

Position paper

Replacing fisheries and decarbonizing the sector? We should not expect it from industrial aquaculture

Brussels, 26 October 2020

This position paper explores the false promises of industrial aquaculture, highlights the key sustainability issues of promoting farming of carnivorous fish species, such as salmon, underscores the environmental and social impacts throughout the whole value chain and explains why the EU should stop promoting seafood coming from industrial aquaculture and instead focus on promoting sustainable small-scale and low impact fisheries and aquaculture.

1. Overview

A common myth is that aquaculture can in the future replace fisheries and help stop overfishing while preserving the oceans from the damages of intensive destructive fishing.¹ Further to that, there is also a prominent narrative, including by the EU Seafood and Aquaculture Initiative, that boosting aquaculture and downsizing fisheries will help decarbonize this food sector. These oversimplifications are blind to several facts.

First, industrially farmed fish, especially carnivorous species such as salmon, actually feed on wild caught fish, including from West Africa's waters, where this deprives local populations of its fish food. Secondly, intensive farming of species like salmon² or tropical shrimps³ causes much damage to the environment, as the farms

¹ See PHILIPPE, Joëlle, "Old fantasies: the French Citizen's convention for climate proposes to replace fisheries with aquaculture," CFFA website, 8 July 2020. Available at: <https://www.cffacape.org/news-blog/old-fantasies-the-french-citizens-convention-for-climate-proposes-to-replace-fisheries-with-aquaculture?rq=CCC>

² ADAMS, Lucy, "Is there a problem with salmon farming?," BBC Panorama, 20 May 2019. Available at: <https://www.bbc.com/news/uk-scotland-48266480>

³ ERICKSON-DAVIES, Morgan, "Why are Southeast Asia's mangroves being destroyed? Hint: it may be in your diet," Mongabay, 29 December 2015. Available at: <https://news.mongabay.com/2015/12/researchers-id-mangroves-worst-enemies/>

pollute water and, since they are often placed very close to the coast, in fjords, estuaries, they also destroy fragile coastal ecosystems like mangroves, which are essential for the reproduction of marine species. Finally, the decarbonizing argument might not be as valid as it promises, since the carbon footprint associated to industrial fish farming is the double than fishing, and in average at the same level than poultry and pork rearing.⁴

This short paper goes through the reasons why the EU should stop promoting industrial aquaculture of carnivorous species and subsequently, also stop encouraging the consumption of products coming from this type of aquaculture, while it should focus on promoting sustainable small-scale and low impact fisheries and aquaculture.

2. The challenges of industrial aquaculture in Europe

The EU is promoting aquaculture in the framework of its Blue Economy,⁵ in a drive to encourage economic growth of sectors related to the ocean, and with the aim to bring to the European consumer's plate healthy and nutritious food. The EU considers that aquaculture has a "*high potential for sustainable jobs and growth.*" The assumption is that aquaculture is more sustainable and will progressively complement and replace fisheries products, as the state of many fish stocks is dire.

This is fallacious because there is no way that European consumers can sustainably continue accessing the amounts of fish they currently are consuming. Given the current quantities of fish consumed in Europe, estimated at 24.35kg/year/per capita,⁶ the EU is forced to import large quantities of farmed fish, most of which is fed with fishmeal made from wild fish. Salmon and shrimps are on the top five species consumed by Europeans, out of which 99% and 49% respectively come from aquaculture.⁷ Shrimps are mostly imported from Latin America and South East Asia. Several NGO reports⁸ have pointed at how global aquaculture supply chains are leading to the destruction of wild fish stocks, often putting food security at risk in developing countries.

The second argument of decarbonization is also contested. With 1-3 kg of CO₂/kg of meat, fisheries are at the bottom of the food industries in terms of CO₂ production.⁹ However, industrial aquaculture is placed at the same polluting level than chicken and pork husbandry.

⁴ BOYD, Claude E., "Assessing the carbon footprint of aquaculture," Global aquaculture alliance, 2 September 2013. Available at: <https://www.aquaculturealliance.org/advocate/assessing-carbon-footprint-of-aquaculture/#:~:text=The%20carbon%20footprints%20of%20individual,of%20feed%20and%20mechanical%20aeration>

⁵ See the European Commission's website on Blue Growth, available at: https://ec.europa.eu/maritimeaffairs/policy/blue_growth_en

⁶ European Market Observatory for Fisheries and Aquaculture Products (EUMOFA), "The EU Fish market: 2019 Edition," December 2019. Available at: https://www.eumofa.eu/documents/20178/314856/EN_The+EU+fish+market_2019.pdf/

⁷ EUMOFA, *Ibid.*

⁸ See "Get the facts," "Fishing the feed," a website by Changing Markets Foundation and Compassion in World Farming. This website contains several reports with regards to the aquaculture industry. Available at: <https://www.fishingthefeed.com/get-the-facts/>

⁹ BOYD, Claude E., *Ibid.*

A. MARINE SPACE OCCUPATION: THE PRIVATISATION OF THE COASTAL SEAS BY FISH FARMS

Depending on the species farmed, developing industrial aquaculture of carnivorous species requires coastal or open ocean fish pens. In both cases, they compete for the occupation of the coastal space with local fishing communities. Tropical shrimp and salmon aquaculture also cause widespread destruction of coastal ecosystems such as fjords, deltas, estuaries, marshes, wetlands or mangroves. These spaces are often key for reproductive cycles of marine species, which are disrupted by the placement of a fixed structure that also pollutes the waters nearby.

The occupation of these areas, sometimes vast, implies other larger concerns regarding access to public domain spaces. Recently, the police intervened in Scotland to stop activists from taking pictures of salmon farms which are located in public domain. Even though the police later apologised,¹⁰ it is worrying that in many cases security forces behave like “*private security firms for the fish farms.*”

As the law of the seas expert Nathalie Ros points out, there is a progression towards the privatization of the seas¹¹ where the marine spatial planning “*in fact leads to the granting of concessions by the coastal State in favour of stationary maritime industries,*” such as fish farms, “*which in practice means the exclusion of all other uses, in particular fishing.*” Small-scale fishing communities are the most affected by this privatization, as they see the spaces where they can fish further reduced.

B. “FISHING THE FEED”: THE SUSTAINABILITY CHALLENGES FOR THE WHOLE AQUACULTURE PRODUCTION CHAIN

European consumers are increasingly concerned about the sustainability of their food, something industrial aquaculture producers have used to their advantage. The narrative that aquaculture products are more sustainable than wild caught seafood has now taken root into European citizens’ minds. However, carnivorous species, such as salmon, require an enormous quantity of fish feed, mostly fishmeal, an increasing amount comes from developing countries, often depriving local people of fish food. Tropical shrimps, though omnivorous, are also fed fishmeal to make them grow faster and so increase the profitability of production.

The booming of the fishmeal industry in Mauritania¹² is the most appalling example, as stocks of small pelagics -staple food for West Africa population- are being depleted, shovelled into the fishmeal factories and exported mostly to China and Europe. This fishing “catastrophe”¹³ is steadily leading to a food security crisis in the region while fishermen and women fish processors are losing their jobs and livelihoods.

¹⁰ STANIFORD, Don, “Oban Times: “Police apologise to fish farm welfare campaigner,” Don Staniford Blog, 19 October 2020. Available at: <https://donstaniford.typepad.com/my-blog/2020/10/oban-times-police-apologise-to-fish-farm-welfare-campaigner.html>

¹¹ ROS, Nathalie, “La privatisation des mers et des océans : du mythe à la réalité », IRJI - Institut de recherche juridique interdisciplinaire François Rabelais, May 2019. Available at : <https://halshs.archives-ouvertes.fr/halshs-02396208>

¹² STANDING, Andre, “European industries must disinvest in West Africa’s booming fishmeal and fish oil sector,” CFFA website, 10 December 2019. Available at: <https://www.cffacape.org/publications-blog/european-industries-must-disinvest-in-west-africas-booming-fishmeal-and-fish-oil-sector?rq=European%20industries>

¹³ CHANGING MARKETS, “Fishing for catastrophe: How global aquaculture supply chains are leading to the destruction of wild fish stocks and depriving people of food in India, Vietnam and The Gambia,” October 2019. Available at: <http://changingmarkets.org/wp-content/uploads/2019/10/CM-WEB-FINAL-FISHING-FOR-CATASTROPHE-2019.pdf>

The UN Special Rapporteur on the right to food pointed at the reliance on wild-caught fish for fish feed as one of the key problems of industrial aquaculture,¹⁴ especially of carnivorous species. “*Fishmeal has shifted from use in livestock farming to use in aquaculture over the past decade. [...] Recent reports highlight extensive overfishing and negative ecosystem impacts caused by the reduction industry.*”

C. GREEN-WASHING: THE BLINDNESS OF ECOLABELS TO SOCIAL AND WIDER SUSTAINABILITY ISSUES

There is also a concern that the eco certification schemes do not cover the lower levels of the supply chain or the social aspects of the production, thus ignoring the precarious working conditions¹⁵ faced by workers and the pollution suffered by the communities who live nearby the fishmeal plants. This is making the wider sustainability and social problems associated with the production of fish feed invisible and contributes to the green-washing of fishmeal-fed aquaculture products.

In the case of the fishmeal industry in Mauritania, for example, the French company Olvea and several other European companies involved in the fishmeal supply to European salmon farms have been financing a “Fisheries Improvement Project” (FIP)¹⁶ with the goal to eco-label West-Africa fishmeal and fish oil products. However, the FAO working group¹⁷ and many other scientist experts¹⁸ have repeatedly warned that small-pelagic stocks are most probably severely overfished.

As Dr Andre Standing states in an article asking European companies to disinvest in fishmeal,¹⁹ eco-labelling “*ignores the fundamental point that the rights of local artisanal fishers, food processors and traders, as well as people’s right to food in the region, must take precedence over the profits of companies in developed countries.*”

3. The EU’s promotion of industrial aquaculture in third countries

The European Union Blue Growth strategy, which includes aquaculture, is also promoted by the EU in its dialogue with third countries,²⁰ including in the context of the discussions for the future EU-Africa partnership. In the case of industrial

¹⁴ UNGA, “Interim report of the Special Rapporteur on the right to food,” A/67/268, August 2012. Available at: <https://undocs.org/A/67/268>

¹⁵ See “Certification Standards for Artisanal and Developing World Fisheries: What are the key challenges these fisheries are facing?” FAQ, CFFA website. Available at: <https://www.cffacape.org/certification-schemes>

¹⁶ See “New Fishery Improvement Project (FIP) for small pelagic fisheries in Mauritania,” Groupe Olvea website, 15 May 2017. Available at: <https://www.olvea.com/2017/05/15/new-fishery-improvement-project-fip-for-small-pelagic-fisheries-in-mauritania/>

¹⁷ FAO, “Report of FAO WORKING GROUP ON THE ASSESSMENT OF SMALL PELAGIC FISH OFF NORTHWEST AFRICA,” Banjul, 2018. Available at: <http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf>

¹⁸ CORTEN, Ad, “Round sardinella, key for food security in West Africa, is further declining,” CFFA website, 15 October 2018. Available at: <https://www.cffacape.org/publications-blog/2018/10/15/2018-10-15-round-sardinella-key-for-food-security-in-west-africa-is-further-declining?rq=Ad%20Corten>

¹⁹ STANDING, Andre, *Ibid.*

²⁰ See PHILIPPE, Joelle, “Small scale fisheries organisations and NGOs call on the EC for an inclusive Oceans Strategy to Secure Sustainable Fishing Communities,” CFFA website, 21 November 2019. Available at: <https://www.cffacape.org/news-blog/small-scale-fisheries-organisations-and-ngos-call-on-the-ec-for-an-inclusive-oceans-strategy-to-secure-sustainable-fishing-communities?rq=Virgi>

aquaculture, the same problems as the ones facing European aquaculture add up to other challenges which are particular to developing countries.

A. ENVIRONMENTAL ASPECTS: COASTAL DESTRUCTION AND OVERFISHING

There are several layers of impacts of industrial aquaculture on the environment. However, one should start from the fact that developing countries are and will be the most impacted by climate change. In the case of coastal and fishing communities, they are facing raising sea levels, coastal erosion, warming oceans and water acidification, to name a few. The international environmental agenda focuses now in creating so-called “climate-change resilient communities.” The growth of industrial aquaculture is adding more pressure on such communities.

In the last decades, the growth of shrimp aquaculture, with 99% of its production is concentrated in tropical developing countries, has been causing destruction of coastal ecosystems,²¹ especially mangroves. Mangroves can store large quantities of carbon,²² while it is estimated that its deforestation may be releasing more CO₂ than Poland.²³ Many studies have indicated that a 30 to 50% of the loss of mangrove forests is due to the deforestation for the production of shrimp, palm oil and rice for export. Whereas the destruction of mangroves is already in itself causing less carbon removed from the atmosphere, the carbon footprint associated with industrial aquaculture is high, with 2 to 7 kg of CO₂ released/kg of meat.²⁴

But there are other less direct impacts on the environment related to aquaculture, such as the overfishing of wild species for fish feed, like small pelagics in West Africa, or destructive trawling to catch juveniles or extracting larvae from the natural environment, when aquaculture companies do not have sufficient technology to reproduce shrimp in captivity. In the first case, this type of fishing is contributing to putting some stocks of small pelagics in a deplorable situation. In the second case, trawling not only destroys the seabed and damages coastal ecosystems, but also causes a lot of bycatch, especially of juveniles of other species and zooplankton which thus are lost.

B. HUMAN AND SOCIAL RIGHTS ASPECTS: LAND EVICTIONS AND COST TRANSFERS

Aquaculture carries the same issues of marine space occupation as in Europe. However, these challenges become more severe when there is an interest by an investor to use a land on which communities have traditionally carried on their activities and where Governments lack the will and capacity for good governance and

²¹ BALES, Kevin, “How Hunger for Shrimp and Slavery Destroy Mangroves,” *Scientific American*, 15 January 2016. Available at: <https://www.scientificamerican.com/article/how-hunger-for-shrimp-and-slavery-destroy-mangroves-excerpt/>

²² ERICKSON-DAVIES, Morgan, “New study finds mangroves may store way more carbon than we thought,” *Mongabay*, 2 May 2018. Available at: <https://news.mongabay.com/2018/05/new-study-finds-mangroves-may-store-way-more-carbon-than-we-thought/>

²³ ERICKSON-DAVIES, Morgan, “Mangrove deforestation may be releasing more CO₂ than Poland, study finds,” *Mongabay*, 2 March 2018. Available at: <https://news.mongabay.com/2018/03/mangrove-deforestation-releases-more-co2-than-poland-study-finds/>

²⁴ BOYD, Claude E., *Ibid.*

for respecting the human rights of the most vulnerable. Even though there are international tools and guidance available, such as for example the 2012 FAO Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests²⁵ and the 2014 FAO Voluntary Guidelines for securing Small Scale Fisheries,²⁶ governments often fail to recognise that small-scale fishing communities are the most vulnerable group²⁷ in this “blue” competitive environment. Additional governance challenges such as corruption and corporate abuses add up to the difficulty of empowering fishing communities and including them in the decision-making process.

In some cases, local communities who have opposed the expansion of aquaculture and other marine sectors have been victims of threat and physical abuse by security forces or guards. The criminalisation of those who try to defend their lands is a frequent tactic used by investors, often with the complicity of government authorities.

The development of industrial aquaculture indeed entails the occupation of vast coastal spaces which have traditionally been used by coastal and fishing communities. The privatisation of land for the benefit of the few also means they will lose access to the sea, but also other indirectly linked economic and social activities will suffer. Fish landing sites, for example, apart from being the economic nerve centre of fishing communities, are also a socializing place, where people meet.

The privatisation of land for aquaculture farms also has an impact on free access to areas which are essential as they also create additional economic gain for subsistence communities. Talking about mangroves, they are a source of biodiversity and home to species of high commercial value which communities gather and sell. Mangroves offer also other “environmental services” which have a positive effect on ecosystems and from which communities benefit, such as natural protection against flooding and erosion. The degradation of ecosystems by industrial aquaculture is in turn a cost that is transferred to communities, while only a minority derive substantial profits from aquaculture.

4. Conclusion

Any restriction to access the waters, be it coastal or at sea, and the competition with other sectors (oil extraction, aquaculture, industrial fisheries, shipping, tourism) directly affects the catches by fishermen, the access to fish for fishmongers and women fish processors and finally, the food security of the population. It is imperative to highlight that industrial aquaculture is generally intended for exports and for the wealthier, and not to feed local populations as its products are too expensive.

²⁵ FAO, “Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security,” 2012. Available at: <http://www.fao.org/tenure/voluntary-guidelines/en/>

²⁶ FAO, “Voluntary Guidelines for securing Small Scale Fisheries in the Context of Food Security and Poverty Eradication,” 2014. Available at: <http://www.fao.org/3/a-i4356en.pdf>

²⁷ In a recent public communication, African artisanal fisheries professional organisations warned on the risk of investing in polluting industries such as the ones promoted in the African Union Blue Economy strategy. See PHILIPPE, Joelle, “Why the current African Union’s blue economy strategy threatens small-scale fisheries,” CFFA website, 24 September 2020. Available at: <https://www.cffacape.org/publications-blog/why-the-current-african-unions-blue-economy-strategy-threatens-small-scale-fisheries>

Aquaculture cannot replace fisheries nor decarbonize the sector

Position paper – 26 October 2020

The UN Special Rapporteur for the right to food highlighted this problem in his interim report: “*Use of the industry to produce farmed fish for wealthy consumers may come at the expense of poorer populations who could benefit from improved availability of and accessibility to wild fish.*”²⁸

Industrial aquaculture of carnivorous species is very polluting, damages the environment and communities, both in Europe and in developing countries. As European investors look into importing fish-feed and aquaculture products from developing countries, **it is vital to re-think about the social aspects and working conditions of those working on these fishmeal factories and seafood farms.** In many cases, workers in these farms are exploited in inhuman conditions and face health hazards. **Eco-labelling systems currently do not guarantee an environmentally and socially responsible activity, but are rather a commercial strategy to improve access to international markets for aquaculture products, which benefits fish farmers and their investors, but not local communities or the farm’s workers.**

Since there is no way that European citizens can continue consuming sustainably the same amounts of seafood, the consumption of intensive aquaculture products and overfished stocks needs to be discouraged. **The European Union should instead promote a reduced consumption of seafood, privileging wild fish coming from sustainable, low-impact and preferably local fishing, while also encouraging low-impact or restorative aquaculture such as mussels, oysters or algae.**

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²⁸ UNGA, *Ibid.*