



# LOCALITY

Circularity Powered by Algae

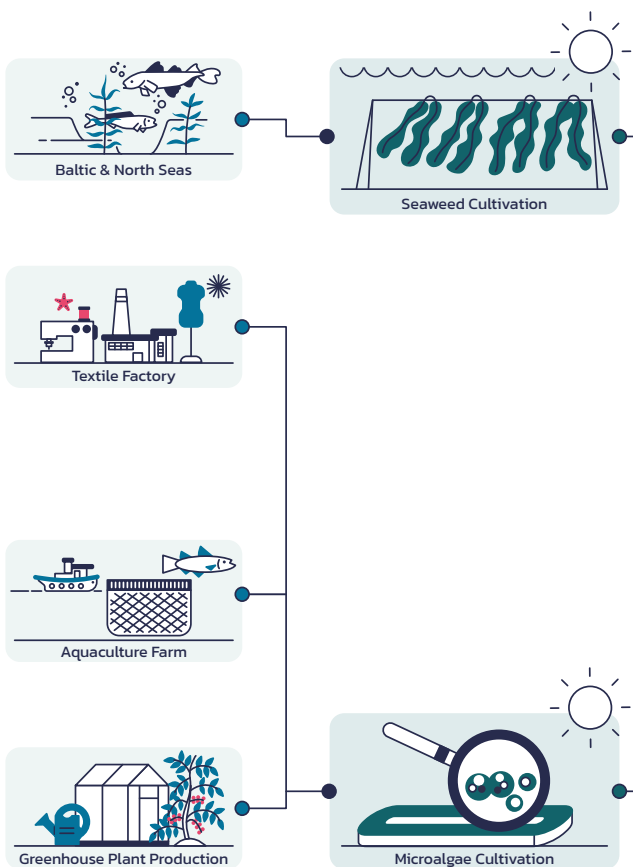
Developing innovative &  
sustainable  
solutions along the  
algae value chain  
in the North & Baltic Sea



Funded by  
the European Union

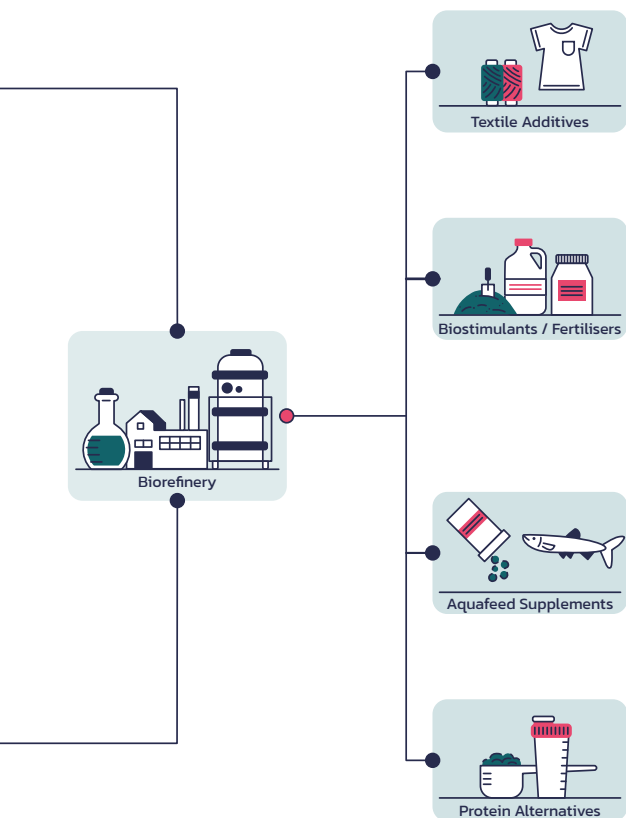
# Our Mission

LOCALITY is creating sustainable and circular value chains based on algae. By bringing together key industries, we encourage collaboration and innovation to develop new algae-based products for local and global markets. At the same time, we are committed to protecting and restoring Europe's aquatic ecosystems.



# Our Goals

Algae offer a natural and renewable alternative to conventional resources. Using algae as an alternative to animal-based feedstocks represents a major opportunity for the circular economy, new business models and as a valuable ingredient in a wide range of products. New circular business models bring innovative solutions to restore our oceans. At the same time the uptake of nutrients is contributing to a carbon neutral Europe.



# Our Approach and Impact

LOCALITY is building three industrial ecosystems that reuse waste streams to cultivate algae. This approach helps develop sustainable food, aquaculture ingredients, agricultural products, and textiles. By demonstrating the environmental, social, and economic benefits, LOCALITY is shaping strategies for commercial adoption and wider acceptance of algae-based solutions.

Through partnerships and collaboration, we ensure that our technologies and products reach key stakeholders, encouraging the replication of circular ecosystems across Europe. Our work aligns with the Horizon Mission for Ocean and Waters, supporting cleaner and healthier water systems.

**Innovation in action: LOCALITY represents a breakthrough in the utilisation of algae cultivation as a wastewater management resource and means for industrial circularity while stimulating algae-based product development and their market uptake.**





# North Sea Greenhouse Ecosystem

This ecosystem uses greenhouse wastewater to grow microalgae. Scientists optimise production conditions through lab experiments, selecting species that thrive in a two-phase process within photobioreactors. The resulting algae biomass is analysed for its potential applications.

## Focus Areas



Agriculture-relevant bioactivities



Novel sustainable biostimulants  
and biocontrol products



Innovative algae-based  
nutraceuticals



Algae-based fish, meat, and egg  
alternatives



# Nordic Aquaculture Ecosystem

In this system, industrial fish waste is used to cultivate microalgae such as *Spirulina* and *Chlorella vulgaris*. These algae are grown in stages, from lab-scale trials to larger production setups like raceway ponds.

## Focus Areas



Algae-derived additives to boost Atlantic salmon's resistance to parasites



Functional aquafeed ingredients



Immunity-boosting algae-based feed additives



# Baltic Textile Ecosystem

This initiative explores how algae can be used in textile production and wastewater treatment. Four species of freshwater diatoms are cultivated in laundry wastewater, selected based on their ability to absorb pollutants. The harvested biomass is then analysed for use in textile applications.

## Focus Areas



Natural algae-based dyes



Innovative algae-infused fabrics



Algae-based textile coatings for antimicrobial and dyeing purposes

# Join Our Circular Journey!



## The Consortium

