



POLICY BRIEF 2



Co-funded by
the European Union

POLICY BRIEF

Project acronym and number:

BlueBioTechpreneurs | 101124697

Policy impact (max 100 words)

How does your project contribute to the policy objectives indicated in the Call document (including more recent policy initiatives at EU or national level).

The transition towards a sustainable blue bioeconomy requires new approaches to skills development that complement existing education systems. BBT contributes to this policy objective by developing and implementing a blended learning approach combining MOOCs, webinars and Hackathons to increase awareness, strengthen competences and connect learners with blue economy stakeholders. The project's results provide practical evidence relevant to the Union of Skills, the EU Bioeconomy Strategy and its Blue Bioeconomy Innovation Initiative, as well as BlueComp, by demonstrating how flexible skills development models can support emerging blue biotechnology value chains while highlighting remaining challenges related to recognition, employment pathways and market uptake.

Impact for citizens and communities

Describe the impacts for EU citizens and citizen communities.

BBT tested a pathway of five MOOCs, seven webinars and three regional Hackathons to complement science-focused specialist education with entrepreneurship, digital and sustainability competences, career orientation and direct contact with practitioners. By July 2026, the MOOC portfolio had recorded 3,595 enrolments against a target of 2,000; the webinars had attracted 270 live participants and 806 recorded views across 27 countries; and the Hackathons had involved 103 participants. These figures demonstrate reach and clear impact. More importantly for citizens, the activities show how flexible provision can help people discover the blue bioeconomy, apply knowledge to practical questions, discover credible career routes and enter professional communities. The evidence also identifies the conditions needed for access to translate into progression.

Flexible learning can widen access, but quality depends on coherent design

The modular five-course structure allowed learners with different backgrounds, levels of prior knowledge and professional goals to enter at an appropriate point. Hosting the courses on a professional online learning platform increased discoverability and provided an established learning environment. The portfolio was co-created by consortium partners, external experts and related initiatives, integrating scientific, business and policy perspectives that one organisation could not have provided alone. Articles, videos, interviews, exercises, quizzes, reflection activities and discussions offered different ways to engage with the content.

Learner comments also indicated progression from initial discovery to critical application. Some participants encountered the blue bioeconomy for the first time. Others moved beyond viewing e.g., recirculating aquaculture systems solely as a compliance issue and connected them to broader business-risk management. Participants also considered regenerative ocean farming within wider food-system solutions and distinguished between expanding marine protected areas and ensuring their effective management and enforcement.

This feedback suggests that flexible courses can do more than transfer information. They can introduce citizens to unfamiliar sectors, connect technical knowledge with practical, ethical and commercial questions, and help learners consider new educational or career directions.

"This course was an extremely valuable and inspiring experience for me. From gaining a strong foundation in marine biotechnology to developing a deeper understanding of entrepreneurship, sustainability, and leadership in the blue bioeconomy, the content was well-structured, practical, and highly relevant." —

Course 5 learner

Policy implication: Multi-partner expertise creates educational value only when individual contributions are translated into a coherent learning journey. Future EU-funded MOOCs should resource early platform planning, common templates, editorial coordination, quality assurance, accessibility and specialist digital-learning design alongside expert content.

Online participation does not automatically create a learning community

Social learning was an important part of the MOOC experience, but effective learner communities require deliberate management. Personal introductions and experience-based prompts generated the strongest interaction, while technical prompts often produced standalone responses.

Future courses should include structured peer tasks, prompts that ask learners to compare or build on one another's responses, clear guidance on social learning (ideally linked to learning objectives), and sustained facilitator or mentor involvement throughout the courses' availability.

Course discussions should also lead to long-term professional communities. For example, the BBT community group, WaveMakers Early Careers Exchange, on BlueActionMatch hosts over 150 members and brings together students, recent graduates, professionals, businesses, educators, and researchers. This group allows early-career members to seek advice, showcase skills, and build connections, while organisations can identify emerging talent. Future learning initiatives should connect participants to such continuing communities and resource their moderation, maintenance and employer participation.

Policy implication: Future learning initiatives should connect participants to continuing professional communities. These communities require named responsibility and resources for moderation, maintenance, and employer participation.

Reuse and recognition must be planned from the outset

Project learning content should be maintained in platform-independent formats so that it can be updated, adapted, and reused after hosting contracts end. Flexible courses outside traditional degree programmes can help citizens explore an unfamiliar career, change professional direction, or update their knowledge. Their value is strengthened when universities, lecturers, and career services incorporate relevant modules into formal education and career-development provision.

Transfer beyond the project has already begun. As an example, the University of Southern Denmark uses the BBT MOOC and accompanying webinars as preparatory learning in the DANIDA-funded African Blue Futures programme. Students revise the materials before participating in an international Blue Economy Hackathon in Tanzania, gaining a shared knowledge base before they apply their learning through interdisciplinary challenges and international collaboration. Building on this experience, the University of Southern Denmark is developing a proposal to use selected modules within a multidisciplinary educational framework in the EPICUR University Alliance.

The University of Gdansk is also exploring selected MOOC materials for Bachelor-level Oceanography courses, either as external learning resources or, where university procedures allow, as a recognised component contributing to ECTS. These examples demonstrate transferability, but formal recognition arrangements remain under development, also due to the long timeframe needed for academic accreditation.

Learners' willingness to share completion certificates through professional networks indicates that the certificates have signalling value. A completion certificate is not, however, equivalent to a formally recognised qualification.

Policy implication: Pathways towards quality-assured micro-credentials, ECTS or other forms of portable recognition should be planned from the beginning. Responsibilities, quality criteria and institutional approval routes should be made explicit before delivery starts. Accreditation of non-academic educational support materials should be simplified and streamlined, facilitating obtaining ECTS for students that choose to participate.

Representation can support diversity and inclusion, but longer-term outcomes must be measured

One participant specifically highlighted the encouragement she gained from seeing women succeed in the sector. These results are pointing in the right direction, but do not demonstrate unequivocally that speaker representation sensibly increases longer-term women participation. They nevertheless provide a credible basis for highlighting success stories of women entrepreneurs and professionals and mentoring, networking, access to finance and inclusive recruitment.

Policy implication: To concretely assess improvement in diversity, equity and inclusion funders should gather gender-disaggregated participation data and monitor progression into employment, leadership and enterprise creation, using measurement of attendance as a first steppingstone.

Outermost regions require place-based capacity as well as European connections

BBT's engagement with the Azores, Canary Islands and Reunion showed that outermost regions are sources of specific knowledge, resources and business opportunities that are sometimes overlooked.

Successful innovation examples presented during BBT Webinars included linking local environmental pressures and assets to enterprise and applied monitoring, creating value from invasive algae, taking island products to international markets, and applying Azorean algal-bloom monitoring expertise in mainland Portugal. Another example of engagement with an outermost region is the participation of INOVA at the Atlantic Hackathon where they provided a challenge focusing on how existing methods for detecting microplastics in food and water are costly, time-consuming and accessible to relatively few organisations.

These examples made locally rooted career pathways visible and showed that regional expertise can create career opportunities and livelihoods for local residents while attracting international talent.

Policy implication: Future initiatives should involve outermost regions in co-designing place-based challenges and mobility opportunities. They should also strengthen connections with European expertise, employers and markets. Digital access can help overcome geographical distance, but it cannot substitute for investment in local institutions and credible pathways into employment. These initiatives can encourage young people from across Europe to consider careers in outermost regions, while demonstrating to young island residents that meaningful blue-economy careers and businesses can be built locally.

Hackathons develop skills and networks, but progression must be designed into the programme

Hackathon participants particularly valued interdisciplinary teamwork, networking, pitching and continuous access to challenge owners and mentors. For example, ninety-three per cent of Baltic Hackathon respondents reported that the event strengthened their blue-bioeconomy knowledge or skills, while 95% rated mentors as very helpful. The evidence supports real challenges and coached pitching as learning methods that expose participants to professional expectations and give companies direct sight of emerging talent.

Policy implication: Future programmes should require employers to co-design challenges, mentor teams and commit to structured follow-up through placements, recruitment interviews, incubation or continued solution development.

Impact for companies and businesses (if applicable) (max 100 words)

Describe the impacts for EU companies and businesses.

Across three Hackathons, companies and research organisations brought real operational and market challenges to multidisciplinary teams of students and recent graduates. This gave challenge owners direct access to emerging blue-bioeconomy talent, allowed them to observe participants' technical, entrepreneurial and teamwork skills, and generated 16 early-stage concepts offering fresh, outside-the-box perspectives on their needs. Through continuous exchanges, businesses could clarify problems, test assumptions and receive rapid feedback on potential solutions. The events also connected companies with mentors, researchers, clusters and regional and sectoral actors, expanding their professional networks, visibility and opportunities for recruitment, collaboration, innovation partnerships and solution development.

Barriers and future needs (max 100 words)

An outstanding barrier is the gap between specialist scientific education and the entrepreneurial, digital, sustainability and career-navigation competences needed to turn blue-bioeconomy knowledge into careers and innovation. BBT mapped more than 60 higher-education institutions in 17 countries and found few programmes integrating marine science, entrepreneurship, governance and digital competences. Further barriers include unrecognised non-formal learning, weak employment progression, English-only delivery, under-resourced online facilitation and learner communities, and higher mobility, connectivity and infrastructure costs in island and outermost regions. Future EU support should fund integrated curricula, recognised micro-credentials, multilingual accessible provision, sustained facilitation, paid work-based learning and place-based participation support.

Market readiness and IPR (if applicable) (max 100 words)

The 16 hackathon concepts demonstrate ideation and team readiness, but not yet market readiness. One challenge progressed through the creation of the sEaDNA start-up. Future schemes should establish IPR and data rules before each challenge and then provide 12 to 18 months of staged support, technical validation, customer discovery, incubation, access to research infrastructure and investors, and follow-on grants. Success metrics should include prototypes, placements, ventures and investment, rather than only ideas generated.

Other

Are there any other elements about the project relevant for being mentioned?

Key lessons and priorities for future action

The evidence presented above points to six priorities for future EU-funded blue-skills and blue-bioeconomy initiatives. Together, they show what is needed to convert participation in learning activities into recognised competences, employment and innovation outcomes.

- **Connect learning activities through a clear progression pathway.** BBT's MOOCs provided accessible foundational knowledge, the webinars introduced participants to careers and practitioners, and the Hackathons enabled them to apply their knowledge to real challenges. Future calls should require projects to connect these stages through referrals, mentoring, networking, work-based learning, recruitment and incubation. Responsibility for participant follow-up should be assigned from the outset.
- **Integrate transversal and career-related competences into specialist education.** Specialist programmes may build scientific depth without preparing learners to apply their knowledge in employment, innovation or enterprise creation. Entrepreneurship, business models, digital and sustainability competences, governance, leadership and career navigation should therefore be embedded within specialist blue-bioeconomy education and reflected in its learning outcomes.
- **Fund the integration of multi-partner course content.** Contributions from partners, experts and related projects enriched the MOOCs with complementary knowledge, case studies and perspectives. Expert content alone, however, does not create a coherent learning experience. Early platform planning, common templates, editorial coordination, quality assurance, accessibility checks and specialist digital-learning design should be recognised and funded as substantive educational tasks.
- **Facilitate learner communities and sustain them beyond individual activities.** Online learning platforms do not create professional communities on their own. Future projects should provide structured peer activities, facilitated discussions, mentoring and opportunities for learners to interact with course developers and one another. Participants should also be connected to continuing communities, such as the WaveMakers Early Careers Exchange and Talent Hub on BlueActionMatch. Such communities require named responsibility and resources for moderation, maintenance and continued engagement after project activities end.
- **Establish recognition, employment and innovation pathways before delivery begins.** Completion certificates helped learners communicate their participation, but they were not equivalent to formally recognised qualifications. The limited conversion of training into placements also showed that skills acquisition alone does not generate employment. Future programmes should agree potential recognition routes with education providers, including micro-credentials or ECTS where institutionally feasible, and secure employer commitments to placements, recruitment, incubation or continued solution development before recruiting participants.
- **Combine European digital reach with place-based support and long-term stewardship.** Digital provision can connect learners from coastal, island and outermost regions with European expertise, but it cannot by itself remove language, mobility, connectivity, infrastructure or regional-capacity barriers. Future calls should fund multilingual and accessible delivery, locally designed challenges, travel and technical support, and sustained mentoring. They should also require learning materials to be retained in platform-independent formats, with clear arrangements for hosting, updating and reusing them after project funding ends.

Across these priorities, success should be assessed not only through enrolments, views or ideas generated, but also through recognised learning, work-based experience, employment, professional progression, enterprise development and continued participation in blue-bioeconomy networks.

EU funding statement



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