Towards a strong and sustainable EU algae sector

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European Commission sets out its vision for developing the sustainable EU algae sector

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Towards a Strong and Sustainable EU Algae Sector COM/2022/592 final

Update

On 15 November 2022 the Commission adopted the Communication "Towards a strong and sustainable EU algae sector", an initiative aimed at unlocking the potential of algae as a sustainable source of alternative protein.

Background

The EU aims to harness the potential of algae as a renewable resource in Europe to ensure secure supplies of raw materials and energy. The European Commission's High-Level Scientific Advice Mechanism projects an additional biomass demand of more than 100 million tonnes for human food in the next 20 years. This initiative turns current environmental and climate-related challenges into business opportunities in the context of the European Green Deal.

The Farm to Fork Strategy highlights the role of algae as an important source of alternative protein for a sustainable food system and global food security. Algae are a healthy and low-calorie food low in fat and rich in dietary fibres, micronutrients and bioactive compounds, with some species having a particularly high protein content. They are also a valuable material for several other commercial applications, including animal/fish feed and feed additives; pharmaceuticals; nutraceuticals; plant biofertilisers; bio-based packaging; cosmetics or biofuels; and as services provider for wastewater treatment and removal of carbon and nutrients from aquatic ecosystems.

The Sustainable Carbon Cycles Communication recognises the potential of algae for the blue carbon economy. Seaweed forms the most extensive and productive vegetative coastal habitat, and has high sequestration potential. European demand for seaweed could increase from around 270,000 tonnes in 2019 to 8 million tonnes in 2030, and reach €9 billion in value. Such an increase in production could create around 85,000 jobs, and mitigate up to 5.4 million tonnes of CO_2 emissions a year.

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Algae, specifically seaweed aquaculture, are currently subject to a multitude of EU and national regulatory texts.These include the following Regulations, Recommendation and Directives:

- Alien Species Regulation 1143/2014
- Regulation 708/2007 concerning the use of alien and locally absent species in aquaculture
- Regulation 511/2014 on compliance measures for users of the Nagoya Protocol
- Regulation 2015/2283 on Novel Foods
- Regulation 1380/2013 on the Common Fisheries Policy
- Recommendation 2018/464 on the monitoring of metals and iodine in seaweed, halophytes and products based on seaweed
- Habitats Directive 92/43/EEC
- Maritime Spatial Planning Directive 2014/89/EU
- Marine Strategy Framework Directive 2008/56/EC
- Water Framework Directive 2000/60/EC.

Certain EU legislation applies to cultivation of seaweed at sea or of algae on land. However, there is considerable fragmentation in areas where there is no EU-level regulatory framework. A more coordinated approach is needed, including simplified procedures and a monitoring and quality framework, with the ultimate aim of placing sustainably sourced, safe biomass algae-based products on the market.

What is changing?

In its Communication, the European Commission sets out a coherent approach for a robust, sustainable and regenerative EU algae sector capable of meeting the growing EU demand for renewable resources. It concludes that to meet this objective and boost the algae sector, additional policy actions are required.

Based on an analysis of the sector and stakeholder consultations, it proposes regulatory and non-regulatory actions. These actions build on existing initiatives, taking into account available science, knowledge and data, and best business practices.

What has been done so far?

The Blue Bioeconomy Forum, a platform for entrepreneurs, researchers, government officials and other stakeholders, published its Roadmap for the blue bioeconomy (2019) which made recommendations in four main areas:

- policy, environment and regulations
- finance and business development
- consumers and value chains

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- science, technology and innovation.

In recent years, the Commission has initiated and supported a number of algae-related initiatives. These include:

- The EU4Algae project (creation of a collaborative European Algae Stakeholder Platform)
- Calls for applications for EU research and innovation funds (Horizon 2020; Horizon Europe)
- The Circular Bio-based Europe Joint Undertaking
- Investments in the algae sector through the European Maritime and Fisheries Fund and European Regional Development Fund
- Blue economy-related business support mechanisms (Blue Invest; the Aquaculture Assistance Mechanism).

Other initiatives are in place to help increase knowledge of algae, such as:

- European Marine Data and Observation Network
- Commission's Knowledge Centre for the Bioeconomy
- Joint Research Centre's JRC Biomass Mandate
- Studies looking at how algae could help to achieve climate-related goals and its relationship with nutrients
- Ocean literacy and awareness-raising initiatives.

How can the EU unlock the potential of the EU algae sector?

The Commission's primary objectives are to:

- upscale regenerative algae cultivation and production throughout the EU
- develop and mainstream the markets for food and non-food algae applications.

The Commission sets out a range of initiatives aimed at improving governance and the business environment, enhancing knowledge and increasing social awareness of algae. Some specific regulatory actions foreseen by the Commission are set out in Table 1.

Why?

The European algae sector holds significant potential for the EU blue bioeconomy, especially in coastal communities. Farming of algae can contribute to the EU's objectives of decarbonisation, zero pollution, circularity, preservation and restoration of biodiversity, protection of ecosystems, and development of environmental services. Algae can replace fossil-based products, and serve as raw material for plant biofertilisers, bio-based chemicals and other materials, and biofuels.

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What are the major implications for exporting countries?

The EU is already a leading global importer of seaweed products in terms of value, and EU demand for algae and algae-based products is expected to increase in the years to come. The strong and increasing demand for seaweed products in Europe may create opportunities for exporters of such products to the EU.

Market demand for microalgae such as *Chlorella* and the cyanobacteria *Spirulina*, which can be produced on land and far from the sea, is also growing in the EU.

However, the development of a strong algae industry in the EU, centred on aquaculture production and innovative seaweed mariculture, and including strategic autonomy from imports and new or improved industry standards for algae products, implies a more competitive marketplace for AGRINFO partner exporters of such products.

Resources

Online resources from the European Commission:

- Biomass Mandate
- Blue Invest
- Circular Bio-based Europe Joint Undertaking
- EU4Algae
- European Marine Data and Observation Network
- Knowledge Centre for the Bioeconomy
- Roadmap for the blue bioeconomy

Sources

Communication: Towards a Strong and Sustainable EU Algae Sector, COM/2022/592 final

Farm to Fork Strategy

Roadmap for the blue bioeconomy

Strategic guidelines for EU aquaculture

Communication on Sustainable Carbon Cycles

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Tables & Figures

Table 1
Towards a strong and sustainable EU algae sector:
Improving governance framework and legislation

What	When	With whom	How
Develop new algae farmers' toolkit	Starting 2023	Relevant stakeholders	
Identify optimal sites for seaweed farming Include seaweed farming and sea multi-use in maritime spatial plans		Member States	Marine Spatial Plan Assistance Mechanism Open method of coordination for aquaculture
Develop standard testing, quantification and extraction methods for algae ingredients and contaminants	End 2026	European Committee for Standardization (CEN)	
Develop algae biofuel standards and certification methodology	End 2026	CEN	
Assess market potential, efficiency and safety of algae-based materials used in fertilising products	Starting 2023		Amend Regulation (EU) 2019/1009 on EU fertiliser products to include algae-based materials

Source: based on Communication COM/2022/592, 4.1

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