

Unsustainable Approach: Factory Fish Farming

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In many communities people are growing more and more aware that their food choices affect not just our own health, but also our society and planet. Whether it is local farmers' markets springing up across the country or grocery stores dedicating aisles to organic foods, it's clear that consumers are taking a more critical view of how their food is produced. But when it comes to seafood, murky messages abound about what we are eating.

The need to end unsustainable fishing has led some to falsely conclude that large-scale fish farming is a solution. Pressured by industry, the U.S. government has also pushed this as a solution, budgeting \$4.3 million for the 2011 fiscal year to support development of the ocean factory fish farming industry in federal waters.¹ But this approach will not provide sustainable seafood for consumers, as it puts more pressure on wild fish and more industrially produced food on our plates.

What is ocean factory fish farming?

Ocean factory fish farming, also known as offshore aquaculture, follows an industrial agriculture model — growing thousands of animals in a confined environment — and moves it into the ocean to raise fish. Wastes, including excess feed, as well as any antibiotics or chemicals used to treat the cages, flow directly into the ocean. Like any factory farm, they are generally big, dirty and dangerous.

Eating up the food-chain

The ocean factory fish farming industry is focused on raising high-value, top-of-the-food-chain carnivorous fish like salmon, tuna, and cobia. On land, this would be similar to raising lions or tigers. These predators require a high concentration of protein. For fish, it means scooping up massive amounts of small wild fish and turning them into fish-meal and fish oil that is further processed into feed pellets and fed to farmed fish. In 2006, the fish-farming industry alone consumed nearly 90 percent of such commercially caught "pelagic" fish, which include anchovies, herring, mackerel, and sardines.² It can take over six pounds of this wild fish to create one pound of farmed fish, a formula that is both highly environmentally and economically ineffi-

cient.³ This means an increasing amount of farmed fish will harm larger fish, marine mammals, birds, and people that all depend on these small fish for food.

Soy in our oceans

Companies that are looking to provide cheap "alternative" fish feed have been behind the efforts to promote factory fish farming. It's no surprise that soy is their feed of choice. The soy industry claims it has been working for the past twenty years to develop soy-based feeds for the aquaculture industry.⁴

Fish, however, do not naturally eat soy. It is a land-based product not found in the aquatic environment. Much of it is also likely to be genetically modified. In 2009, more than 77 percent of soy produced worldwide was genetically engineered and in 2010, 93 percent of soy grown in the United States was genetically engineered.^{5,6} The impacts of any type of soy, genetically modified or natural, on wild fish that consume the excess feed are largely unknown.⁷ Studies have suggested that excess estrogen-like compounds found in soy have negative affects on wild fish.⁸

Flying fish

Factory fish farming does nothing to decrease the number of miles seafood is transported for non-coastal residents. Fish would still be grown in coastal areas and shipped hundreds of miles inland to reach non-coastal consumers. Right now, Hawai'i is the testing ground for factory fish farming in the United States and development of factory fish farming there is a prime example of inefficiency. For example, despite being promoted as "sustainably delicious,"⁹ a fillet of fish from Kona Blue Water Farms has to

travel over two thousand miles across the Pacific to make it to the closest restaurant in California. To get to Chicago, it needs over another two thousand miles. In terms of reducing food miles and shipping costs to middle of the country markets, ocean factory fish farming is not a solution.

Moreover, farming fish offshore is an expensive business, making it impractical at a small scale. In addition to the costs of cages, locating them in deep ocean waters adds in fuel costs from regular trips to and from facilities as well as costs for offshore surveillance and security of the property.^{10 11} In order to be profitable, these costs have to be offset by growing lots of fish.¹² Fish are likely to be shipped all around the world where they will fetch the highest price — whether it be California or Japan.

Pollution is not the Solution

While ocean factory fish farming is often touted as a way to take pressure off of wild fish, it can actually do the opposite. Uneaten fish feed, fish waste and any chemicals or antibiotics used in the operation flow through the cages directly into the ocean. The excess nitrogen released into the marine environment through fish waste is also of concern. It can lead to algal blooms that ultimately deplete oxygen vital to some marine life, including fish.¹³ The U.S. government wants a \$5 billion factory fish farming industry, which could create nitrogen wastes the equivalent of the untreated sewage of 17.1 million people — over twice the population of New York City.¹⁴

Caged fish can escape and overtake or interbreed with wild fish, altering natural behavior and weakening important genetic traits.¹⁵ Open ocean salmon and trout farms in Norway had nearly six million fish escape between 2001 and 2009 — not an example we want to follow in U.S. waters.¹⁶ In addition to mature fish escapes, the release of fertilized eggs is also of concern.¹⁷ Farmed fish, caged or escaped, can also spread disease to wild fish.¹⁸

Keeping it clean

Many of the environmental problems with ocean factory fish farming could be minimized by using new technologies to raise fish in self-contained tanks on-land that reuse water.¹⁹ Much like greenhouses, recirculating aquaculture systems create a controlled environment to raise fish. Some operations even integrate growing vegetables, leafy greens and herbs along with fish, a type of farming known as aquaponics. These farms can easily be located away from the coasts, on a small scale, providing both local food and jobs. Places like Milwaukee, Wisc. and Albany, Ind. are already benefiting from such community-oriented solutions.^{20, 21}

The way forward

We've seen the failure of industrial agriculture on land and with other large-scale fish farms worldwide. Thankfully, those who care about their food and where it comes from have the opportunity to protect our oceans from that kind of damage before it happens. A piece of legislation intro-

duced earlier this year by Representative Young, H.R. 574, would prevent U.S. agencies from authorizing factory fish farming in federal waters. With better alternatives for fish farming on the table, we need this legislation to put the brakes on factory fish farming and steer us towards a more sustainable future so that we can all feel good about the fish on our plates.

Endnotes

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