BLUEAIR Project

BLUE GROWTH SMART ADRIATIC IONIAN S3

D.T.1.2.5

White paper on regional and cross-regional challenges and opportunities

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1. Introduction

Blue innovation is the key enabler of sustainable blue economy especially for the insular and coastal states, enhancing their productivity and competitiveness. It can support, boost and upgrade several of its sectors, its relevant management processes (i.e., maritime spatial planning) as well as the conservation of the marine environment. **Sustainability** and **digitalization** are among the most important benefits derived from innovation, while building innovation capacity at regional, national and macro-regional scale is required for boosting it. As all Q-Helix actors may derive benefits from innovation, their active engagement and cooperation in relevant activities is encouraged.

Macro-regional cooperation among all Q-Helix actors in the Adriatic – Ionian Region (AIR) is required for the identification of common challenges and opportunities and for addressing them through the adoption of blue innovation in relevant activities. Macro-regional cooperation can facilitate the development of new advanced technologies, the creation of new products and services with increased added value, tailor-made to the needs and requirements of the AIR. Strengthening cooperation and aligning relevant innovation policy promotes and enhances blue innovation.

The White Paper on regional and cross-regional challenges and opportunities for strengthening macro-regional cooperation in the AIR towards innovation in a sustainable blue economy is elaborated in the context of the BLUEAIR project. It combines the insights and results derived from a series of regional and cross-regional Cross-fertilization Workshops (CF WSs), which took place from February to May 2022 in the AIR countries that participate in the project, and includes recommendations on commonly addressing the identified common challenges and opportunities related to blue innovation and the strengthening of macro-regional cooperation in the AIR.

These recommendations will support the establishment of a transnational Innovation Community that engages all Q-Helix actors related to blue innovation in the AIR. More specifically, they will provide input for the development of an Action Plan that will facilitate the establishment of this Community.

The process followed for the development of appropriate recommendations starts with the identification of common challenges and opportunities through implementation of relevant actions and solutions as highlighted in Figure 1.

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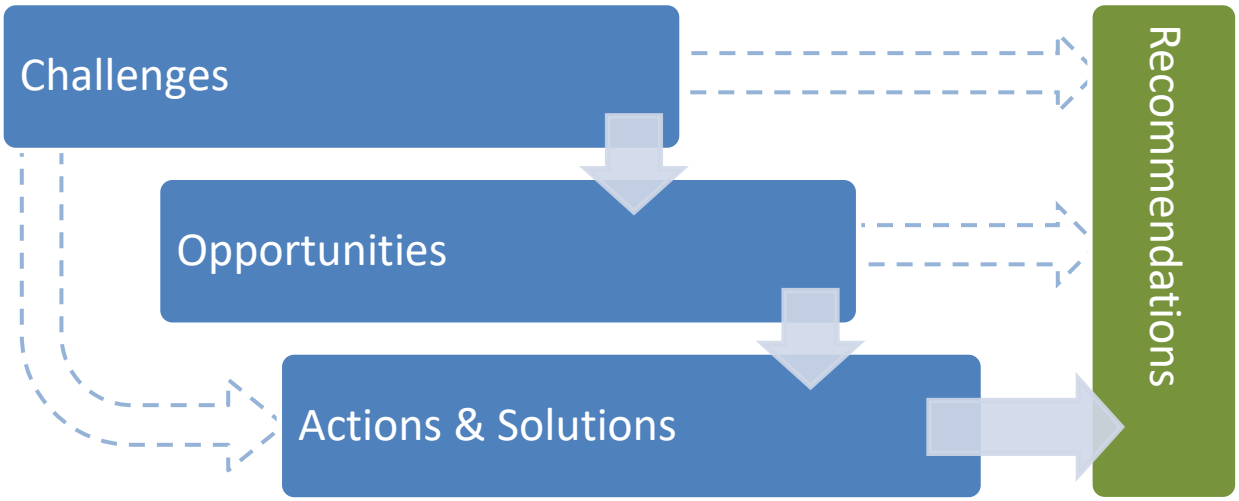

Figure 1: Process for linking common challenges, opportunities, actions, solutions, and recommendations.

This process is elaborated in subsequent sections, for each recommendation. Details on challenges, opportunities, actions and solutions identified in the context of BLUEAIR are presented in the Annex.

The five key recommendations that have been produced within the context of this White Paper, are the following:

1. Enhancing AIR's Sustainable Blue Economy in the long-term through the **sustainable exploitation** of marine resources, green technologies, and green operations.
2. **Alignment of institutional framework** with current needs of the Q-Helix related to macro-regional cooperation and blue innovation.
3. Establishment of a **macro-regional innovation community** for strengthening cooperation among all Q-Helix actors in the AIR.
4. **Capacity building** on blue skills and technologies with multi-use applications.
5. **Pooling relevant funding** opportunities.

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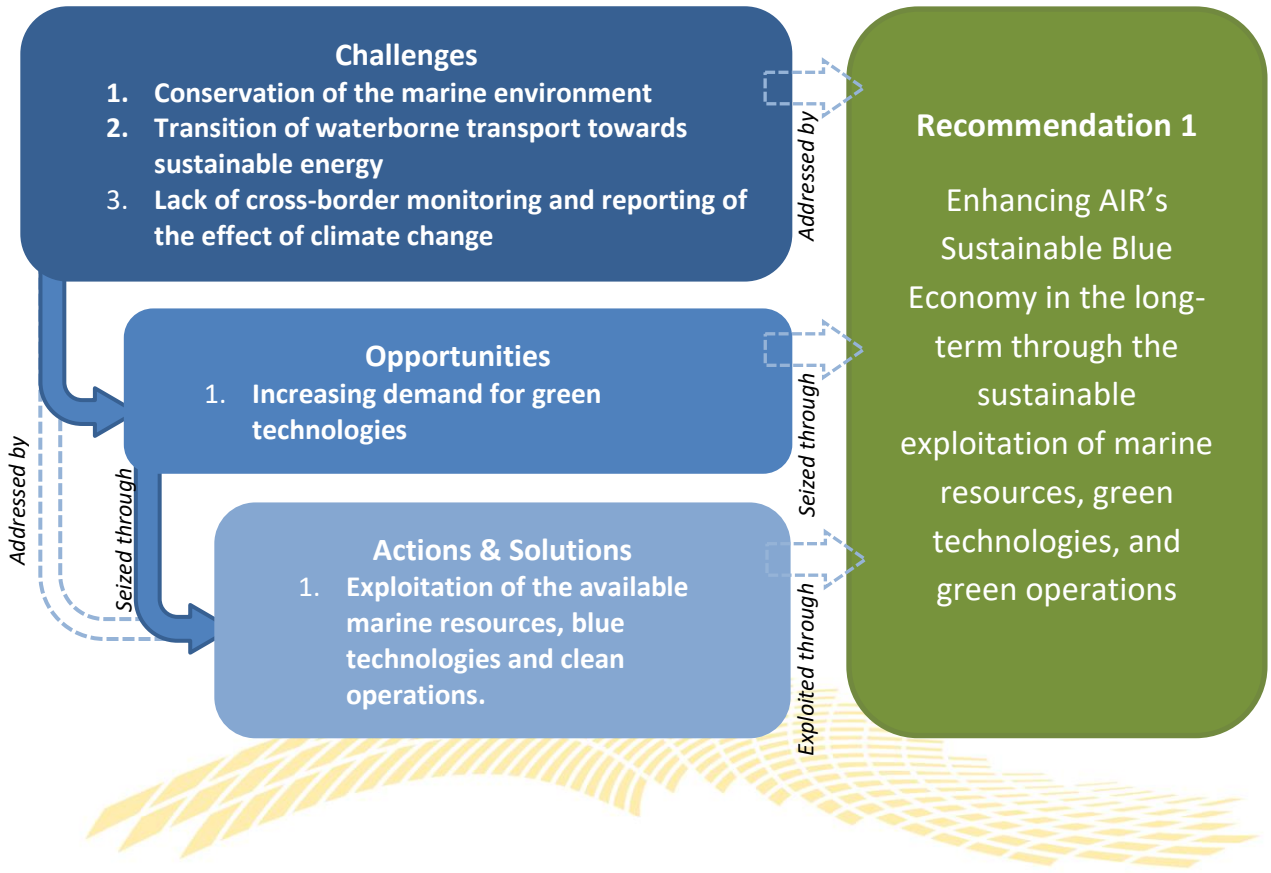
2. Recommendations for strengthening macro-regional cooperation towards innovation for the sustainable blue economy in the AIR

Key recommendations for addressing the main identified challenges, opportunities, actions and solutions related to strengthening macro-regional cooperation towards blue innovation in the sustainable blue economy, include the following.

Recommendation 1

Enhancing AIR's Sustainable Blue Economy in the long-term through the sustainable exploitation of marine resources, green technologies, and green operations

Considering the increasing demand for green technologies and the current challenges towards the alignment of blue technologies with the requirements for the marine environment (i.e., conservation of the marine biodiversity, elimination of the pollution of the marine environment, climate change, etc.), the exploitation of the existing marine resources of the AIR and its relevant competitive advantages can facilitate the green transition of its blue economy sectors (i.e., waterborne transport) and the competitiveness of its regions. Digital solutions (i.e., Artificial Intelligence, Internet of Things, etc.) may play a viable role, while their integration into activities towards conservation of the marine environment can enhance blue economy sectors' sustainability. Their use should focus on the investigation and in timely addressing climate change impacts on marine and coastal areas (i.e., data collection, monitoring).



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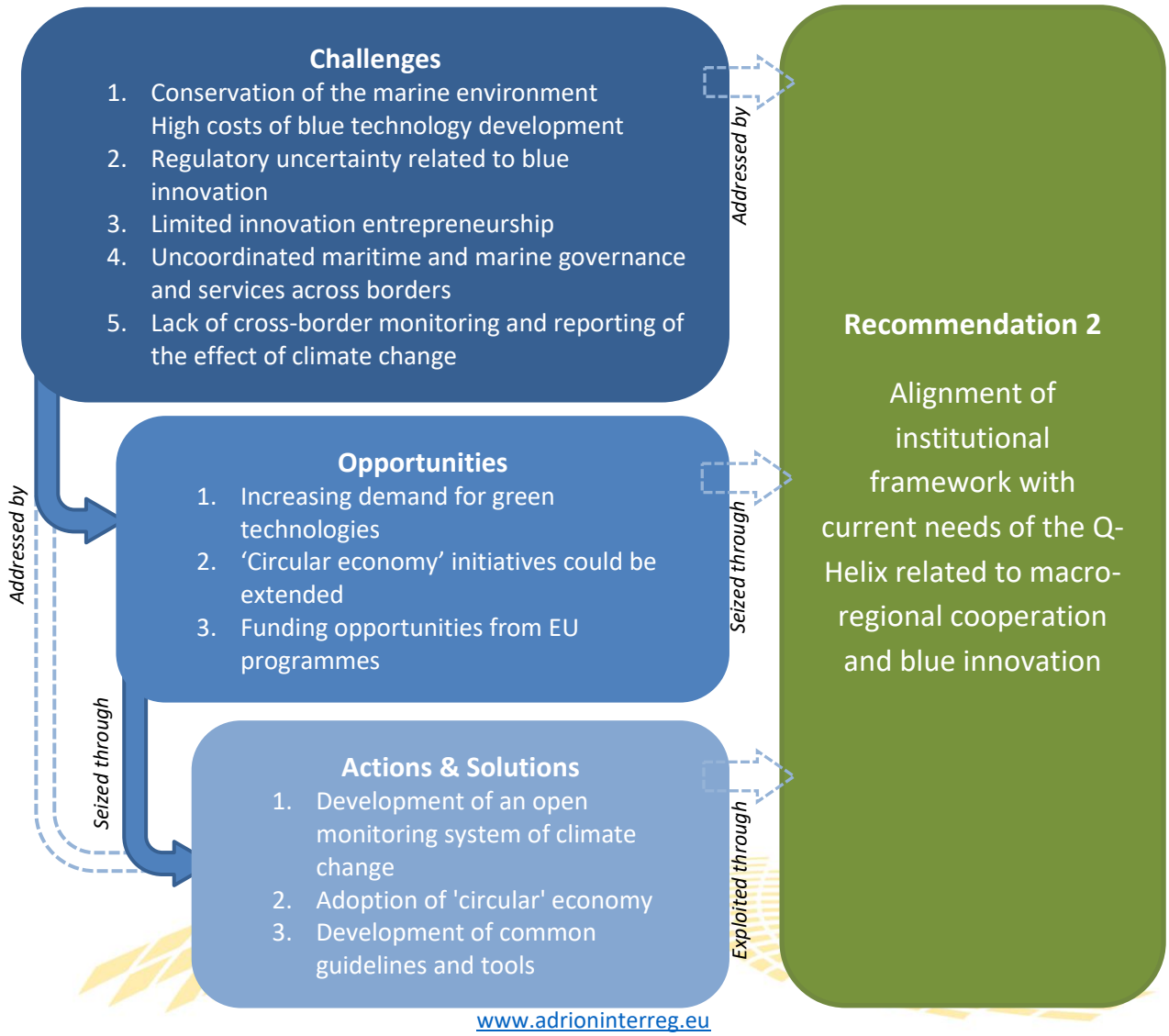
Recommendation 2

Alignment of institutional framework with current needs of the Q-Helix related to macro-regional cooperation and blue innovation

The integration of appropriate actions, measures and solutions into relevant institutional frameworks (i.e., Smart Specialization Strategy) is necessary for addressing the common challenges of the AIR. The integration of common guidelines and tools for facilitating green and digital transition, for adopting circular economy, for enhancing macro-regional cooperation and for better allocation of financial resources towards macro-regional cooperation and blue innovation are indicative specific recommendations that can effectively address those challenges (i.e., the need for adapting blue technologies thus protecting the marine environment, the alleviation of high costs for the development of blue technologies, the adoption of innovative processes and methods in blue economy sectors, etc.). It can also reduce regulatory uncertainties related to blue innovation.



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Recommendation 3

Establishment of a macro-regional innovation community for strengthening cooperation among all Q-Helix actors in the AIR

A Macro-Regional innovation community should involve and engage all Q-Helix actors related to blue innovation and facilitate the identification and addressing of related common challenges and opportunities. Its establishment can be based on existing relevant efforts and on existing cooperation between industry and academia. It can also motivate actors involved in joint blue projects that aim at the development of products and services adapted to macro-regional challenges and needs or the creation of partnerships for the use of shared infrastructures (i.e., ports) improving Q-Helix actors environmental and economic performance. Its establishment will stimulate cooperation for the development of solutions that can address the specific needs of the AIR related to blue innovation and will facilitate knowledge transfer among all Q-Helix actors and all the AIR countries and regions (i.e., dissemination of products, services, and best practices), thus exploiting the current opportunities for capacity building in the macro-region. This recommendation is fundamental as it supports the implementation of all others.

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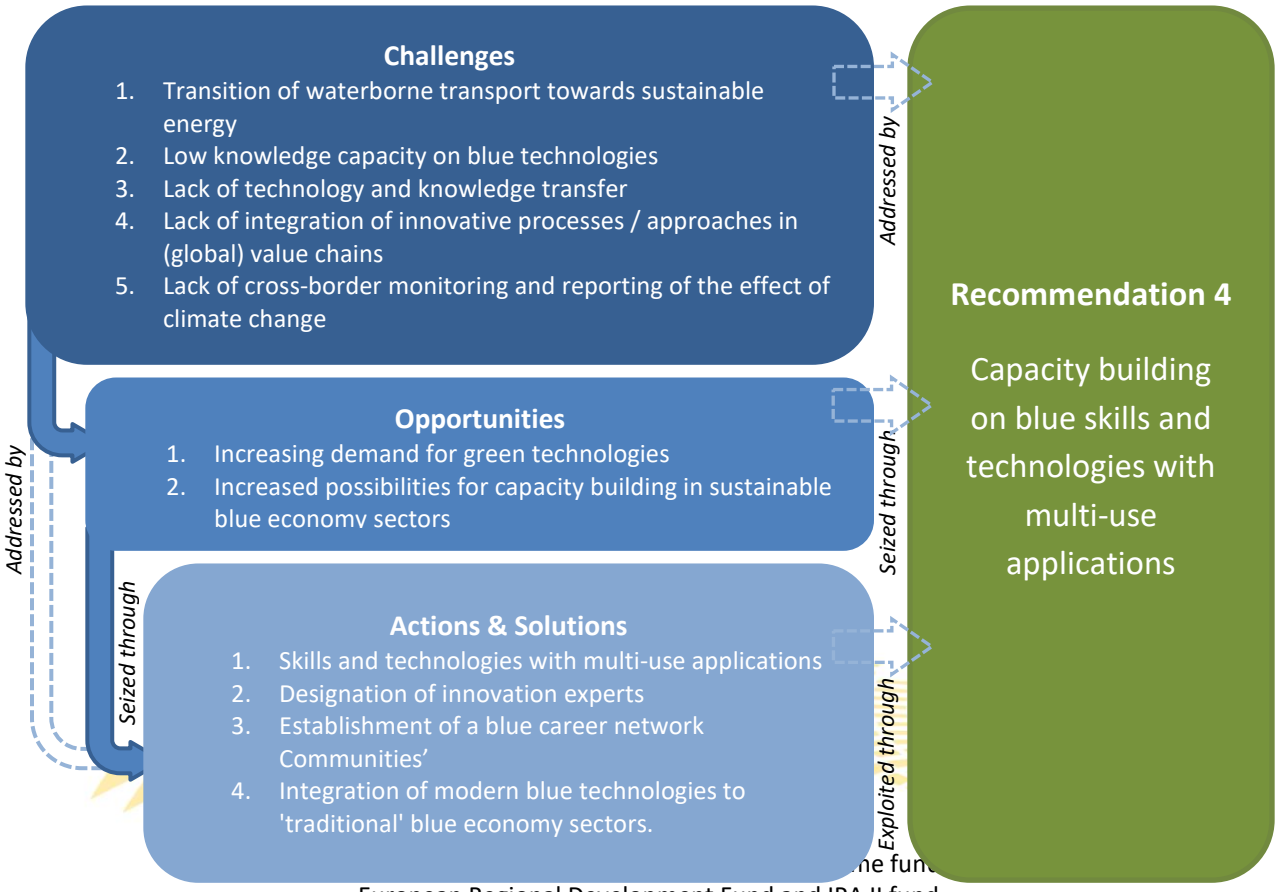
Recommendation 4

Capacity building on blue skills and technologies with multi-use applications

The increasing demand for green technologies as well as the existing opportunities for capacity building in the blue economy can support the integration of blue technologies and new, innovative methods in relevant value chains and the enhancement of capacity building in the entire blue economy. The appropriate use of those blue technologies can accelerate the green transition of the blue economy sectors and support the investigation of the impact of climate change at the macro-regional scale with emphasis on how to monitor them. Emphasis is recommended to be placed on the promotion and integration of such technologies to 'traditional' blue economy sectors, which need to modernize their operations and approaches. It is also suggested that research activities should focus on blue innovation, further development and improvement of blue technologies, and current Q-Helix actors' needs in alignment with the requirements for the conservation of the marine environment (i.e., social innovation, development of an open monitoring system for the investigation and identification of climate change impacts on marine and coastal areas, enabling the sharing of and access to knowledge, information, data, and technologies). The establishment of a macro-regional blue career network for connecting relevant centers would enhance capacity building and especially the competences and blue skills of the relevant human capital, while it would also enable knowledge transfer between the AIR countries and regions. Capacity building can be enhanced through appointing innovation experts that can provide consultation on blue innovation, on how to exploit the increasing demand for blue technologies, and how to align those technologies' capabilities with the requirements for conserving the marine environment and its resources.



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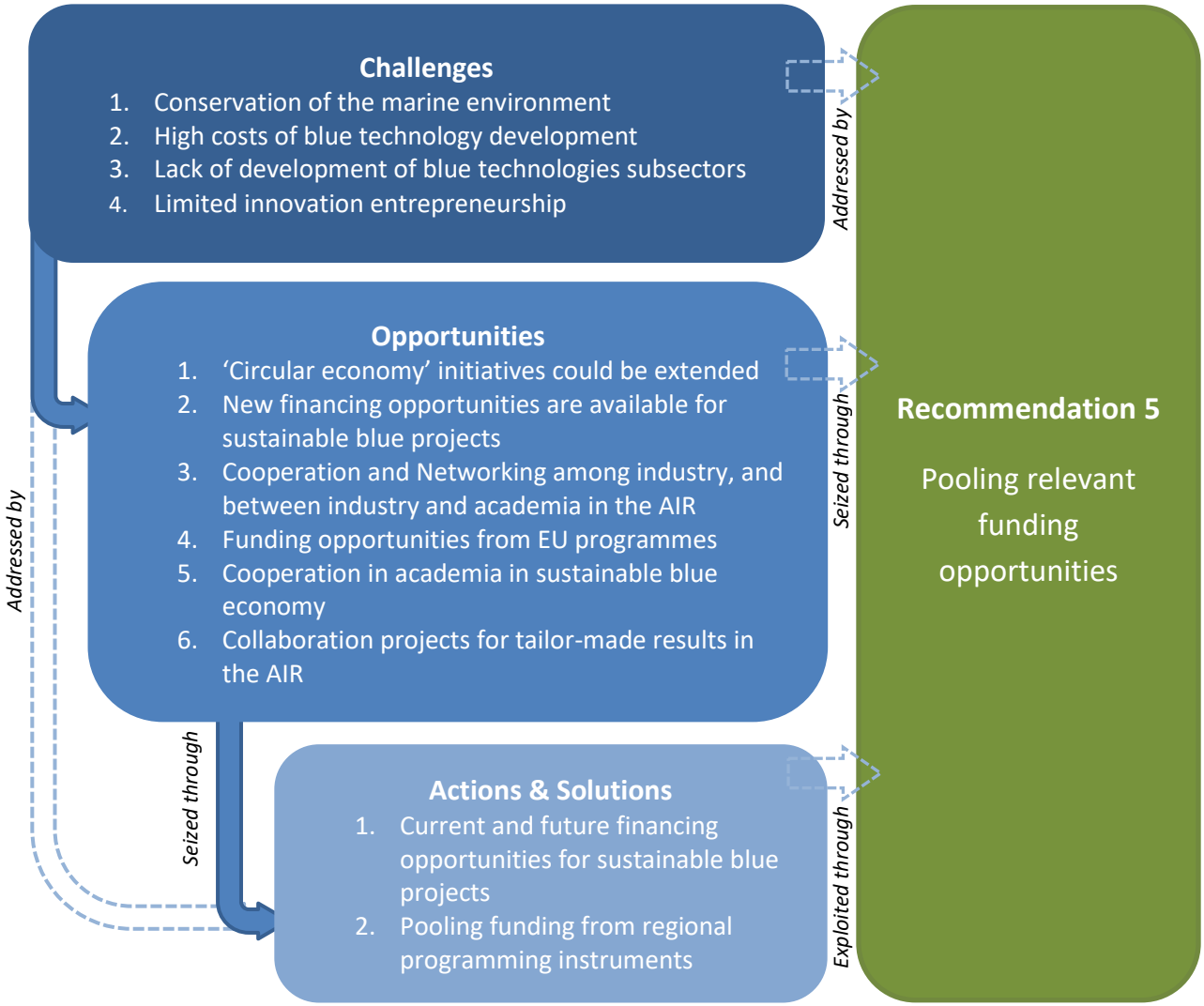
Recommendation 5

Pooling relevant funding opportunities

Relevant funding opportunities for blue innovation projects to implement the recommendations already exist to a large extent. Resources may also become available through other initiatives and funding instruments (i.e., Circular Economy initiatives, Blue Sustainable Ocean Strategy by the European Investment Bank, regional programmes, etc.). Their exploitation can address the limited development of blue technologies and the high costs that accompany them as well as the limited blue innovation entrepreneurship in the AIR. To improve access of all Q-Helix actors to these funds, their compilation into a single point and the provision of support on how to apply to relevant calls for projects is recommended.



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ANNEX

A. Macro-regional challenges in the Adriatic – Ionian Region

a. Macro-regional challenges for innovation

1. The conservation of the marine environment can be a major challenge for technology deployment, especially those technologies that require permanent installations.
2. The high costs of blue technology development that are a potential barrier to growth in the sector.
3. The regulatory uncertainty related to blue innovation that hinders investments.
4. The transition of waterborne transport towards sustainable energy.
5. The lack of development of blue technologies subsectors.

b. Macro-regional challenges towards a macro-regional cooperation

1. The lack of cooperation among all Q-Helix actors to develop innovative products and services tailor-made to local market needs and demands.
2. Low knowledge capacity on blue technologies.
3. The lack of technology and knowledge transfer between advanced and lagging regions.
4. Limited innovation entrepreneurship related to blue technologies.
5. Uncoordinated maritime and marine governance and services across borders.
6. Lack of integration of innovative processes/approaches in (global) value chains.
7. Lack of progress towards the implementation of maritime spatial planning.
8. Lack of concrete results through coordinated project planning.
9. Lack of a cross-border monitoring and reporting system of the effect of climate change.

B. Macro-regional opportunities in the Adriatic – Ionian Region

a. Macro-regional opportunities for innovation

1. Increasing demand for green technologies reducing the environmental impacts of existing activities.
2. ‘Circular economy’ initiatives could be extended.
3. New financing opportunities are available for sustainable blue projects

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b. Macro-regional opportunities towards a macro-regional cooperation

1. Cooperation and Networking among industry, and between industry and academia in the Adriatic-Ionian Region.
2. Funding opportunities from EU programmes (i.e., EU Green Deal).
3. Cooperation in academia (i.e., research, development, innovation) in sustainable blue economy.
4. Collaboration projects for tailor-made products and services in the Adriatic-Ionian Region adapted to macro-regional challenges and demands.
5. Fostering of Sustainable blue economy Innovation Communities of Q-Helix actors in the Adriatic-Ionian Region.
6. Increased possibilities for capacity building in sustainable blue economy sectors (i.e., blue skills).

C. Actions and solutions on strengthening macro-regional cooperation

1. Exploitation of the available marine resources, blue technologies and clean operations for sustaining and enhancing in the long-term the competitive advantages of the Adriatic – Ionian Region's sustainable blue economy.
2. Skills and technologies with multi-use applications for sustainable blue economy value chains exploiting the potential for applying new methods (e.g. big data applications), land-sea technology and economic «cross-overs» and renewing the skills base of the blue economy.
3. Sharing infrastructure on land or in ports through partnerships between cross-cutting blue sectors for increasing efficiency through reduced costs and/or environmental impacts.
4. Current and future financing opportunities for sustainable blue projects.
5. Setting up transnational cooperations between S3 regions/countries on common S3 priorities for finding joint solutions that can address macro-regional challenges and opportunities.
6. Setting up 'Innovation Communities'.
7. Pooling funding from regional programming instruments.
8. Designating of innovation experts for consulting on innovation and support its implementation.
9. Development of an open monitoring system for the investigation and identification of climate change impacts on marine and coastal areas, enabling the sharing of and access to knowledge, information, data, and technologies.
10. Adoption of 'circular' economy into national and macro-regional action plans and policy/strategy frameworks.
11. Establishment of a blue career network for connecting relevant centers.
12. Development of common guidelines and tools for adaptation to climate change.
13. Integration of modern blue technologies to 'traditional' blue economy sectors.

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