

## Final Recommendations to the European Commission

### INTRODUCTION

The EU blue biotechnology sector is a growing sector and source of jobs. It is therefore set to play an important part in the EU economy, especially that of EU coastal regions.

As mentioned in the European Commission's Communication "Blue Growth opportunities for marine and maritime sustainable growth", by 2030, the blue biotechnology sector could become a provider of mass-market products, together with a range of high added value specialized products.

However, it is still rather much of a niche sector, and the skills required by businesses do not always match the training available. Furthermore, a number of structural modifications to the work environment are affecting the skills needed. These include factors like environmental requirements and digitalization of work processes.

In order to address these structural challenges affecting not only the blue biotechnology sector, but more generally the maritime industry as a whole, the EU has put Maritime Skills high on the agenda. Indeed, as part of the EU industrial strategy post 2020, it has developed a New EU Skills Agenda (June 2016), which addresses skills in the maritime industry in particular.

Indeed, some of the key actions developed to foster skills in the maritime sectors at the EU level have been to:

- ✚ Create a European Commission's expert group on maritime skills
- ✚ Launch Blue Careers calls (2017 and 2018)
- ✚ Develop a project to develop an EU strategy on skills in the maritime industry. The MATES project, led by CETMAR (Galicia) was granted €4.9 Million euros from the "Sectoral Skills Alliance" Erasmus+ programme, from 2018 to 2021

These three initiatives aim at addressing the skills gap in the maritime sectors. Blue biotechnology has been identified as a key sector. The BBMBC project financed by the Blue Careers call is one example.

The project created a Master's degree in the cutting-edge sector of blue biotechnologies. It offers work-based training and placement opportunities which give students the chance to gain practical experience in this sector including in a wide variety of modern industries such as Health, Nutrition and Aquaculture. The Master's degree is co-designed between universities and enterprises from 5 different EU countries. They developed an **internationally recognized** curriculum which **meets the needs of industries** looking for highly skilled employees. The project also develops lifelong learning schemes and mentoring opportunities to foster workers' prospects and progression. As part of the project, the members of the BBMBC consortium have developed in this paper a series of recommendations to put forward to the EU institutions, to further help the blue biotechnology sector to develop.

These recommendations take into account current European context of negotiations on the post-2020 EU budget and legislation in which the European Commission has reaffirmed a part of the EMFF budget would be dedicated to Integrated Maritime Policy, including Skills in the maritime sectors. At the same time, the Commission's proposal on the post 2020 Erasmus budget doubles the current amount of money dedicated to Erasmus 2014-2020 and recommends creating synergies with regional smart specialization strategies. These are opportunities for coastal regions and stakeholders to work further on skills gap in the maritime sectors.

More recently, the European Commission has launched a bioeconomy forum (Amsterdam, November 2018) to develop a roadmap for the blue bioeconomy. The blue biotechnology sector is included in this roadmap. The lessons learnt by partners during the timeframe of the project could also nurture discussions on the development of a roadmap on the bioeconomy.



Blue Biotechnology Master  
for a Blue Career

## Final Recommendations to the European Commission

THE EUROPEAN COMMISSION SHOULD CAPITALIZE AND REPLICATE GOOD PRACTICES DEVELOPED IN THE BLUE CAREERS CALLS IN DIFFERENT SEA BASINS TO ENSURE STRUCTURAL CHANGES FOR SKILLS IN THE BLUE BIOTECHNOLOGY AND MORE GENERALLY THE MARITIME ECONOMY.

THE EUROPEAN COMMISSION SHOULD REPLICATE THE BLUE CAREERS CALL PROMOTING THE METHODOLOGY DEVELOPED BY THE BBMBC PROJECT AND CONSIDER WAYS TO IMPROVE THEIR LEVERAGE IMPACTS

### 1) A METHODOLOGY TO REPLICATE:

- The BBMBC project has developed an **interesting methodology** to bring together universities and SMEs from one sector within a sea basin. This should be replicated to mainstream good practices adapting training to industry needs.
  - o This methodology should be replicated at sea-basin level to create a skills ecosystem in an area that shares common economic features. Blue Biotechnology being a niche sector, a sea-basin and transnational approach will help to foster transfer of knowledge and innovation
  - o The BBMBC methodology should be replicated in other sectors of the blue economy which are essential for the growing population in coastal areas;

### Added value of the blue careers calls:

The BBMBC project and EU funds **have a leverage effect** to find other types of support to enable the continuity of the project, and this should be capitalized at EU level:

- o It has leverage effects on the University that hosts the project: the master's degree and cooperation between SMEs and Universities will be maintained through the University's approval to keep the master's degree for two years
- o Partners have got to know each other and have built trust, which ensures the sustainability of the project. They have been able to travel also to teach students from other EU countries, perform tutoring, and promote the project in different EU, national and regional events. Through the EU financial incentives, partners have been able to meet and dedicate time to a common action plan. This trust has enabled university and SMEs to share knowledge, which is not an easy task in a competitive environment. It has improved the competences of members of the consortium, not only in terms of scientific knowledge but also in terms of languages, communication skills, mindsets, etc.



- Through the work package on “transferability” the master’s degree has received the agreement of the Spanish ministry of education to be replicated in the Universidad Católica de Valencia. The Blue Careers call has thus enable partners to engage in a multi-level dialogue to ensure the sustainability of the project and mainstream the methodology developed

## 2) CONSIDER WAYS TO IMPROVE THE EFFECTIVNESS AND LEVERAGE IMPACT OF THE BLUE CAREERS CALLS:

The BBMBC project is a success in many ways. However, partners met difficulties, which could be overcome with improved Blue Career calls. Recommendations in this respect are the following:

### - **Regarding the administrative requirements:**

- The BBMBC partners come from different backgrounds with different levels of experiences in EU projects. Administrative and financial reporting were felt to be very time consuming in a context where the project is not the partners’ main tasks (teachers teach in other Master’s degrees, they are also researchers, business leaders still need to work for the core activities of their SMEs, etc.) and where the duration of the project is very short (two years). Some administrative constraints could prevent some actors from getting involved in such programmes. For example, very small enterprises leaders has no administrative staff to collect timesheets, payslips... and fill all asked forms. As a recommendation, we propose **extending the financial and administrative reporting period** in order to reduce the number of administrative procedures during the project life. The interim report could also be more straightforward in terms of length and requirements.
- State aids rules for participation of private enterprises. We recommend legislative exemption to encourage private sector participation.

### - **Regarding the end of the project, its sustainability, replicability and scaling-up:**

- The BBMBC partners had planned to continue the master’s degree through different forms of backing: university’s agreements, regional funds, EU funds like Erasmus. For the latter, the information came mainly through good contacts the universities had with colleagues who had experience of other EU programmes, and not much from the EU itself.
- As a recommendation, the BBMBC partners urge the EU/EASME to provide more assistance for the project partners on this issue and help them identify other EU funds which could enable them to further develop one dimension of the project, and avoid multiplying one-off projects.

### - **Areas of future collaboration to be tackled in the next calls:**

- The BBMBC partners had the objective to develop life-long learning, opening the master’s degree to workers/unemployed people/workers in professional retraining. Two students were in this case. However, partners met the difficulty to identify the audience that could benefit from life-long learning. The next calls could tackle this issue.
- The European Commission should consider developing awareness-raising for schools and high schools to develop ocean literacy, knowledge of job opportunities in the blue biotechnology sector and education offers. Indeed, the BBMBC project revealed that often the candidates’ profiles do not fit in with the goals of the master’s degree. Indeed, for the 2018-2019 academic year, the University of La Rochelle which hosts the master’s received more than 20 applications, but could only select 12 students. In total, 8 students are attending the classes.

## THE EUROPEAN COMMISSION SHOULD DEVELOP KNOWLEDGE TRANSFER TO CAPITALIZE THE PROJECT RESULTS RELATED TO SKILLS IN THE BLUE BIOTECHNOLOGY SECTOR

- The BBMBC project could be the first stone of a **European Blue Biotechnology Community**. This community gathering the private sector and the education institutions, partners of Blue careers projects, could develop a business intelligence scheme (collection of data from businesses, standardise definitions, combined global jobs database) based on the work of the BBMBC project like the study developed on the skills gap identification in industries and SME's. Indeed, one of the main issues that BBMBC partners experienced was the operating **difficulties to collect data**. **In this respect, building up a community promoting trust and structured dialogue represents an added value to tackle these challenges.**
- The BBMBC project could also act as a European pool of experts to speak on blue biotechnology jobs and share professional experiences to students and teachers. The BBMBC project developed a summer school whose main objective was to make students defend their thesis in front of a range of businesses from the blue biotechnology sector. This event had a real added value in teaching terms, as it helped students develop their oral skills and promote their skills to businesses. **An annual symposium** could be imagined to foster knowledge transfer on the latest research in blue biotechnologies, with the final goal to anticipate the skill needs in the sector.
- This community could be replicated at sea-basin level. Governance of the macroregional and sea-basin strategies should be adapted to foster their skills ecosystems.
  - For example: the Atlantic strategy
    - The Atlantic strategy and its action plan should contribute to capitalize the BBMBC project results to foster skills in the important maritime sectors for the Atlantic, such as blue biotechnologies, to create a dynamic and skilled workforce ecosystem at this sea-basin level;
    - In the context of the review of the Atlantic Action Plan, the Atlantic States should consider the BBMBC project as a flagship project to transfer to other maritime sectors of the Atlantic sea basin
    - The Assistance Mechanism of the Atlantic Strategy should play the role of transferring the BBMBC project results to other stakeholders and help project leaders to replicate it.
    - In addition, a dedicated group on blue skills could be developed with the relevant ministries and DGs of the European Commission to put into practice the policy guidelines on the skills gap in the maritime sectors.
    - The Atlantic Annual event should be used to capitalize projects tackling the skills gap in the maritime sectors.



THE EUROPEAN COMMISSION SHOULD CAPITALIZE THE PROJECT RESULTS/INITIATIVES RELATED TO SKILLS IN THE BLUE BIOTECHNOLOGY SECTOR IN FUTURE LEGISLATION AND EU FUNDING OPPORTUNITIES

1) FUTURE EU LEGISLATIONS:

- **Integration of results in on-going EU initiatives modelling future EU legislations :**

- The results of the BBMBC project and a new generation of Blue Careers on biotechnology could directly benefit the EC expert group on maritime links with positive impacts for the next generations of EU maritime policies.
- It could be the basis for extending the MATES project on blue biotechnology to tackle other blue sectors than Shipbuilding and Energy.
- And could also nurture the roadmap on bioeconomy that the European Commission plans to draw up in 2019.

- **Reflections on future EU legislations:**

- The partners met the difficulty of transferring a “second-year” master’s degree developed in France to Spain where there is no “second-year master’s degree”. What could be further work at EU level is to promote an analysis aiming to identify existing barriers and suggest concrete solutions in order to harmonize curriculum schedule at EU level.
- Not only curriculum, but also tuition fees and rules for internships could be also explored. Indeed, while an internship in France has to be paid, it is often not the case in other areas of the EU.

2) BETTER ENSURE THE COMPLEMENTARITY OF ITS DIFFERENT FUNDING SCHEMES

- **With Erasmus funding**

- The Universities and SMEs helped students to perform their internships abroad to foster their adaptation skills, language skills, etc. Although this is in line with the overall objective of the project, the EU support is relatively small. Indeed, the Erasmus programme dedicated to help such mobility delivers quite small amounts of money for students, which does not enable them to cover all the expense of living abroad, especially in a context where internships are not necessarily paid
- The BBMBC partners recommend creating more synergies between the Blue Careers call and Erasmus programme: common information days, support from EASME to help partners to benefit from Erasmus funds which could take the form of (a) specific meeting with partners to look at the complementarity of EU funds.
- We recommend increasing the financial help for students to better assist students in their experience abroad, in the EU and internationally.



- The European Commission should consider earmarking funds for the blue economy within Erasmus, in line with its proposal for a new Erasmus programme which mentions the importance of taking into account smart specialization strategies within Erasmus.
- **With Horizon Europe funding:**
- The programme would be used to foster transfer of knowledge in the field of blue biotechnologies, with the final aim to adapt the skills to the sector's innovation. Synergies with EMBRIC (European Marine Biological Research Infrastructure Cluster to promote the Blue Bioeconomy), a H2020 project aiming at developing new world-class research infrastructures in the field of Blue biotechnologies should be developed in this respect. Link here : <http://www.embric.eu/about>



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