

# Expanding the Potential of the Irish Seaweed Industry in 2022

## Status of the sector in 2022

The seaweed industry contributes over €90 million annually to the Irish economy and employs about 700 people. With the increasing national and international demand for sustainably sourced raw materials, there is great potential to grow this industry, increasing employment opportunities and contributing to local economic development in rural coastal communities. The challenge for Ireland will be to diversify and grow the industry in a sustainable manner. Given the critical roles seaweed plays in our marine ecosystem and fisheries, any expansion of the seaweed industry must be done in manner that ensures this precious public resource is protected for future generations.

The development and marketing of high-value seaweed based products can be achieved through:



Increasing the types and quantities of wild seaweed harvested  
 Cultivating more farmed seaweed both in-sea and on land  
 Incorporating seaweed into Integrated Multi-Trophic Aquaculture systems

Regardless of what combination of these occurs, there are a number of key underlying aspects to be considered

## 1. Components of Value

Seaweeds consist of a wide variety of compounds that can be used to create high-value products. Depending on the species, identifying the optimal extraction methods for the most value-added components needs to be supported.



Seaweeds contain a variety of valuable compounds including:

CELLULOSE, PROTEIN, LIPIDS, CARBOHYDRATES, MINERALS, VITAMINS, POLYSACCHARIDES, PEPTIDES, METABOLITES, PIGMENTS, MANNITOL, AGAR, ALGINATE, CARRAGEENAN, FUCOIDAN, LAMINARIN AND ULVANS.

## 2. Potential Uses of Seaweed

A wide range of products are already produced here in Ireland for agriculture, animal and human markets. However, there are a multitude of potential uses for seaweed if support is provided to assess and develop the most valuable and viable markets.

Currently, the largest volumes of seaweed, relating to *Ascophyllum nodosum*, are used to produce high-value biostimulants for agricultural use with the by-products from this process being sold as low-value animal feed or organic fertiliser.

Smaller volumes of a wider variety of seaweeds are now used for the production of higher value products for the human and animal health, food, cosmetics and beauty product markets.

There is now a lot of investment in R&D developing potential products and markets.

These include:

Functional Foods, nutraceuticals & Pharmaceuticals

Cosmeceutical Applications

Seaweed-Based Materials

Local Food, Tourism & Leisure activities

Animal Feed & Feed Additive

Ecosystem Services

## 3. Fostering Industry Growth

There is extensive knowledge and technological expertise in the Irish seaweed industry and, through surveying of seaweed industry representatives, the following areas were identified as being key to supporting industry growth:



An integrated regulatory system for licensing, reporting and enforcement of wild seaweed harvesting regulations as well as for seaweed farming



Best management practice guidelines for sustainable harvesting and processing to assure a reliable and consistent supply of seaweed



Product quality standards



Focused R&D in harvesting equipment, processing technology, potential benefits of use in higher value applications from bioenergy and bio-based materials to cosmetics, nutraceutical and pharmaceutical uses.



Coordinated business supports



Funding for start-ups and for commercialising biorefinery technology



An industry or trade association to share information and support continued professional development

## 4. Recommendations

To address these challenges and stimulate industry growth, the socio economic report of seaweed harvesting in Ireland suggested the following recommendations:

1. Establish a voluntary charter for an agreed upon code of good practice for seaweed harvesting
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3. Appoint an overarching body to oversee and coordinate all national seaweed industry development including research, business support, regulation and enforcement
4. Develop an ongoing and consistent mapping method and monitoring system for seaweed harvesting
5. Establish a number of no-harvest zones around Ireland to act as a baseline for ongoing monitoring and management of seaweed harvesting areas
6. Establish and adequately resource an integrated regulatory framework and system for seaweed harvesting and processing
7. Develop a set of industry quality standards and best management practice guidelines to support the development of the seaweed industry
8. Establish an academic centre of excellence to support a coordinated programme of targeted research and development (R&D)
9. Expand the seaweed farming industry in Ireland
10. Introduce a formal mechanism for funding R&D and business supports needed by the seaweed industry
11. Facilitate the development of a seaweed trade or industry association