



MST SECTOR COUNCIL
MARINE SCIENCE & TECHNOLOGY SECTOR COUNCIL

Seaweed Solutions & Innovations – A Sea of Opportunities

The Next Generation for Energy in the East of England – Marine Science and Technology Sector Council

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SPACE TO GROW

We give people the space they need to develop and grow businesses through provision of flexible hotdesking and office and workshop space at our sites.



BUSINESS INSIGHT

We help businesses overcome challenges by finding creative and innovative solutions, and help businesses access new opportunities through bespoke advice, workshops, and training.



CONNECTED COMMUNITIES

We bring together the skills, resources and ideas of our communities to work towards common goals.



Why the Focus on Seaweed?

In the UK, seaweed has been used for centuries...



History of Seaweed Uses in the UK

19th & early 20th centuries
Iodine extraction for tincture of iodine

Food / feed / soil enricher

Resurgence in the last decade & development of seaweed aquaculture

Late 17th & 18th centuries
Soda ash for glass, soap production, linen bleaching



20th century
Hydrocolloids production, gelling agent in food and non-food applications



(Capuzzo, 2023)

Current UK Uses and Farming Needs

- Multiple uses and products: Wide applications in nutritional supplements, fertilisers, animal feed, biofuel, textiles, cosmetics, bioplastics, wastewater treatment...
- Bioremediation (N/C uptake).
- Coastal protection (prevent coastal erosion).
- Alternative livelihood, job opportunities and new value chains.
- The growing demand for seaweed for multiple applications cannot be sustained by wild harvest.

(Capuzzo, 2023)



The Global Seaweed Industry

16,700,000,000

USD industry (2023)

~35,000,000

Tonnes produced each year (2020)

12,000

Different seaweed
species

291

Seaweed species
commercially farmed

95%

Seaweed
produced by
farming

The UK Seaweed Industry

600

Species of seaweed

~90

Seaweed related businesses

69%

Seaweed produced by wild
harvest

~33%

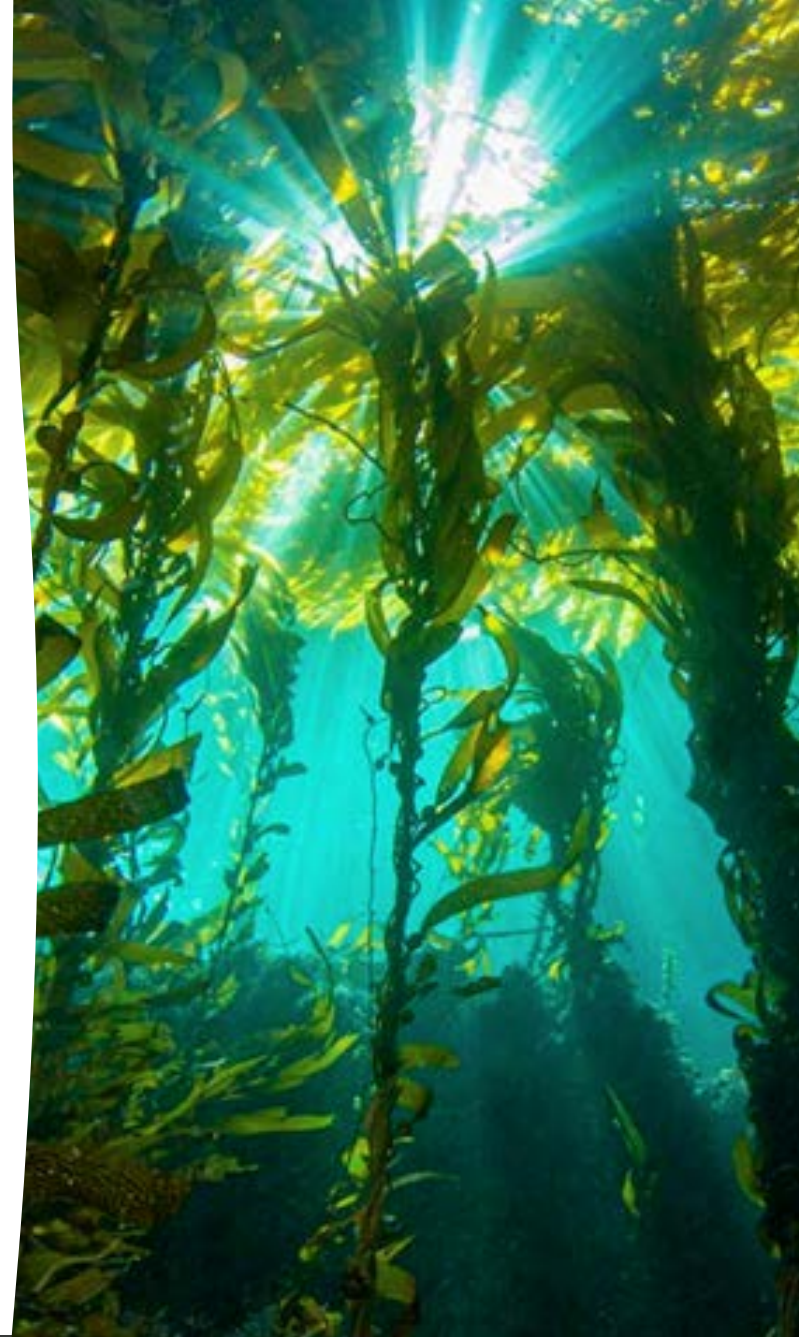
Businesses with food & drink as the
target market

~15

Commercial
seaweed
farms

Seaweed Solutions

- Carbon sequestration and blue-carbon solutions – purchase of carbon credits to protect and restore seaweed forests.
- Replacing high carbon products – chemicals in plastics and fertilisers.
- The use of seaweed in animal feed – reducing methane production by inhibiting microbial methanogenesis in cattle.
- Seaweeds as an important future feedstock for the growing population.
- Co-location opportunities with multi-use sea farms and innovative growing methods.



Seaweed Innovations



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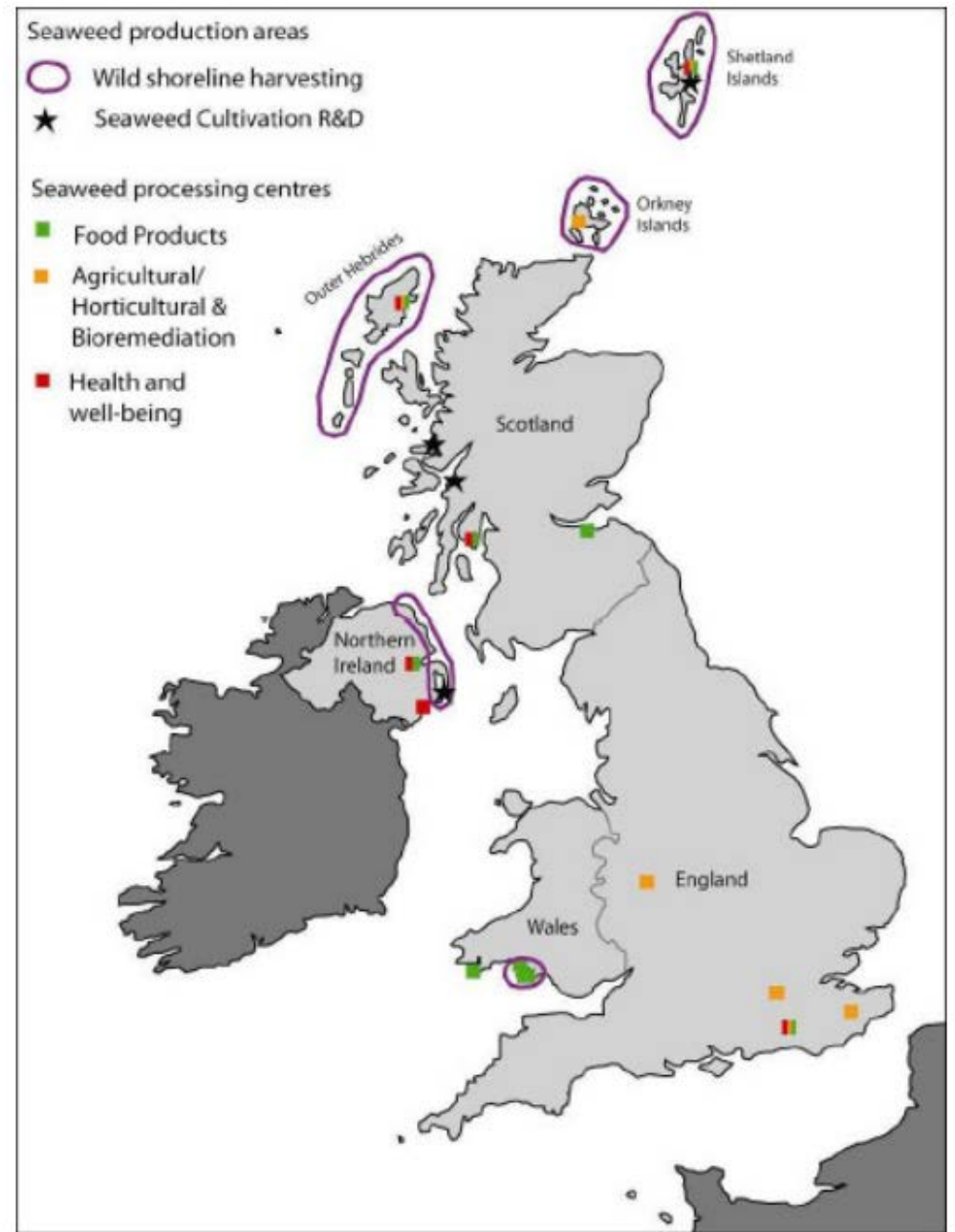
Seaweed Leather – **Uncommon Alchemy**



25% SeaCell Joggers – **Tommy Hilfiger**

Seaweed Burger Patties – **Chiki Monkey**

Local Seaweed Production





Why the Focus on Seaweed in East Anglia?

Norfolk and Suffolk have over 140 miles of coastline, bordering the North Sea, which is currently being developed into a thriving energy- and raw-material-generating region.

(visitnorfolk.co.uk, 2021;
visitsuffolk.com, 2021)

The Algae Innovation Platform

- Established in June 2021 after discovering a local interest for algae with a lack of a shared platform to communicate about initiatives.
- Aims to collaborate to better understand what is needed to develop a viable and sustainable seaweed and microalgae industry in the East of England and discuss current barriers to development.
- Focuses on sharing expertise and experiences as well as networking.





Objectives & Focus Areas for the AIP

- Work to minimise the barriers that are delaying development and raise awareness of the benefits of algae.
- Support the development of a local strategy that encourages algae innovation and the establishment of local seaweed farms.
- The vision is to develop/secure local supply chains to produce algae products in the region.
- Encourage cross-sector collaboration, commercialisation, scale-up and spin-off projects from the platform.

Seaweed in East Anglia Project

- Collaboration between Cefas, UEA and Hethel Innovation.
- The project will run over 11 months and will deliver a regional roadmap that can be used by businesses, investors and local authorities to provide an understanding of the opportunity Norfolk has to build a seaweed economy.
- The sector roadmap will include the development of an Algae Cluster, provide the foundation for future demonstrator projects, and encourage investment in seaweed-related businesses in our region.



About the Seaweed in East Anglia Project

The project will be used by businesses, investors and local authorities to provide an understanding of the opportunity Norfolk has to build a seaweed economy, focusing on three areas:

- Scoping farming methods and species, as well as co-location opportunities for seaweed aquaculture
- Understanding Norfolk's production capability of seaweed-based products, including foods and bioplastics
- Developing a roadmap for industry and Algae Cluster development



Thank You!



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