

Nordic SeaFarm

Nordic SeaFarm is a Swedish company born out of an interdisciplinary research project involving five universities with an ambition to discover the environmental impact of large-scale seaweed farms. On a farm located off the West Coast of Sweden, the company cultivates and harvests various seaweed species and works on developing new products and services to find innovative ways of scaling seaweed production. Through cooperation and partnerships, Nordic SeaFarm is also dedicated to exploring new seaweed applications and promoting multi-use marine practices.



Regional Context

Nordic SeaFarm's primary facility is in Otterön Farm, located off the west coast of Sweden, outside the village of Fjällbacka, while the company offices are in Gothenburg.¹ The choice of the facility location was linked to the unique conditions of Västra Götaland coastal waters, characterised by high salinity, rich in marine species, and predominantly in moderate to good ecological status. This environment is conducive to seaweed growth, providing a natural, nutrient-rich habitat for these cultivations. However, environmental

pressures such as over-fishing, leisure boating, and pollution, including marine litter and microplastics, still challenge this marine ecosystem.²

Value Chain

In their 30-hectare farm, Nordic SeaFarm cultivates and harvests on a large scale around 100 tonnes of Sugar Kelp and Sea Lettuce (*Ulva*) but has also been testing Dulse cultivations, hoping to scale up this production in the future, with the first test happening in the

1 Nordic SeaFarm, [About](#). Accessed 31 January 2024.

2 Interreg Baltic Sea Region Programme funded project Land-Sea-Act, [Case study Gothenburg Region, Sweden - Draft for a Regional Maritime Strategy for the Gothenburg Region \(Orust and Uddevalla\)](#). Accessed 31 January 2024.

summer of 2024. The company has recently decided to focus solely on scaling seaweed production, while in the past, its ambition was to work on processing, too. In recent years, the company decided to strategically specialise in the earlier stages of the value chain, as it seeks to focus on enhancing and scaling its production capacity while expanding its seaweed varieties and improving the efficiency of its farming operations.

This choice was driven by the challenges posed by processing the harvested seaweed. This is a common pain point for many businesses that work in the seaweed value chain, as the demand for this raw material, especially in Europe, has been inconsistent. While their first harvest caught the attention of many Swedish Michelin star restaurants, and their seaweed has been served at the Nobel Banquet for two consecutive years, overall demand for seaweed as a food source has been slower than anticipated.³

To overcome this challenge, Nordic SeaFarm has established a joint venture with [OceanCollective](#) to develop new plant-based food from the sea, focusing on new food concepts

3 Nordic SeaFarm, [Nordic SeaFarm's Seaweed At the Nobel Prize Dinner](#). Accessed 31 January 2024.



Nordic SeaFarm contributes to valorising products and by-products from the macroalgae value chain.

and leveraging seaweed and other marine ingredients. The venture, [Ocean Next](#), plans to develop these concepts both in-house under its own brand and through partnerships with global players.⁴ This partnership offers Nordic SeaFarm the chance to increase consumer demand for seaweed and explore a new collaborative approach that could serve as a model for further scaling the value chain.

Regional and Local Enabling Conditions

As mentioned, the favourable water conditions that characterise the west coast of Sweden, with cold temperatures and nutrient-rich

4 OceanCollective, [Blue Food / Ocean Next - The next wave of blue food](#). Accessed 31 January 2024.



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conditions, are particularly favourable for growing high-quality seaweed on a large scale compared to other European countries, providing a critical advantage for Nordic SeaFarm's success.

Since its inception in 2016, Nordic SeaFarm has partnered with several Michelin restaurants and innovative food producers who have been drawn to the company's locally sourced, high-quality seaweed-based ingredients.⁵ This has also attracted various investors to the company. In 2020, Nordic SeaFarm launched a program solely dedicated to restaurants, providing them with exclusive access to seaweed. The program has since been expanded to support anyone interested in growing seaweed. Participants receive a buoy in the Fjällbacka and can visit the farm in the spring. This initiative has ensured a constant crop demand and promoted the use of algae in different food applications.

Impact on Regional Development

With 14 employees, a 2023 turnover of approximately €600,000, and its growing visibility in the Swedish food sector, Nordic

⁵ Nordic SeaFarm, [Raising 20 MSEK to drive blue revolution](#). Accessed 31 January 2024, and JCE Group, [JCE invests in Nordic SeaFarm](#). Accessed 31 January 2024.

SeaFarm is shaping up to significantly influence the regional development of Västergötland's coastal community, as well as the development of Europe's seaweed sector. Its positive environmental impact on the coastal waters, which instilled the idea of its inception in 2016, is Nordic SeaFarm's primary drive. Their farm plays a pivotal role in combating eutrophication: the company actively removes excess nutrients like nitrogen and phosphorus from the sea through their harvest.

In addition, the company is dedicated to working in the food sector because it believes that seaweed represents a promising source of protein with unique nutritional and regenerative qualities that can contribute to healthier diets. They have been awarded the 2023 Impact Maker Award, a prize for innovative start-ups working in the food sector for their commitment to supply food that is both environmentally friendly and beneficial for human health.⁶ Moreover, their continued involvement with the Nobel Banquet is a recognition of Nordic SeaFarm's successful efforts

⁶ Nordic SeaFarm, [Winner: Impact Maker Award](#). Accessed 31 January 2024.



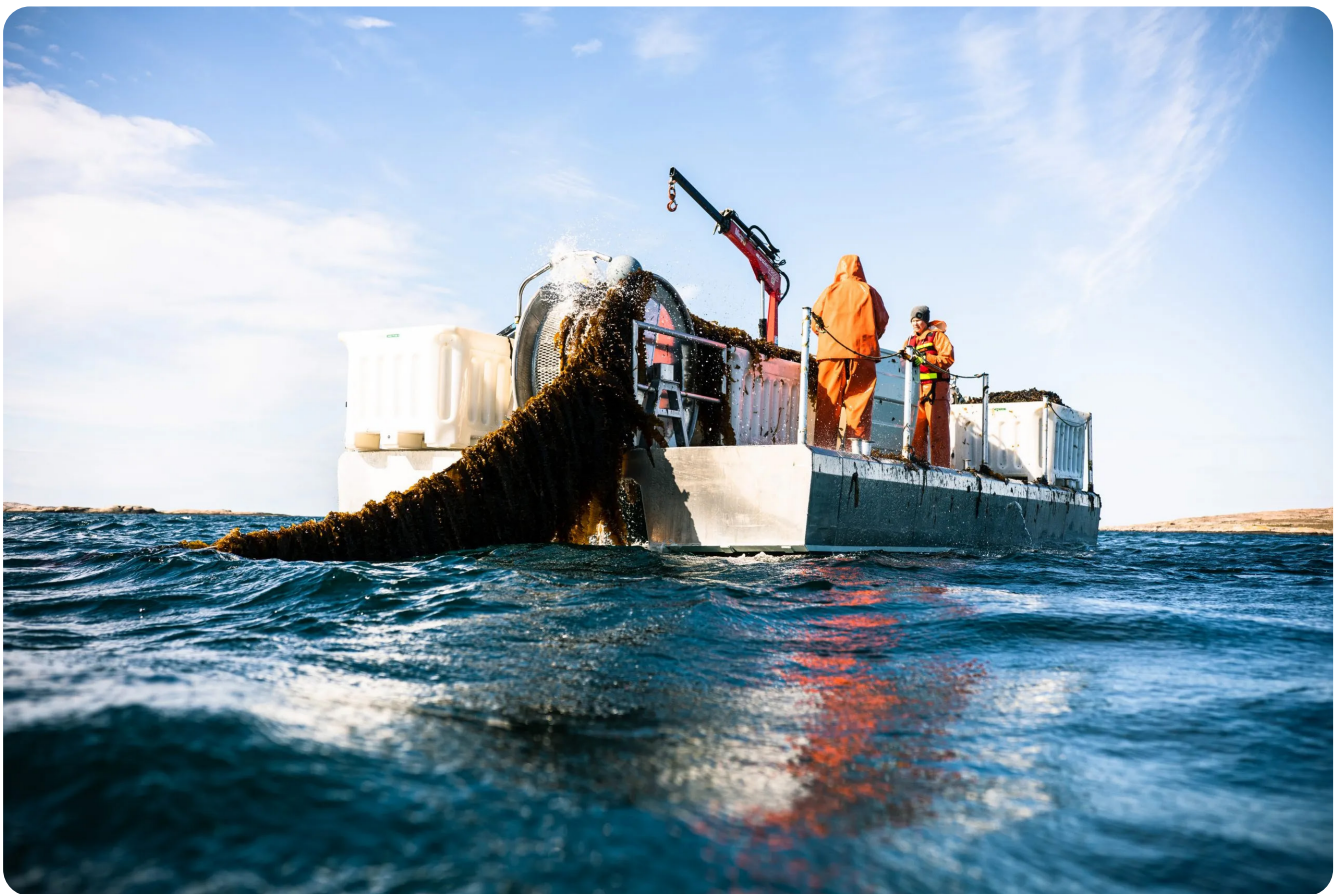
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in promoting sustainable food production.

Furthermore, Nordic SeaFarm has held ongoing discussions with [OX2](#), one of Europe's leading developers of renewable energy sources, to investigate opportunities for large-scale cultivation of seaweed at the planned [Galatea-Galene offshore wind farm](#) in the Swedish economic zone off the coast of Falkenberg and Varberg, two cities in the Halland county located south of Gothenburg. The wind farm's potential to power 1.2 million households underscores the scale of this synergy, representing a great example of innovative marine multi-use.⁷

⁷ Nordic SeaFarm, [OX2 x Nordic SeaFarm](#). Accessed 31 January 2024.

In this scenario, Nordic SeaFarm's operations can substantially increase employment opportunities beyond their current site and contribute to economic growth along Sweden's west coast. By partnering with the fishing industry and offshore wind power providers, the seaweed industry can help maintain or increase employment. This shift would entail a transfer of skills that could revive local economies and create new opportunities for those previously employed in traditional fishing. Therefore, Nordic SeaFarm has the potential to play a crucial role in supporting the transition of coastal regions and communities towards a sustainable blue economy.



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