

Global fisheries deprive local communities of key nutrients, study finds

by Stephen Leahy on 26 September 2019



- *New study shows that fish in tropical regions have higher concentrations of calcium, iron and zinc – critical for human health – than fish in colder waters.*
- *Fish already being caught off the shores of many nutritionally-vulnerable countries could easily meet needs for vital micronutrients for people living within 100 kilometres of the coast*
- *Fish – including small species traditionally landed, processed, and eaten locally – is instead being processed into fishmeal for export.*

Millions of people around the world suffer from malnutrition despite the ready availability of essential nutrients just off their coastlines. Dietary deficiencies in iron, calcium and other micronutrients are responsible for more than a million premature deaths every year. [New research](#) published in Nature confirms there is a wealth of these micronutrients in local fish – if only local people could afford them.

Discussions around food security and public health often leave out the important role of fish, particularly in low-income countries, said the study's lead author, Christina Hicks, an environmental social scientist at the University of Lancaster in the United Kingdom.

If the fish already being caught were “accessible locally, they could have a huge impact on global food security and combat malnutrition-related disease in millions of people,” she told Mongabay.

A 2019 Greenpeace report said [West Africans were losing hundreds of thousands of tonnes of edible fish to fishmeal and fish oil exports](#) and called for an immediate phase out of the industry.

Fish are an important source of many vitamins, minerals and fatty acids that are often missing from the diets of poor populations throughout the world, said Andrew Thorne-Lyman, a nutritionist at Johns Hopkins Bloomberg School of Public Health in the United States and a co-author of the study.

There is an enormous diversity of fish in the oceans, with a wide range of nutritional characteristics. “What’s most exciting about our study was being able to show [that] where a fish lives determines those characteristics,” he told Mongabay.

The new study, examining the nutritional values of more than 350 species, finds fish in tropical regions have higher concentrations of calcium, iron and zinc — critical for human health — than fish in colder waters. This research shows the fish caught just off the shores of these countries has the potential to easily provide the micronutrients — calcium, iron, zinc and vitamin A — for people who live within 100 kilometres (60 miles) of the coast.

Yet about half the world’s coastal countries — located in Africa, parts of Asia, the Pacific and the Caribbean — have moderate to severe nutrient deficiency risks.



Landing fish at Kayar, Senegal. Photo: Anne Delaporte/WorldFish (CC-NC-ND-2.0)

Let them eat (fish) cake

Around the world, poorer people in particular rely heavily on grains like maize or rice, and can neither afford meat nor have access to vitamin-fortified foods, said Thorne-Lyman. Fish have historically been the most accessible source of vital nutrients in many countries.

“However the price of fish in most countries has skyrocketed in the past decade because of the demand for fishmeal,” he said.

This is a widespread – and growing – issue along Africa’s populous northwestern coastline. Fishing fleets from East Asia, Russia and the EU catch vast quantities of fish inside West African territorial waters in exchange for nominal fees. Fish that is landed locally is increasingly processed in one of the dozens of industrial plants set up to process small fish like sardinella for export as fishmeal to be used as pet food, animal feeds and in aquaculture.

About 60 percent of the global finfish catch (fish with fins as opposed to shellfish) is turned into fishmeal and oil. “[This] deprives people in the developing world on low incomes of previously affordable, nutritious local fish — to aid the production of costly farmed fish that is mainly consumed in high-income countries,” writes Daniel Pauly, of the Institute for the Oceans and Fisheries at the University of British Columbia in Canada.

In the Senegalese fishing community of Cayar, a women’s fish processing co-operative can no longer get a local supply of fish because a foreign-owned fish meal factory nearby bids up the price, says co-author Philippa Cohen of WorldFish, a CGIAR Research Program.

[More than a dozen fish meal factories](#) have recently been built along Senegal’s coast to process sardinella and other small fish. There are now more than 40 fishmeal factories in Senegal, Mauritania and Gambia, built mainly by Chinese enterprises, noted Pauly.

The lack of affordable local fish is also one of the drivers of the bushmeat trade. A 2004 study directly linked poor fish supply with increased hunting in nature reserves and sharp declines in wildlife populations. The study urged improvements in fisheries so people could regain access to local fish.

For many countries, the solution to malnutrition is “swimming right under their noses,” Cohen, another of the study’s co-authors, told Mongabay.

Currently, fishing efforts are directed towards “catching the highest-priced species and shovelling fish landings towards the mouths of the rich in cities or feeding pets

and livestock in wealthier countries,” she said. “We need to find a way to put human nutrition at the core of fisheries policies.”

Foreign fishing fleets and processors are often subsidized which makes it even more difficult for small-scale fishers to compete, said Hicks. Fisheries are managed to maximize revenue, usually for export, rather than nutritional benefits for local populations.

“These health benefits far outweigh export or licensing revenues,” Hicks said.

The solutions are within reach of governments. Senegal, for example, could offer more support for its small-scale fishery, provide dietary advice to the public and scale back on exports of its fish to ensure the local population has affordable access to local fish, she said.

Each country and region will require different approaches so that wild fish can improve the health of millions of people, Hicks said.

“One thing we do know is that there is no need for additional fishing effort.”

Citations

Hicks, C. C., Cohen, P. J., Graham, N. A. J., Nash, K. L., Allison, E. H., D’Lima, C., ... Macneil, M. A. (2019). Harnessing global fisheries to tackle micronutrient deficiencies, *Nature* (196) doi.org/10.1038/s41586-019-1592-6 (2019)

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Banner image: Fisher folk, Morondava, Madagascar. Photo: Rod Waddington (CC-SA-2.0)

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