

Can kelp help? Investors eye sustainable harvest from seaweed

Oceans

Regulation and climate will impact crops from the sea, says *Patrick Temple-West*

Hardy and abundant, seaweed is playing an increasing role in sustainability initiatives: finding its way into packaging, cattle feed, and human diets.

In Europe, for example, although levels of seaweed production are relatively low, the EU has been investing in seaweed development and private investment funds are starting to explore opportunities. Big companies, too, are dabbling with the crop. Food multinational Nestlé has created plant-based versions of shrimp and eggs made with seaweed, and consumer goods business Unilever has invested in seaweed as a compound in cleaning products.

“Seaweed” — which comprises thousands of species — is actually a misnomer,

argues the US National Oceanic and Atmospheric Administration, a federal agency. A weed spreads fast and can damage its surroundings, but seaweed creates a habitat for aquatic life.

Karen Scofield Seal, chief executive and co-founder of Oceanium, a UK-based seaweed processor developing kelps in the cold Atlantic and Pacific Northwest waters, believes it can do much more. “The sustainable seaweed industry is in its infancy in the western hemisphere but is rightly gaining significant attention,” she says.

According to research firm Markets and Markets, the global seaweed cultivation market is now worth around \$17bn but is expected to nearly double by 2025. Although Asia dominates, cultivation is increasing in the west.

Food delivery company Just Eat Takeaway recently partnered with London-based Notpla, which makes biodegradable packaging from seaweed. The resulting food boxes were rolled out in the UK in October 2021 and in the Netherlands



Seaweed wrap: Notpla food boxes

in January this year. “Hundreds of [Just Eat’s] restaurant partners are able to get our boxes for their home delivery,” says Pierre Paslier, co-founder and co-CEO of Notpla. “We hope that, as we have more manufacturing capacity for this, we can enter other European markets.”

With a background at L’Oréal making cosmetics containers, Paslier began crafting seaweed materials in his kitchen. Now, Notpla processes about 30 seaweeds from around the world.

But, for all the momentum behind seaweed, it faces obstacles. “We are limited by manufacturing capacity,” Paslier admits. Production cannot be scaled to the point that it can drive down costs, he adds, and “we might never really beat the virtual price of plastic”.

Nevertheless, in December, Notpla closed a £10mn series A financing round led by Horizons Ventures, a fund that invests the fortune of Hong Kong dealmaking king Li Ka-shing.

At the same time, investors are increasingly interested in seaweed as a

tool to reduce methane emissions. Researchers have found that adding certain types of seaweed to cattle feed can cut the level of methane cows release.

Canada’s Cascadia Seaweed, a Vancouver Island-based producer, is now developing seaweed that can bring down cows’ methane emissions as well as fatten them. Chief executive Mike Williamson notes that cattle feed producers operate on very thin margins, so they are unlikely to volunteer to add seaweed just to cut emissions. “But they will pay more if — in reducing their carbon footprint — they also have to feed their cows less overall.”

Cascadia has built seven seaweed farms in Canada and is preparing to launch a seaweed food brand, Kove.

A 30-year veteran of the Royal Canadian Navy, Williamson says he jumped into the seaweed business well aware that previous attempts to make money with seaweed have floundered. But now, he says: “Two things have fundamentally changed — the rise of plant-based

food, and we are finally starting to take climate change seriously.”

Regulators’ approaches to seaweed farming so far look similar to the rules they apply to fishing, says Humphrey Atkinson, head of operations at Notpla. “In the EU, there are regulations on production and limits on the amount of wild harvesting,” he says. Rules for fishing are being used as guidance for seaweed cultivation and harvesting — and that will apply to rules for the labour force too, Atkinson adds.

Global warming and rising sea temperatures, so far, do not seem to have had a widespread impact on seaweed. But extreme weather does present a threat. Freshwater floods can hurt seaweed farms, which are usually located off coastlines.

“If you are in an area where there is a lot more rain, that is going to flood a lot more rivers and the rivers are going to put a lot more freshwater into the ocean,” Williamson says. “Seaweed does not like a freshwater bubble.”