Ocean Supercluster embarks on aquaculture data project in effort to ramp up ocean economy

*By **Jessica Galang***
Published on March 17, 2021

The Ocean Supercluster's latest project could provide much-needed modernization for Canada's aquaculture industry.

The nearly $27-million Integrated Operations and Real-Time Analytics Project is being led by Norway-based Grieg Seafood, one of the world's leading salmon producers with operations in British Columbia and Shetland, British Columbia, alongside partners Innovasea, SubC Imaging, AKVA Group and High-Tech Communications.

Canada's Ocean Supercluster is contributing close to $12 million to the project with an additional $14.8 million coming from industry.

"We're trying to increase our focus on the opportunity for Canada in ocean, because we feel like we're just scratching the surface," says Kendra MacDonald, CEO of the Ocean Supercluster.

The project comes at a time that Canada's ocean industry, which contributes $31.7 billion annually in gross domestic product and accounts for close to 300,000 jobs, is becoming an important focus for the economy. In late February, Bernadette Jordan, Minister of Fisheries, Oceans and the Canadian Coast Guard, called on Canadians to contribute to the country's Blue Economy Strategy.

The strategy has several stated goals including greater participation of women, Indigenous groups and other underrepresented groups along with the goals of positioning Canada as a global leader in the ocean space and integrating ocean conservation and climate change.

In 2018, Matt Hebb, then-interim CEO of the Ocean Supercluster, wrote that 25 percent of economic activity is connected to oceans in Norway, which has an economy about a fifth the size of Canada's but a higher GDP per capita. Meanwhile in Canada, which has the longest shoreline in the world, the ocean sector counts for about one percent of economic activity.
"There's much more that we could do if you compare us to other countries," says MacDonald. "We have the natural geography to be able to take more advantage of the global conversation around ocean."

The long-term benefits of a two-year project

The partners are collaborating to use data analytics in Grieg Seafood NL's planned salmon farm in Placentia Bay off the southeast coast of Newfoundland. As rural areas of Atlantic Canada struggle with high-speed internet access, the project will establish a wireless data network and several technologies to provide much-needed tech infrastructure.
"Communications and analytics enhance both productivity and safety aspects of business. These factors are incredibly important to us," Perry Power, human resources and communications manager at Grieg NL, told *Research Money* in an email.
"Cutting-edge aquaculture is heavily data-dependent. By this, I mean we rely on numerous informatics fields to make predictive decisions to the benefit of the livestock and the environment we operate in. We feel that this communications array will provide a template for our entire industry to grow upon," he wrote.

The project will include physical sensors to monitor and control marine assets, and allow Grieg to adapt its operations in real-time based on those insights. Innovasea aquaculture scientist Jennie Korus noted in the supercluster's launch video that algorithms will allow Grieg to monitor fish health and develop a wellness index for fish. The work will also allow Innovasea to accelerate its own tech roadmap.

> *"We have the natural geography to be able to take more advantage of the global conversation around ocean." —Kendra MacDonald, CEO of the Ocean Supercluster*

More accurate monitoring will also give the company and its customers better insight into available stock to plan harvests. SubC Imaging's equipment will detect changes in nets, such as tears or changes in size, to prevent fish escaping into the wild, which can impact surrounding ecosystems.

"There's a lot of the oceans globally that are unexplored and there's a lot of work being done to get more mapping data and more information," says MacDonald. "The more information that we have, the better decisions that we can make."

The two-year project will create 138 new jobs, including 20 at project implementation. It will begin later this year.

A decade of ocean: Canada's participation

Supercluster projects are also meant to help Canada meet its global commitments.

In 2018, Canada committed to the United Nations Decade of Ocean declaration between 2021 to 2030 to advance ocean science around the world. The Ocean Supercluster has several projects that include data analytics, robotics, imaging and green energy to monitor oceans and make them more sustainable, and the Digital Supercluster is using machine learning to identify illegal fishing vessels.

MacDonald said that a major focus of the supercluster, like Canada's Blue Economy Strategy, is to increase participation of underrepresented groups in the ocean sector. Its Indigenous Career Pivot Pilot, for example, provides work placements for Indigenous people to explore career options in the ocean economy.

In Atlantic Canada and the Arctic, MacDonald said that the impact of climate change is already being felt as sea levels and temperature rise and fish migration is impacted. "I think the more perspectives we can bring to those challenges, the better the solutions and outcomes will be," she said.

Power at Grieg NL notes that increased ocean investment could be transformative to the Atlantic Canada aquaculture industry, given that farms are often in less connected rural areas. "It is a given how vital this industry is, particularly to Newfoundland, in areas that were once ravaged by unemployment and declining populations and are now stabilized and growing because of this industry's presence," he said.

"Our hope for this project's impact is that it will provide a 'proof of concept' for other operators on both coasts," Power added. "This will, in turn, prove to our federal and provincial governments the importance of reinvestment into our young industry so that it can grow and become an integral part of the rural Canadian economy."