Eliminating waste in the fisheries industry

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Ana Karina Carvajal is a Research Manager at SINTEF Fisheries and Aquaculture and is hoping that research can make a contribution towards more sustainable food production. Credit: Thor Nielsen

Every year 340,000 tonnes of usable whitefish by-product are discarded into the sea. But the fisheries industry has now identified ways of halting this practice.

The fishing company Nordic Wildfish has been assisting in the development of a new technology that can make use of the entire by-product from whitefish such as cod, pollock and haddock.

Instead of discarding the heads, guts and the rest of the fish, they can all be incorporated into a hydrolysis process that separates the bones, leaving a kind of "soup" to which enzymes can be added and valuable oils and proteins extracted.

"The entire process takes place on board the trawler, which has only been at sea for two months," says Anders Bjørnerem, R&D Director at Nordic Wildfish in Norway.

So this technology is entirely new? "Yes. No one has done this before, and it's very exciting. We've already been nominated for the 2016 Innovation Prize awarded by the technical journal Teknisk ukeblad," says Bjørnerem.

Non-sustainable food production

Nordic Wildfish is located on the island of Valderøya, west of Ålesund, Norway, and has been working closely with the research-company SINTEF for some time to promote technological development.

"As much as 92 per cent of marine whitefish by-product is not utilised," says Bjørnerem.

"Commonly it is only the fillets that are processed to become food. This is not sustainable food production. As we approach 2050, the demand for food on this planet will increase by as much as 70 per cent due to high levels of population growth. The industry must make it its goal to utilise the entire fish," says Ana Karina Carvajal, Research Manager at SINTEF Fisheries and Aquaculture.

According to a report published by SINTEF in 2014, 340,000 tonnes of whitefish by-product are discarded annually. SINTEF believes that this material has major commercial potential if it can be processed to

produce high quality end-products such as ingredients in animal feed and food for human consumption.

Teamwork is key

On board the trawler Molnes, whitefish by-product is processed using enzymatic hydrolysis to produce valuable proteins, amino acids and fish oils. Many technologies have been developed and adapted for installation on board the refurbished trawler.

"Excellent teamwork between researchers and the industry will enable many new systems for better exploitation of the fish to be implemented within the next two to four years," says Carvajal. "We're very pleased to see that some segments within the industry have already taken the first steps towards more sustainable food production," Carvajal says.

Provided by SINTEF

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