

POLICY BRIEF

The Further Development of the Sustainable Blue Bioeconomy Through the Ecosystem Approach

When managed accordingly, Blue Bioeconomy activities can have a significant beneficial impact on the natural environment through sustainable practices and strengthening ecosystem services. Ecosystem services are the numerous benefits that society derives from the natural environment. These services form the foundations of our economies, health, and general well-being. Within the Blue Bioeconomy, these services are critical. For example, mussels not only serve as a food source but also contribute to nutrient recovery and coastal protection. Similarly, oyster reefs provide coastal protection and serve as nurseries for marine life. Integrating ecosystem services into business models and regional planning offers both economic and environmental advantages. Locally-produced, sustainably-managed resources support regional economies, while nature-based solutions – such as oyster reefs for erosion control, macroalgae cultivation for enhancing biodiversity around offshore wind farms or microalgae production on industry side streams – illustrate how the blue bioeconomy can align economic development with conservation.

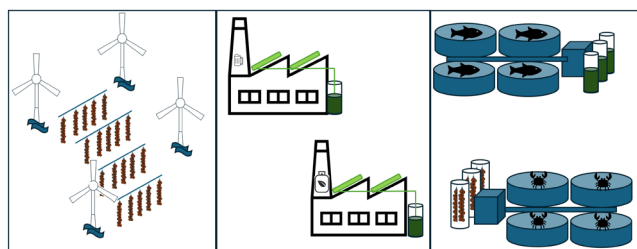


Figure 1: Examples of integration of blue bioeconomy productions in different industries

This economic and environmental alignment can create positive impacts that resonate across sectors, creating value for tourism, retail, and other industries.

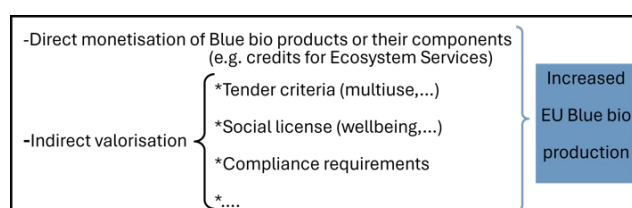


Figure 2: Benefits for blue bioeconomy production through the Ecosystem Approach

To maximise these benefits, an **Ecosystem Approach (EA)** is essential, providing a framework that both assesses and mitigates the environmental impacts of activities while enhancing positive contributions to ecosystem services. Key elements of an EA include the evaluation of ecosystem services in both economic and social terms, raising awareness about the value of these services, and fostering a willingness to protect them. Quantifying these services enables industry and policymakers to weigh trade-offs and make informed decisions. Adopting an EA can also significantly enhance public support, granting businesses and other stakeholders the social license to operate.

Awareness creation, robust tools and regulative frameworks are indispensable to ensure effective valuation and management within EA.

Although sustainability is firmly integrated into national policies, the explicit adoption of the EA remains limited. The main challeng-

es hampering EA implementation include the inherent complexity of EA, a lack of understanding or knowledge of EA, insufficient support from economic actors, unpreparedness within certain sectors, gaps in supportive tools and methodologies, weak public interest, and the absence of relevant legislation.

As guidance for policy makers, a conceptualised policy process is proposed (Figure 3). This process is designed as a circular framework that can be iteratively refined to enhance the effectiveness of EA plans over time.

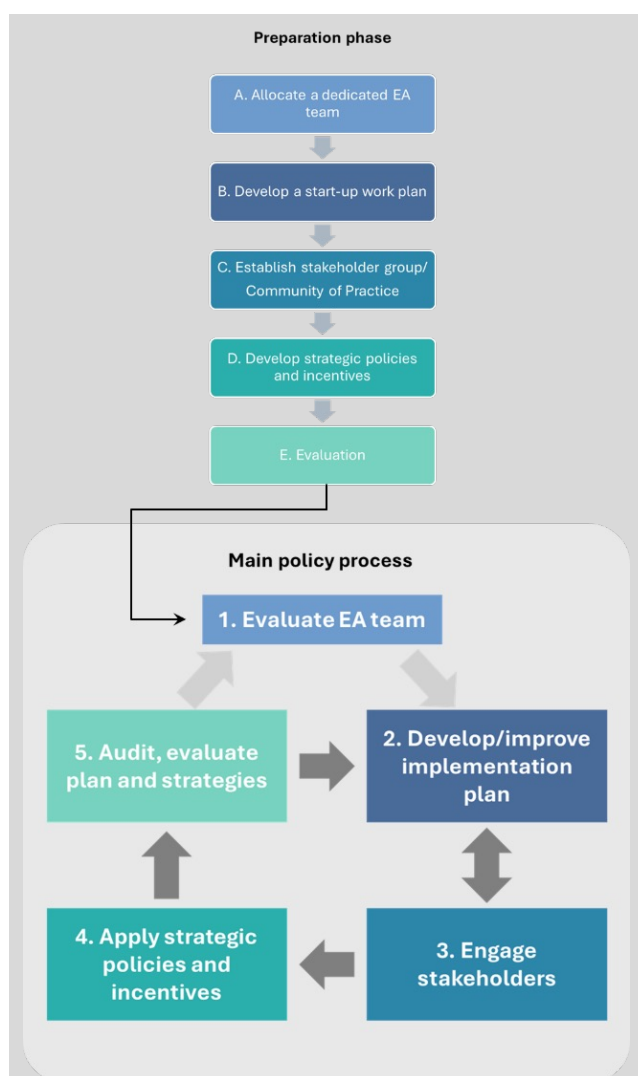


Figure 3: Policy process for the Ecosystem Approach

Policymakers are invited to check the status of EA in their regional policies on the [online platform](#), which also provides next steps to be taken for implementation of the EA in their region. The BlueBioClusters project explored the concept of an **Ecosystem Approach Ladder** as a supporting framework for the application of an EA in Blue Bio and to address several of the existing challenges within the Blue Bioeconomy. The Ladder aims to incentivise and reward companies effectively adopting nature-inclusive practices within their business activities. By improving their ecosystem impact, companies are placed higher on the ladder, resulting in better financial and reputational rewards.

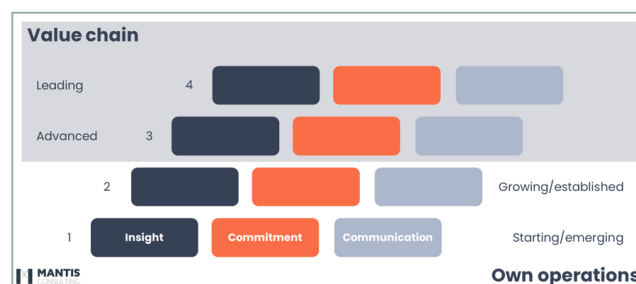


Figure 4: The Ecosystem Approach Ladder management tool

To assist Blue Bio companies in adopting an EA and addressing the challenges of its implementation, governments can implement policies, provide incentives, and install frameworks that encourage sustainable practices.

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