SEAWEED FARMING

BIOME ALGAE

OVERVIEW:

Farm area
50 hectares

Seaweed
300 tonnes

Life Below Water is the least-funded SDG, *UN Secretary-General António Guterres*, **yet the ocean is the world's largest carbon sink**. Biome is the biggest English seaweed farm with a mission to sustainably scale seaweed farming across the UK South West. These underwater forests support a diversity of marine life, and could provide a clean route for carbon removal as well as products with low carbon impacts. More evidence is needed to understand this potential at sites and at scale.

CARBON & BIODIVERSITY IMPACT

Biome is part of a collaborative **research program which will combine public and private finance** to investigate 3 themes:

1. Carbon capture for UK South West seaweed species and a life cycle analysis for Biome's farm.
2. Environmental and biodiversity site monitoring
3. The potential to improve water quality with seaweed

Spanning government, universities and private industry, the programme will generate the evidence needed to scale up seaweed farming and determine the potential for seaweed carbon credits across the UK.

OUTCOMES

Biome has already begun monitoring the biodiversity impacts of seaweed with Exeter University:

- Net **increase in biodiversity** evident.
- Publications supported so far:

Impact of seaweed farming at the local scale (within a farms footprint) on habitat for animals & plants
Evidence review of UK seaweed farming impacts

PROGRAMME STEPS

- Acceptance of first PhD student and postdoctoral researcher
- Programme approval by relevant Government bodies
- Alignment with complementary research programmes, including WWF-funded PhD and Oceans 2050

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CIRCULAR ECONOMY

How does it work?

Biome is working across different market sectors to support a more circular economy. The project is both a producer and processor of seaweed - the only one in the UK. This means they can create seaweed extracts and bring new products to market with lower carbon and environmental impacts.

Progress

- Biome has built a state-of-the art blueprint for a scalable wind/solar powered processing facility and biorefinery combined. This will power the processing for seaweed-derived products.
- The chemical composition of the seaweed meets all EU food standards and is micro and macronutrient rich with high protein value.

COLLABORATION

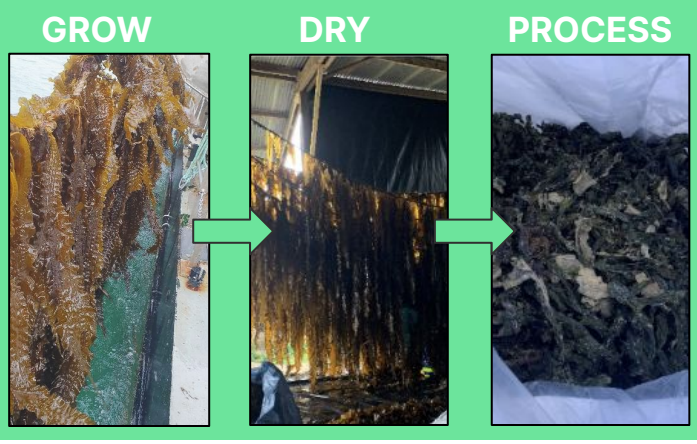
Biomes seaweed is being tested by a range of industry actors to bring alternative seaweed products to market across the value chain. Biome targets markets that are sustainable, provide solutions to societal challenges and magnify their ethos and positive impact, including:

Biofertilizers as seaweed is an alternative to chemicals that still supports crop yield and health.

Hard bioplastic and food safe barriers for products in the UK & EU.

Cattle feed leading to less methane emissions.

Seaweed derived textiles and materials, and more (like vegan food & cosmetics).



BIOMES PRODUCT ROADMAP

Pilot Season (2020-21)	Season 2 (2021 - 21)	Season 3 (2022-23)	Season 4 (2023 - 24)	Season 5 (2024 - 25)
Proof of concept IP development RD&I Science	Food Cattle feed Biostimulants	Food Cattle feed Biostimulants Biomaterials	Food Cattle feed Biostimulants Biomaterials & extracts	Scaling across markets