

The effect of covid-19 on seafood markets

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Abstract

Fish and other aquatic foods are a key part of our global food systems and a highly nutritious food group of major social, cultural and economic significance. Like meat processors and farmers, the seafood sector is feeling the COVID-19 effect. Fishing fleets are tied up and fish farmers are facing an ever-increasing biomass in their cages, ponds, and tanks. Transport links all over the world have been severed, restaurants have closed, and supermarkets have either abandoned or reduced their fresh seafood offerings. Disruptions in supply chains for fish and aquatic foods are already happening due to disruptions in transportation, trade, and labor. Falling production from reduced fishing efforts and delayed stocking of aquaculture systems will lead to lower supplies, access, and consumption of these foods. Decreased consumer demand and increased transaction costs will have a knock-on effect that will push the price of fish and aquatic foods up and make them less affordable for poor consumers. Many people employed in these supply chains, such as fish vendors, processors, suppliers or transport workers will lose their jobs. Demand for packaged and frozen products has spiked as households look to stock up on non-perishable food at the expense of fresh seafood options. Other consequences of the virus outbreak include the cancellation of key seafood trade events across the world and a delay in aquaculture harvests due to labour shortages. In general, the effects of COVID-19 on the seafood market are as follows: A drop in fish seafood demand amid restaurants' closures, A rise in salmon exports to Europe, US but logistic costs up, Cod sales drop, while there is a shift from fresh to frozen fish on several markets, Sales of packaged food rise across Europe, as COVID-19 cases rise, disruptions in supply chains for fish and aquatic foods due to disruptions in transportation, trade, and labor.

Keywords: Fish, COVID-19, Consumer, Packaged food, Seafood market

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Introduction

COVID-19 is a health crisis, but it could also lead to a food security problem if proper measures are not taken. If the COVID-19 pandemic continues in such a way the production of agricultural crops, aquatic foods and livestock such as wheat, rice, vegetables, fish, sea food, egg, meat and dairy will be affected (Sunny *et al.*, 2020).

The COVID-19 pandemic is a rare socio-economic shock in terms of global scale and extent of supply chain disturbance across all sectors, including seafood. Social distancing measures that have led to widespread restaurant closure and reduced seafood market foot traffic, have driven greater public dependence on seafood deliveries and home-cooking (Easton *et al.*, 2020).

The COVID-19 pandemic will continue to inflict heavy damage on seafood markets, particularly for fresh products and popular restaurant species. On the supply side, fishing fleets are laying idle, and the deteriorating outlook has seen aquaculture producers drastically reduce stocking targets. Measures to contain the spread of COVID-19 (e.g. closure of food services, cessation of tourism, reduction of transport services, trade restrictions, etc.) have caused disruption in both domestic and international supply chains. The fact that live, fresh or chilled fish, which represent 45 percent of fish consumed, are highly perishable products presents additional logistical challenges. Furthermore, widespread containment measures can have a notable impact on nations that trade

significant amounts of seafood, reducing foreign incomes or threatening food security. Keeping the supply chain open is fundamental to avoid a global food crisis (WHO, 2020).

COVID-19 offers opportunities to make fishing industries more sustainable

The pandemic is inflicting economic and social harm on those working in fisheries sectors, but it opens a window to make seafood industries more sustainable. Measures to curb the spread of COVID-19 have hit fishers hard, but on the other hand the crisis may offer opportunities to make fishing industries more sustainable, according to a new UNCTAD report on the pandemic's impacts on the blue economy. Before the pandemic struck, exports of fisheries products had seen strong growth, increasing by 11% from \$136 billion in 2013 to \$152 billion in 2017, with more than 50% originating in developing countries. But exports for 2020 are expected to drop by at least one third, with global demand down due to the pandemic, which has left many restaurants and hotels closed or empty for weeks or months. "2020 will surely be a very difficult year for the fisheries sector," said David Vivas, an UNCTAD legal officer working on trade and environmental issues. This is especially true for the world's 9.4 million fishers, 90% of whom live in developing countries.

Steep plunge in prices and supply

Shrimp, for example, are selling for a mere 10% of their normal price in certain ports in northern Spain. Similarly, dramatic price drops have been registered for fresh salmon, trout and cod exported from northern Europe and Chile to North America.

Massive flight cancellations have hurt trade in some high-end fresh seafood products. Maldivian tuna exports to Europe, for example, have been halted. Argentina's fish and seafood exports to Spain, Italy and China have fallen by 30% since the outbreak. And Indian shrimp consignments to China have dropped by 10% to 15%.

The pandemic is also affecting supply, with economic restrictions keeping many boats anchored in ports. In the Mediterranean alone, the catch has collapsed by about 80%. The region's confinement measures have hurt small-scale fishers the most, with less than 10% of their vessels currently casting nets. For coastal communities, such as those living in the Mediterranean region or in small island nations, fishing is their lifeline. Tourism, which has also been heavily affected by the pandemic, tends to be the only economic alternative for fishers in these countries. If demand doesn't pick back up the social consequences could be devastating (<https://unctad.org/>).

Flip side: a lifeline for fish stocks

But COVID-19's effects on the supply of and demand for fisheries products

could offer the globe's oceans, seas and rivers an opportunity to replenish. Recent United Nations research has revealed that about 31% of global fish stocks are currently below sustainable biological levels. Much of the overfishing has been supported by governments through subsidies that make it cheaper for industrial fleets to hunt for fish. There is no doubt that fuel subsidies play a big role in chronic overfishing. Yet despite the fact that oil prices hit a 25-year low in April, governments continue to pour into the sector oil and other capacity-enhancing subsidies that are estimated at about \$10 billion in OECD member countries and potentially above \$20 billion worldwide. Now is the time for governments to rethink how they support fisheries sectors and shift from subsidies that enhance the capacity of industrial fleets in favour of more support for responsible small-scale fishers as well as measures that encourage sustainable stock management and improve fishing traceability. Such a shift would help not only to reverse the overexploitation of fish stocks but also to tackle illegal, unreported and unregulated fishing, which may have increased recently in certain regions due to less surveillance of the oceans during the pandemic (<https://unctad.org/>).

Policy recommendations

- Keep up the fight against illegal fishing, relying as much as possible on electronic monitoring and

surveillance systems supported by targeted inspections and missions at sea and in ports.

- Exercise due restraint in scaling up trade protectionism disguised as sanitary measures in seafood value chains.
- Support the transition from fresh fish to value-added processed seafood products where feasible, to offer new economic opportunities to those working in the sector.
- Enhance coordination between fish and seafood suppliers and transport, warehousing and logistical services to minimize loss of produce and food waste (<https://unctad.org/>).

Implications: The direct and indirect effects of the COVID-19 pandemic
Negative consequences

1. Many fisheries faced complete shutdowns at the onset of social distancing restrictions if they were not considered vital to national food supply systems
2. Knock-on economic effects from market disruptions have further impacted smallscale fishers' ability to pursue their livelihoods through 'twin disasters' of reduced demand and attendant collapse of prices. Export-oriented SSF have faced a vast reduction in demand (particularly from Asia, United States, and Europe), port closures, loss of access to cold storage, and cessation of shipping and air freight
3. SSF geared at local markets are also affected. In the Philippines, slashed prices due to reduced demand from local restaurants and hotels have drastically reduced fishing activity, and factories are closed or operating at reduced capacity
4. access to cold storage is more important now than ever to reduce fish waste and loss and maintain local food security
5. Fishers, processors and sellers also face risks of COVID-19 spread and infection, and thus have to make difficult decisions – feeding their families or risking exposure. Fishing communities and ports could potentially become “hotspots” for rapid infection due to the migratory nature of fishers and frequency of international visitors
6. Migrant fishers face combined stress from lost income, inability to support families, shortage of basic necessities and exclusion from government relief schemes and many migrants are stranded on vessels or in harbors, unable to return home, living in cramped living conditions without adequate water or food.
7. In processing plants worldwide, women tend to occupy temporary and lower-paid positions, do not have access to social protections after losing their jobs, and are more likely to be laid off.
8. There are also likely reverberating impacts on the marine environment. Decreased human observer coverage and lapses in monitoring and enforcement may be leading to increased occurrence of Illegal,

Unreported and Unregulated (IUU) fishing and incursions into areas used by SSF.

9. Furthermore, in many places that are highly dependent on tourism, declines in global travel will have devastating impacts on local livelihoods and likely lead to increased pressure on local resources to meet food and livelihood needs.

Positive initiatives and outcomes

- 1- While most of the news is dire, there are some bright spots as the SSF sector and their allies have taken action to respond. There are numerous examples of food sharing, as SSF focus their resources and capacity to make food security contributions within their communities. In Oaxaca, Mexico, local fishers are contributing their time and boats to provide 50–60 tons per week of free seafood for their communities
- 2- In Hawaii, the local food movement has grown substantially, with fishers helping to supply vulnerable populations (elders) and food banks to bolster local food security. And strong existing social networks in the Pacific Islands have facilitated food sharing since the onset of COVID-19.
- 3- ABALOB, a South African social enterprise that seeks to help empower small-scale fishing communities through the fisher-driven development of technology, has adapted its traceability platform and marketplace, to facilitate product

sales and delivery to households in cities and in the fishing communities.

- 4- It is fast-tracking further development of its platform for use in CSFs globally. In Maine, the CSF ‘Local Catch Network’ has seen an uptick in membership and sales, and consumers can consult a public registry of local fishers from whom they can buy seafood directly. Smartfish, Inc., a sustainable seafood marketing enterprise in Mexico, has seen an increase in sales in recent months due to its ability to pivot primarily from supplying restaurants to home delivery and online sales.
- 5- In addition, Smartfish currently provides the only market opportunity for some of their partner cooperatives and remarkably they are able to maintain important price premiums. Nascent local market initiatives are also emerging to weather the crisis. For example, home delivery systems and online fish selling platforms have emerged in Seattle (Nathan *et al*, 2020)

Worldwide Seafood Industry to 2027 - Impact of COVID-19 on the Market

With regional and international food and agricultural value chain severely disrupted, seafood is caught in the eye of the COVID-19 storm. The market is expected to lose steam before recovering to reach a projected global market size of US\$138.7 billion by 2027. Global food supply chains are severely disrupted as governments move swiftly to implement trade restrictions to protect domestic

food supplies, a move that has and still continues to impact countries dependent on food imports.

Along with several other food products, export revenues of even seafood are declining as countries close borders and halt trade. Fish and aquatic food value chain is currently witnessing a medley of challenges ranging from shutdown of operations, changing consumer demands, market access and logistical problems, and transportation and border restrictions. Supply chain interruptions caused by disruptions in transportation, trade and labor have halted both fish farming and commercial fishing operations. Delayed stocking of aquaculture feed and systems is impacting production with rising prices threatening to be a key fallout.

Commercial fishing fleets are tied up as part of the restrictions negatively impacting commercial fishing which is a major part of the global food system. The value chain for fish and fish products is labor intensive and all of these factors discussed above are impacting food security and nutrition for populations that rely on fish for animal protein and essential micronutrients. Misconception and misinformation published in media of seafood being a carrier of COVID-19 virus and a potential route of transmission to humans is leading to sudden decline in consumption. Closure of restaurants and hotels, which represent large buyers of fish and seafood, has impacted sales significantly. Lower demand, setbacks to exports and higher costs of operations

are chipping off profit margins of fisheries and seafood companies. The entire fishing industry comprising open catch, culturing, processing, preserving, storing, transporting, marketing and retailing of fish or fish products has been impacted. Unless immediate corrective measures and policy changes are made, seafood a critical part of food security goals, will become less affordable for the poor under the current scenario.

With the easing of the lockdown restrictions, the market will however regain lost growth momentum. Seafood will remain a healthy food option and an indulgent treat and mainstay of salads in luxury dinners and food parties. Continued developments in aquaculture and the ensuing availability of wider product choices will spur growth, alongside the growing focus of governments worldwide to utilize fisheries to achieve food security goals. The focus on reducing fish waste and losses and rise in sustainable and responsible fisheries management will positively benefit growth in the market by ensuring easy physical and economic access to sufficient, safe, nutritious and affordable seafood products.

A few of the market forces at play during the pre-pandemic period included advancements in freezing technologies and cold chain logistics and the ensuing popularity of chilled and frozen seafood; robust demand for prepared and preserved/cured seafood options among consumers on the lookout for safe and convenient food options; strong revenue potential of fishmeal and fish oil;

establishment of seafood only restaurants and expanding varieties of gourmet seafood dishes and the resulting healthy growth of farmed seafood in the foodservice industry. Over the last decade, Asia-Pacific has emerged into a major market, supported by factors such as presence of developing Asian countries with economic dependence on fisheries exports; availability of vast coastlines, rivers and inland water resources rich in marine and fresh water fishery resource; growing consumer preference for protein rich foods; and increasing per capita consumption of fish among the growing base of affluent middle class population (<https://www.researchandmarkets.com/>).

Impacts on the value chain from changes in global demand

Impacts on demand are varied and have escalated in time, mirroring the spread of the virus (first in China, second in the EU, and third in the US). The EU, China, and the US are the most important export markets for seafood products. General market trends identified include:

- Sectors that rely heavily on food service are in trouble (e.g., octopus, blue swimming crab), due to dramatic drops in demand.
- Sectors that rely on retail and companies that have based their businesses on supplying retail markets are doing better (e.g., there is a boom of demand for canned tuna for stockpiling).
- Sectors targeting indirect human consumption (e.g., the marine

ingredients subsector) have not been affected. For some aquaculture products (e.g., shrimp), a trend toward producing feed for adult individuals to gain weight, instead of larvae or post-larvae cultivation, has been identified. Different response strategies have been identified among suppliers in the end markets:

- There is a trend toward the supply chain attempting a push for consumption of domestic seafood, as international trade is heavily constrained by logistics. Yet, domestic markets also face constraints. It is hard to estimate if this is a long-term trend or not.
- Suppliers that are heavily reliant on food service are attempting to switch sales to the retail sector, as retailers demand extra product. However, suppliers that are used to foodservice customers have traditionally been under much less pressure in terms of sustainability requirements and find themselves unable to meet the sustainability criteria of retailers. There are no signs of retailers prepared to lower their sustainability standards in the current crisis.
- All fisheries heavily impacted by a drop in demand also reported a parallel drop in prices for their products.

Measures taken by governments on behalf of the fisheries sector include:

- Some states have put in place measures such as delayed payments of credit or temporary layoffs

partially covered by unemployment insurance schemes (e.g., Chile). Yet, fishers rarely depend on credit from banks. In fisheries that remain in the informal sector, fishers and workers cannot benefit from any of these measures.

- A key focus of states has been on hygiene and awareness campaigns.
 - Some initiatives put in place by state authorities by early April are designed to maintain access to food, including the demand at the local level and the supply of seafood to communities. Measures include improved price monitoring, the provision of facilities and refrigerated transport to supply seafood.
 - Governments are also implementing plans to ensure continuous income for fishery dependent families, including alternative livelihoods and Cash for Work schemes.
 - Access for credit and microfinance schemes.
 - Provision of basic supplies and food items. Fishers Measures taken by fishers have included:
 - Commercializing their main target species in the domestic market, normally at lower prices, because of low interest in the domestic market in target species (e.g., squid in Chile), lower purchasing power in domestic markets, or an excess of product as a result of lowered demand
 - Processors and exporters Measures taken by processors and exporters have included:
- Implementing stricter hygiene and biosecurity protocols in facilities, including plants, offices, and vehicles.
 - Reducing processing capacity to meet social distancing measures and adapt to reduced demand. These actions largely affect workers in processing plants, who are mainly women. Highest impacts are on informal workers.
 - In the absence of government aid, some sectors have self-organized to ensure the availability of basic supplies to fishing communities. Some processors have facilitated advanced payments of salaries and benefits to workers.
 - Switching the main product processed to others that require a smaller workforce in processing plants and have steady market demand (e.g., stopping processing blue swimming crab and switching to tuna).
 - Shifting their target market and focusing on placing products in the domestic market as much as possible. In some cases, domestic retailers have suspended the supply of fresh product as well, leading to attempts by processing plants to innovate through online marketing direct to consumers (www.undp.org).

Five facts about COVID-19 impact on seafood markets

1. The COVID-19 coronavirus pandemic is causing an increased uncertainty in the global seafood

trade, driving changes in consumer behavior and transport patterns affecting several markets. The foodservice segment has been hit hard, while an increase in grocery and food delivery services is reported as a result of extensive home quarantines both in Europe, the US and, to a lesser extent, Latin America.

2. A weakening Norwegian krone helps to dampen some of the effect associated with lower demand, according to the Norwegian Seafood Council (NSC), which listed some of the ongoing trends relating to COVID-19's seafood trade at present:
3. A drop in fish seafood demand amid restaurants' closures
4. Although grocery sales around Europe are increasing, there is reason to expect lower demand for fish and seafood as a result of reduced sales. In the first instance, lower demand will affect goods that are mainly sold in restaurants such as king crab, scrambled cod and shrimp. Moreover, uncertainty in Europe means that buyers want to limit the product range in stores
5. A rise in salmon exports to Europe, US but logistic costs up
6. In week 11, fresh salmon exports for reprocessing in Europe rose 24% to 18,067 metric tons. Exports rose 42% to Poland, 93% to Denmark and 141% to Lithuania, Aandahl said. However, sales of fresh salmon and trout are being affected in some markets. Logistics prices are also increasing, due to changing consumption patterns and unpredictable price trends, according to Aandahl. During the same week, Norwegian exports of fresh whole salmon to the US decreased 4% to 379t compared to the same week last year, while exports of fresh fillet increased by 4% to 426t. For fresh whole trout exports to the US were up 122% to 178t.
7. Cod sales drop, while there is a shift from fresh to frozen fish on several markets .
8. In the season from January to April, between 30-40% of Norwegian cod is exported as fresh whole cod. Nearly all Norwegian cod exports go to peach consumption and further processing in Europe. Large parts of the fresh market for cod have fallen away as several European countries have imposed severe restrictions. Reduced demand will lead to price falls in the markets, according to NSC. Frozen products are better suited for storage. Several markets are now reporting a shift from fresh to frozen fish, as it was noticed in an earlier phase in China, according to NSC. Products such as clipfish and dry fish also have the advantage of being stored for longer periods without refrigeration.
9. Sales of packaged food rise across Europe, as COVID-19 cases rise
10. Sales of packaged food have risen across European countries, as shoppers continue to stock up food at supermarkets.

11. Salmon, Cod orders from China are picking up again. There was an increase in exports of fresh whole salmon to China from 149t in week 10 to 217 in week 11. This corresponds to a year-on-year decrease of 51% in week 10 and of 37% to week 11. However, it shows that orders in China are picking up again (www.undercurrentnews.com)

Discussion

Fish and other aquatic foods are a key part of our global food systems and a highly nutritious food group of major social, cultural and economic significance. Disruptions in supply chains for fish and aquatic foods are already happening due to disruptions in transportation, trade, and labor. Falling production from reduced fishing efforts and delayed stocking of aquaculture systems will lead to lower supplies, access, and consumption of these foods. Decreased consumer demand and increased transaction costs will have a knock-on effect that will push the price of fish and aquatic foods up and make them less affordable for poor consumers. Many people employed in these supply chains, such as fish vendors, processors, suppliers or transport workers will lose their jobs. Because this occurred during the Chinese New Year, demand for luxury seafood declined and markets collapsed for Canadian and American lobsters, Australian crayfish, Vietnamese shrimp and many other fisheries. This was a harbinger of massive and life altering changes that

were about to unfold in small-scale fisheries (SSF), seafood market and coastal fishing communities around the world (Nathan *et al.*, 2020).

Fish and fish products are a key component to a healthy diet and are safe to eat. Misleading perceptions in some countries have led to decreased consumption of these products. Yet, coronavirus cannot infect aquatic animals (finfish, reptiles, amphibians and invertebrates such as crustaceans and molluscs), therefore these animals do not play an epidemiological role in spreading COVID-19 to humans (FAO, 2020).

The study found that COVID-19 was affecting aquatic food system in two significant aspects: the supply and demand for aquatic food. These two aspects were directly related to food security, so food as well nutritional security is also at risk. As the supply of fish and other aquatic food was disrupted it created less diversity and availability in the market that raised market price. So, the consumer couldn't get desired fish species and other aquatic food items that put adverse impact on consumer demand and consumption. also reduced dietary diversity as if they buy fish with high price they couldn't afford more diversified food items for diet that ultimately put adverse impact in nutritional security (Sunny *et al.*, 2020)

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