

A New Utilization Movement

Thor Sigfusson

“From Maine lobster to Louisiana shrimp to Alaska salmon, the United States fishing industry could benefit economically and environmentally by applying the Icelandic model.”

This is the story of how Iceland propelled a Nordic tradition to increase the utilization and value from seafood and by that create new job opportunities, especially for coastal dwellers. This essay outlines lessons for countries facing resource constraints and, perhaps unknowingly, resource underutilization.

History

Since the 9th century, Icelanders have derived vitality and stamina from fish. Seafarers, including women, dropped hand lines into the sea, caught fish, gutted and then hung them to dry on driftwood racks. Sea pants softened with fish oil allowed fishermen to stay warm and dry, and go out further away from the shore. Wooden rowboats led to sailing smacks and motor driven trawlers like *The Coot*, which reached even further into the North Atlantic swells. The fishing crafts may have changed, but the Icelandic determination to push the limits of what was possible remained constant.

Challenge

In recent history, fisheries and fish processing jobs have been on a declining slope in Iceland. Like many other countries, Iceland has faced reduced landings and been mindful not to overfish. With stock sustainability and the ecological effects of fishing and management systems as core concerns, how has Iceland become even more competitive in the global marketplace?

Solutions

The Iceland Ocean Cluster, a group of collaborating marine companies and experts, has traced the origin of Iceland's economic success. While Icelandic cod landings decreased from 460,000 tons to 180,000 tons between 1981 and 2011, the total export value of cod products actually rose from \$340 million to \$680 million (present value Figure 1). The number of fishermen and fish processing jobs decreased, but from a holistic perspective marine related jobs grew significantly in this period. The Iceland Ocean Cluster discovered and supported a network of 120 marine companies that have been instrumental to this success. This growth was in part due to two factors: a value-added approach and the strategy of 100 percent fish utilization, both of which, once again, pushed the limit of what was possible.

Company Spotlight: Codland was founded in 2012 by the Iceland Ocean Cluster and is owned by one of the biggest fishing companies in Iceland. Codland is a network of companies with a common goal of increasing the value of fish products and raising awareness of Icelandic fisheries. Codland specializes


 The logo for Codland, featuring the word "codland" in a bold, lowercase, sans-serif font inside a rectangular border.

in total utilization of fish products. One of Codland's new projects is Alda, a lemonade health drink that strengthens joints and prevents wrinkles with marine collagen.

The **value added approach** challenges the notion that a fish's primary purpose is a filet. The Icelandic industry has discovered and nurtured alternative applications for fish products through research and development in cosmetics, health food and pharmaceuticals (Image 1). This approach has ben-

efited all levels of the supply chain, including fishermen in remote areas who have seen prices for cod liver triple in recent years due to increased interest in value added uses.

In Icelandic, *nýtin* is a positive word that describes a person who uses things to their fullest. **100 percent utilization** seeks to use every ounce of the fish. Iceland has moved to 80 percent utilization of cod while the average utilization around the North Atlantic is closer to 45 percent. By increasing the amount of each fish used, it becomes possible to create more value from fewer resources.

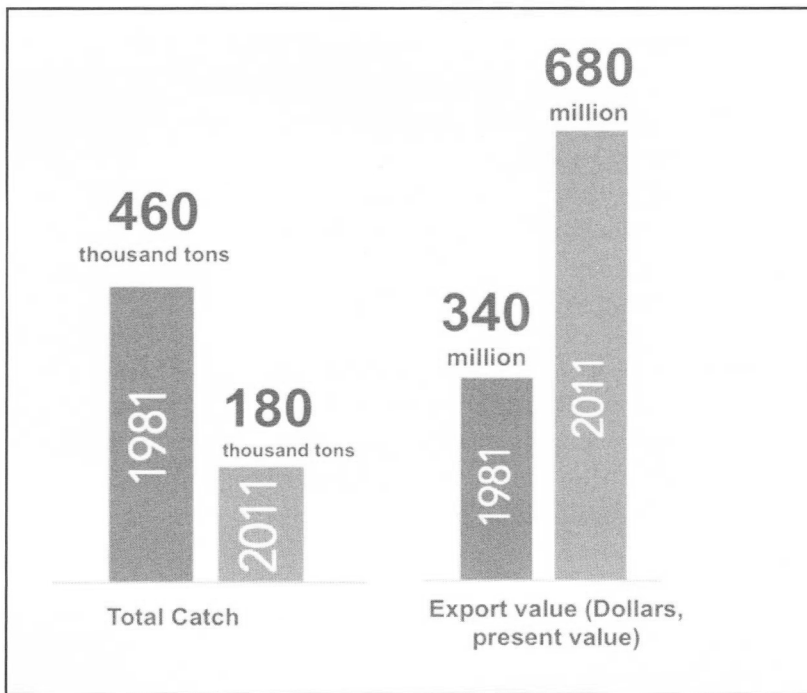


Figure 1. These charts show incredible value increase from fewer resources in the period from 1981 to 2011. These metrics demonstrate the potential of making more jobs and wealth with fewer resources.

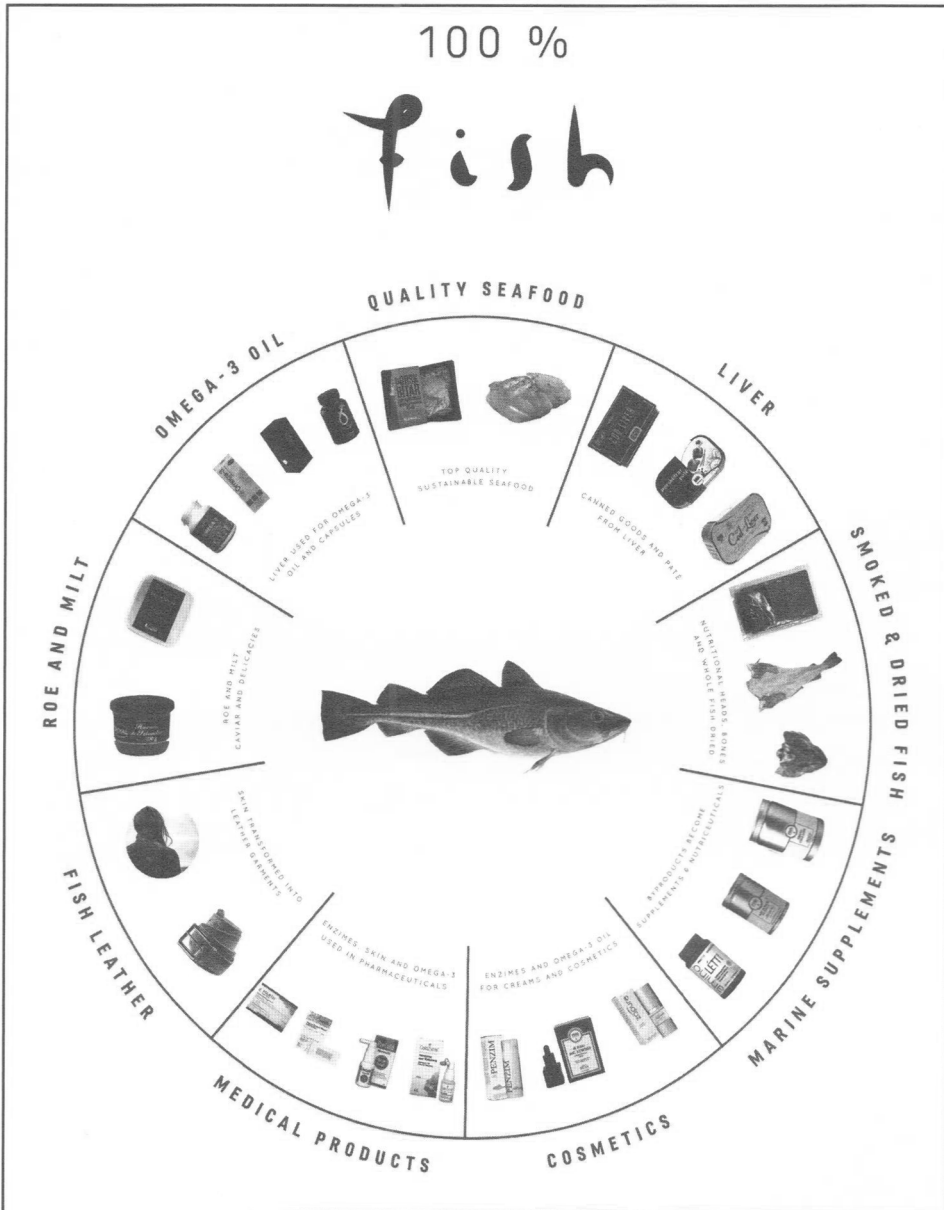


Image 1. This image shows the plethora of products that can be made from one cod. From enzyme-rich creams and cosmetics to fish skin leather garments, these products demonstrate that it is possible to move up the value chain from traditional fishing industry uses.

Implications for the Globe

Iceland has discovered one way of creating value and jobs, especially in remote and rural areas where opportunity is not taken for granted. With new partnerships and the sharing of best practices we may be on the cusp of a new utilization movement. Around the world 455 million tons of fish are wasted each year¹. In the US for example, 40–47 percent (or 1 million metric tons) of edible seafood was wasted between 2009 and 2013². From Maine lobster to Louisiana shrimp to Alaska salmon, the United States fishing industry could benefit economically and environmentally by applying the Icelandic model. U.S. seafood waste could be used for pharmaceuticals, health food, cosmetics, biodiesel, carbon blocks and even the cultivation of medicinal mushrooms. The Iceland Ocean Cluster has started dialogues with representatives around the world and from both coasts of the United States. There is an enormous interest in fully utilizing resources and now the question is how best to implement these strategies.

Scientists believe overfishing, unsustainable seafood farming practices, ocean pollution and acidification will threaten the future of seafood availability worldwide³. Icelandic companies have pioneered new ways to create jobs and value from fewer resources. Now it's up to the rest of the world to imagine, and then build, a value-added world with 100 percent utilization.

Credit: Jack Whitacre of The Fletcher School and The Institute for Global Leadership for research and writing assistance.

1. <http://www.fao.org/save-food/resources/keyfindings/en/>

2. www.sciencedirect.com/science/article/pii/S0959378015300340

3. www.sciencedirect.com/science/article/pii/S0959378015300340