES

Centro de Ciências do Mar do Algarve - Algarve Marine Science Center, University of Algarve

Adelino Vicente Mendonça Canário and Joana Ferreira Leal

Centro de Estudos do Ambiente e do Mar - Center for Environmental and Marine Studies, University of Aveiro: Ana Isabel Lillebo Batista

Centro de Investigação Marinha e Ambiental - Marine and Environmental Research Center, University of Algarve **:** José Manuel Quintela de Brito Jacob**,** Maria João da Anunciação Franco Bebianno

CIIMAR - Interdisciplinary Center of Marine and Environmental Research, University of Porto

Coral Research & Development Accelerator Platform, King Abdullah University for Science and Technology, Saudi Arabia: Carlos M. Duarte, Executive Director.

MARE -Marine and Environmental Sciences Center

Algarve University - Alice Newton | Évora University - Helena Adão and Teresa Cruz | FCT, Nova University - Graça Martinho and José Ferreira | Faculty of Sciences, University of Lisbon - Jaime Ramos, Pedro Ré, and Ricardo Melo | ISPA - Manuel Eduardo dos Santos | Polytechnic Institute of Leiria - Maria Jorge Campos and Maria Manuel Gil

MARE – External Monitoring Committee

Angél Borja, AZTI – Tecnalia Marine Institute | Emmet Duffy, Smithsonian Environmental Research Center | Janine Barbara Adams, Nelson Mandela University, Institute for Coastal and Marine Research | Ursula Siebert-Lebenslauf, University of Veterinary Medicine Hannover (TiHo), Institute for Terrestrial and Aquatic Wildlife Research (ITAW).

LINKED IN BLUE ECONOMY GROUPS

Blue Economy Innovation

Blue Bioeconomy Forum

TEACHING NOTE

Part 1: Case Overview and Teaching Background

Case synopsis

The Case Study, set in Portugal over the year of 2018, concerns the decision to launch Blue Bio Value, an acceleration and ideation program specialized in the blue bioeconomy. BBV was initiated by Oceano Azul Foundation, whose mission is to restore and maintain the ocean's health and productivity for the benefit of life on the planet. The case explores the untapped potential of the blue bioeconomy, as an emerging growing industry, in order to create cross-sector sustainable ocean-based solutions in sectors such as pharmaceuticals, nutraceuticals, food, polymers and energy. Moreover, it analyses the challenges faced by the players in this field, which comprehends a large portion of SMEs and startups. These challenges, which include funding, infrastructure and support gaps are hindering the international ocean agenda and, consequently, emphasize the need for a program like BBV, portraying an opportunity in the market. The case closes with strategic considerations in terms of positioning of the program, partnerships required for its creation and possible formats to effectively meet the participant's demands in line with sustainability. For the subsequent analysis, alignment with BBV's strategic goals should be considered. Namely, contributing to the development of blue biotechnology applications which attribute economic value to marine bioresources, assisting the scalability of blue bioeconomy startups committed to ocean conservation along with promoting BBV as a tool to communicate that economic growth can coexist with a healthy ocean, and contribute to the development of the blue biotech ecosystem in Portugal.

Case use and Teaching Objectives

This case may be approached in courses that cover topics of business strategy, innovation, sustainability, entrepreneurship, impact investment and regenerative business. The case may also be relevant for stakeholders in the blue bioeconomy and marine biotechnology, or similar niche sustainable industries, entrepreneurs, members of accelerator programs, policymakers at

national and international levels in maritime and ocean affairs. In this case, readers are able to benefit from a better understanding of an emerging industry that explores the untapped economic potential of marine resources, while striving to maintain environmental stewardship, as well as the important role of partnerships and collaboration to support its development. In addition, it emphasizes the challenges that can be faced in the process, and the importance of strategic choices to mitigate them. The purpose of this teaching note is to critically reflect on how BBV can maximize value creation and impact in the blue bioeconomy, simultaneously meeting the needs of the program's participants through its partnerships and the program's format. Main teaching objectives include:

- Analyze value creation as an accelerator in the blue bioeconomy;
- Identify pathways to impact from specific program components;
- Deconstruct and critically analyze the need for partners vs building internal expertise, along with respective advantages and disadvantages;
- Understand the role of partnerships to escalate sustainable development and address gaps;
- Promote discussion on the influence of collaboration and innovation in the spread of sustainable ocean-based solutions and global industry transformation.

Methodology and data collection

The case study's information portrays the time period of the decision to launch BBV in 2018. Data and information on blue bioeconomy were gathered from industry reports, journal articles and online research, while specific details on the acceleration program derived from interviews with Oceano Azul Foundation, BBV's founders and its project manager.

Preparing exercises

Students should comprehensively read the Case Study in advance of class, or in dedicated time prior to discussion, to better comprehend its industry and geographic context, details, and

considerations regarding challenges and options for BBV. The appendix should also be consulted to establish productive engagement in class discussion and analysis.

Part 2: Teaching Plan and Case Analysis

This teaching plan is valuable in assisting instructors guide the class with questions addressing various interlinked subjects, from value creation, impact, partnerships to innovation, systemic industry transformation and sustainability. Some of these subjects are forward-looking, strategic and interdisciplinary in their nature, and the case discussion aims to shed light on emerging fields by connecting them with strategy, as their relevance in the management sphere grows. Therefore, constantly evolving findings are to be accounted for in order to complement the discussion whenever it takes place. The case discussion starts with establishing what BBV intends to accomplish and what participants specifically require. Moving onwards to examining how the program's structure might align with their goals and lead to positive impact, followed by identifying possible resource gaps. Then, it is prompted an evaluation of whether it should seek partnerships for external support. Sequentially, partnership selection criteria are explored, and finally a reflection on BBV's potential in Portugal and globally, with an emphasis on sustainable growth is made. This sequence intends to logically progress from defining objectives and needs to address in the program, to practical steps to achieve them, thus helping students follow and engage in the discussion. Subject to the purpose of the class and instructor's specific branch of knowledge, each case question and topic can be more or less prioritized and addressed, accordingly.

<u>Case Introduction</u>

In recent years, Portugal has started to surge as a pioneer in the blue bioeconomy due to its rich marine resources. The BBV acceleration program would be born from this vision in 2018, as

an answer to blue bioeconomy roadblocks hindering its growth. BBV hopes to support startups focused on marine-based solutions, helping them overcome the hurdles of early development, market entry, and scaling. BBV's mission was to surpass barriers such as lack of funding, limited access to global markets and resources for product development. For the purpose of achieving these objectives and creating lasting value, BBV might require strategic partnerships to thrive while balancing the dual purpose of business growth for the startup participants, and a sustainable ocean economy. In the following teaching plan, participants are prompted to reflect on these considerations and their results for BBV. Materials and frameworks mentioned are provided in the appendix to assist in the analysis and discussion.

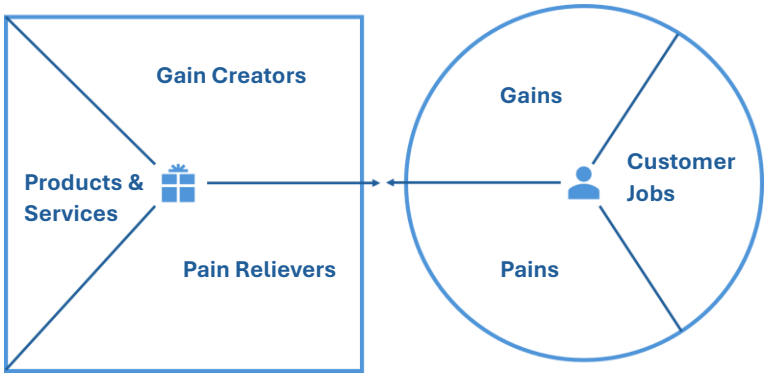
Class Discussion

After a short introduction about BBV and the context of the case, the in-class discussion could kick-off by asking the following question:

1. What program components are most essential for BBV to create value for startups in the blue bioeconomy, and answer their needs?

In terms of the acceleration program, BBV's main customers are the startups participating in the acceleration program, which operate along the value chain of marine bioresources. To assess how BBV can best design their acceleration program, applying the **Value Proposition Canvas** (Appendix 2) will help discussants clarify how BBV's offerings are able to meet their specific needs and alleviate key challenges in the blue bioeconomy. In class, allow students to collaboratively brainstorm in groups applying this framework, starting with the right side and moving to the left side, exploring matching value proposition and customer segment, as exemplified:

Figure 1



Customer Jobs	- Developing innovative ocean-based solutions, effectively sourcing the marine bioresources - Market entry, securing customers and scaling - Access to initial and follow-on funding for R&D and infrastructure, building connections to research institutions, suppliers, corporates for collaboration and growth
Gains	- Business and technical mentorship and expertise - Financial support from investors, including seed funding, as well as continued funding - Access to infrastructure and resources essential for their business models - Connection in the industry to strengthen startups expansion
Pains	- Limited access to funding especially in earlier stages - Costly and inaccessible labs and specialized facilities for marine bioeconomy - Challenges in reaching customers and scaling, particularly in niche or emerging markets - Isolation from market networks to support growth and market reach
Service	- Provide mentorship from experts, business strategy mentorship - Access to networks of impact investors and VC - Technical and infrastructure support critical for product development - connections with universities, research institutes, corporate partners, and NGOs in the blue bioeconomy sector
Gain Creators	- Accelerated market entry for participants, through their robust support ecosystem - Improve success rates for the startups, these also gain a competitive edge with all the guidance and resources available to them - Boosted innovation through technical expertise and collaboration opportunities
Pain Relievers	- Solving funding gaps by connecting the startups with funding sources and providing initial capital - Providing access to the infrastructure needed for the duration of the program will remove a barrier to innovation - The program would foster scalability with expertise in market expansion

2. How can BBV's program structure – through its offerings of mentorship, funding, and resources - effectively support impact and value creation in the blue bioeconomy?

Groups tools can be applied, such as the Logic Model (Appendix 3) or Theory of Change, to assess the impact of BBV's initiatives, thus ensuring alignment with long-term goals.

This exercise for BBV aligns the program resources needed and activities with their outcomes, which helps build a clear pathway towards achieving the goal of promoting sustainable economic and environmental impact in the blue bioeconomy. This model also provides structure for assessing the acceleration program's effectiveness and uncovering areas where there is room for improvement. Readers can consult the full logic model in Appendix 4.

Additionally, this framework can be integrated with the SDGs, connecting the outputs, outcomes and impact of the acceleration program with the indicators, targets and goals of sustainable development, respectively. In class, discussion can be opened to students, on which

specific SDGs the program contributes, to and their practical applicability to business models and operations (BBV's examples in Appendix 5). For example, using Mentimeter as an interactive tool, and then discussing results.

3. Are there gaps between BBV's current resources, and what it needs to achieve their goal? What specific areas might require external expertise or resources that BBV currently lacks?

As observed in the previous question, for BBV to accomplish their intended impact and value creation in the blue bioeconomy with its acceleration program, a variety of inputs are needed to bring the program to life. Oceano Azul Foundation, as the program's promoter, possessed part of the main resources necessary to facilitate the emergence of new blue companies while promoting ocean protection. Therefore, BBV had already available in-house notable ocean experts on conservation, fundraising and legal regulation, as well as blue biotech academics from its promoter. However, it was lacking extra commercialization, operations, entrepreneurship and marketing support for the participants. In terms of funding, the Foundation would financially support the acceleration program. Nonetheless, continued funding for the startups' acceleration would need to be prevenient from another source, namely investor networks and partners. Critical infrastructure for the blue biotech startups to scale their innovation would also need to be complemented. The program might also need supplemental market connections to foster the support network it aspires for blue bioeconomy. In summary, the **most remarking resource gaps** for the program include global market entry and entrepreneurial product development/ commercialization expertise, consistent funding across scaling stages, access to well-equipped labs and testing facilities for R&D and prototyping, as well as connections to build a network or ecosystem for the blue bioeconomy.

To evaluate what pathway is most appropriate to obtain these missing targeted resources, the students can use the Build Borrow Buy Framework, as exemplified in Appendix 6.

4. What criteria should BBV use to select strategic partners (e.g., universities, investors)?

As previously analyzed, external partnerships would add a significant value to the acceleration program, advancing key activities for BBV and providing immediate resources and expertise, which amplify the program's capacity to support startups, and enhance its value proposition with a broader ecosystem. BBV's possible strategic partners choice can be guided by the stakeholder analysis matrix (Appendix 7), which can evaluate and prioritize partners based on two key criteria. The first criterion is interest, which means how well the partner's goals align with BBV's mission in the blue bioeconomy and overall sustainability, together with actively supporting the growth in the sector. The second key criterion is influence/power, which entails the partner's ability to provide critical resources or support, namely technical expertise (in the case of research institutes and universities), funding capacity from investors, market knowledge for corporate partners, and strong industry connections to relevant industries. This criterion can be assessed through estimating the possible partner's contribution to the program, as seen in Appendix 7's example.

Furthermore, other specific criteria are worthy of consideration. For instance, some partners' reputation and credibility can affect BBV's attractiveness for startups; also, the willingness to collaborate long-term in the program, committed for several editions rather than short-term engagement. Based on the aforementioned criteria, different groups of students could create a pitch for potential BBV partners, as an interactive exercise to allow for comparison of different choices.

5. What role can BBV play in fostering knowledge-sharing and **collaboration** across the blue bioeconomy sector to build a more sustainable industry?

Currently several industries are starting to recognize the transformational change towards sustainability, with the rising urgency of environmental and social challenges, upon the 2030 agenda and the Paris Agreement Targets. As pointed out previously, the blue bioeconomy has

the potential to offer many solutions to these challenges and sustainable ocean management is imperative. Upon this scenario, BBV has the opportunity to accelerate collaboration across the blue bioeconomy. By adopting an open innovation approach, the program could promote co-creation of solutions, through platforms or knowledge hubs where stakeholders could openly exchange insights, research and best practices, and encourage cross-sector innovation. Connecting academia and industry would facilitate scientific breakthroughs in marine biotechnology, to transition into commercial applications. As a result, blue bioeconomy's collective impact would increase and promote transparency and sustainability.

6. How can BBV become a leader in accelerating the Portuguese blue bioeconomy while also building globally relevant solutions and balancing ocean resources conservation?

BBV has the potential to lead the Portuguese Blue Bioeconomy through advancing the development of innovative, scalable solutions that prioritize sustainable ocean practices in its program. By partnering with global research institutions, conservation organizations, and industry leaders, BBV can integrate cutting-edge marine technologies and successfully leverage Portugal's inherent ability to become an important hub in terms of ocean bioeconomy, at European or even international level. The students should consult Appendix 8 for this question. For BBV to achieve this level of impact and value creation, not only for its startup participants, but also for the blue bioeconomy, it must strive to create system-value. Rethinking value creation through a system lens allows businesses and organizations to address societal needs in a more holistic way, understanding the interconnectedness of business, society and environment, as well as the full extent of their impacts, while not hindering progress towards a flourishing future.

BBV could implement this in order to generate positive impacts across the entire blue bioeconomy, rather than focusing solely on the individual success of participating startups. For instance, by training startups to adopt regenerative models that restore instead of merely

minimizing harm on ocean ecosystems, and by building an ecosystem of collaborative stakeholders. Furthermore, BBV could promote full impact measurement for social, ecological, and economic value, as well as influence industry standards by inspiring broader market adoption of its participant's business models and solutions.

Another interesting concept to be explored in this case is the Two Loops of Change model, which suggests that, at any given time in a society, there are "dominant" systems that drive the economy and culture, and there are "emergent" systems and trends that are less well known but are making progress to eventually become the dominant system (Appendix 9). As BBV intends to be disruptive and transformative, through their efforts to connect pioneers and build blue bioeconomy networks, the program can play an important role as a change maker in Portugal and across marine-related industries, as a new system rooted in sustainability emerges.

7. How can BBV foster innovation beyond Portugal, given its potential global relevance?

While BBV's roots are in Portugal, it intends to have broader implications for global innovation and accelerate international startups as well. A discussion on their role in fostering innovation beyond Portugal can be sparked by asking students why it would be important for organizations like BBV to expand their innovation efforts globally, and what challenges might arise when scaling. Hence, encouraging a reflection on opportunities and risks associated with a global expansion.

Students can then be prompted to analyze BBV's potential global role and expansion through the lenses of the Ansoff matrix and the innovation ambition matrix framework, for example (suggestion in Appendix 10, 11). The frameworks previously discussed gave rise to strategies that BBV could implement to balance innovation, market expansion, and sustainability on a global scale. BBV could advocate for supportive policies for the sector, namely research funding and defined regulatory frameworks. It could also contemplate extending through a

platform or events to connect stakeholders, building a global brand for sustainability, highlighting startups' biotechnologies. Or, additionally, the program may conduct thorough market research to identify regions with high potential for blue bioeconomy growth, and select high-impact markets to focus their resources.

Conclusion

Examining BBV's case, students can explore possible partnerships, program formats and initiatives in depth. The process begins by defining blue biotechnology startups' needs and crafting a compelling value proposition to meet them. By utilizing the Logic Model, students can assess how the program's activities align with desired impacts, pinpointing any resource gaps to achieve BBV's goals. Strategic partnerships to fill these gaps can then be evaluated, contributing to the co-creation of innovative solutions. Ultimately, this discussion underlines the critical role of collaboration in sustainable emerging industries and BBV's potential to drive a transformative, global sustainable blue bioeconomy.

Appendixes

Appendix 1

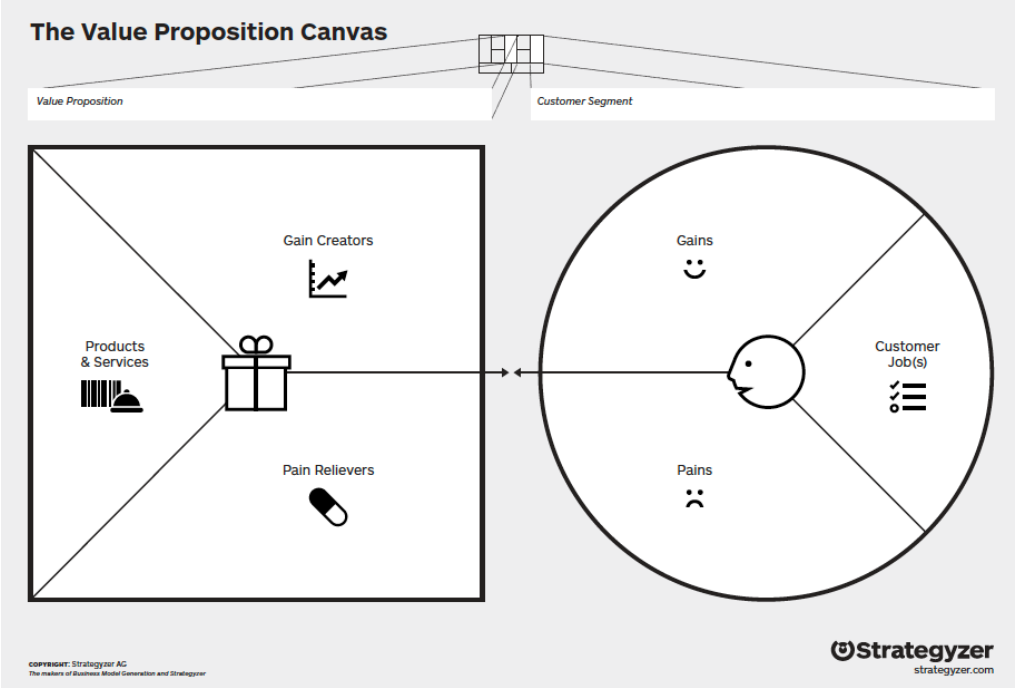
Timetable Proposal for Class Discussion

Here are suggested timings for the class discussion for a class with duration of 115 minutes and 5 extra minutes to allocate as needed and which can be adapted accordingly as preferred.

Activity	Time
Class and case introduction	10 min
Identifying customer needs and creating value proposition for the acceleration program	20 min
Impact and logic model for BBV program	15 min
Overview of resource gaps	10 min
Evaluating Partnerships alignment	15 min
Collaboration towards innovation in the blue bioeconomy	10 min
Balancing sustainability and growth as a blue bioeconomy accelerator	15 min
Fostering innovation at global level	15 min
Conclusion and key takeaways	5 min

Appendix 2

The Value Proposition Canvas



Source: https://www.strategyzer.com/library/the-value-proposition-canvas

Full written explanation and application to BBV:

First, diving on the Customer Profile analysis, several **customer jobs** can be identified: mainly developing innovative ocean-based solutions, effectively sourcing the marine bioresources, secondly, market entry, securing customers and scaling, thirdly, access to initial and follow-on funding for R&D and infrastructure, building connections to research institutions, suppliers, corporates for collaboration and growth. The **customer pains** include as identified in the case study: limited access to funding especially in earlier stages, costly and inaccessible labs and specialized facilities for marine bioeconomy, challenges in reaching customers and scaling, particularly in niche or emerging markets, or isolation from market networks to support growth and market reach. **customer gains** can be business and technical mentorship and expertise, financial support from investors including seed funding as well as continued funding, access to infrastructure and resources essential for their business models and connection in the industry to strengthen the startups expansion.

Therefore, upon creating the program, a match between the participants and the value proposition of BBV's acceleration program must exist. In terms of **service**, BBV would provide mentorship from experts in the blue biotechnology industry, as well as business strategy mentorship, access to networks of impact investors and venture capital, technical and

infrastructure support critical for product development, developing connections with universities, research institutes, corporate partners, and NGOs in the blue bioeconomy sector. The program's **pain relievers** could revolve around solving the funding gaps by connecting the startups with funding sources and providing initial capital, providing access to the infrastructure needed for the duration of the program will remove a barrier to innovation, the program would foster scalability with expertise in market expansion. The program's **gain creators** would include an accelerated market entry for participants, through their robust support ecosystem improve success rates for the startups, these also gain a competitive edge with all the guidance and resources available to them, not to mention boosted innovation through technical expertise and collaboration opportunities.

Appendix 3

Logic Model

Purpose Statement:					
Inputs/ Resources In order to accomplish our set of activities we will need the following:	Activities To address/complete our project we will complete the following activities:	Outputs / Deliverables / Direct Results Once completed or underway, these activities will produce the following:	Outcomes We expect that if completed or ongoing these activities will lead to the following changes over time. (Outcomes should reflect or align with the goal of your project)		
			Short-term	Medium-term	Long-term

Assumptions:
External Factors:

Source: https://www.continuous-learning-institute.com/blog/logic-model-basics

Appendix 4

Applied Logical Model for BBV

INPUTS	- Funding - Blue Bioeconomy and Business expert mentors and knowledge - Infrastructure (labs for R&D, bioresources bank, physical spaces for the program to take place) - Effective organization and personnel - Participant Startups
ACTIVITIES	- Acceleration Program - Facilitating access to funding (can be direct funding or exposure to investors) - Helping participants overcome legal barriers - Mentor and aid participants on their business model formulation, research, product development, sales and marketing, etc - Workshops with experts - Creating and connecting Network of industry and commercial partners - Technical support - Scouting and screening applicants (startups)
OUTPUTS	- Startups funded and mentored - Access to labs and testing sites for R&D - Partnership agreements and collaborations for the Startups that can help them enter market and scale - Startups are equipped with compliance and business knowledge
OUTCOMES	- Strengthened industry network - Startups achieve market entry and scalability - Active participation in sustainable practices in the blue bioeconomy - Expanded industry- research collaboration - Growth in sustainable blue bioeconomy innovations - Strengthened blue economy ecosystem in Portugal
IMPACT	- Environmental: Conservation of Marine Resources and contributing to solving global challenges - Economic: Blue Bioeconomy sector growth and job creation, drive regional sustainable development in coastal and ocean areas, not only in Portugal but also across the globe - Social: increased societal commitment and awareness of ocean's sustainable potential

Appendix 5

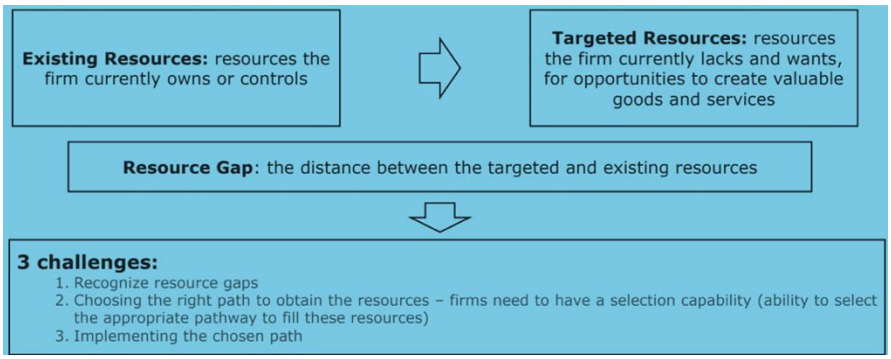
UN Sustainable Development Goals and examples for BBV operations alignment with SDGs

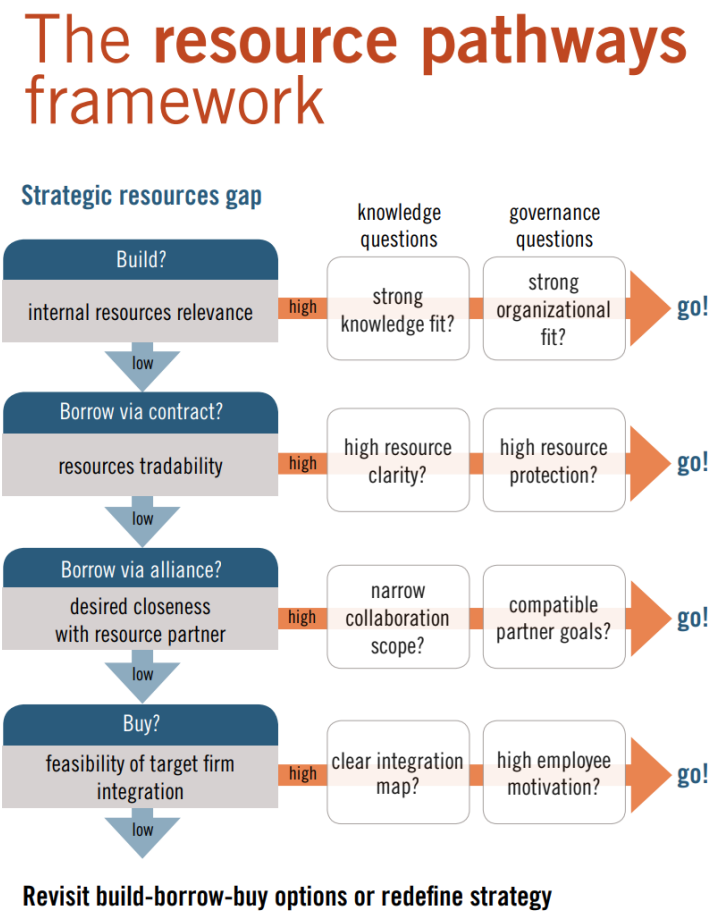
Source: https://sdgs.un.org/goals

SDGs	Examples of Integration in BBV's Operations
8 DECENT WORK AND ECONOMIC GROWTH	- Invest in skills training in the blue bioeconomy (e.g.: business development skills) - Promoting entrepreneurship and supporting SMEs in their business models - Creation of jobs through blue businesses viability
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	- Fostering R&D for innovative products or processes that enhance sustainability. - Partnerships with universities to advance sustainable technologies - Infrastructure sharing among stakeholders in blue biotech - Supporting sustainable marine food systems
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	- Increasing awareness of sustainable production methods and solutions the startups are developing, through networking and events - Aiding startups in implementing circular bioeconomy principles
13 CLIMATE ACTION	- Promoting renewable marine energy startups as well as carbon sink marine ecosystems restoration projects and climate-friendly alternatives for products - Strengthening climate resilience with ocean solutions
14 LIFE BELOW WATER	- Advocating for the importance of conservation of oceans and marine resources as part of valuable natural capital and recognizing the importance of ecosystem services - Partner with NGOs to fund and support marine conservation projects and marine biodiversity monitoring - Sustainable sourcing of marine resources
17 PARTNERSHIPS FOR THE GOALS	- Form **cross-sector partnerships** with governments, NGOs, and other companies to drive collective action on ocean sustainability - Sharing innovations with industry networks

Appendix 6

Resource Gaps analysis and resource pathways applied to BBV





Source: http://www.build-borrow-buy.com/wp-content/uploads/2013/01/Business-Digest_BBB_english_dec2012.pdf.

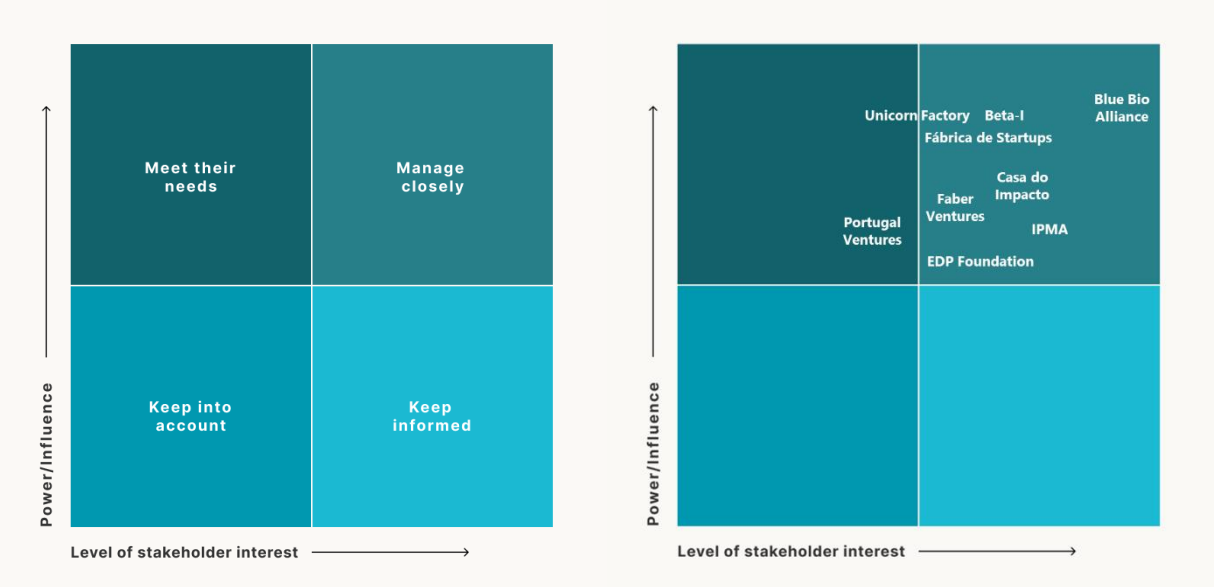
Regarding business-related expertise, BBV should follow a **borrow** strategy, with the possibility of forming partnerships with international accelerators and regional industry networks, since its internal resources aren't specialized in this area and it can find partners with

compatible goals, for example Fábrica de Startups. About consistent funding, the program can either **borrow** by partnering with venture capital firms (for example Faber Ventures), impact investors, funding agencies or collaborate with government-backed funds specializing in sustainable and blue economy investments. As for the specialized infrastructure access, since building in-house lab facilities would be costly and resource-intense, **borrowing** by forming partnerships with universities, research centers, or marine biotech companies seems to be the most adequate strategy to share resources. Regarding forming the blue economy ecosystem, BBV should consider both **building** a robust ecosystem by hosting events and networking sessions and **borrowing** by engaging with existing blue bioeconomy industry networks such as Blue Bio Alliance, specially at the international level to support and reach non-Portuguese startups, while focusing on community development.

Appendix 7

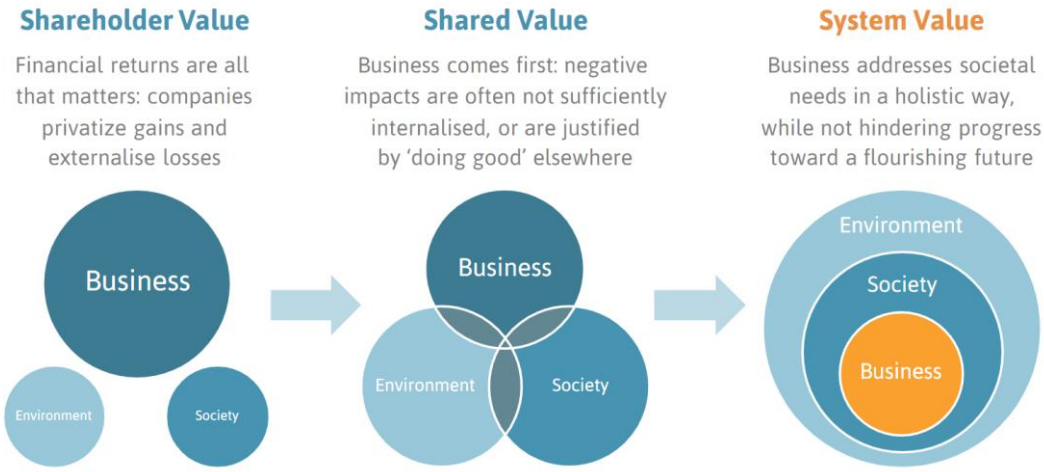
Stakeholder matrix

To connect the stakeholder matrix with the examples given as possible partners in the case, the following matrix (on the right) was drafted. The examples closer to the top right corner could potentially be a better match as partners for BBV, being aligned in terms of interests and having the most influence to help achieve the desired impactful outcomes for the program. The students can experiment with this framework and their own examples of possible partners.



Source: https://simplystakeholders.com/stakeholder-matrix/.

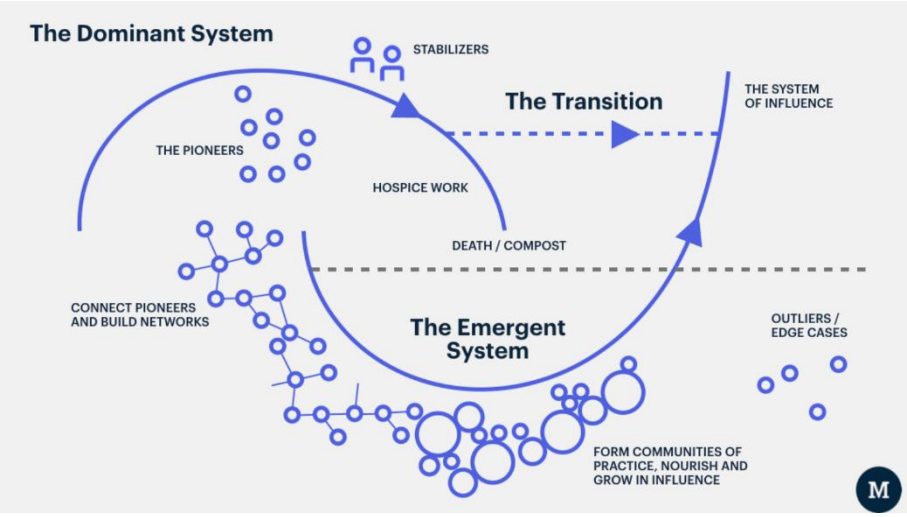
Appendix 8: consult Future Fit



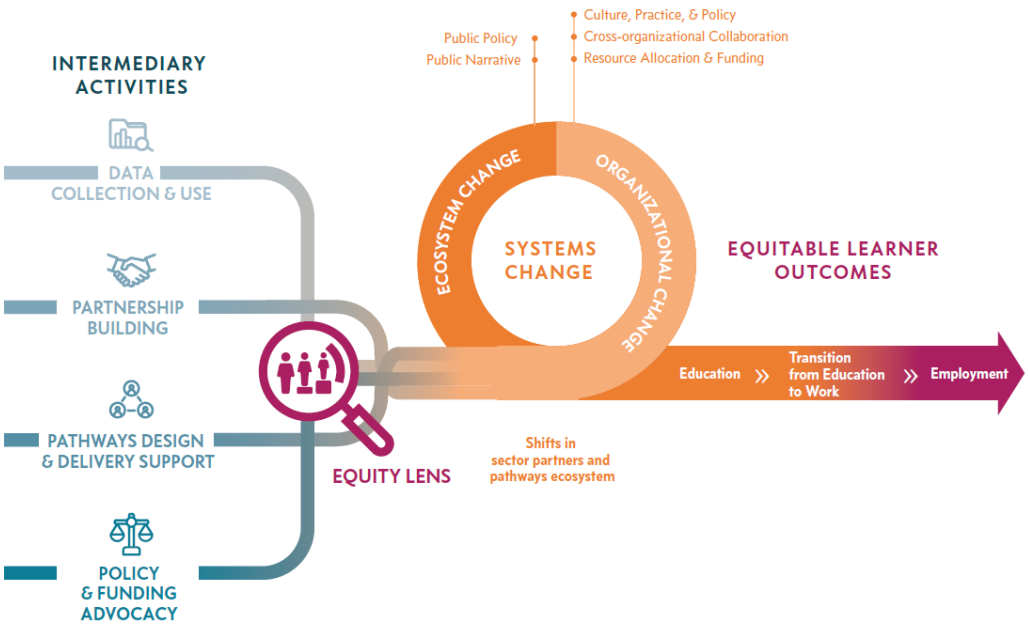
Source: https://benchmark.futurefitbusiness.org/mg-systems-view.html

Appendix 9

The two loops Model



Source: https://www.innovationunit.org/thoughts/the-berkana-institutes-two-loops/



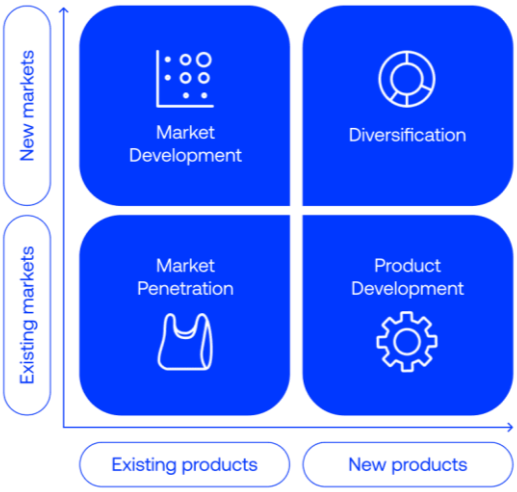
Source: https://www.equalmeasure.org/equitable-pathways-surveys/

This is another example of a framework which can be connected to analyze the Case Study.

Appendix 10

Ansoff-Matrix

Applying the Ansoff Matrix to foster innovation on a global scale, the growth strategies that would be most adequate for BBV to prioritize once established would be to support startups in expanding into new geographic markets and customer segments (market development), having initially focused on market penetration and product development. Diversification into related areas such as green technologies and sustainable agriculture might however, risk losing focus and alignment with their vision as well as requiring additional resources than the ones used in blue biotechnology areas.

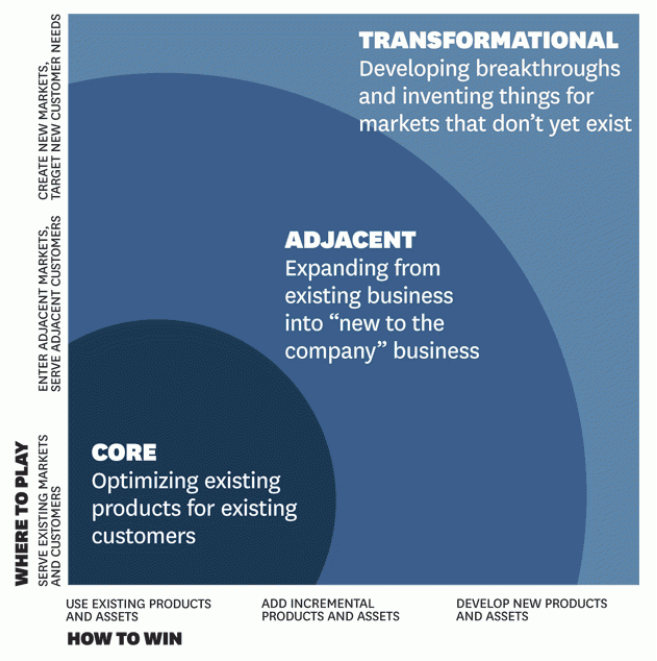


Source: https://www.appinio.com/en/blog/market-research/ansoff-matrix

Appendix 11

Innovation-Ambition Matrix

With the ambition to accelerate globally the blue bioeconomy, BBV supporting existing startups and improving their products and services, contributes to incremental innovation in the field, which solidifies the **core** of blue bioeconomy. Moving forward to **adjacent** innovation would entail also helping startups that explore new markets and applications for blue biotechnologies, leading to expand solutions into new areas, for example by striving to support diverse cohorts with emerging technologies or expanding partnerships to provide different types of support. Furthermore, BBV has the potential to drive **transformational** innovation and can create new markets and reshape the global blue bioeconomy landscape. Students can be prompted to explore ways in which the acceleration program could move into adjacent and even transformational innovation, based on the Innovation Ambition Matrix, splitting the class into three main groups focused on each one of the levels for this dynamics and how BBV could better allocate innovation resources (investor network, infrastructure for product development, mentorship focus, etc) across core, adjacent and transformational opportunities as it scales globally.



Source: https://hbr.org/2012/05/a-simple-tool-you-need-to-mana

References

1000 Ocean Startups. 2024. "Home." *1000 Ocean Startups*. https://www.1000oceanstartups.org/home

Aalpha. n.d. "How Much Does It Cost to Build an Online Platform?" https://www.aalpha.net/articles/how-much-does-it-cost-to-build-an-online-platform/.

AMA. 2024. "Projeto PRR: Pacto Da Bioeconomia Azul." Portal Mais Transparência. 2024. https://transparencia.gov.pt/pt/fundos-europeus/prr/beneficiarios-projetos/projeto/02/C05-i01.01/2022.PC644915664-00000026/.

Aqua-Spark. n.d. "About Us.". https://aqua-spark.nl/about-us/.

Blue Bio Alliance. "Blue Bioeconomy Pact." https://www.bluebioalliance.pt/blue-bioeconomy-pact.

Blue Bio Value. n.d. "Home - Blue Bio Value." https://www.bluebiovalue.com.

Blue Bio Value. *Worldwide Ecosystem of Blue Economy: Accelerator Benchmark Report.* Unpublished internal document, 2022.

BlueInvest. n.d. "BlueInvest Community." https://blueinvest-community.converve.io/index.html.

Broderick, Vaughan. 2023. "The Value Proposition Canvas and Customer-Centric Innovation." *Medium*, March 6, 2023. https://medium.com/@vaughanbroderick/the-value-proposition-canvas-and-customer-centric-innovation-8b08305edc03.

Capron, Laurence, and Will Mitchell. 2012. *Build, Borrow, or Buy: Solving the Growth Dilemma*. Business Digest. http://www.build-borrow-buy.com/wp-content/uploads/2013/01/Business-Digest_BBB_english_dec2012.pdf.

CarbonCredits.com. 2024. "The Core Carbon Principles." https://carboncredits.com/the-core-carbon-principles/.

Carson, Siri, Sveinung Sægrov, Richard Sempere, and Pentti Kujala. 2024. “Closing the Blue Loops: Responsible and Sustainable Innovation in the Fields of Water and Ocean.” https://www.europarl.europa.eu/RegData/etudes/STUD/2024/762845/EPRS_STU(2024)762845_EN.pdf.

Cayuse. 2023. “What’s the Difference Between Public and Private Grant Funding?” 2023. https://cayuse.com/blog/public-private-grant-funding-difference/.

Chesbrough, Henry. 2020. "Why Now Is the Time for Open Innovation." *Harvard Business Review*, June 25, 2020. https://hbr.org/2020/06/why-now-is-the-time-for-open-innovation.

CIIMAR. 2019. “Blue Bioeconomy Roadmap for Portugal - BLUE and GREEN.” https://www2.ciimar.up.pt/pdfs/resources/roadmap_digital_hGBit_.pdf.

Clarivate. 2022. Ocean Science Research Report 2022. https://clarivate.com/wp-content/uploads/dlm_uploads/2022/07/GRR_2022-3_Ocean-Science-1.pdf.

Clearview Social. 2023. "How to Design an Employee Ambassador Program: A Complete Guide." Clearview Social..https://clearviewsocial.com/blog/how-to-design-an-employee-ambassador-program-a-complete-guide.

Collier, Mack. 2024. "How Much Does a Brand Ambassador Program Cost?" *Mack Collier*.https://mackcollier.com/how-much-does-a-brand-ambassador-program-cost.

Collins, Jane Eva, Thomas Vanagt, Isabelle Huys, and Helena Vieira. 2020. “Marine Bioresource Development – Stakeholder’s Challenges, Implementable Actions, and Business Models.” *Frontiers in Marine Science* 7 (February). https://doi.org/10.3389/fmars.2020.00062.

Commission, European, Directorate-General for Maritime Affairs, Fisheries, Joint Research Centre, A Borriello, A Calvo Santos, L Codina López, et al. 2024. *The EU Blue Economy Report 2024*. Publications Office of the European Union. https://op.europa.eu/en/publication-detail/-/publication/ef90077b-1e82-11ef-a251-01aa75ed71a.

Crowdbotics. 2024. "How Much Does It Cost to Build a Database Management App?" https://crowdbotics.com/posts/cost-to-build/database-management-app/.

DGPM. 2023. “Relatório de Monitorização Da Estratégia Nacional Para o Mar 2021-2030: OE2- Emprego e Economia Azul Circular e Sustentável.” https://www.dgpm.mm.gov.pt/_files/ugd/eb00d2_2e244ab3493842849da025a30405c3e3.pdf.

Directorate-General for Maritime Affairs and Fisheries. 2023. “InvestEU: €28 Million for the First Blue Economy Instrument in Portugal.” March 27, 2023. https://oceans-and-fisheries.ec.europa.eu/news/investeu-eu28-million-first-blue-economy-instrument-portugal-2023-03-27_en.

Directorate-General for Maritime Affairs and Fisheries. 2024. "Investments in the Blue Economy Are Increasing." European Commission. April 3, 2024. https://oceans-and-fisheries.ec.europa.eu/news/investments-blue-economy-are-increasing-2024-04-03_en.

East Stroudsburg University of Pennsylvania. 2016. "Introduction to Logic Models." *Office of Sponsored Programs and Research (OSPR)*. https://www.esu.edu/ospr/documents/15-16/Introduction_Logic_Models.pdf.

Economist Impact. 2024. "How to Scale Up Blue Carbon Projects." https://impact.economist.com/ocean/ocean-health/how-to-scale-up-blue-carbon-projects.

EIB (European Investment Bank). 2024. Clean Oceans and the Blue Economy: Overview 2024. https://www.eib.org/attachments/lucalli/20240073_clean_oceans_and_the_blue_economy_overview_2024_en.pdf.

EMEPC. 2024. "Extension of the Continental Shelf Project (PEPC)." EMEPC. https://en.emepc.pt/projeto-pepc.

EU Blue Economy Observatory. n.d. “Blue Biotechnology.” Blue Biotechnology - European Commission.

European Commission. 2021. “COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on a New Approach for a Sustainable Blue Economy in the EU Transforming the EU’s Blue Economy for a Sustainable Future.” https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:240:FIN.

European Commission. 2021. “European Green Deal: Developing a Sustainable Blue Economy in the European Union.” May 17, 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2341.

European Commission: Directorate-General for Maritime Affairs and Fisheries and Joint Research Centre. 2019. “The EU Blue Economy Report 2019.” https://data.europa.eu/doi/10.2771/21854.

EvalCommunity. 2023. "Logic Models: Everything You Need to Know." https://www.evalcommunity.com/career-center/logic-models/.

Faster Capital. 2024. “The Pros and Cons of Hybrid Funding.” 2024. https://fastercapital.com/topics/the-pros-and-cons-of-hybrid-funding.html.

Flevy. 2023. "Understanding the Role of a Company Ambassador: Explained." *Flevy*.https://flevy.com/topic/corporate-culture/question/understanding-role-company-ambassador-explained.

Forbes Communications Council. 2023. "The Why and How of Employee Ambassador Marketing." Forbes, February 27, 2023. https://www.forbes.com/councils/forbescommunicationscouncil/2023/02/27/the-why-and-how-of-employee-ambassador-marketing/

Fundação Calouste Gulbenkian. "The Future Is Blue." Accessed December 9, 2024.https://gulbenkian.pt/en/read-watch-listen/the-future-is-blu

Future-Fit Foundation. 2023. "Benchmarking Sustainable Business: Systems View." *Future-Fit Business Benchmark*. https://benchmark.futurefitbusiness.org/mg-systems-view.html.

Hurst, Dermot, Torger Børresen, Lisa Almesjö, Fien Raedemaecker, and Steinar Bergseth. 2016. *Marine Biotechnology Strategic Research and Innovation Roadmap - Insights to the Future Direction of European Marine Biotechnology*. (PDF) Marine Biotechnology Strategic Research and Innovation Roadmap - Insights to the future direction of European marine biotechnology

Intechno Software Private Limited. 2024. “Effective Strategies to Promote Startup Companies 2024.” LinkedIn. March 16, 2024. https://www.linkedin.com/pulse/effective-strategies-promote-startup-companies-2024-qzcbc/

Jiménez, Ángel Luis. 2024. “From the Pharmaceutical and Food Industries to Guarantor of Planetary Sustainability: The Role of Blue Biotechnology in the Face of Global Challenges.” ASEBIO - Asociación Española de Bioempresas. March 21, 2024. https://www.asebio.com/en/news-events/news/pharmaceutical-and-food-industries-guarantor-planetary-sustainability-role-blue

MARE. 2023. “Portugal e a Biodiversidade Marinha: O Papel das Áreas Marinhas Protegidas e Outras Ferramentas para a Conservação.” MARE. November 24, 2023. https://www.mare-centre.pt/pt/portugal-e-a-biodiversidade-marinha-o-papel-das-areas-marinhas-protegidas-e-outras-ferramentas-para-a-conservacao.

McKinsey & Company. 2024. "Improving the Management of Complex Business Partnerships." https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/improving-the-management-of-complex-business-partnerships.

McKinsey & Company. 2024. "Sign Up Now: Creating Consumer and Business Value with Subscriptions." https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/sign-up-now-creating-consumer-and-business-value-with-subscriptions.

NOVA School of Science and Technology. n.d. “Pacto Da Bioeconomia Azul.” Pacto da Bioeconomia Azul | NOVA FCT

OECD. 2013. *Marine Biotechnology: Enabling Solutions for Ocean Productivity and Sustainability*. OECD. https://doi.org/10.1787/9789264194243-en.

Ólives, Stefanie. 2024. “What Is the Bioeconomy and How Can It Drive Sustainable Development?” World Economic Forum. July 12, 2024. https://www.weforum.org/agenda/2024/07/bioeconomy-sustainable-development/

Oxford Review. 2023. "Encyclopaedia Open Innovation: Definition and Explanation." *Oxford Review Encyclopaedia*. https://oxford-review.com/oxford-review-encyclopaedia-terms/encyclopaedia-open-innovation-definition-explanation/.

Paliychuk, Ulyana. 2024. “How to Get Funding for an Impact-Driven Startup.” *Beetroot Magazine - Business*, February 2, 2024. https://beetroot.co/business/how-to-get-funding-for-an-impact-driven-startup/

Precedence Research. 2024. “Marine Biotechnology Market Size | Share and Trends 2024 to 2034.” 2024. https://www.precedenceresearch.com/marine-biotechnology-market

PwC. *Strategic Partnerships: The Real Deal.*

Radojevich-Kelley, Nina, and David Lynn Hoffman. 2012. “Analysis of Accelerator Companies: An Exploratory Case Study of Their Programs, Processes, and Early Results.” *Small Business Institute Journal* 8 (2): 54–70. https://sbij.scholasticahq.com/article/26258

Raimi, Lukman, Jainaba M. L. Kah, and Muhammad Usman Tariq. 2022. “The Discourse of Blue Economy Definitions, Measurements, and Theories.” In *Implications for Entrepreneurship and Enterprise Development in the Blue Economy*, 1–17. https://www.igiglobal.com/viewtitlesample.aspx?id=300675&ptid=283974&t=The%20Discourse%20of%20Blue%20Economy%20Definitions,%20Measurements,%20and%20Theories:%20Implications%20for%20Strengthening%20Academic%20Research%20and%20Industry%20Practice&isxn=9781668433935

SAIIA (South African Institute of International Affairs). 2024. “Africa’s Sustainable Blue Economy: The Role of Incubators and Accelerators.” South African Institute of International Affairs. https://saiia.org.za/research/africas-sustainable-blue-economy-the-role-of-incubators-and-accelerators/.

Simply Stakeholders. 2023. "How to Use the Stakeholder Matrix." https://simplystakeholders.com/stakeholder-matrix/.

Sprout Social. 2024. "How Much Does Social Media Management Cost?" *Sprout Social*. https://sproutsocial.com/insights/social-media-management-cost

Startup Genome. 2023. “Global Blue Economy Trends and Insights.” 2023. https://startupgenome.com/article/insights-and-rankings

Startup Genome. 2024. “Top Blue Economy Ecosystem Players.” *Startup Genome*. https://startupgenome.com/article/top-blue-economy-ecosystem-players.

The Portugal News. "Portugal Leading the Way with Blue Economy." April 26, 2023. https://www.theportugalnews.com/news/2023-04-26/portugal-leading-the-way-with-blue-economy/77027

Thriwin. 2023. "Promoting Global Innovation: The Role of Incubators and Accelerators." *Thriwin*.https://www.thriwin.io/blogs/promoting-global-innovation-the-role-of-incubators-and-accelerators

United Nations Global Compact Portugal. 2024. "UN Global Compact." *United Nations Global Compact Portugal*.https://globalcompact.pt/index.php/en/un-global-compact-en

United Nations. 2015. “The Sustainable Development Goals.” https://sdgs.un.org/goals

United Nations. 2015. *Sustainable Development Goals*. United Nations Department of Economic and Social Affairs. https://sdgs.un.org/goals.

United Nations. 2021. “Promotion and Strengthening of Sustainable Ocean-Based Economies.” https://sdgs.un.org/sites/default/files/2022-01/2014248-DESA-Oceans_Sustainable_final-WEB.pdf

United Nations. n.d. “Oceano Azul Foundation.” United Nations Partnerships for SDGs Platform. https://sdgs.un.org/partnerships/oceano-azul-foundation#description.

United Nations. n.d. “Voluntary Commitments on Oceans and Seas.” United Nations Sustainable Development Goals Knowledge Platform. https://sdgs.un.org/topics/oceans-and-seas/vcs.

University of Hull. 2024. “Using the Matrix Methodology.” University of Hull Library Guides. https://libguides.hull.ac.uk/introduction/matrix.

World Bank and United Nations Department of Economic and Social Affairs. 2017. “The Potential of the Blue Economy: Increasing Long-Term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries.”https://openknowledge.worldbank.org/server/api/core/bitstreams/cee24b6c-2e2f-5579-b1a4-457011419425/content

World Bank. 2024. “The World Bank’s Blue Economy Program and PROBLUE: Frequently Asked Questions.” https://www.worldbank.org/en/topic/environment/brief/the-world-banks-blue-economy-program-and-problue-frequently-asked-questions.

World Bio Market Insights. 2023. “The Accelerator at the Heart of Portugal’s Marine Biotech Drive.” August 9, 2023. The accelerator at the heart of Portugal’s marine biotech drive - World Bio Market Insights

World Economic Forum. 2024. "How Reframing the Value of Blue Carbon Could Help Support Local Communities." https://www.weforum.org/stories/2024/07/how-reframing-the-value-blue-carbon-could-help-to-support-local-communities/.

WWF. 2015. “Principles for a Sustainable BLUE ECONOMY WWF BALTIC ECOREGION PROGRAMME.” https://wwfint.awsassets.panda.org/downloads/15_1471_blue_economy_6_pages_final.pdf.