



DELIVERABLE 4.4

HACKATHON IMPACT REPORT



Co-funded by
the European Union

ABOUT THIS DOCUMENT

GRANT AGREEMENT NR	101124697
PROJECT TITLE	Blue Bio Techpreneurs
PROJECT OFFICER	Julien Peris
DELIVERABLE NR & TITLE	DELIVERABLE 4.4 HACKATHON IMPACT REPORT
WORK PACKAGE	WP4
ABSTRACT	Final impact report from collected feedback during hackathon series highlighting lessons learned, innovation produced, needs assessed and further steps to foster careers in the blue bioeconomy.
DELIVERABLE TYPE	Report
DELIVERABLE VERSION	1.0
DISSEMINATION LEVEL	Public
ONLINE ACCESS	Yes
PARTNER RESPONSIBLE	UNIVERSITY OF SOUTHERN DENMARK (SDU)
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DUE DATE (M)	31.08.2026
SUBMISSION DATE	17.08.2026
KEYWORDS	BlueBioTechpreneurs, Hackathon



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ABBREVIATIONS

ABBREVIATION	DESCRIPTION
BBT	Blue Bio Techpreneurs
BBA	BLUEBIO ALLIANCE
CDE/DEC	Communication, Dissemination and Exploitation
D	Deliverable
DMP	Data Management Plan
DEC	Dissemination Exploitation Communication
EC	European Commission
GA	Grant Agreement
M	Month
PC	Project Coordinator
PMBA	Pole Mer Bretagne Atlantique
PO	Project Officer
PP	Project Partner
SDU	University of Southern Denmark
SUB	SUBMARINER Network for Blue Growth EEIG
UG	University of Gdansk
WP	Work Package
WPL	Work Package Leader



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ACKNOWLEDGEMENTS

We would like to extend our heartfelt thanks to the many individuals and organisations whose dedication, collaboration, and support made the Blue Bio Techpreneurs Hackathons possible.

We express our sincere gratitude to Claudia Pierdominici from the European Climate, Infrastructure and Environment Executive Agency (CINEA), under the European Maritime, Fisheries and Aquaculture Fund (EMFAF) Programme, for her valued support and guidance throughout the initiative.

We would also like to warmly acknowledge the outstanding efforts of our hosts and organisers. Special thanks go to the University of Southern Denmark, Department of Biology team — Hannah Yeo, Jamileh Javidpour, and Cecilie Petersen — for their commitment and coordination of the **Nordic Hackathon**. We are equally grateful to the University of Gdańsk, Faculty of Oceanography and Geography, together with the dedicated UG Team, including Hanna Łądkowska, Barbara Dmochowska, and the Centre for Monitoring and Water Protection UG, for their important contributions to the successful delivery of the **Baltic Hackathon**. Our sincere appreciation also goes to the BLUEBIO ALLIANCE (BBA) team — Diana Almeida, Mariana Paupério, Rita Baptista, and Sílvia Rodrigues — for their exceptional organisational work for the **Atlantic Hackathon**. We further thank Pôle Mer Bretagne Atlantique, represented by Ethan Holaday and Sébastien Cann, as well as the Escola Superior de Turismo e Tecnologia do Mar – Politécnico de Leiria, represented by Sérgio Leandro and Celso Alves, for their invaluable support in hosting and coordinating the **Atlantic and Ocean Hackathon** event.

We also warmly thank the BBT Project Coordinators from the SUBMARINER Network, especially Katharina Kurzweil, Konstantinos Madias, and Alberto Terenzi for their valuable contributions to the organisation, communication, and successful implementation of the hackathons.

Finally, we would like to thank all participants for their enthusiasm, creativity, and dedication throughout the hackathons. Their engagement, innovative ideas, and collaborative spirit were at the heart of the initiative's success.

Blue Bio Techpreneurs project and the Nordic, Baltic and Atlantic Hackathon are co-funded by the European Union under Grant Agreement ID 101124697.

1. INTRODUCTION

The purpose of this deliverable is to consolidate and document the methodology developed and applied through the **three Blue Bio Techpreneurs (BBT) Hackathons** implemented during the project. It presents the implementation process, key outputs, lessons learned, and resulting impacts, highlighting the contribution of the hackathons to the project's objectives. Furthermore, the deliverable provides recommendations for the future use, adaptation, and replication of the hackathon methodology, with the aim of ensuring the sustainability of project results and maximizing their long-term impact beyond the project's official end date.

By addressing real-world challenges identified by industry stakeholders from across the European Union and connecting them with early-career professionals and emerging talent poised to enter the labour market, the BBT Hackathons significantly enhanced the project's impact, visibility, and relevance. The hackathons created a dynamic interface between industry needs and future workforce capabilities, ensuring that project activities remained closely aligned with current challenges and opportunities within the blue bioeconomy.

This report covers the full duration of the project and consolidates the experience gained through the design and implementation of the three BBT Hackathons. It provides an introduction to the development of the BBT Hackathon model, alongside references to the detailed methodology underpinning its delivery. The report also documents the evolution of the methodology across the three hackathons, highlighting the continuous improvements and refinements made throughout the process.

Furthermore, the report assesses the outputs, outcomes, and impacts generated by the hackathons, including their contribution to entrepreneurship, innovation, stakeholder engagement, and skills development within the blue biotechnology sector. Finally, it presents recommendations for the future application, adaptation, and replication of the hackathon model, demonstrating its long-term relevance and potential as a practical framework for future EU-funded initiatives and projects seeking to foster innovation and collaboration within the blue bioeconomy.

2. DEVELOPING THE BLUE HACKATHON MODEL

2.1 Methodology and Design

The BBT Hackathons were designed to address key challenges facing the European blue economy by creating a collaborative environment that bridges academic knowledge, practical application, innovation, and skills matching. The initiative responds to the growing need for a workforce equipped with the multidisciplinary competencies required to support the sustainable development, competitiveness, and resilience of Europe's blue biotechnology sector.

By connecting students and recent graduates from diverse academic backgrounds with real-world challenges proposed by blue biotechnology companies, research initiatives, and other relevant stakeholders, the hackathons provide participants with the opportunity to apply their knowledge to authentic industry needs. Through interdisciplinary teamwork, expert mentoring, and hands-on problem-solving, participants strengthen both their technical and transferable skills, including innovation management, communication, entrepreneurship, teamwork, and business development. At the same time, participating organisations gain access to fresh perspectives, innovative ideas, and emerging talent, creating opportunities for future collaboration and recruitment.

A key distinctive feature of the BBT Hackathons is the challenge-driven approach adopted in their design. They are built around the active identification and sourcing of real-life challenges emerging from European blue bioecosystems.



Before each hackathon, challenge topics are carefully identified and collected through engagement with local communities, blue biotechnology companies, research projects, innovation initiatives, and other stakeholders operating within the respective sea basins. This approach ensures that the challenges addressed by participants reflect genuine needs, opportunities, and bottlenecks currently experienced by the European blue economy. By grounding the hackathons in authentic industry-driven challenges, the initiative creates a direct link between innovation activities and the practical realities faced by companies, researchers, and communities across Europe.

The direct involvement of challenge owners throughout the hackathon process represents a further added value of this approach. Challenge owners participate as key contributors, mentors, and knowledge providers, enabling participants to gain a deeper understanding of the context, complexity, and importance of the challenges they are addressing. This interaction gives students and recent graduates a stronger sense of purpose and ownership, as they are not simply developing theoretical solutions but actively contributing to challenges with the potential to create tangible value and real-world impact for European industries and society.

At the same time, the involvement of challenge owners creates significant benefits for participating organisations. By engaging with multidisciplinary teams of emerging talent, companies and projects gain access to new perspectives, creative approaches, and innovative solution pathways that may support their ongoing activities and innovation objectives. Beyond the immediate generation of ideas, the hackathons provide an opportunity for challenge owners to identify potential future collaborators, interns, employees, or entrepreneurial teams with the skills, motivation, and innovative mindset required to contribute to their organisations.

The initiative comprises three hackathons, each hosted within a different European sea basin—the Atlantic, Baltic, and Western Baltic Sea—ensuring that the innovation process incorporates diverse regional perspectives and reflects the unique environmental, economic, and industrial characteristics of Europe’s marine regions. This regional approach enables participants to engage with challenges that are directly connected to local blue bioeconomy ecosystems, while simultaneously promoting transnational knowledge exchange, collaboration, and networking across European regions.

Each hackathon follows a challenge-based learning methodology, supporting participants in transforming initial ideas into structured innovation concepts through guidance from experienced mentors representing academia, industry, entrepreneurship, and the wider innovation ecosystem. Participants are supported in understanding market needs, developing solution concepts, assessing feasibility, and exploring potential pathways towards implementation, commercialisation, further research, or entrepreneurial development.

The expected outcomes of the BBT Hackathons extend beyond the development of innovative concepts and prototype solutions. The initiative aims to stimulate entrepreneurial thinking, generate viable startup ideas, strengthen university–industry collaboration, and create new pathways for employment, internships, and professional development within the blue biotechnology sector. By exposing participants to real industry challenges and connecting them with established actors in the sector, the hackathons contribute to building a skilled, adaptable, and innovation-oriented workforce capable of supporting Europe’s transition towards a sustainable blue bioeconomy.

A cross-cutting objective of the initiative is to promote diversity, equality, and inclusiveness throughout all stages of implementation. Particular emphasis is placed on encouraging female participation and supporting broader representation within blue biotechnology, entrepreneurship, and innovation activities. By creating an inclusive environment where participants from different backgrounds can contribute their perspectives and expertise, the BBT Hackathons contribute to building a more diverse, resilient, and collaborative European innovation ecosystem.

Through this challenge-sourcing model and strong engagement of industry and community stakeholders, the BBT Hackathons move beyond traditional innovation competitions. They establish a collaborative platform where real European challenges meet emerging talent, entrepreneurial thinking, and expert guidance, maximising the potential for meaningful outcomes, including new innovation pathways, startup opportunities, industry collaborations, and long-term skills development for the European blue biotechnology sector.



Further details on the specific methodology, organisational approach, implementation steps, and terminology applied in the design and delivery of the BBT Hackathons are provided in the dedicated methodological framework milestone document that can be requested from the project coordinators.

2.2 Evolution across the three hackathons

In the initial Nordic Hackathon, challenge owners and participants registered simultaneously through a common application period, with an indication of their field of interest and topics. While this approach enabled efficient onboarding and broad participation, it also revealed an important limitation: participants applied before having visibility of the specific challenge topics. As a result, the alignment between participants' expertise, interests, and the selected challenges could not be fully optimized at the outset.

Building on the lessons learned from the Nordic experience, the second iteration of the hackathon model, implemented in the Baltic region, introduced a more structured and sequential process. A dedicated call for challenges was launched first, allowing challenge owners to submit and define their proposed topics. Following an evaluation and selection phase, the finalized challenges were published before participant recruitment commenced. This significantly improved the participant experience, as applicants could make informed decisions and apply to challenges that best matched their interests, competencies, and professional backgrounds. The revised process also contributed to stronger team engagement and greater thematic relevance across the hackathon activities.

The Atlantic Hackathon further strengthened and matured this approach by introducing an additional matchmaking and team-selection step. Beyond enabling participants to select preferred challenge topics, challenge owners were also given the opportunity to review participant profiles and shortlist applicants whose expertise, experience, and skill sets were most relevant to the challenge objectives. This created a more targeted and collaborative innovation environment, ensuring that multidisciplinary teams were formed with a stronger strategic fit between solution seekers and contributors.

Overall, the hackathon methodology evolved progressively across the Nordic, Baltic, and Atlantic implementations. Each iteration integrated lessons learned from the previous cycle, resulting in a more refined, participant-centred, and impact-oriented model. The gradual improvements enhanced the quality of collaboration, strengthened the relevance of team composition, and increased the potential for developing meaningful and implementable solutions to the identified challenges.

3. SUMMARY OF THREE BBT HACKATHONS

The BBT project organised three hackathons (Nordic, Baltic and Atlantic) with a distinctive programme tailored for students, recent graduates, and professionals to address future challenges in the blue biotech sector. Each hackathon was an approximately 48-hour event, during which participants collaborated to develop innovative ideas and solutions for real-world problems. These challenges were presented by startups, companies, and institutions seeking fresh perspectives and creative solutions. Participants had the chance to apply and strengthen their transversal skills, including problem-solving and design thinking. At the same time, the BBT hackathons offered the private sector a unique opportunity to engage with young talent, fostering innovation and addressing pressing industry challenges.

The first BBT hackathon, the Nordic Hackathon, took place in Odense, Denmark, from September 27 to 29, 2024. It was the inaugural event in the three-part BBT Hackathon series, preceding the Baltic Hackathon in Poland. The second BBT hackathon, the Baltic Hackathon, was hosted by the University of Gdańsk in Borucino, Poland, from June 6 to 8, 2025. The third BBT hackathon, the Atlantic Hackathon, was hosted by BLUEBIO ALLIANCE and Pôle Mer Bretagne Atlantique in partnership with Ocean Hackathon® 2025 and its local edition in Peniche, facilitated by the Escola Superior de Turismo e Tecnologia do Mar – Politécnico de Leiria. This hackathon took place in Peniche, Portugal, from October 17 to 19, 2025.

This brief report highlights the key outcomes and lessons learned from the hackathons, which are now publicly available to inspire further engagement and innovation.

3.1 Nordic Hackathon (Odense, Denmark)

The Nordic Hackathon focused on addressing blue biotechnology challenges emerging from the Western Baltic Sea basin and the wider European blue bioeconomy ecosystem. Six carefully selected challenges, representing the needs and priorities of five blue biotechnology companies and organisations from Denmark, Estonia, Germany, and Portugal, were presented to participants for the development of innovative and creative solutions (The detailed survey results are presented in the BBT Deliverable 4.1 Interim Hackathon Report, with further results available in the BBT Deliverable 4.2 Hackathon Report.

Table 1). The selected challenges were sourced from real-life industry needs and reflected current priorities of blue biotech actors, with a particular focus on circularity, sustainability, resource efficiency, and the development of solutions that can contribute to a more resilient and sustainable blue economy.

A central element of the Nordic Hackathon was the active involvement of challenge owners throughout the event. Seven mentors representing the participating companies provided expert guidance, knowledge exchange, and skills-building support to the teams as they worked towards developing solutions for the identified challenges. Through direct interaction with industry representatives, participants gained valuable insights into real-world innovation processes, expanded their understanding of potential career pathways within the blue biotechnology sector, and established connections with a network of potential employers, collaborators, and future professional contacts.

The Nordic Hackathon brought together a diverse and international community of participants, including **43 attendees** representing students, recent graduates, mentors, project partners, and committee members. Among these, 27 participants were BSc, MSc, or PhD students or recent graduates (Figure 1), representing 20 universities across 14 European countries. The event was further strengthened by the contribution of seven industry mentors, nine project partners, and committee members. Collectively, the Nordic Hackathon community represented 22 nationalities, highlighting the strong European dimension of the event. The initiative also demonstrated a strong commitment to inclusiveness and gender diversity, with female participants representing 58% of the total people present (e.g. participants, challenge owners, facilitators etc; Figure 1).

The programme of the Nordic Hackathon was carefully designed to maximise participant engagement, collaboration, creativity, and learning outcomes throughout the event. The hackathon opened with a kick-off session introducing participants to the objectives, methodology, structure, schedule, and expected outcomes of the event. This initial session also provided an opportunity for participants, mentors, and project partners to connect, establish working relationships, and build a collaborative atmosphere from the outset.

Following the introduction, challenge owners presented their respective challenges, allowing participants to gain a comprehensive understanding of the problems to be addressed and the context behind each challenge. Teams then entered structured working sessions, supported by defined milestones that guided the development of their ideas from initial concepts towards more mature innovation proposals. Throughout these work blocks, mentors and project partners remained actively engaged, providing technical input, strategic advice, feedback, and support to help teams refine their solutions and consider practical implementation pathways.

The hackathon concluded with dedicated pitch presentation sessions, where teams presented their proposed solutions to challenge owners, mentors, and the wider hackathon community. These final presentations provided an opportunity to showcase the creativity and innovation generated during the event, while also enabling constructive discussion, feedback exchange, and potential follow-up opportunities between participants and industry representatives.

Beyond the formal innovation activities, the programme incorporated networking and social activities through dedicated breaks and informal interaction opportunities. These moments supported knowledge exchange, strengthened connections between participants and stakeholders, and contributed to building a collaborative community around blue biotechnology innovation.

To assess the achievement of the hackathon objectives and identify opportunities for continuous improvement, the Nordic Hackathon organisers collected feedback from participants through an anonymous evaluation questionnaire. The survey was distributed among students, mentors, project partners, and other participants, covering key aspects of the event, including organisation and logistics, mentor–student collaboration, achievement of objectives, networking opportunities, skills development, and career orientation. A total of 20 responses were collected and analysed, providing valuable insights into participant experiences, the effectiveness of the methodology, and recommendations for strengthening future BBT Hackathon activities.

The feedback confirmed a highly positive participant experience. Overall, **95% of respondents were satisfied or very satisfied with the event**, and an equal share reported that the hackathon met or exceeded their expectations. The organisation of the event received particularly strong ratings, with 90% of respondents finding the schedule well-structured and manageable, 95% considering the venue and facilities sufficient for their needs, and 90% rating the pre-event communication as excellent or good. Networking and learning outcomes were equally encouraging: 90% of respondents found value in connecting with other participants, mentors, or partners, and 80% confirmed that participation contributed to their knowledge or skills in the blue biotechnology sector. In open responses, participants repeatedly highlighted the collaborative environment, the diversity of backgrounds and perspectives, the engaging real-life challenges, and the final pitch presentations, describing the hackathon as a fantastic, enjoyable, and challenging experience.

The detailed survey results are presented in the [BBT Deliverable 4.1 Interim Hackathon Report](#), with further results available in the BBT [Deliverable 4.2 Hackathon Report](#).

TABLE 1. CHALLENGE TITLES, OWNERS, AND COUNTRIES OF THE CHALLENGES REPRESENTED AT THE BBT NORDIC HACKATHON

No.	Challenge Title	Owner	Country
1.	Sustainable and cost-efficient potable water recovery system from humidity in greenhouses	Aquaponics Iberia	Portugal
2.	Blue biotech value chains explained	Global Skills Network OÜ	Estonia
3.	Increasing the Consumption of Blue Mussels through Innovation	Eat Myt	Denmark
4.	Accelerating Seaweed Product Development	Kerteminde Seafarm	Denmark
5.	Extending Post-Harvest Seaweed Shelf Life	Kerteminde Seafarm	Denmark
6.	Oxygen Deficit in Fish Farms	Kieler Lachsforelle	Germany

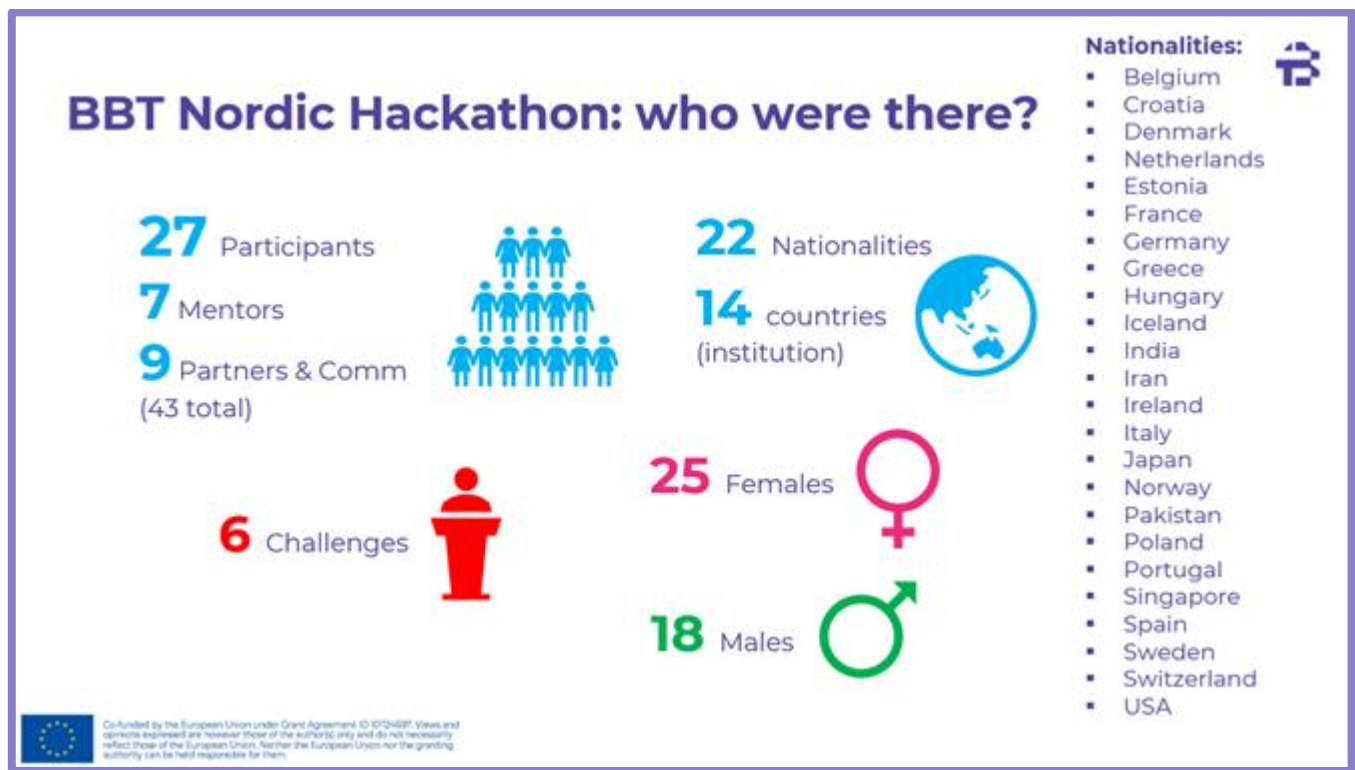


FIGURE 1. BREAKDOWN AND SUMMARY OF PARTICIPANTS AT THE NORDIC HACKATHON

3.2 Baltic Hackathon (Borucino, Poland)

The second BBT Baltic Hackathon focused on addressing challenges relevant to the Baltic Sea basin and beyond through innovative, sustainable, and circular blue bioeconomy solutions. Five real-life challenges proposed by companies from Poland, Denmark, and Lithuania, as well as international projects, were selected for participants to solve (Table 2). Six mentors representing the challenge owners provided technical guidance, skills development, career insights, and networking opportunities throughout the event.

Planning and implementation of the Baltic Hackathon drew on lessons learned from the first BBT Nordic Hackathon. Feedback from the Nordic event on organisation, mentoring, networking, career development, and overall participant experience was incorporated into the design of the Baltic Hackathon, resulting in a more refined, well-structured, and participant-centred programme.

The Baltic Hackathon fostered meaningful collaboration between academia and industry by facilitating direct interaction between start-ups, companies, and students from diverse disciplines. The event brought together **42 participants**, including 25 MSc and PhD students from 17 universities across 15 European countries (Figure 2). They were joined by six mentors and eleven project partners and committee members, representing a total of 23 nationalities. Gender diversity was a notable strength of the event, with women accounting for 62% of all people present (e.g. participants, challenge owners, facilitators etc).

The programme was based on the methodology developed by SDU, the BBT Hackathons Work Package lead, and adapted to the Polish context. It included an opening session, challenge pitches, team formation, structured working sessions with milestone reviews, mentor consultations, final pitch presentations, and networking activities integrated throughout the event. This format provided participants with continuous expert support while encouraging interdisciplinary collaboration and knowledge exchange.

The impact of the event extended beyond the hackathon itself. Two articles highlighting the Baltic Hackathon and its outcomes were published through the initiative of participants and jury members: *Young Innovators Tackled Blue Economy Challenges at the Blue Bio Techpreneurs Baltic Hackathon* and *Students' Innovations for the Development of Aquaculture and Blue Economy (Innowacje studentów dla rozwoju akwakultury i błękitnej gospodarki)*.

The event was evaluated through anonymous feedback collected from 27 respondents, including participants, mentors, and project partners. Overall satisfaction was very high, with respondents confirming that the hackathon met or exceeded their expectations. Notably, **93% reported that participation enhanced their knowledge and skills** in the blue bioeconomy. The relevance of the challenges, the quality and availability of mentor support, the organisation of the event, networking opportunities, and pre-event communication all received highly positive evaluations. The challenges were rated as relevant or very relevant by all respondents, 95% found the mentors very helpful, and 93% found value in connecting with other participants, mentors, or partners. The organisation of the event also received strong ratings, with 85% of respondents rating the pre-event communication as excellent and 89% considering the venue and facilities fully sufficient for their needs. Participants also confirmed that the hackathon helped them develop and refine solutions to real-world challenges while strengthening interdisciplinary collaboration. Feedback further indicated that the programme, timeline, and resources were appropriate, while also providing constructive recommendations that will support the continuous improvement of future BBT Hackathons.

The detailed survey results are presented in the [BBT Deliverable 4.1 Interim Hackathon Report](#), with further results available in the BBT [Deliverable 4.2 Hackathon Report](#).

TABLE 2. CHALLENGE TITLES, OWNERS, AND COUNTRIES OF THE CHALLENGES REPRESENTED AT THE BBT BALTIC HACKATHON

No.	Challenge Title	Owner	Country
1.	What's the secret to building an energy-efficient recirculating aquaculture system (RAS) in the Baltic area?	Aqua Medic Poland/ AquaLoop Interreg South Baltic	Poland + Interreg South Baltic area partners
2.	How can we make recirculating aquaculture system (RAS) production in the Baltic area sexy?	Business Lolland-Falster/TETRAS Interreg Baltic Sea Region project	Denmark + Interreg Baltic Sea Region partners
3.	Can we find a sustainable replacement for minerals (mica), used in cosmetics, in the Baltic?	Business Lolland-Falster	Denmark
4.	How can Baltic offshore wind farms be inspired to invest in regenerative ocean farming?	Officina Baltica Sp. z o.o./Klaipeda Science and Technology Park (Cool Blue Baltic project)	Poland, Lithuania
5.	How can we raise healthier fish with fewer treatments in intensive recirculating aquaculture systems (RAS) in the Baltic area?	Fish farm - "K-2"	Poland

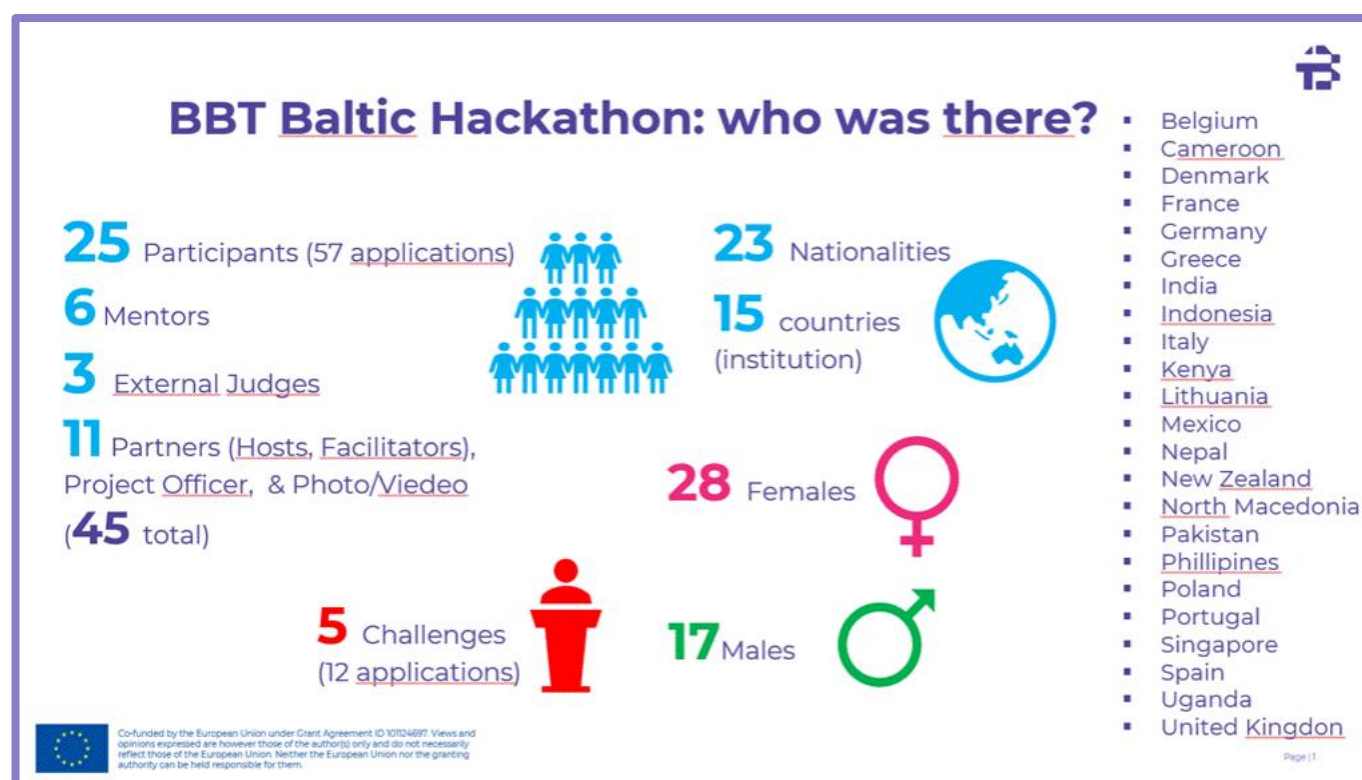


FIGURE 2. BREAKDOWN AND SUMMARY OF PARTICIPANTS AT THE BALTIC HACKATHON

3.3 Atlantic Hackathon (Peniche, Portugal)

The Atlantic Hackathon brought together blue biotechnology innovators, companies, and participants to address pressing challenges linked to the Atlantic Sea Basin and the broader blue bioeconomy landscape. The event was organised by two

consortium partners located within the Atlantic Basin, BBA and PMBA strengthening the connection between the hackathon activities, the regional innovation ecosystem and participants' outreach.

The final of the three BBT took place in Peniche, Portugal in partnership with [Ocean Hackathon®](#). The organisers of this global event, the Campus Mondial de la Mer, supported the BBT project from its conception. Observation of the Grand Finale of the 2023 edition allowed the consortium to identify best practices for its hackathon series in general and to envisage a partnership to coincide with the 2025 edition of the event. After a process of information gathering and bilateral meetings between Ocean Hackathon®, regional Ocean Hackathon® hosts and BBT consortium partners, it was determined that partnering with the event would enrich the Atlantic Hackathon – allowing participants access to exceptional access to marine data sets from leading institutions, benefiting from a large network of data coaches, and receiving structure and support from the central organisers throughout the process, all while giving BBT and its participants an international platform on which to network and disseminate their results.

Embedded within the broader Ocean Hackathon® structure, the Atlantic hackathon had the specificity of focusing on blue bioeconomy challenges which involved the use of marine and blue economy data sets. In some cases, the primary sources of data were those provided by challenge owners, collected in the exercise of their economic activity. Data sets were also made available from Ocean Hackathon data providers: Cerema, French Office of Biodiversity, French Centre of expertise and data on nature (UMS PatriNat), Ifremer, Météo-France, ODATIS Ocean Cluster, Shom, University of Le Havre, European organisation for the exploitation of Meteorological Satellites (EUMETSAT), Copernicus Marine Service, European's reference service for Copernicus DIAS (WEkEO), European Marine Observation and Data Network (EMODnet), Mercator Ocean International, Global Fishing Watch, Ocean Data Sharing, European Marine Biological Resource Centre (EMBRC). EMBRC was indeed a challenge owner for the edition in Peniche, while Global Fishing Watch was represented with an in-person data coach at the Peniche event who worked closely with two BBT teams.

The Atlantic Hackathon was built around five real-world challenges put forward by organisations from France and Portugal, encouraging participants to design innovative solutions addressing concrete needs (Table 3). These challenges represented key priorities identified by blue biotech stakeholders, with a strong emphasis on advancing sustainable practices, promoting circular approaches, and supporting the efficient and responsible valorisation of marine resources.

TABLE 3. CHALLENGE TITLES, OWNERS, AND COUNTRIES OF THE CHALLENGES REPRESENTED AT THE BBT ATLANTIC HACKATHON

No.	Challenge Title	Owner	Country
1.	Sustainable upcycling of aquaculture nutrients into circular bio-based solutions	AmpliAqua Building Global Innovators (BGI) - Sustainable Ventures	Portugal
2.	Detecting Microplastics in Food and Water: A Smart Monitoring Challenge	INOVA - Instituto de Inovação Tecnológica dos Açores	Portugal
3.	Tracking Marine Biodiversity: An Interactive Genomics Explorer for Europe	European Marine Biological Resource Centre (EMBRC)	France
4.	From Sea to Dish - Intelligent Traceability for a Sustainable Ocean	B2E Blue Bioeconomy CoLAB	Portugal
5.	Let's improve aquaculture in Portugal?	Associação Portuguesa de Aquacultores	Portugal

The active engagement of challenge owners and mentors was a key element of the Atlantic Hackathon, with representatives from the participating organisations supporting teams throughout the innovation process. Through mentoring sessions, knowledge sharing, and constructive feedback, the five company representatives helped participants refine their ideas and better understand the practical context behind each challenge. Their contribution extended beyond technical guidance, providing valuable exposure to industry perspectives, potential career pathways, and opportunities to connect with professionals and organisations operating within the blue biotechnology ecosystem.

Apart from the wide range of nationalities represented (Figure 3), a particularly impactful element of the Atlantic Hackathon was the involvement of a challenge originating from the Azores, an outermost region of the European Union, as well as the participation of Azorean participants. The participation of an organisation from this territory highlighted the importance of ensuring that innovation opportunities within the blue bioeconomy are accessible beyond mainland and central European regions, recognising the valuable contribution of remote and geographically distinct areas to the European maritime ecosystem. By bringing an Azorean challenge into a European innovation setting, the hackathon created visibility for the specific needs and opportunities of outermost regions, while demonstrating how local knowledge, marine resources, and regional expertise can contribute to broader objectives for sustainable development and a more inclusive blue economy.

BBT greatly benefited from the co-organisation and hospitality of hosting institution Escola Superior de Turismo e Tecnologia do Mar – Politécnico de Leiria. The school's excellence in marine science and technology and its previous experience hosting a local edition of Ocean Hackathon® made them an invaluable partner in the preparation and execution of the Atlantic Hackathon.

Additionally, and following the joint forces with Ocean Hackathon®, the winners of each local edition of the Ocean Hackathon® were invited to travel to Brest for the Grand Finale. The event is a chance to compete with teams from around the world, with monetary prizes to advance the projects of the 1st, 2nd, and 3rd place winners. The Atlantic Hackathon in Peniche was no exception. The winning team travelled to Brest, France, to pitch their solution CircularPonics. A digital tool designed to upcycle aquaculture nutrients into circular, bio-based solutions, Circularponics responded to a challenge owned by AmpliAqua (owned by BGI – Sustainable Ventures company) and highlighted the potential of circular thinking in a world of growing seafood demand.

Ahead of their pitch the five team members benefited from additional coaching from the challenge owner, from PMBA and from the Polytechnic University of Leiria, as well as feedback from the Peniche startup SEAentia. Throughout their stay in Brest, participants exchanged with fellow students and blue economy professionals at the forefront of sustainable innovation, all while familiarizing themselves with a major hub for ocean science.

The pitch itself offered an opportunity to hone participants skills and disseminate the results of their work on a bigger stage. The jury for the Grand Finale was composed of advisors and ambassadors from Météo-France, CEREMA, SHOM,

IFREMER & Mercator Ocean International. They encouraged the team to expand on the tool's technical foundations and its potential in a world of rising populations and the growing seafood demand.

The event was a fitting capstone to the BBT Hackathon experience. It brought the fruits of the action to an international audience and permitted Atlantic Hackathon winners to reinforce new skills and gain expert feedback. Live streaming of the pitches and the subsequent recording disseminated the results of the participants' hard work to over 1000 viewers at time of writing.

Feedback collected after the event confirmed the Atlantic Hackathon as a highly successful conclusion to the series. All 22 survey respondents were satisfied or very satisfied with the event (**82% very satisfied**), and expectations were met or exceeded in every case, with 64% reporting that the event exceeded their expectations. Notably, **95% of respondents confirmed that participation contributed to their knowledge or skills** in the blue biotech and blue bioeconomy sectors, and all respondents found value in connecting with other participants, mentors, or partners. The challenges were rated as relevant or very relevant by all respondents, and 95% found the challenge owners and coaches very helpful. Participants particularly praised the collaborative atmosphere, the continuous presence of challenge owners, the Lego Serious Play team-building workshop, and the final pitch presentations, with one participant describing the event as "This is the best hackathon I've ever attended".

For a more comprehensive overview of the Atlantic Hackathon, including detailed descriptions of the organisational methodology, challenge selection process, participant journey, mentoring approach, activities, outcomes, and feedback results, please refer to the Blue Bio Techpreneurs [Deliverable 4.2](#).

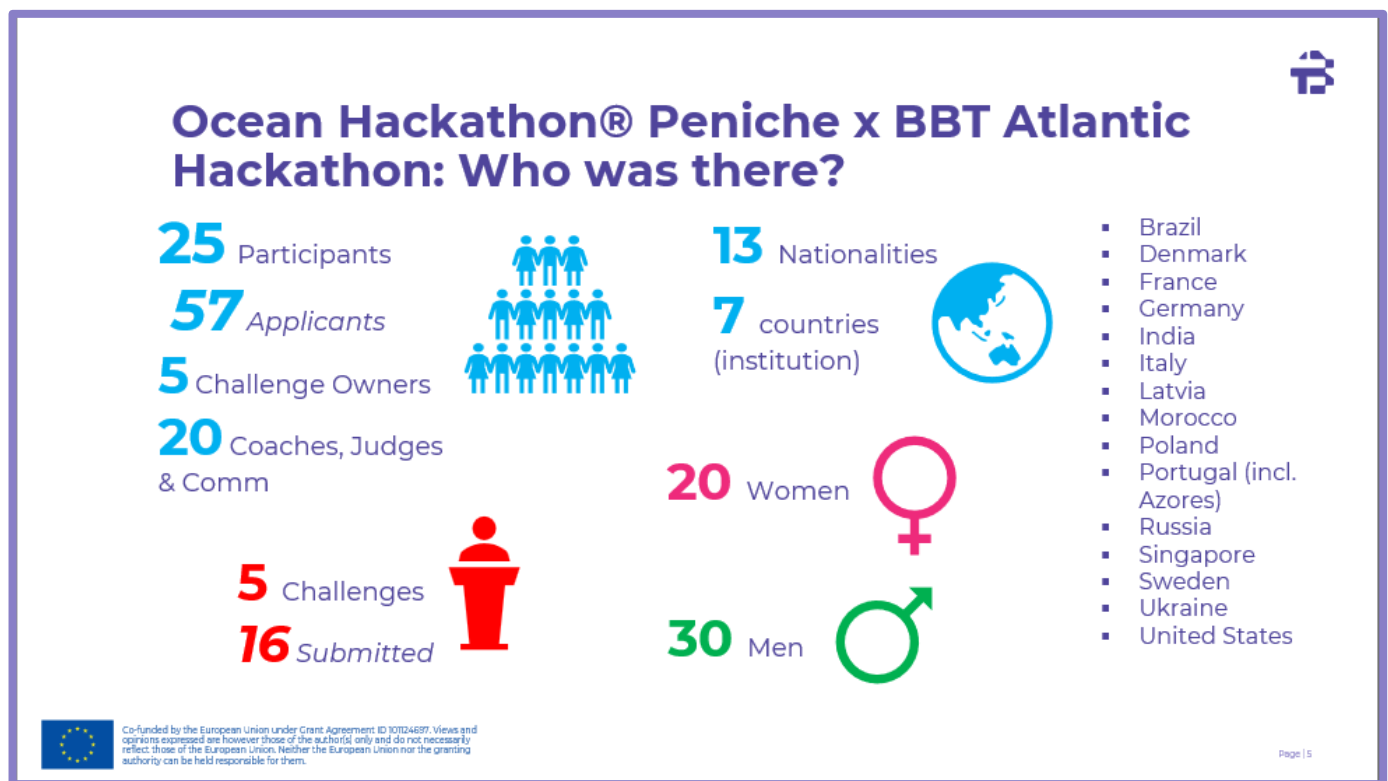


FIGURE 3. BREAKDOWN AND SUMMARY OF PARTICIPANTS AT THE ATLANTIC HACKATHON

4. IMPACTS AND OUTCOMES

4.1 Participation and reach

The three BBT Hackathons attracted a total of **137 participants**, demonstrating the project's strong capacity to engage a diverse, international, and interdisciplinary community. Across the Nordic, Baltic, and Atlantic editions, the events invited **73 BSc, MSc, and PhD students or recent graduates representing 46 universities from 17 European countries**, alongside mentors, challenge owners, project partners, coaches, jury members, and committee members.

The hackathons achieved broad geographical reach, with participants representing 22 nationalities at the Nordic Hackathon, 23 nationalities at the Baltic Hackathon, and 13 nationalities at the Atlantic Hackathon. This international participation fostered cross-border collaboration and knowledge exchange while strengthening European networks within the blue bioeconomy sector.

The events successfully promoted diversity and interdisciplinarity by bringing together participants from a wide range of academic disciplines and professional backgrounds to collaborate on real-world blue bioeconomy challenges.

Gender balance from hackathon participants was also a notable achievement with women representing 48.1% of participants at the Nordic Hackathon, 52.0% at the Baltic Hackathon, and 34.6% at the Atlantic Hackathon, demonstrating the project's commitment to inclusive participation.

Stakeholder engagement was a defining feature of all three hackathons. Participants worked directly with industry mentors, challenge owners, coaches, project partners, and jury members, ensuring continuous interaction between academia, industry, and innovation stakeholders. This collaborative approach provided participants with expert guidance, facilitated knowledge transfer, strengthened industry-academia links, and created valuable opportunities for networking, career development, and future collaboration.

The reach of BBT's Atlantic Hackathon was enhanced by its partnership with Ocean Hackathon®. The winning team of the Peniche Hackathon pitched in front of an audience of dozens of in-person spectators in the Grand Finale in Brest, including a jury consisting of representatives of multiple French, European and international entities connected to ocean science and technology. In addition, at time of writing over 1000 viewers had streamed the event live or watched the recording online.

4.2 Experiences and Lasting impacts

Assessing the experiences and longer-term impacts of the BBT Hackathons has been an important component in understanding the broader value and effectiveness of the initiative. While quantitative indicators such as participant numbers, diversity, challenge engagement, and innovation outputs provide important measures of achievement, capturing the personal experiences, reflections, and perceived benefits of participants provides deeper insight into how the hackathons contributed to skills development, career perspectives, networking opportunities, and engagement with the blue biotechnology ecosystem.

The BBT Hackathons were designed not only as innovation events but as immersive learning and career development experiences, bringing together students, recent graduates, industry representatives, researchers, and innovation stakeholders around real-life challenges from the blue biotechnology sector.

To capture both immediate experiences and longer-lasting effects, participant testimonials and reflections were collected at multiple stages following the three BBT Hackathons. Initial feedback was gathered shortly after each hackathon (within one to two months after participation), allowing participants to reflect on their experiences while the activities,

interactions, teamwork, and learning processes were still fresh. These early reflections provided insights into participants' perceptions of the hackathon format, the relevance of the challenges, the value of mentoring, the benefits of interdisciplinary collaboration, and the overall contribution of the events to their personal and professional development.

In addition, a follow-up reflection process was conducted several months after the completion of the third and final BBT Hackathon, which took place in October 2025. This later-stage feedback collection, conducted in 2026, provided an opportunity to explore the more lasting impressions and impacts of participation. By allowing participants additional time to reflect, the follow-up responses captured whether the experiences gained during the hackathons continued to influence their skills, career considerations, professional networks, and engagement with blue biotechnology innovation.

A recurring theme emerging from immediate participant feedback (at the end of the in-person event) was the unique value of working with authentic, industry-driven challenges. Unlike traditional educational exercises based on hypothetical scenarios, the BBT Hackathons enabled participants to engage with real problems identified by blue biotechnology companies, research initiatives, and other sector stakeholders. This approach strengthened participants' sense of purpose and motivation, as they understood that their ideas had the potential to contribute to challenges currently faced by real organisations and communities. Direct engagement with challenge owners helped participants appreciate the complexity of innovation processes and develop a stronger connection between academic knowledge and practical application.

The involvement of industry mentors and challenge owners was consistently highlighted as a key strength of the hackathon experience. Through mentoring, discussions, and feedback sessions, participants gained access to sector-specific knowledge, entrepreneurial perspectives, and insights into potential career pathways within blue biotechnology. The interaction with professionals provided participants with a valuable opportunity to understand industry expectations, receive guidance on their ideas, and expand their professional networks. For many participants, these connections represented an important bridge between academic environments and future employment or entrepreneurial opportunities.

Participants also highlighted the benefits of the interdisciplinary and international nature of the hackathons. Bringing together students and graduates from different academic backgrounds, institutions, and European countries created a dynamic environment for knowledge exchange and collaborative problem-solving. Working in diverse teams encouraged participants to consider different perspectives, improve communication and teamwork skills, and develop greater confidence in presenting and defending innovative ideas. These transferable skills are essential for future professionals working in complex and multidisciplinary fields such as blue biotechnology.

Beyond individual skills development, the hackathons also contributed to strengthening connections between education, research, and industry. By creating a shared space where students, companies, mentors, and project partners could collaborate, the initiative supported the development of a more connected European blue biotechnology ecosystem. Challenge owners benefited from exposure to fresh ideas and alternative approaches generated by emerging talent, while participants gained access to industry knowledge, networks, and potential future opportunities.

Refer to past deliverables for short term survey statistics Blue Bio [Techpreneurs Deliverable 4.1 Interim Hackathon Report](#) and [Blue Bio Techpreneurs Deliverable 4.2 Interim Hackathon Report](#).

The longer-term reflections collected months after the final hackathon further demonstrate the importance of creating continued engagement opportunities beyond the events themselves (Figure 4). The follow-up feedback provided insights into how participants continued to value the experience over time, including the confidence gained from solving real challenges, the skills developed through teamwork and pitching, and the professional relationships established during the events.

9. Overall, how valuable was your BBT Hackathon experience?

(Scale 1–5)

1 star = Not valuable

5 stars = Extremely valuable



FIGURE 4. OVERALL VALUE OF THE BBT HACKATHON EXPERIENCE REPORTED IN THE LONG-TERM FOLLOW-UP SURVEY

The BBT Hackathons also demonstrated a strong commitment to inclusiveness and equal opportunities. Through active efforts to encourage diverse participation, the initiative created a collaborative environment where participants of different backgrounds, disciplines, and career stages could contribute their perspectives. The strong representation of female participants across the hackathons further reflects the initiative’s contribution to supporting broader participation and diversity within blue biotechnology and innovation activities.

Overall, the collected testimonials, participant feedback, and follow-up reflections demonstrate that the BBT Hackathons generated meaningful value for participants, challenge owners, and the wider blue biotechnology ecosystem. The initiative provided participants with opportunities to develop practical skills, strengthen entrepreneurial mindsets, build professional networks, and gain insight into future career opportunities.

The following section presents selected participant testimonials and reflections collected after the three BBT Hackathons (Figure 5). Together, these personal experiences provide qualitative evidence of the learning outcomes, professional impacts, and lasting value generated through the initiative.

Short-Term Reflections: Experiences Captured After Each Hackathon Event

Nordic Hackathon Reflections



What did you gain from participating in the Hackathon?

Gillian Moran

"The hackathon was beneficial to me specifically to connect with blue food researchers and companies in Denmark as they could be future collaborators or employers for me"

Nordic Hackathon Reflections



How has the Hackathon benefited you in the long run?

Hiba Jasmin

"One of the biggest outcomes was securing my current internship in Sweden, which was inspired by some of the ideas discussed during the event."

Nordic Hackathon Reflections



How has the Hackathon benefited you in the long run?

Amin Sadeghi Sheshdeh

*"We always say that knowledge should be useful in **real-world applications**, and this hackathon proved exactly that! Our idea was actually inspired by nature and animals. But for me, the most valuable part was expanding my network. **I met some amazing people there, and I'm still in touch with them!**"*

Baltic Hackathon Reflections



What was the main lesson you learned from the hackathon?

Hemagni Baldha

*"The hackathon showed me that **diverse knowledge systems can come together to build smarter, more sustainable technologies**, and sustainability isn't a buzzword —it's a responsibility we can tackle creatively through biotechnology, green energy, and waste-to-resource innovation"*

Baltic Hackathon Reflections



What was the main lesson you learned from the hackathon?

Felina Pranata Irawan

*This hackathon was an invaluable **stepping stone for my career**, providing the opportunity to collaborate with amazing fellow students and industrial mentorship while tackling real-world challenges.*

*It showed me how **interdisciplinary teamwork can turn academic innovation** into scalable, business-ready solutions!*

Baltic Hackathon Reflections



What was the main lesson you learned from the hackathon?

Cassia Wilson

*"My main lesson learnt from the hackathon was probably the **power of a diversity of backgrounds** and research in helping to **create a feasible solution to real-world problems** in such a short time frame."*

Atlantic Hackathon Reflections



What was the main lesson you learned from the hackathon?

Ayman Bnoussaad

Bringing together people from different backgrounds under intense pressure can spark collaboration and quickly turn complex ocean challenges into actionable, tangible solutions.

Atlantic Hackathon Reflections



What was the main lesson you learned from the hackathon?

Alexei Karavan

The Ocean Hackathon in Peniche showed me how creativity thrives when diverse minds unite, proving that genuine innovation emerges through focused teamwork.



FIGURE 5. PARTICIPANT TESTIMONIALS COLLECTED SHORTLY AFTER EACH HACKATHON (SHORT-TERM REFLECTIONS)

Long-Term Perspectives: Follow-Up Reflections on Skills, Networks, and Career

To better understand the lasting value and longer-term impacts of the BBT Hackathons, a follow-up survey was distributed to participants in May 2026. The survey was conducted between 7 and 20 months after participation, allowing participants sufficient time to reflect on their experiences and consider how the hackathon activities had influenced their personal development, professional ambitions, skills, networks, and engagement with the blue biotechnology sector beyond the immediate event experience.

The purpose of the follow-up survey was to move beyond immediate event satisfaction and capture the sustained outcomes generated through participation. Participants were invited to reflect on the extent to which the hackathons contributed to confidence building, interdisciplinary collaboration, innovation skills, entrepreneurial thinking, career perspectives, and connections with industry and the wider blue economy community. The survey combined structured evaluation questions with open-ended reflection questions, allowing participants to share personal experiences and perspectives on the longer-term value of the initiative.

The collected testimonials demonstrate that the BBT Hackathons were perceived as transformative experiences that extended beyond a short-term innovation challenge. A recurring theme across the 12 responses received was **increased confidence, personal growth, and the motivation to pursue new opportunities**. One participant reflected on how the experience contributed directly to entrepreneurial ambitions:

"The BBT Hackathon completely shattered my limits, giving me the unstoppable confidence to launch my skincare brand The OceanVeda and map out its expansion across Europe. I highly recommend this experience to any visionary ready to scale their business dreams and create a massive global impact."

Participants also highlighted the value of stepping outside traditional academic environments and gaining exposure to broader innovation perspectives. Several respondents emphasised that the hackathons helped them connect scientific knowledge with real-world applications and societal challenges:



"The BBT Hackathon is a good opportunity to get out of the scientific bubble and see certain topics within a broader context. Only this will allow us to solve the issues of our time."

The opportunity to collaborate with participants from different disciplines, countries, and cultural backgrounds was repeatedly identified as one of the most valuable aspects of the experience. Participants noted that working in diverse teams encouraged new ways of thinking, improved adaptability, and strengthened collaboration skills:

"I would definitely recommend it to others as it was a really fun and eye-opening experience, to understand how to work within a very limited timeframe with unknown colleagues with different knowledge and cultural backgrounds."

Another participant similarly reflected: *"Multicultural team analysis helped me with new ways of thinking"*.

The follow-up responses also highlighted the importance of the challenge-based methodology and the opportunity to work on authentic blue biotechnology problems. Participants appreciated that the hackathons provided exposure to real-world challenges rather than theoretical exercises, requiring them to develop practical solutions under realistic conditions.

"Working under time pressure to deliver a project... the reality of research."

Several participants described the intensive nature of the hackathon as a valuable preparation for future professional environments, where innovation often requires rapid decision-making, teamwork, and the ability to integrate different perspectives. One participant summarised this experience as:

"A short, but fun experience to come together with interesting people to tackle interesting challenges."

Direct engagement with industry representatives and challenge owners was another important element highlighted in the follow-up reflections. Participants valued the opportunity to receive feedback from professionals, understand industry perspectives, and expand their professional networks. One participant noted:

"Great opportunity to expand my network with professionals. I gained more confidence through the exposure to a real-world challenge and business pitching practice."

The interaction with industry stakeholders was also recognised as an important learning opportunity that is difficult to replicate in traditional educational settings. Reflecting on the benefits of engaging with companies, one participant stated:

"Equally valuable was the opportunity to engage closely with industry stakeholders, gaining insights that are difficult to find elsewhere."

Beyond technical knowledge, participants highlighted the development of leadership, teamwork, communication, and problem-solving skills. The collaborative nature of the hackathons required participants to navigate different working styles, distribute responsibilities, and combine diverse expertise to reach a common goal. One participant reflected:

"While managing the team presented challenges, strong leadership, diverse skill sets, and effective collaboration enabled us to develop an innovative, winning solution. The experience taught me a great deal about addressing marine challenges and working with people from different backgrounds—both of which are fundamental to the blue economy."

The broader personal transformation associated with the hackathon experience was captured by another participant:

"A hackathon is a vast ocean - you dive in as oneself and surface as another. It's a transformative journey where openness, adaptability, and listening shape the outcome."

Overall, the longer-term follow-up feedback demonstrates that the BBT Hackathons generated impacts beyond the immediate development of innovation concepts. Participants reported increased confidence, stronger collaboration skills,



broader professional networks, enhanced understanding of blue biotechnology opportunities, and greater awareness of how scientific knowledge can contribute to solving real-world challenges. The testimonials provide qualitative evidence that the hackathons served as a catalyst for personal development, entrepreneurship, and deeper engagement with the European blue biotechnology ecosystem.

4.3 Learning and capacity building

The BBT Hackathons were designed not only to generate innovative solutions for industry-driven challenges but also to strengthen participants' knowledge, skills, and capacity to contribute to the European blue bioeconomy. The follow-up survey after participation demonstrates that the learning outcomes extended well beyond the duration of the events, with participants continuing to recognise the value of the competences and experiences gained.

A particularly positive finding was the increase in participants' understanding of blue biotechnology and the wider blue bioeconomy. **All respondents reported that the hackathon had increased their understanding and interest** in the sector, with one-third indicating that the increase was significant and the remaining participants reporting a moderate increase (Figure 6). These findings suggest that the hackathons successfully contributed to improving ocean literacy and raising awareness of the opportunities, challenges, and innovation potential within Europe's blue biotechnology ecosystem.

10. Did the BBT Hackathon increase your understanding of and interest in blue biotechnology or/and the blue bioeconomy?



FIGURE 6. REPORTED INCREASE IN UNDERSTANDING OF AND INTEREST IN BLUE BIOTECHNOLOGY

Participants consistently identified the acquisition of both technical and transferable skills as one of the most valuable outcomes of their participation. Frequently reported learning outcomes included interdisciplinary teamwork (83.3%), creative problem-solving (66.7%), innovation and entrepreneurial thinking (58.3%), communication and presentation skills (50.0%), project and time management (58.3%), stakeholder engagement (33.3%), and a stronger understanding of industry challenges and real-world applications (83.3%) (Figure 7). Several participants also highlighted that working directly with challenge owners enabled them to better understand how scientific knowledge can be translated into practical solutions with societal and commercial relevance.

11. What skills or knowledge did you gain or strengthen through the hackathon?

(Select all that apply)

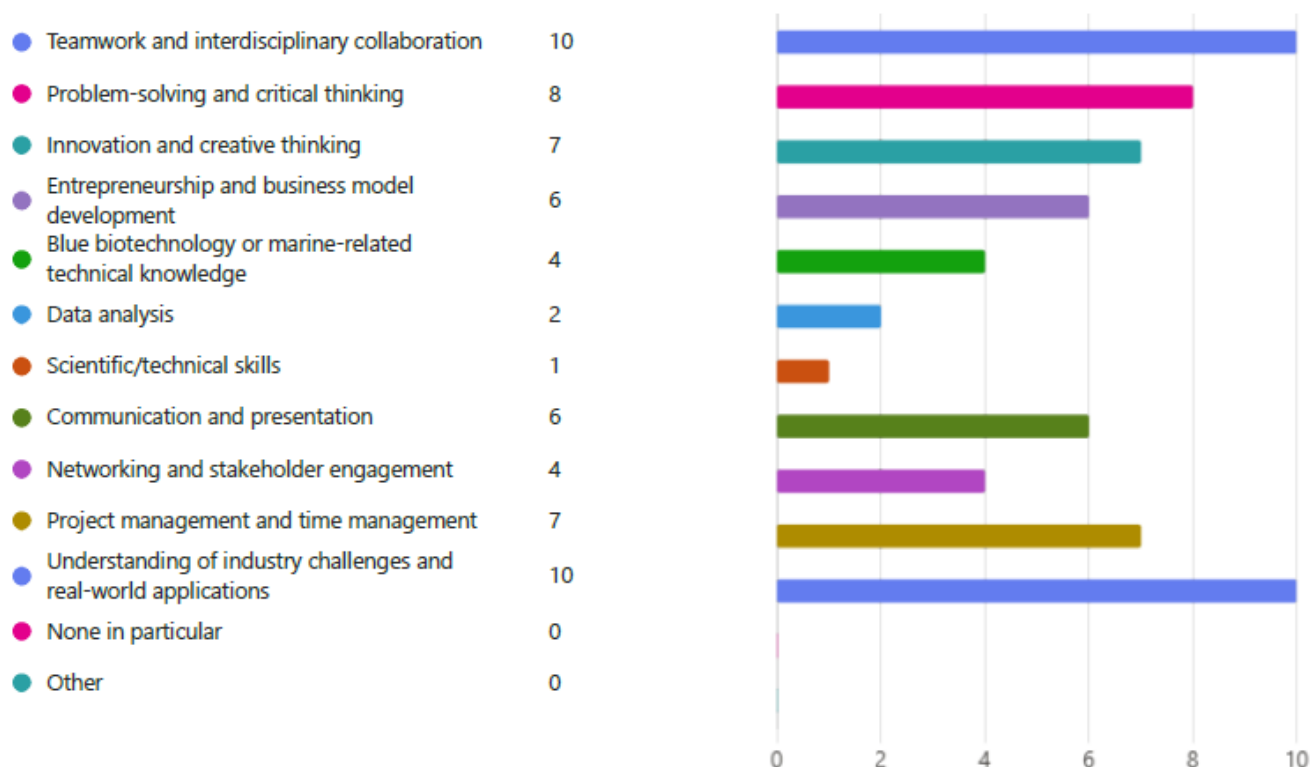


FIGURE 7. SKILLS AND KNOWLEDGE GAINED OR STRENGTHENED THROUGH THE BBT HACKATHONS

The hackathons also contributed to strengthening participants' entrepreneurial mindset. Exposure to challenge-based innovation, business model development, and industry mentoring encouraged participants to consider entrepreneurship as a potential career pathway and increased their confidence in developing and presenting innovative ideas. For some participants, the experience directly influenced subsequent entrepreneurial activities, while others described gaining a broader understanding of how innovation ecosystems function and how academia, industry, and entrepreneurship intersect within the blue economy.

Collaboration and networking represented another important capacity-building outcome. The hackathons brought together participants from diverse academic disciplines, institutions, countries, and cultural backgrounds, creating an environment that fostered interdisciplinary collaboration and knowledge exchange. Many respondents emphasised that working in international teams strengthened their communication skills, broadened their perspectives, and improved their ability to collaborate effectively with individuals possessing different expertise and experiences.

The follow-up survey further indicates that the hackathons supported the development of professional networks. While the extent of networking outcomes varied among participants, many reported establishing new connections with fellow students, researchers, mentors, challenge owners, industry representatives, entrepreneurs, and project partners. Several participants remained in contact with individuals they met during the hackathons, primarily through professional networking platforms such as LinkedIn, while others reported maintaining occasional contact through research or professional collaborations. These findings demonstrate that the hackathons successfully created opportunities for participants to become part of a broader European blue biotechnology community that may continue to generate value beyond the project lifetime.

Overall, the findings demonstrate that the BBT Hackathons successfully combined technical learning, entrepreneurial education, interdisciplinary collaboration, and professional networking into a single learning experience. The initiative therefore contributed not only to participants' knowledge of blue biotechnology but also to developing the innovation, collaboration, and entrepreneurial competences needed to support the future European blue bioeconomy.

The key quantitative results of the long-term follow-up survey are summarised in Table 4.

TABLE 4. KEY QUANTITATIVE RESULTS FROM THE LONG-TERM FOLLOW-UP SURVEY (N = 12)

Indicator	Result (n = 12)
Overall value of the hackathon experience	Average rating 4.67 / 5 (8 respondents rated 5, 4 rated 4)
Increased understanding of and interest in blue biotechnology	100% (33.3% significant increase, 66.7% moderate increase)
Most frequently gained skills	Interdisciplinary teamwork (83.3%); understanding of industry challenges and real-world applications (83.3%); creative problem-solving (66.7%)
Expanded professional network	50.0% yes, somewhat; 25.0% neutral; 25.0% not really
Still in contact with connections made	75.0% (8.3% regularly, 41.7% occasionally, 25.0% via social media only)
Team or idea continued after the event	4 of 12 respondents (2 both continued, 1 idea only, 1 team only)

4.4 Innovation and networks

Beyond individual learning outcomes, the BBT Hackathons generated innovation and strengthened connections between academia, industry, entrepreneurs, and the wider blue biotechnology ecosystem. By working on authentic industry-defined challenges sourced from companies, research organisations, and innovation initiatives, participants developed solution concepts that addressed real-world needs while simultaneously building relationships with key stakeholders within the sector.

The long-term follow-up survey demonstrates that, although the primary objective of the hackathons was skills development and innovation rather than startup creation, several project ideas continued beyond the events themselves. Three respondents reported that either their team or their idea continued after the hackathon, while two respondents indicated that both the team and the project continued their collaboration. Reported follow-up activities included the development of prototypes and proof-of-concept solutions, further refinement of ideas, integration into academic research activities, presentations at scientific or professional events, and, in one case, the formation of a startup based on the hackathon concept (Figure 8). These examples illustrate that the hackathons acted as catalysts for continued innovation activities beyond the event itself.

18. Did your hackathon team or idea continue after the event?

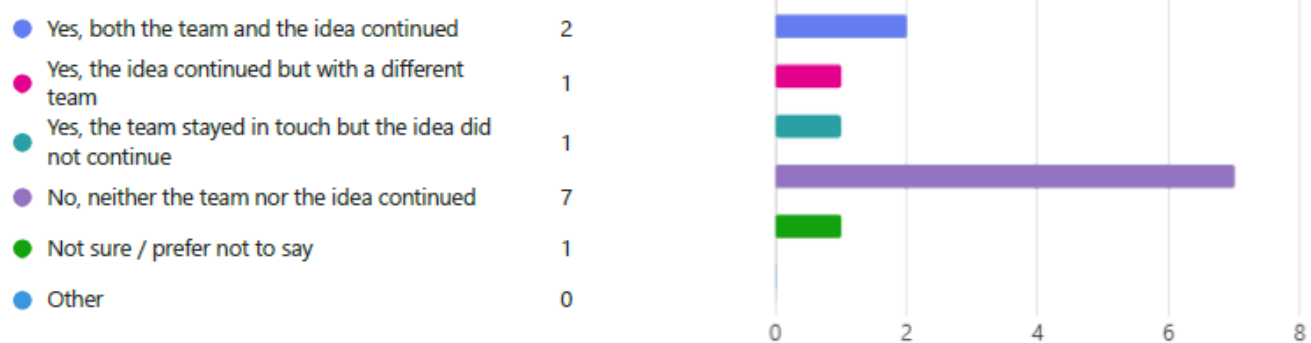


FIGURE 8. CONTINUATION OF TEAMS AND IDEAS AFTER THE BBT HACKATHONS

The survey also highlights the value of the hackathons as networking and partnership-building platforms (Figure 9). Participants reported establishing connections with researchers, fellow students, entrepreneurs, mentors, challenge owners, industry representatives, and project partners (Figure 10). While not every connection immediately resulted in formal collaboration, respondents consistently recognised the importance of expanding their professional networks and gaining access to communities that would otherwise have been difficult to reach. Several participants also noted that the hackathons provided direct exposure to potential employers, collaborators, and innovation stakeholders operating within the European blue biotechnology sector.

13. Did participating in the BBT Hackathon help expand your professional network?



FIGURE 9. REPORTED EXPANSION OF PROFESSIONAL NETWORKS

14. Which types of connections did you make through the hackathon?

(Select all that apply)

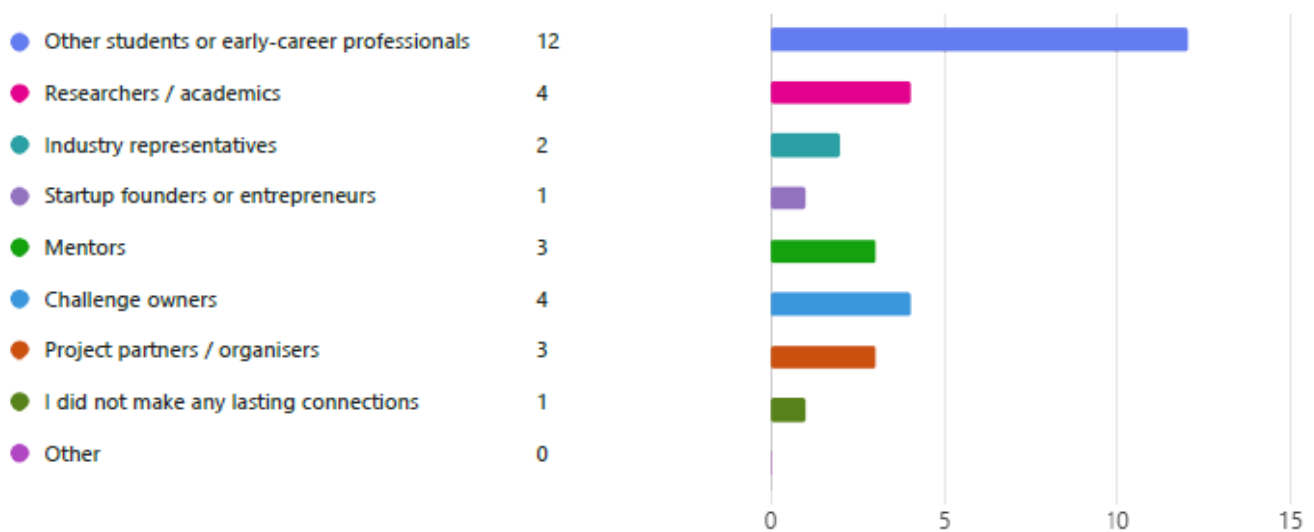


FIGURE 10. TYPES OF CONNECTIONS ESTABLISHED THROUGH THE BBT HACKATHONS

The international character of the BBT Hackathons further strengthened their impact. By bringing together participants from multiple European countries and diverse disciplinary backgrounds, the initiative promoted cross-border collaboration, intercultural learning, and the exchange of knowledge between regional innovation ecosystems. Participants repeatedly identified the opportunity to work within multicultural and interdisciplinary teams as one of the defining strengths of the hackathon experience, enabling them to develop broader perspectives on marine challenges while strengthening skills that are increasingly important in international research and innovation environments.

Taken together, the survey findings demonstrate that the BBT Hackathons generated value beyond the individual events by stimulating innovation, strengthening European networks, and creating pathways for future collaboration. While not every project continued after the hackathon, the initiative successfully established new connections between emerging talent and the blue biotechnology sector, contributing to a stronger and more connected European innovation ecosystem.

The complete set of long-term follow-up survey results is presented in Figure 11 to Figure 16.

12. In what other ways did the BBT Hackathon benefit you?
(Select all that apply)

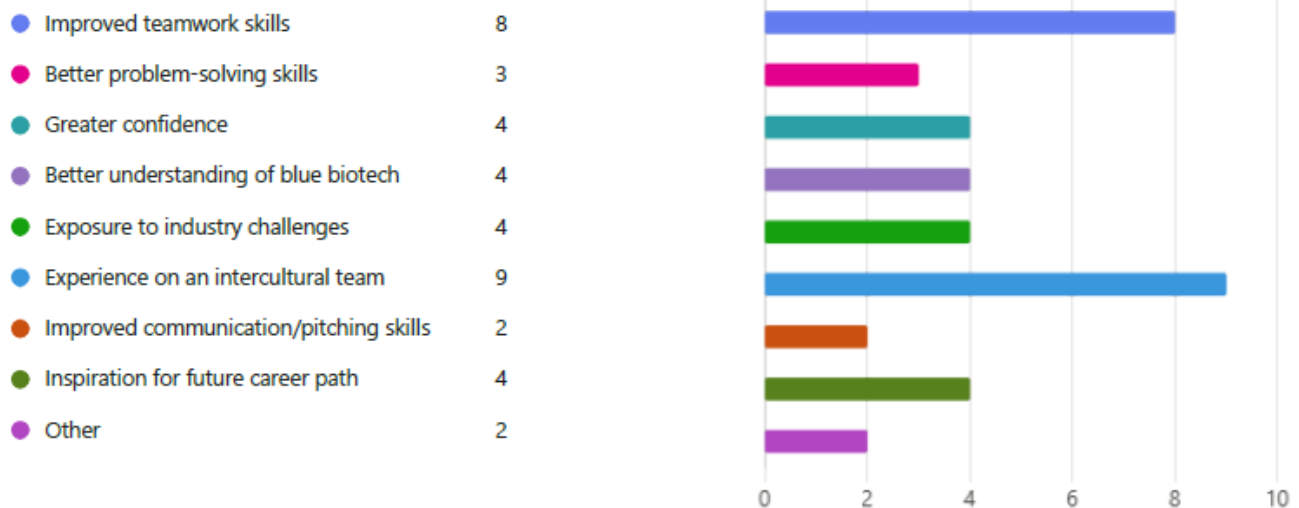


FIGURE 11. ADDITIONAL BENEFITS OF PARTICIPATION REPORTED IN THE LONG-TERM FOLLOW-UP SURVEY

15. Are you still in contact with anyone you met through the hackathon?

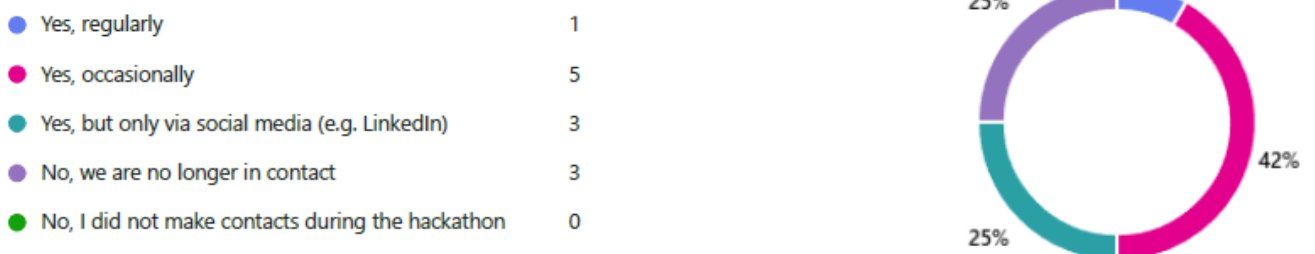


FIGURE 12. CONTINUED CONTACT WITH CONNECTIONS MADE DURING THE HACKATHONS

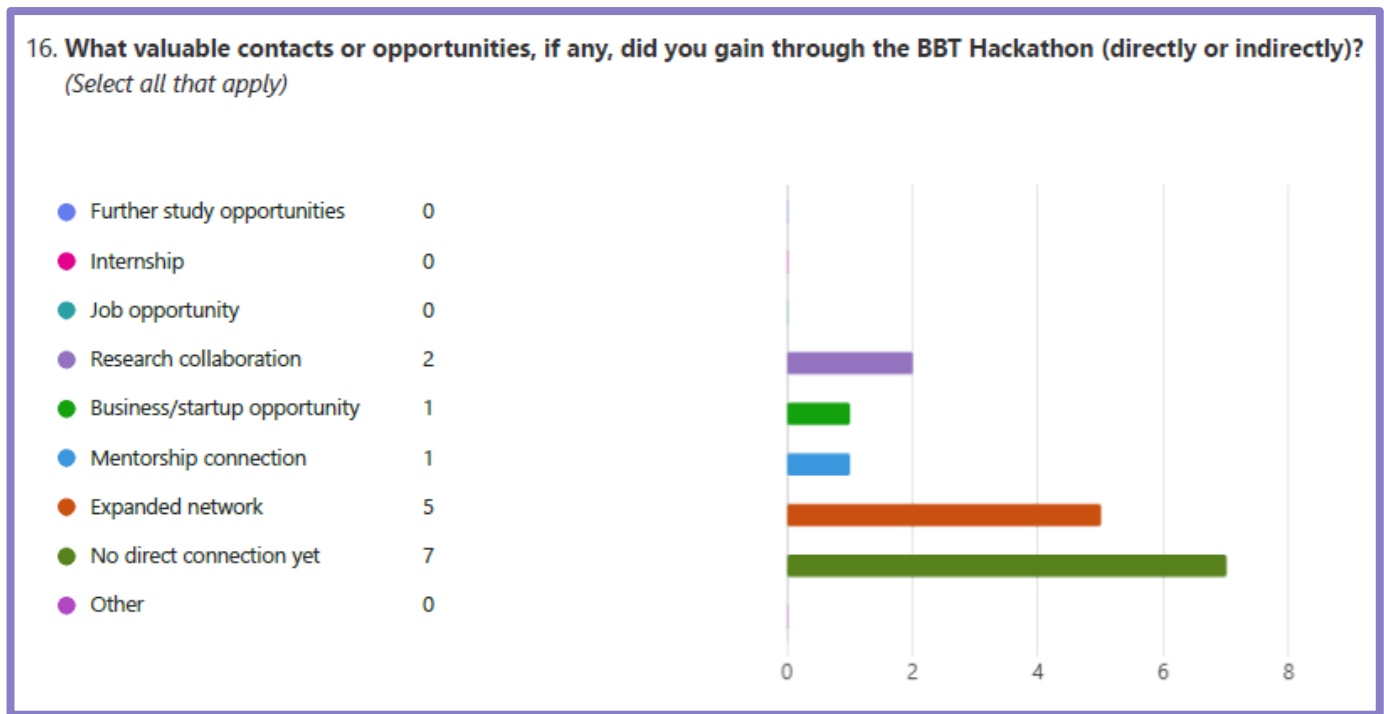


FIGURE 13. VALUABLE CONTACTS AND OPPORTUNITIES GAINED THROUGH THE HACKATHONS

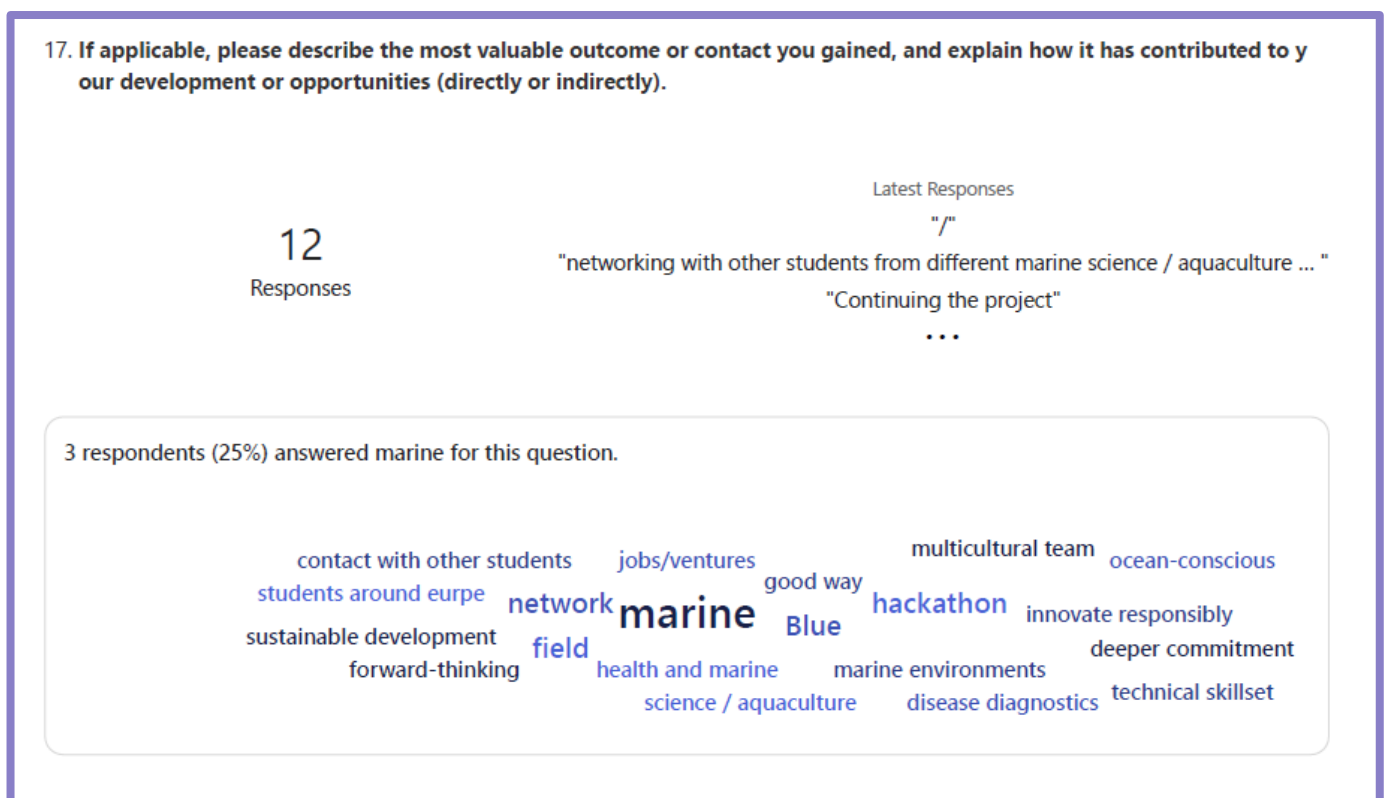


FIGURE 14. SUMMARY OF OPEN-ENDED REFLECTIONS FROM THE LONG-TERM FOLLOW-UP SURVEY

Responses
The hackathon aligned my business with sustainable, ocean-conscious practices, allowing me to innovate responsibly within the European Blue Economy. The event connected me with forward-thinking innovators who share a passion for sustainable development. I gained a deeper commitment to serving humanity by creating products that protect both skin health and marine ecosystems.
I gained contact with other students around Europe, expanding my network somewhat but, that probably did not contribute to any potential opportunities
challenge owner; made me aware of how regional or local issues can be
I gained some exposure and socialising experience, although I do not think it will immediately be of benefit because my blue technical skillset (disease diagnostics in marine environments) was not in need at the hackathon when I participated in it, and none of the contacts I made were in this field.
not applicable
Not applicable
STEPS INTO THE FIELD I SEE MYSELF IN LONG-TERM PERSPECTIVE
not applicable
It broadened my horizons, helping me with a multicultural team. But also there was a good way of making connections for future jobs/ventures although they did not happen to me personally
Continuing the project
networking with other students from different marine science / aquaculture related majors

FIGURE 15. SELECTED OPEN-ENDED RESPONSES FROM THE LONG-TERM FOLLOW-UP SURVEY

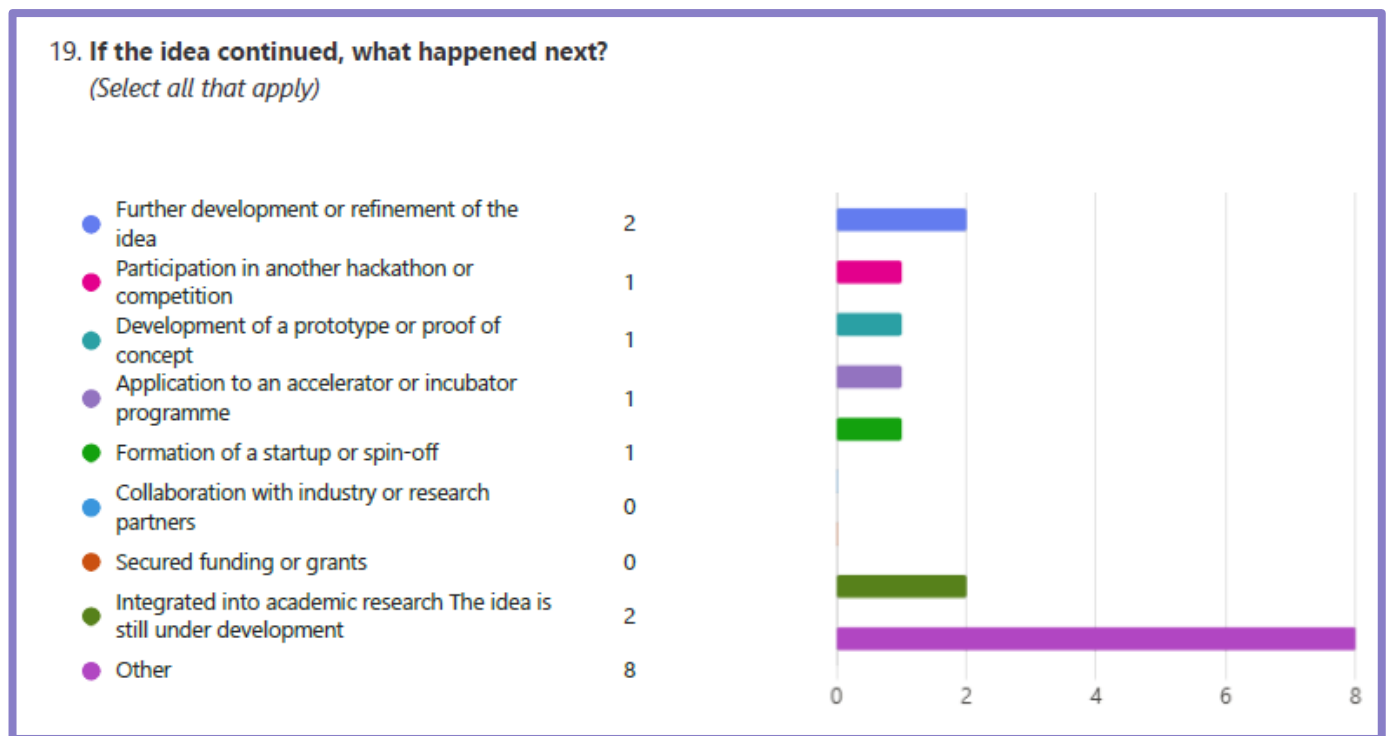


FIGURE 16. FOLLOW-UP ACTIVITIES OF TEAMS AND IDEAS THAT CONTINUED AFTER THE HACKATHONS

4.5 KPI overview

The BBT Hackathon series successfully achieved the key performance indicators (KPIs) established for this work package and made a significant contribution to the implementation of other project activities, including the BBT webinars, the BBT Massive Open Online Course (MOOC), and the Ambassadors Programme. Beyond the quantitative targets achieved, the hackathon series generated important qualitative impacts by providing an integrated innovation and entrepreneurship platform designed in direct alignment with the project's overarching objectives. The activities were closely connected with the wider BBT ecosystem, ensuring that learning, networking, and innovation opportunities were reinforced across the different project components.

Throughout the project implementation period, three international hackathons were successfully organised, representing the Nordic, Baltic, and Atlantic regions. These events engaged a total of **137 participants** from diverse backgrounds, including students, early-career professionals, researchers, entrepreneurs, and representatives from industry and other stakeholder groups. The hackathon series successfully achieved good representation of females among participants, with an overall almost equal participation rate of female and male participants (**44.9% female** and **55.1% male**). This achievement demonstrates the project's commitment to promoting inclusiveness, diversity, and equal opportunities within blue bioeconomy education, entrepreneurship, and innovation activities.

By bringing together participants from different disciplines, backgrounds, and sectors, the hackathon series created an inclusive and interdisciplinary environment that supported collaborative problem-solving and innovation development within the European blue bioeconomy. The diversity of participants, including balanced gender representation, contributed to a broader exchange of perspectives and strengthened the creativity, relevance, and inclusiveness of the solutions developed during the events.

The events attracted a broad range of stakeholders, including challenge owners from companies and organisations, industry mentors, coaches, jury members, project partners, and committee representatives. Their active participation

enabled meaningful interaction between academia and industry, allowing participants to gain insights into real-world challenges, receive expert feedback, and develop solutions with relevance to current blue bioeconomy needs. The involvement of external stakeholders also strengthened knowledge exchange and contributed to building stronger links between education, research, and industry.

Across the three hackathons, participants developed innovative solutions to 16 real-world challenges proposed by companies and organisations operating in the blue bioeconomy sector. The challenge-based approach enabled participants to apply their knowledge and creativity to practical industry-driven problems while developing entrepreneurial mindsets and skills related to innovation, teamwork, communication, and solution development.

The hackathon series made a significant contribution to strengthening academia–industry collaboration by facilitating direct engagement between participants, challenge owners, mentors, and other sector representatives. Through these interactions, participants gained valuable experience in entrepreneurial processes, stakeholder engagement, and the translation of ideas into potential solutions. At the same time, companies and organisations benefited from access to new perspectives and creative approaches from emerging blue bioeconomy professionals.

Evaluation results demonstrated a high level of participant satisfaction, confirming that the hackathons successfully achieved their educational, innovation, and networking objectives. Participants highlighted the value of the interdisciplinary format, the opportunity to work with real-world challenges, and the access to expert guidance and professional networks as key elements contributing to the success of the events.

Importantly, the impact of the hackathon series was designed to extend beyond the individual events themselves. A post-hackathon sustainability mechanism was established to support continued engagement and maximise the long-term value generated through the activities. This mechanism was strengthened through the complementary BBT activities, including the BBT MOOC, webinars, and the Ambassadors Programme, which provided participants and stakeholders with continued opportunities for learning, networking, knowledge exchange, and engagement with the blue bioeconomy community. Through this integrated approach, the project ensured that the innovation capacity and entrepreneurial skills developed during the hackathons could be further reinforced after the completion of the events.

The hackathon series also contributed to the wider communication, dissemination, and visibility objectives of the BBT project through communication activities, participant-led publications, promotional materials, and engagement with the broader blue bioeconomy community. These dissemination efforts increased awareness of the project, highlighted emerging solutions and talent within the sector, and supported the creation of a wider innovation network.

Overall, the outcomes of the BBT Hackathon series demonstrate strong alignment with the project's ambition to develop future blue bioeconomy professionals, strengthen European innovation ecosystems, and foster sustainable collaboration between higher education institutions, research organisations, and industry stakeholders. By combining challenge-based learning, stakeholder engagement, gender-balanced participation, and continued support through complementary project activities, the hackathon series provided an effective model for building entrepreneurial capacity and accelerating innovation within the European blue bioeconomy.

5. COMPARATIVE REFLECTIONS

5.1 Lessons learned

The organisation and implementation of the BBT Nordic, Baltic, and Atlantic Hackathons demonstrated the importance and effectiveness of adopting a continuous improvement approach throughout the project lifecycle. Each hackathon served as an opportunity to evaluate processes, identify areas for improvement, and incorporate lessons learned into the

planning and delivery of subsequent events. Experiences gained from each edition, together with structured feedback collected from participants, challenge owners, mentors, project partners, and other stakeholders, were systematically analysed and used to refine the hackathon methodology.

This iterative approach resulted in progressively improved organisational processes, enhanced participant experiences, more effective stakeholder engagement, and stronger collaboration between academia and industry. The learning gained through the three hackathons contributed not only to the successful implementation of individual events but also to the development of a more robust and transferable model for challenge-based innovation activities supporting entrepreneurship and skills development within the blue bioeconomy.

The key lessons learned and improvements identified throughout the hackathon series are summarised below.

Early and effective communication with all stakeholder groups

Clear, timely, and targeted communication with all stakeholder groups was identified as a critical success factor for the effective delivery of the hackathons. Providing early information about the hackathon concept, objectives, expected outcomes, participant commitments, and benefits for each stakeholder group was essential for attracting high-quality applications and maintaining engagement throughout the process.

For challenge owners, mentors, and industry representatives, early communication helped establish a shared understanding of expectations and ensured that the proposed challenges were appropriately formulated for a hackathon environment. For participants, clear communication regarding the format, learning objectives, assessment criteria, and expected outputs helped create confidence and improved preparedness before the events.

Communication materials developed during the first hackathon, including promotional videos, participant testimonials, and event-related content, became valuable resources for increasing visibility and supporting recruitment activities for subsequent hackathons. These materials strengthened the project's dissemination efforts and contributed to raising awareness of the opportunities available through the BBT hackathon series.

Early engagement of challenge owners and mentors

The early involvement and continuous engagement of challenge owners and mentors were recognised as essential elements in ensuring the relevance, quality, and impact of the hackathon outcomes. Careful preparation of challenges, supported by regular communication before the events, enabled challenge owners to clearly define the problems they wanted participants to address while ensuring that challenges were suitable for an interdisciplinary innovation process.

The active involvement of challenge owners throughout the hackathons improved participants' understanding of the real-world problems being addressed and enabled the development of solutions that were more closely aligned with industry needs. Continuous mentor support provided participants with valuable technical, entrepreneurial, and professional guidance, strengthened knowledge transfer between academia and industry, and enhanced the overall learning experience.

Participant selection and team composition

The selection of participants and formation of teams were identified as important factors influencing the quality of collaboration and innovation outcomes. Applying transparent evaluation criteria helped ensure the participation of motivated individuals with diverse skills, interests, and backgrounds. The creation of interdisciplinary teams with complementary expertise supported effective teamwork, encouraged knowledge exchange, and contributed to the development of more innovative and holistic solutions.

At the same time, the organisers recognised the importance of providing participants with clear guidance regarding expectations, team dynamics, roles, and collaborative working approaches. As participants came from different academic

disciplines and had varying levels of previous hackathon experience, additional support in these areas helped create a more inclusive environment and enabled all participants to contribute effectively.

Comprehensive planning and coordination

Effective planning, coordination, and governance were identified as fundamental requirements for successful hackathon implementation. Clearly defined roles and responsibilities among BBT organisers, project partners, and external contributors supported efficient decision-making and smooth event delivery. Structured communication channels between organisers and stakeholders helped ensure alignment throughout the preparation and implementation phases.

The experience gained through the three hackathons highlighted the importance of establishing realistic timelines for key activities, including challenge development, participant recruitment, selection processes, communication activities, and practical arrangements such as travel and event logistics. Future editions of similar activities would benefit from dedicated programme management structures and clearly established governance mechanisms to support efficient coordination and consistent implementation.

Interactive and networking activities

The inclusion of interactive activities, team-building exercises, informal networking opportunities, and continuous engagement with mentors and industry representatives significantly enhanced the overall hackathon experience. These activities encouraged collaboration among participants, supported the exchange of ideas, and created an environment conducive to creativity and innovation.

Networking opportunities also contributed to the development of longer-term professional connections between participants, researchers, entrepreneurs, industry representatives, and other blue bioeconomy stakeholders. The relationships established during the hackathons extended beyond the individual events and supported the broader objectives of strengthening the blue bioeconomy innovation ecosystem.

Confidentiality and intellectual property management when working with real industrial challenges

Working with real industrial challenges required careful consideration of confidentiality, data protection, and intellectual property management. The introduction of Non-Disclosure Agreements (NDAs) and clearly defined procedures for handling sensitive information helped establish trust between challenge owners and participants.

These measures provided challenge owners with confidence that their knowledge, data, and commercially sensitive information would be appropriately protected, while enabling participants to engage openly and effectively with authentic industry challenges. Clear procedures for managing intellectual property considerations created a secure framework for collaboration and supported meaningful knowledge exchange between academia and industry.

Overall, the lessons learned from the BBT Nordic, Baltic, and Atlantic Hackathons demonstrate the value of an adaptive and reflective approach to innovation programme delivery. The continuous improvement process strengthened the methodology, increased stakeholder engagement, and contributed to the development of an effective model for fostering entrepreneurship, collaboration, and innovation capacity within the European blue bioeconomy.

5.2 Recommendations for Future Hackathons

Based on the experiences gained throughout the BBT project and the feedback collected from participants, mentors, and challenge owners, several recommendations have been identified for future hackathon initiatives.

First, future hackathons should continue to prioritise **real, industry-driven challenges** sourced through close collaboration with companies, research organisations, and innovation projects. This approach distinguishes the BBT

methodology from more traditional hackathons and significantly increases participant engagement and the practical relevance of the proposed solutions.

Second, greater emphasis should be placed on **pre-hackathon preparation**. Providing participants with introductory webinars, background reading, or networking sessions before the event would allow teams to familiarise themselves with the challenge themes and begin building relationships before the intensive hackathon period.

Third, maintaining **continuous engagement with challenge owners** throughout the event should remain a core feature of the methodology. Participants consistently valued direct access to industry expertise, while challenge owners benefited from iterative discussions with multidisciplinary teams. Future editions could further strengthen this interaction through scheduled mentoring sessions and structured feedback milestones.

A fourth recommendation is to further develop **post-hackathon support mechanisms**. Although several ideas continued to develop after the events, participants indicated that additional mentoring, networking opportunities, incubation support, or follow-up funding could help transform promising concepts into prototypes, research collaborations, start-ups, or commercial applications. From an impact perspective, it is important to note that the hackathon series was designed in line with the project's overall objectives and closely connected to its other activities, including the Massive Open Online Course (MOOC) and webinars. While the BBT project did not establish a dedicated post-hackathon support mechanism, efforts to sustain and extend the impact of the hackathons were strengthened through these complementary activities, as well as through the BBT Final Conference programme and the Ambassadors Programme. These activities provided additional opportunities for participants to develop their knowledge, maintain networks, disseminate outcomes, and further engage with the blue bioeconomy ecosystem. Future initiatives could build on this approach by introducing more structured post-hackathon pathways, including dedicated mentoring, incubation, networking, and follow-up funding opportunities.

Future hackathons should also continue to promote **international and interdisciplinary participation**. Diversity of academic backgrounds, nationalities, and professional experiences proved to be one of the initiative's greatest strengths, fostering creativity, intercultural competence, and innovative problem-solving.

Finally, systematic impact evaluation should remain an integral component of future hackathons. Collecting feedback immediately after the events, as well as several months later, provides valuable evidence of both immediate learning outcomes and longer-term impacts, enabling continuous improvement of the methodology.

5.3 Adaptations across countries – global

One of the key achievements of the BBT Hackathons was the demonstration that the developed methodology is both adaptable and transferable across different national, regional, and innovation contexts. Although the three hackathons were organised within distinct European sea basins, each with their own industrial priorities, stakeholder networks, and regional characteristics, the core BBT methodology proved sufficiently flexible to accommodate local needs while maintaining a consistent participant experience and educational approach.

The methodology was intentionally designed around a set of transferable principles rather than a rigid event format. These principles include sourcing authentic industry-driven challenges, engaging challenge owners throughout the innovation process, fostering interdisciplinary and international collaboration, combining technical and entrepreneurial mentoring, and supporting participants in developing innovative solutions with real-world relevance. This modular structure enabled each hackathon to reflect the characteristics of its local blue bioeconomy ecosystem while preserving the common objectives and quality standards of the BBT initiative.

An important demonstration of this adaptability was the successful integration of the BBT methodology into the internationally recognised **Ocean Hackathon®** framework. Rather than operating as a standalone activity, the BBT approach was embedded within an established international innovation event, complementing the existing hackathon

structure with its emphasis on challenge sourcing, industry engagement, entrepreneurship, skills development, and career-oriented mentoring. This integration demonstrated that the BBT methodology is compatible with existing innovation ecosystems and can strengthen established hackathon models by introducing additional educational and industry engagement components.

The collaboration with the Ocean Hackathon® network also expanded the international dimension of the initiative. It enabled participants to engage with a broader European innovation community, facilitated exchange between regional and international stakeholders, and increased the visibility of blue biotechnology challenges within an established marine innovation platform. This experience demonstrated that challenge-based learning methodologies developed within one project can be successfully embedded into larger international initiatives, thereby increasing their reach, sustainability, and long-term impact.

Across all three hackathons, the consistent positive feedback from participants, mentors, and challenge owners further confirms the robustness of the methodology across different countries and cultural contexts. While practical aspects such as challenge topics, local stakeholder engagement, venue logistics, and regional priorities naturally varied between locations, the fundamental elements of the BBT model remained effective. Participants consistently valued the opportunity to work on authentic challenges, collaborate within multidisciplinary international teams, receive direct guidance from industry experts, and develop practical innovation and entrepreneurial skills.

The experiences gained throughout the project indicate that the BBT methodology has significant potential for replication beyond the lifetime of the project. The framework can readily be adapted to different European regions, sea basins, innovation ecosystems, and even sectors beyond blue biotechnology, while maintaining its core educational and innovation objectives. Future implementations may tailor challenge sourcing, mentoring approaches, stakeholder composition, or thematic focus to local priorities without compromising the underlying methodology.

6. HACKATHON PAPER

As an additional contribution to the project, and in line with the amendment extending the BBT project for a further six months, SDU together with BBT Consortium developed a scientific manuscript exploring the evolution, status, and future potential of hackathons within the blue bioeconomy sector. The manuscript provides an overview of how hackathons have been used over the years as collaborative innovation platforms, highlighting emerging trends, applications, and their growing relevance in addressing complex challenges within the industry.

The work examines the value of hackathons as tools for fostering creativity, innovation, interdisciplinary collaboration, and problem-solving among diverse stakeholders, including researchers, entrepreneurs, industry professionals, and students. Particular attention is given to their role in supporting early-career researchers and young professionals by providing opportunities to develop entrepreneurial skills, build networks, gain practical experience, and transform innovative ideas into potential solutions for real-world challenges.

The manuscript also discusses the broader impact of hackathons in strengthening the blue bioeconomy ecosystem by encouraging knowledge exchange, accelerating innovation processes, and bridging the gap between academia, industry, and society. Based on the analysis, recommendations are provided on how hackathons can be further integrated and expanded in future initiatives, including improving long-term support mechanisms, increasing stakeholder engagement, and creating pathways for successful ideas and projects to continue beyond the hackathon format.

This additional activity contributes to the project's overall objectives by highlighting the importance of innovation-driven approaches and providing insights into how hackathons can serve as effective instruments for capacity building, collaboration, and sustainable development within the blue bioeconomy.

Please refer to the pre-print of our BBT Hackathon paper:

Yeo, H. H. J., Dmochowska, B., Holaday, E., Paupério, M., Łądkowska, H., Kurzweil, K., Madias, K., & Javidpour, J. (2026). *Opening spaces for collaborative innovation: Understanding the value of hackathons for the Blue Bioeconomy*. Zenodo. <https://doi.org/10.5281/zenodo.21670491>

Figures from the BBT Hackathon paper on Zenodo

Opening spaces for collaborative innovation: understanding the value of hackathons for the Blue Bioeconomy.

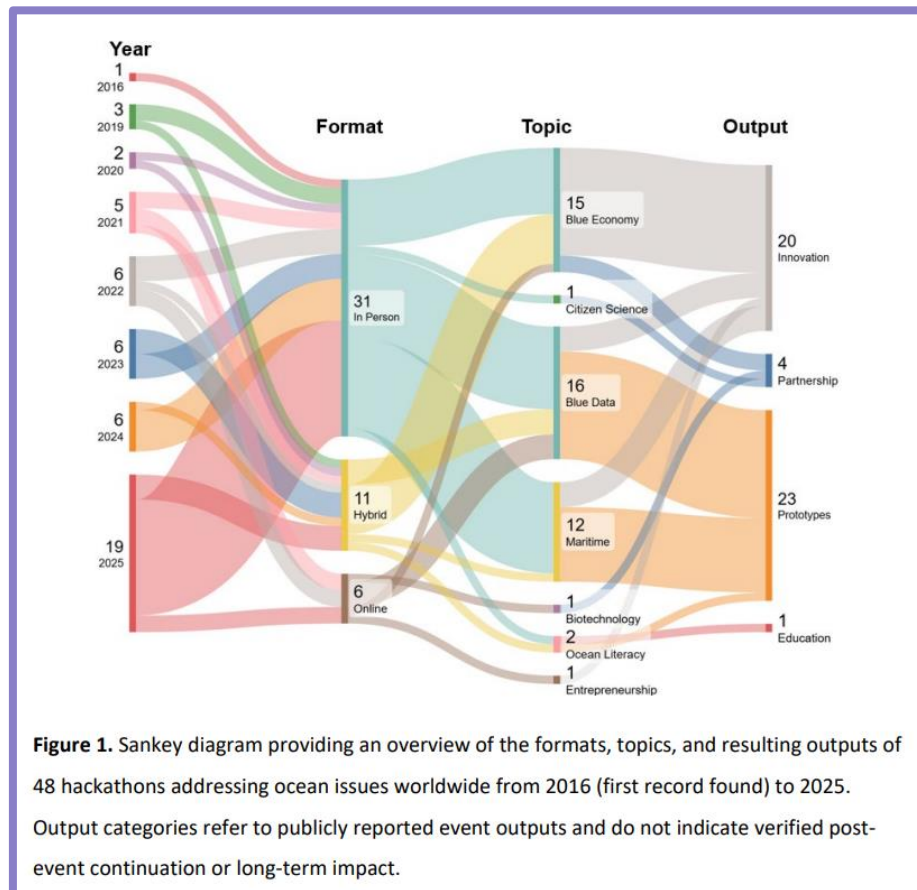
Yeo, Hannah H.J.¹ ; Dmochowska, Barbara² ; Holaday, Ethan³ ; Paupério, Mariana⁴ ; Łądkowska, Hanna² ; Kurzweil, Katharina⁵ ; Madias, Konstantinos ; Javidpour, Jamileh¹

Show affiliations

Preprint for our article titled "Opening spaces for collaborative innovation: understanding the value of hackathons for the Blue Bioeconomy" from the Blue Bio Techpreneurs project (<https://bluebiotechpreneurs.eu/>).

Abstract:

The blue bioeconomy is an emerging field of sustainability transition, but many innovations remain constrained by fragmented actor networks, early-stage uncertainty, skills gaps and weak pathways from ideas to implementation. Hackathons are increasingly used to stimulate blue bioeconomy innovation, yet their contribution to transition processes remains under-theorised. This article examines blue bioeconomy hackathons as temporary transition spaces. Combining a scoping inventory of ocean and blue economy hackathons with an embedded case study of three Blue Bio Techpreneurs (BBT) hackathons across the Nordic, Baltic and Atlantic Sea basins, we analysed how short, challenge-based events support technical and soft skills training, learning and open innovation. The paper shows that hackathons for the Blue Bioeconomy most commonly produce early-stage concepts, prototypes, partnerships and awareness-building outputs, but public reporting of actors, methods and follow-up outcomes remains uneven. Our BBT cases indicate that hackathons are most valuable when they connect challenge owners, students, mentors, researchers and intermediaries in a structured but neutral setting. Their transition contribution lies in problem reframing, network formation, entrepreneurial learning, expectation building and the preparation of solutions. However, hackathons are not sufficient to overcome scale-up, regulatory or financing barriers on their own. We argue that their value depends on careful challenge curation, active challenge-owner engagement, interdisciplinary team formation, clear intellectual property arrangements and dedicated follow-up mechanisms. The paper contributes to sustainability transitions research by conceptualising hackathons as temporary intermediation spaces for emerging blue bioeconomy niches.



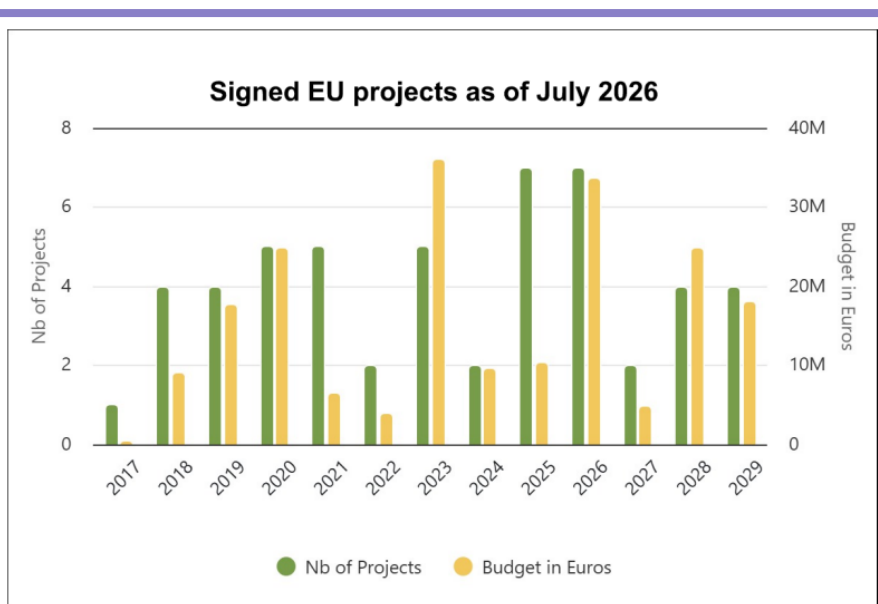


Figure 2. Number and budget of signed EU-funded projects tagged with "Hackathon" across all research fields in the University of Southern Denmark (SDU) Funding App. Data were extracted on 24 July 2026 and include only projects that had been signed by that date. The figure is not limited to blue economy or blue bioeconomy projects. As projects may continue until 2029 and additional projects may be signed in the future, records for later years are not yet complete.

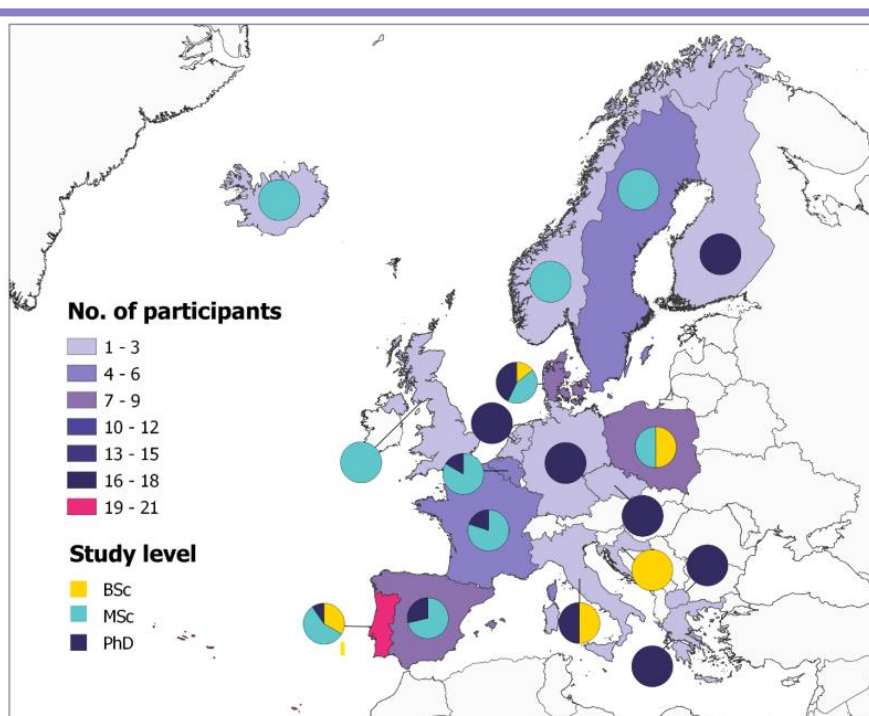


Figure 3. Distribution and breakdown of hackathon participants across all three BBT hackathons (combined) according to the geographic location of their affiliated institutions and their study level.

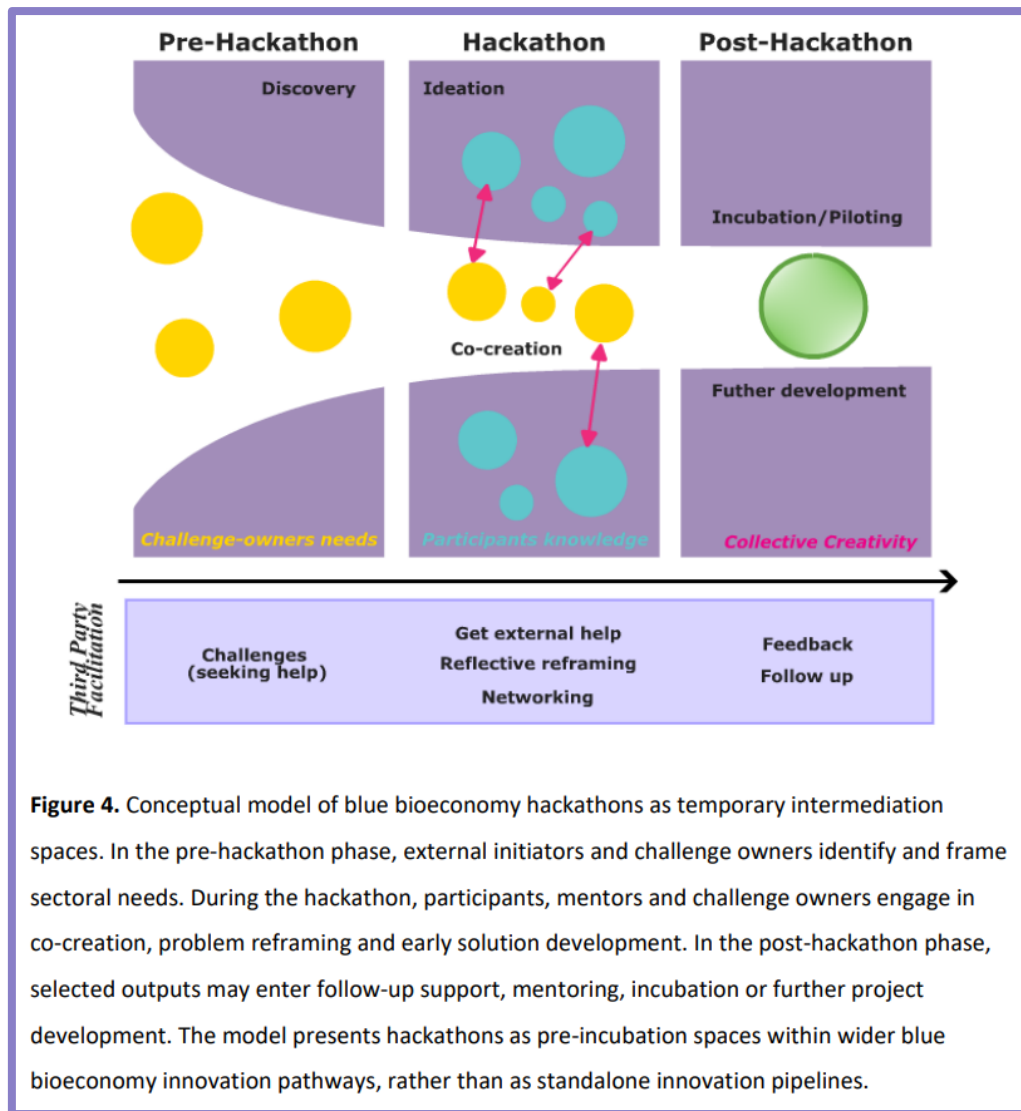


Figure 4. Conceptual model of blue bioeconomy hackathons as temporary intermediation spaces. In the pre-hackathon phase, external initiators and challenge owners identify and frame sectoral needs. During the hackathon, participants, mentors and challenge owners engage in co-creation, problem reframing and early solution development. In the post-hackathon phase, selected outputs may enter follow-up support, mentoring, incubation or further project development. The model presents hackathons as pre-incubation spaces within wider blue bioeconomy innovation pathways, rather than as standalone innovation pipelines.