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## Algae: New Commission Study Highlights Their Potential for a Sustainable Blue Economy

**Key policies:** *European Green Deal, EU Climate Law, EU Climate Neutrality Objective 2050, EU Biodiversity Strategy, EU Farm to Fork Strategy, EU Circular Economy Action Plan, European Ocean Pact, EU Blue Economy Strategy, EU Climate Adaptation Policy Framework, EU Research and Innovation Policy (Horizon Europe)*

The **European Commission** has published a new study outlining the significant potential of **macro- and microalgae** to support Europe's transition towards a more **sustainable, resilient and climate-neutral economy**.

The *Study to Support a Sustainable EU Algae Industry* demonstrates how algae can contribute to addressing key challenges such as **food security, water pollution, climate change and biodiversity loss**, while strengthening the EU's **blue economy**.

### Multiple benefits across sectors

According to the study, algae can play a transformative role across a wide range of applications, including:

- Replacing **fish-based ingredients** with algae-based feed in aquaculture
- Producing **biofertilisers and plant biostimulants**
- **Cleaning wastewater** and reducing nutrient pollution
- **Mitigating climate change** through carbon capture and storage
- Supporting **sustainable food and feed systems**

These applications highlight algae's versatility as a nature-based solution supporting both environmental and economic objectives.

### Biofertilisers and healthier soils

The study finds that **all algae species** contain natural compounds that make them suitable for use as **biofertilisers and plant biostimulants**. These products:

- Improve crop growth and plant health
- Reduce nutrient losses caused by water runoff
- Lower the risk of **eutrophication**, which harms aquatic ecosystems

By enhancing nutrient efficiency, algae-based inputs can support more sustainable agricultural practices.

### Algae and climate change mitigation

Algae also offer substantial potential for **carbon sequestration**. Seaweed forests in EU waters currently cover around **902,000 km<sup>2</sup>** and could capture up to **23.5 million tonnes of carbon per year**, equivalent to **86 million tonnes of CO<sub>2</sub>**.

However, these ecosystems are under pressure from climate change, eutrophication, habitat loss and invasive species. The study highlights **seaweed farming** as a complementary solution:

- **10,000 km<sup>2</sup> of seaweed farms** could store up to **1.1 million tonnes of carbon annually** (around **4 million tonnes of CO<sub>2</sub>**)
- The avoided societal damages from this level of sequestration could reach **€17.4 billion per year**

This positions algae as a **win-win solution** for climate action and sustainable economic development.

### **Sustainable aquaculture and feed security**

Incorporating algae into **aquaculture feed** is identified as a particularly promising pathway. Algae-based feeds:

- Perform as well as traditional fish-based feeds
- Reduce pressure on **wild fish stocks**
- Improve marine ecosystem health
- Enhance fish quality and reduce contaminants
- Provide more **stable and resilient feed supply chains**

Algae-based alternatives to fish oil are therefore a key enabler of sustainable aquaculture growth in the EU.

### **Challenges to scaling up the algae sector**

Despite its strong potential, the algae sector still faces several challenges:

- High production costs
- Limited data for certain applications
- Low production volumes
- Need for further research and innovation

Currently, around **130,000 tonnes of algae** are harvested from the wild annually, with an additional **132,700 tonnes of beach-cast algae** collected in 12 EU countries. Yet, the estimated availability of beach-cast algae alone could reach **1.17 million tonnes per year**, indicating significant untapped potential.

### **Recommendations and policy alignment**

The study provides **detailed recommendations** to scale up algae production and use across Europe, reinforcing a strategic direction already set by the **European Ocean Pact**.

By demonstrating how algae can contribute to **climate mitigation, circular resource use, food system sustainability and biodiversity protection**, the study underlines their importance in building a **competitive, innovative and sustainable EU blue economy**.

Source: [https://oceans-and-fisheries.ec.europa.eu/news/algae-new-commission-study-explores-their-bright-future-2025-09-08\\_en](https://oceans-and-fisheries.ec.europa.eu/news/algae-new-commission-study-explores-their-bright-future-2025-09-08_en)