



IMarEST Emerging Marine Trends

Issue 2 – Aquaculture

Scaling up fisheries and aquaculture presents sustainability issues

As populations worldwide continue to grow at unprecedented rates, we will require an increase in seafood in order to meet protein requirements. Fisheries and aquaculture will have to scale up in order to accommodate the increased demand. However, this is no small feat and could lead to long-term problems for marine ecosystems.

Much like us, farmed fish require omega-3 fatty acids to grow and develop. Smaller, wild fish species such as anchovy and sardine are the primary sources of omega-3 used in aquaculture feed, meaning vast quantities will need to be caught to sustain an expanding aquaculture and fisheries industry. This will put huge strains on wild fish populations, likely resulting in fish stock crashes and problems for marine food webs. One way in which scientists are looking to counteract such problems is through the use of agriculture.

It is now possible to extract omega-3 from genetically modified oilseed crops. This is good news, as it reduces pressure on populations of other wild fish species traditionally used as fishmeal, thereby preventing depleting populations and mitigating detrimental effects on predators higher up the food chain, including ourselves.

However, there will be a number of issues that will need to be addressed before this proposal can be taken any further. Similar to the problems surround the cultivation of crops for bioplastic production, land will be needed to grow genetically modified oilseed crops, which may have impacts on food supply and the terrestrial water cycle. This is also without addressing the potential implications of aquaculture systems in the marine environment through habitat modification, wild fishmeal collection and other ecological impacts – all of which requires thorough investigation before fully informed decisions can be made.



How can you help?

If you would like to get involved and help with the issues raised in this article, here is a list of useful tips and resources on how you can help to protect the marine environment:

- **Look for sustainable seafood** – on your next shop, look for seafood that shows the [blue Marine Stewardship Council \(MSC\) label](#). The MSC fisheries standard reflects the most up-to-date understanding of internationally accepted fisheries science and management, which regularly reviews and develops the standards in consultation with scientists, the fishing industry and conservation groups. This helps to reduce practices that create food security risks and change marine food webs.
- **Use sustainable seafood guides** – there are many pocket guides such as the [Seachoice](#) and [Seafood Watch](#) that can be downloaded as iPhone or Android apps that can help you to make good decisions when you are at the grocery store or eating out in a restaurant. They are specific to wherever you live, so are up to date and accurate.
- **Cooking sustainably at home** – there are a variety of [sustainable seafood recipes](#) and books such as the [Smithsonian's Sustainable Seafood Cookbook](#), that you can utilise to continue being a conscious consumer in your own home.
- **Support organisations that address sustainable fishing** – there are many organisations that are working towards more sustainable oceans. These include: [World Wildlife Fund](#), [Environmental Defense Fund](#), [Greenpeace](#), [Sea Pact](#), [Fishwise](#), [Sustainable Fisheries Partnership](#) and [Ocean Outcomes](#). Read more about their work and get involved in their initiatives – even small donations and engagement can make a huge difference.
- **Spread the word!** – by staying up to date on issues that are related to aquaculture and sustainable fishing and helping to make others aware of the problem, you can help drive wider behavioural changes. Follow the news in dedicated ocean news platforms such as [the IMarEST's newsroom](#) or [World Fishing & Aquaculture](#) and tell your friends, family and work colleagues about what they can do to be a more conscious consumer.

