ALLIANCE™
(https://www.globalseafood.org)

Responsible Seafood ADVOCATE

Fisheries

Crustacean ‘hotel rooms’ seen as food waste and quality solutions for Norway’s small fishing boats

13 May 2025

By Responsible Seafood Advocate

New onboard cooling system for small fishing boats reduces food waste and fuel use

A new low-energy refrigeration system designed for Norway’s small fishing boats could reduce food waste, improve catch quality and cut operating costs – offering a practical solution for a sector that has long struggled to secure accessible onboard cooling technology.

One standout feature: Langoustines can now be stored upright in individual compartments – dubbed “hotel rooms” – inside chilled seawater tanks, helping preserve their condition during longer trips at sea.

Globally, food waste is a major issue in the seafood industry. According to the UN Food and Agriculture Organization (FAO), at least 30 percent of fish and seafood become waste. That figure could be reduced with improved refrigeration on board fishing boats.

While large vessels in Norway’s pelagic fleet are equipped with sophisticated cooling systems, smaller boats often lack ready-made options. Most systems on the market require custom installation, adding cost and complexity. Yet these small vessels make up 80 percent of Norway’s 5,600 registered fishing

New onboard cooling system for Norway’s small fishing boats reduces waste and fuel use, with one design storing langoustines in “hotel rooms.” Photo: Ove Andreas Mandal/SINTEF (https://norwegianscitechnews.com/2025/05/refrigeration-systems-in-small-fishing-boats-reduce-food-waste-and-provide-better-catch-conditions/?utm_source=RSS+newsletter&utm_campaign=dd32ae6176-RSS_CAMPAIGN_TECHNOLOGY-CLIMATE-OCEANS&utm_medium=email&utm_term=0_9a451653fc-dd32ae6176-73674147).

boats and play a key role in landing cod, crab and other whitefish. Currently, only 5 percent of their catch is refrigerated.

(https://bspcertification.org/)

To tackle this challenge, SINTEF researchers have tested two prototypes of a compact cooling system developed by HAV Kjølesystemer and Cadio AS, aimed at improving onboard storage for small-boat fleets.

“We already know that cod has a six-day longer shelf life when stored at 1 degree-C (34 degrees-F), compared to 5 degrees-C (41 degrees-F),” said Kristina Norne Widell, project manager at SINTEF.

The new refrigerated seawater (RSW) system may offer a more accessible and scalable solution. Designed to withstand harsh marine conditions, the system delivers 8 kW of cooling power and uses carbon dioxide (CO2) as a natural refrigerant – a climate-friendly choice, especially important on fishing vessels where leak rates are typically higher than on land.

Circular economy: New tech turns fish waste into valuable pharma and cosmetic ingredients

SINTEF scientists are developing new technology to convert fish byproducts into high-demand ingredients, promoting a circular economy.

Global Seafood Alliance

Langoustine fisherman Ervik Ervik, one of the system’s test users, said the upgrade has changed his workflow: “With the new system, I can be at sea for several days before I have to deliver the catch,” he said. “That means lower diesel costs for me and better conditions for the langoustines on board.”

His langoustines are placed in individual compartments – or “hotel rooms” – and stored upright in tanks filled with chilled seawater. The cooling system continuously circulates the water, maintaining a stable temperature. The result, Ervik said, is healthier animals and a higher-quality product at market.

“The langoustines I deliver will be of better quality and will probably lead to less mortality as well,” Ervik said.

“I think this is an excellent solution, especially during the summer months,” said Manda. “Langoustines can withstand a lot, but they don’t tolerate temperature fluctuations well.”

Beyond langoustines, the research team is also studying how active cooling affects various fish species. Future research, they note, will focus on optimizing energy efficiency.

Read more here (https://norwegianscitechnews.com/2025/05/refrigeration-systems-in-small-fishing-boats-reduce-food-waste-and-provide-better-catch-conditions/?utm_source=RSS+newsletter&utm_campaign=dd32ae6176-RSS_CAMPAIGN_TECHNOLOGY-CLIMATE-OCEANS&utm_medium=email&utm_term=0_9a451653fc-dd32ae6176-73674147).

Author

RESPONSIBLE SEAFOOD ADVOCATE

editor@globalseafood.org (mailto:editor@globalseafood.org)

Copyright © 2025 Global Seafood Alliance

All rights reserved.