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# Pandemic COVID-19's Probable Impacts on Indian Fisheries Sectors & Its Protective Measures

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## Abstract

The outbreak of COVID-19 and the sudden India-wide lockdown, has severely affected India's fisheries sectors. Fishers, hatchery owners, fish processors, sea-food exporters, traders, fish vendors, vehicles carrying fish – all involved in fisheries and allied activities have been badly impacted. Some deceptive perceptions about fish and fishery products in some countries have led to decreased consumption, a drop in demand, and resulting price drops of fish. As there is no current report suggesting that fish play an epidemiological role in spreading COVID-19 to humans, it is safe to consume fish. This article aims to describe some predictable multidirectional impacts of this pandemic on the fisheries sector and a set of protective measures to get rid of this sudden shock.

## Introduction

It is well-known that the outbreak of Corona virus disease 2019 (COVID-19) was first reported from China in December 2019 and has been declared as a Public Health Emergency of International Concern (PHEIC). To prevent Covid-19 transmissibility, India had inflicted a countrywide lockdown from March 2020, which had hindered all the transporting systems and economic activities except few essential and medical services. Thus the food production sector, including fisheries, was adversely affected; that's too on a global scale. Although no report has been found on the direct effects of Covid-19 on fish, the fisheries sector has been badly impacted due to changing consumer demand; reduction of market access due to the logistical problems related to transportation and restrictions. The sudden India-wide lockdown turned many 16 million Indian fishermen's livelihoods upside down, and now they have been looking for support and help. Simultaneously, some misleading concepts about seafood resulted in decreased seafood consumption in many countries, leading to a price drop of fish products. Taking all the points an account, now it's time to review the possible impacts of Covid-19 on the fisheries sector in India and feasible measures to overcome this situation.

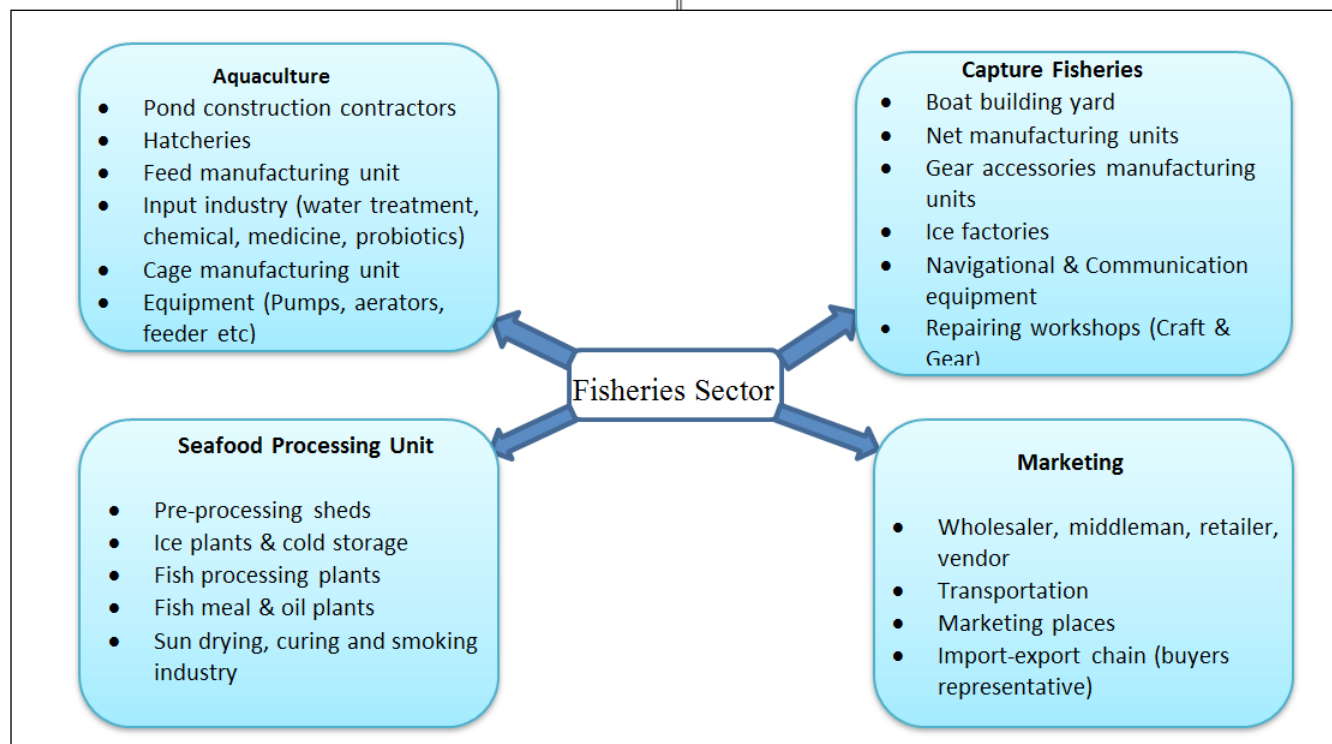
## Different Allied Sectors in Fisheries

Before discussing the impacts of the COVID-19 on Fisheries, an idea about the different allied sectors involved in fish production and how they function is required (Figure 1).

The diagram shows that fisheries is not only about fish production but also about many different units involved in fisheries-related activities and the dependency of several people's livelihoods on this. It can be imagined how the outbreak of COVID-19 and the sudden lockdown gave a shock

to all the fisheries' sectors. This pandemic has damaging effects not only on fish production and farmers' livelihood

but also on food security and nutrition for the population that relies on fish for protein and essential micronutrients.



Fisheries Sectors in India at a glance

### Impacts of COVID-19 on Aquaculture

- Due to difficulties in marketing, the fish farmers couldn't sell their harvested fish. Maintaining the produce on the farm had led to excess expenditure and risks to the farmers.
- Due to the transport system's total shutdown, the hatchery owners couldn't get seeds or broodstock, causing a considerable decline in fish production.
- Non-availability of input like- seed, feed, chemical, medicine, etc. had led to the production loss.
- Difficulties in finding labour were another critical issue.
- To monitor water quality parameters and fish health during production, farmers often rely on diagnostic labs. Due to the lab's closing during the lockdown, farmers were facing problems managing the water quality or disease outbreak during the culture.
- Due to the international market's closure, the export of some cultured species like- *Pangasius* and Shrimp had been reportedly affected.
- Additionally, shellfish aquaculture was also affected due to the closure of the food services like tourism, restaurant, etc.

### Protective Measures for Aquaculture

- The domestic market's promotion will play a crucial role in rescuing the country's fisheries sector. Apart from ensuring people's nutritional and food security, it also helps to increase

revenue, minimize post-harvest losses, enhance employment, and maintain the domestic seafood supply chain.

- Fish farmers, fishermen, processors, and distribution workers should be designated as "Essential Workers" as they provide food to the nation. Proper financial and health support should be given to them to compensate for their loss.
- Need to increase access for fish farmers, workers to credit and micro-finance programs with flexible loan repayment, reduced interest rates.
- Activities to strengthen and regain confidence in producer-buyer relationships and promote fish consumption to enhance demand.
- Assurance of quality seed supply and promotion to establish more input production units will increase production.

### Impacts of COVID-19 on Capture Fisheries

- Limited demand had led to reduced fishing activity. For example, the fishing vessels that rely on export markets and higher-value species (e.g., Lobsters) were likely to be significantly impacted.
- Interrupted input (ice, diesel, gear, bait, etc.) supply to the fishing vessel was also constrained during fishing.

- Shortage of labour was another issue as some crews consist of migrant workers couldn't cross the state borders during the lockdown period. According to a report the lockdown left almost 4,000 migrant fish workers from Andhra Pradesh at Veraval fishing harbour in Gujarat for over a month.
- Sanitization measures (physical distancing between crew members at sea, using facial masks, etc.) also made fishing difficult.

### Protective Measures for Capture Fisheries

- Extension of the fishing season and compensation to the owners and crew of vessels prevented from fishing; will help them overcome the massive economic losses.
- The fishing centers and nearby area's villages can be linked to such services as the local community kitchen. Small fish (sardines, mackerels) can easily be cooked and supplied for a fixed price (FAO, 2020).
- Governments' purchase of seafood should be expanded. Government can use food for institutional use (prisons, hospitals, school feeding programs, etc.) and distribute it.
- Currently, the fishing level restriction can be undertaken by taking proper measures.
- Breaking the price barrier is needed to get sustainable production. Government departments need to set a minimum floor price for each of the important fish species. Matsyafed, the State Co-operative Federation for Fisheries Development Limited, is now fixing India's fish catch price. Matsyafed has announced that they open outlets for selling fish, and if there is excess fish, the Federation buys it and works out ways of selling it.
- Special arrangements should be made to bring back migrant labourers and provide essential goods for their sustenance.

### Impacts of COVID-19 on Sea-Food Processing Unit

- The common problems faced by the seafood processing industry were workforce shortage, low quality and inadequate quantity raw materials, non-supply of required sized products, lack of export orders, and insufficient storage capacity. For example, one study on India's shrimp processing unit showed that manpower shortage was the major constraint by 75% of the processors.
- With the restaurant industry's effective shutdown in many places, food service demand had reduced substantially. This low demand period resulted in the accumulation of unsold inventory, filling the cold storage limits, thus hampering further procurement.
- Needs for social distancing and securing personal protective

equipment (PPE) for labourers were another challenge for seafood processors.

### Protective Measures for Sea-Food Processing Unit

- The government should set the minimum support price and enforce the processor to adhere to that fixed price. The researchers reported that the Andhra Pradesh state government set a minimum procurement price for different sized harvested shrimps for stabilizing the market. The policy wasn't strictly enforced as the processors were often refused to pay the fixed prices. So, additional enforcement efforts to set the minimum price should be made to protect the fish farmers and improve forecasting for processors.
- Updating communication portals to forecast seafood demand at local and international markets and encourage people to eat more seafood.
- The establishment of more cold storage facilities and the domestic market promotion for processed seafood products will help mitigate this current situation.

### Impacts of COVID-19 on Marketing of Fish and Fish-Products

- Closer of transportation by road or sea, restricted borders, and the large-scale cancellation of flights had directly affected the fish trading to foreign markets like the US, China, EU.
- Maximum wholesaler and retailer fish markets in India are congested and crowded, providing risks to traders and consumers. As a result, the closure of all the fish markets was leading to a massive loss.
- Restrictions on market access and a drop in demand resulted in more extended storage of fish and fish products, which has implications like increased food loss, waste, and additional costs for processors, exporters, importers, and traders.
- Another issue was a misconception that COVID-19 could be transmitted through seafood consumption, reducing seafood demand.

### Protective Measures for Marketing of Fish and Fish-Products

- Facilitate direct sales of fish and fish products to the consumers by promoting new online-based technologies (WhatsApp group, etc.) to get adequate safety measures.
- Ensure proper supply-chain access for export fishing operations with cooperation from officials at ports, rail, and border crossings.
- There is a need to communicate how the virus is transmitted and not related to seafood to promote seafood consumption.

- Retail markets can be reopened with high regulatory measures to secure physical distancing. Marketing pre-dressed fish with suitable packaging material can help avoid the crowd in the market.

### Impact of COVID-19 on Overall Fisheries Production in India

In 2018-19 India's fish production was 13.76 million metric tonnes, about 6% greater than the previous year. India was the 4<sup>th</sup> biggest exporter in the world. In 2017-18 Andhra Pradesh was the leading fish producing state, making 34.5 lakh tonnes of fish. India produced 52,262 million fry in 2017-18. The total exported fish quantity in 2018-19 was 1377.24

thousand tonnes. Total fisherman population in India is about 16.1 million. The fisheries sector contribution to the entire national GVA (Gross Value Added) in 2018-19 was 1.24%.

Different reports say that during pandemic, the mechanized sector's loss was Rs. 6,008 crores and from the non-mechanized sector Rs. 830 crores and an overall loss of about Rs. 224 crores a day for the fishing sector. The survey report observed that fish trade volume had been reduced to 33% after the COVID outbreak. Due to the non-availability of marketing channels, the small indigenous fish price has been reduced to 25-50 %. The fish exports for 2020 are expected to drop by at least one third, with the low global demand for fish. Figure 2 shows a gist of the overall impact of COVID-19 on the fisheries sector.

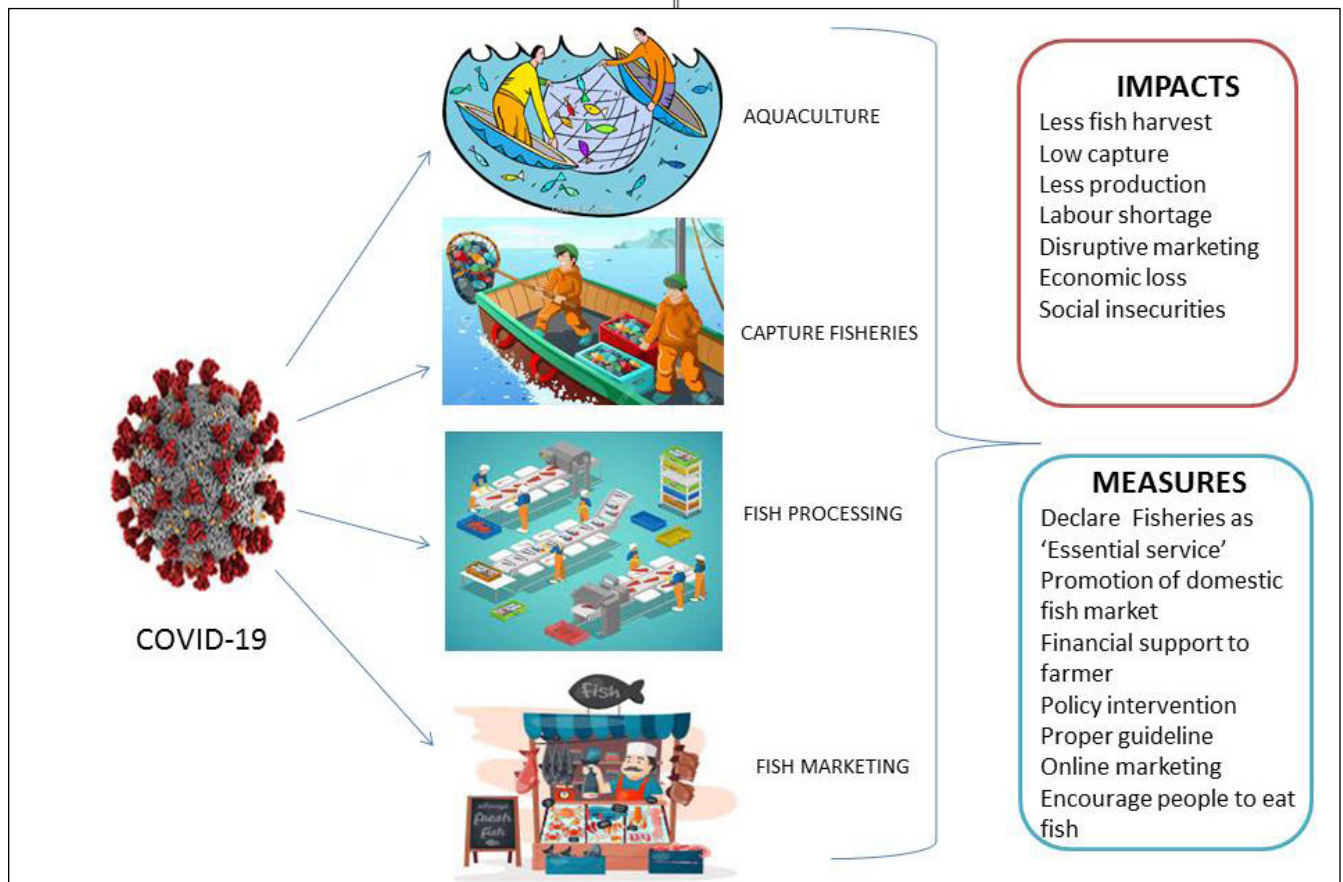


Figure 2: Overall impacts and protective measures of COVID-19 on Fisheries sector

### Supportive Measures by Government of India

India's Finance Minister allocated Rs. 20,000 crores under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) on the 22<sup>nd</sup> of May 2020 to support the fishermen affected by the pandemic's economic impact. The significant impact of PMMSY is to enhance fish production from 13.76 MMT to 22 MMT by 2024-25. Sustain average annual growth of about 9% in fish production. Need an increase in the contribution of GVA

of the fisheries sector, about 9% by 2024-25. Double the export earnings and also enhance the productivity in aquaculture to about 5 tonnes per hectare. Reduce the post-harvest losses from the reported 20-25 % to about 10%.

### Conclusion

The fisheries sector has faced an enormous loss of economy, employment, livelihood, and interruption in foreign trade & input supply chain. After the 5<sup>th</sup> phase of unlocking, it is partially recovered due to the respective

state governments' relaxation. The government had launched PMMSSY to overcome the impact of COVID-19. Nilkranti or Blue revolution scheme was implemented through NFDB (National Fisheries Development Board) to enhance fish production and productivity. The resistance of the US and EU to trade with China may offer India golden opportunities to strengthen fish marketing. Due to the current dynamic situation, immediate steps need to be implemented at both the state and national levels in thorough understanding & analysis of the underlying effects of this pandemic had on Indian Fisheries sectors.

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