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Norway showcases halibut farm as sustainability star

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By James Wright

The Explorer digital showroom identifies Sogn Aqua as a forward-thinking farmer



Caption: The Sogn Aqua AS land-based halibut farm in Ortnevik, Norway.

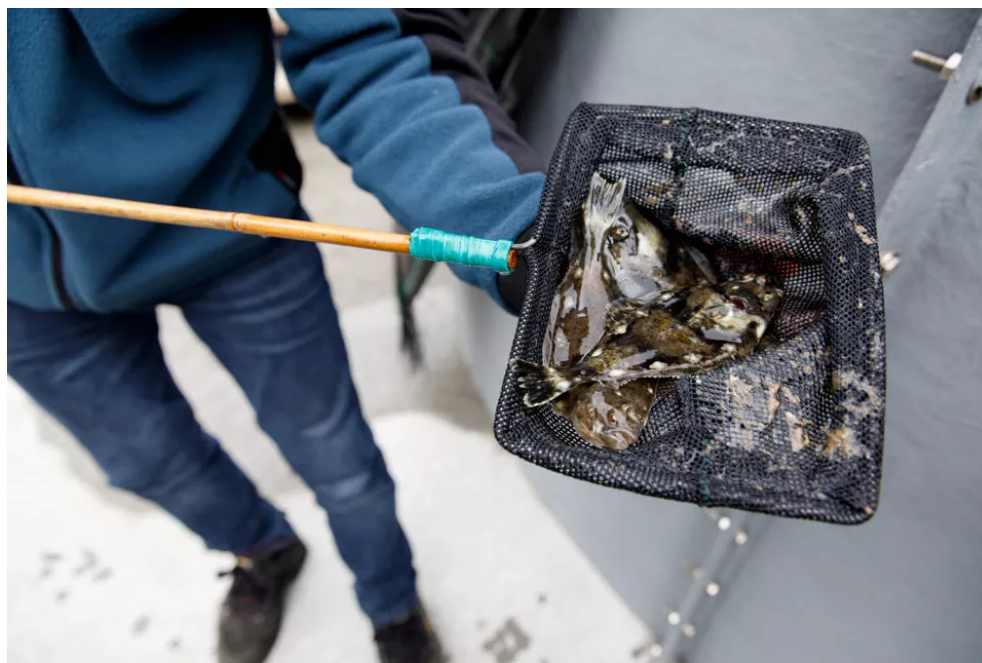
Photo by Tory Williams.

Situated along scenic Sognefjord, Norway's longest and deepest ocean inlet, sits what the Scandinavian nation considers another form of beauty: a halibut farm.

At the base of snow-capped mountains jutting out of pristine blue waters that lap at the shores of Ortnevik, a few hours' drive from Bergen, Sogn Aqua has constructed a 1-hectare network of raceway-like modules filled with the aforementioned pristine waters, fed to the land-based farm via pipeline. In those shallow waters lay thousands of Atlantic halibut (*Hippoglossus hippoglossus*) of varying sizes.

This farm, and the technology that provides fresh halibut to export markets, was recently showcased in the launch of **The Explorer** (<http://www.theexplorer.no/>), a digital showroom for exploring the country's diverse sustainability solutions, in line with the **Sustainable Development Goals** (<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>), outlined by the United Nations.

Being one of 30 to make the launch of a product designed to highlight Norway's top "forward-thinking solutions" is a special recognition, said Ole-Kristian Hess-Erga, quality and development manager for Sogn Aqua AS.



Caption: Halibut being raised at the Sogn Aqua nursery in Slantevik, Norway. Photo by Tory Williams.

"It's a confirmation that we do things right, and that we probably are at the front," Hess-Erga said. "We are extremely proud to be selected based on The Explorer's high standards and criteria within sustainability, environment and scalability. We also believe this is a recognition of our partners and how they take part in the development."

Those partners include **Aqua-Spark** (<https://www.aquaculturealliance.org/advocate/aquaculture-exchange-mike-velings-aqua-spark/>), the Netherlands-based impact investment fund that sees the Sogn Aqua patented water-pumping system as a "game changer" and invested in the company in 2016. *(Editor's note: Aqua-Spark and Sogn Aqua CEO Jan Arne Brekke in early May hosted a tour of the company's farm site and hatchery in nearby Slantevik, which was built in 2009.)*



Caption: Sogn Aqua Chairman Jonny Atle Marøy, CEO Jan Arne Brekke and Ole-Kristian Hess-Erga, quality and development manager, pose for a photo during a site visit in May. Photo by Tory Williams.

The fish is now being sold fresh to high-end restaurants, hotels and caterers through distributors under the **Glitne** (<http://glitne.net/>), brand name. The “snow white” halibut, as it is marketed, may soon be entering retail markets as lightly smoked sashimi-grade fillets, Hess-Erga added. Glitne – which in Norse mythology was the home of Forseti, god of justice – is being sold to the UK through **Direct Seafoods** (<https://www.directseafoods.co.uk/>), to France through Saveurs de Norvège and Pomona and to the United States through **Ultco** (<http://www.ultco.us/>).

According to Hess-Erga, the farm will produce close to 300 metric tons (MT) of halibut this year, with 700-MT capacity by 2021. The five 150-meter raceway modules are built on top of rock, with the water kept in by polyurethane pond liners, instead of a permanent poured-concrete structure. This flexible design allows the farm to be easily dismantled if necessary and was one of the factors in the company’s ability to secure a permit in relatively quick fashion.

“Each module contains two separate tanks that share a water-treatment canal. The production water is pulled into the treatment canal by means of the jet of inlet water and air, created by an ejector,” Hess-Erga explained. “By doing this, the mix of inlet water and production water are oxygenated, degassed for carbon dioxide and particles removed by flocculation/skimming before it is returned to the production tanks.”

Sogn Aqua’s plans extend beyond this one facility – next year it hopes to begin construction on a new, larger facility in the same area, with buildings designed by noted Canadian architect **Todd Saunders** (<http://saunders.no/work/>), to blend into the natural surroundings and integrate with the community in Ortneset. The annual capacity for the company would then reach 3,000 metric tons, Hess-Erga said.



Caption: Proposed Sogn Aqua AS halibut farm in Ortneset, Norway.
Illustration by Saunders Architecture.

Farming Atlantic halibut, which takes four to five years to grow to market size of 5 kg, is “extremely complex,” said Hess-Erga. Establishing productive broodstock takes up to 10 years, he said, and egg production is finicky. The most crucial stage, he explained, is after hatching and introduction to live feed, during which the larvae undergo metamorphosis, a period in which the fish require very specific nutrients to cope with the transformation. At a size of 300 to 500 grams, the fish are brought to the grow-out site at Ortnevik.

“The long production time increases the risk, even though we experience a very low mortality rate each year. The long production time and the varying size/growth rate can only be significantly improved through a good and long term breeding program. The nutrient requirements, especially on larger fish is not very well established and therefore the available feed might not be optimal. Stocking densities increase with increasing size.”

This complexity is one reason why halibut farming is only being done by only a handful of outfits worldwide. Hess-Erga said Sogn Aqua is the third-largest in Norway, behind Sterling White Halibut in Hjelmeland and Nordic Halibut in Averøy. They represent an effort to diversify Norwegian aquaculture, which Hess-Erga said is crucial. Norway, he said, has the means and knowledge to do so.

“We have an obligation to do this, both by replacing fishing of endangered species with aquaculture and to make high valued species and species at a lower-trophic level available for human consumption,” he said. “Easy and simple technology, such as our system, can be adapted to other species and to less developed countries. Improving farming practices, reducing the impact on the environment and contributing to value creation in other areas.”



Caption: A halibut at the surface of the Sogn Aqua farm in Ortnevik, Norway. Photo by Tory Williams.

The Explorer aspires to become a global matching service for Norwegian solutions to international challenges, to boost Norwegian exports and strengthen Norway's position as a sustainability pioneer.

Aquaculture has its downsides on a global scale, said Hess-Erga, listing poor animal welfare and water quality, eutrophication, escapes, discharge of chemicals used for cleaning and treatment purposes, use of antibiotics and the presence of parasites as issues that Sogn Aqua's farming methods prevent.

"If these issues are dealt with correctly and there is a continuous search for better solutions, farming practices can be sustainable," said Hess-Erga, in relation to aquaculture meeting the UN Sustainable Development Goals. "If you add improvement of social- and local issues, transparency, respect for nature and include the whole value chain, the resulting farm can be truly sustainable."

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