



## Impact of the COVID-19 crisis on the capture fishery sector in Libya

### INTRODUCTION

The COVID-19 pandemic caused a major public health crisis around the world, including the State of Libya. It was followed by an economic crisis due to the measures taken by countries to contain the spread of infection among the population. These measures included the partial or complete closure of private and public commercial and industrial establishments and the prohibition of travel. Prohibiting travel between regions and countries, banning the movement of goods between them, and other preventive measures were taken. *Inter alia*, the sectors affected have included the fishery sector and its related activities. Although conditions in the State of Libya have remained unstable since 2011 due to military and political conflicts, the capture fishery sector has been quite resilient. However, this has not been true in the case of the fish farming sector, which, despite its limited activity in the country, initially faltered and then totally ceased.

Given this context, this study focuses solely on capture fishery activities and related services in an attempt to determine the extent to which the pandemic (COVID-19) has affected this sector. This study was undertaken by the North Africa Office (SNE) of the Food and Agriculture Organization of the United Nations (FAO), with an aim to:

- identify and analyze the effects of the pandemic on the various activities related to capture fisheries;
- assess the effect of the measures taken in times of crisis and their impact on the capture fishery sector; and
- assess progress in the implementation of the recommendations made to reduce the economic and social impacts of the pandemic.

### I. Methodology

This report was prepared using the following methodology:

- A standard questionnaire prepared for these studies in the Maghreb region in Arabic was adapted to suit the local situation in Libya;
- Areas and target groups from the general and private sectors, and their various specializations and activities, were selected taking into account the geographical spread of these activities along the Libyan coast. This coast extends from the Libyan border with Egypt in the east to its border with Tunisia in the west. Our study covered most of the Libyan cities located along the approximately 2 000 km coastline;
- The job titles of those targeted in this study from the public and private sectors were listed;
- Coordination with a group of scientific researchers working in the Marine Biology Research Center in various Libyan coastal cities (Tobruk, Benghazi, Tripoli and Zuwarah), was undertaken to facilitate the implementation of the study;

- This study aimed to distribute one hundred questionnaires in total. In areas far from the capital city of Tripoli, the questionnaire was distributed by e-mail (the questionnaire was then printed, distributed and filled out under the supervision of the scientific researchers). In the case of areas near Tripoli, hard copies of the questionnaire were directly distributed to targeted people;
- Questionnaires were collected, classified, and reviewed; following which missing data was inserted and errors corrected in coordination with the scientific team in the various cities by telephone contact;
- Data was entered onto excel tables, translated into English and processed;
- A final report was prepared.

## **II. Preventive measures enacted by the authorities**

On 14 March 2020, the President of the Government of National Accord (GNA) declared a State of Emergency. This was intended to combat COVID-19 even before the first case in the country was detected on 24 March 2020. On 17 March 2020, a set of precautions and preventative measures was issued to all sectors of the State, including the marine sector. To prevent the spread of the SARS-CoV-2 virus (the virus causing COVID-19), the GNA closed national borders, suspended flights for three weeks and banned foreign nationals from entering the country. In addition, schools, universities, cafes, restaurants, mosques, fishing ports, fish markets were closed and public gatherings prohibited. Furthermore, on 30 March 2020, the GNA announced the release of 466 detainees in Tripoli, as part of an effort to stop the spread of the virus in prisons. In the two months after the first Libyan case of COVID-19 was reported, the country had very few cases (75 confirmed cases and three deaths).

In late March 2020, many educational and awareness campaigns on COVID-19 were initiated nationally, such as lectures, TV and radio interviews and online meetings. These campaigns were conducted by professionals and experts, mainly from Libyan universities. Also, the number of employees were limited to 20-30 percent of workforce and a rotational work program was instituted. Official buildings were sterilized and various protective equipment issued. A medical survey of workers to identify infected employees was undertaken and quarantine procedures were applied. This helped the Libyan people become aware of many aspects of COVID-19, including its symptoms, the process of viral transmission, and preventative actions. In addition, the early implementation of physical distancing measures was valuable in breaking the chain of virus transmission.

Although these measures were effective the first two months after the pandemic reached Libya, there followed an alarming rise in the number of confirmed cases occurred (reaching 100 277 cases by 31 December 2020, at which time 72 107 people had recovered and there were 26 692 active cases), likely due to the reopening of air travel, the opening of external borders and failures in compliance with the recommended preventive measures.

## **III. The impact of COVID-19 on the fishery sector**

### **1. The respondents**

Completed questionnaires were obtained from 82 respondents. Their average age was 47. All but one were men. Sixty-two percent of the respondents were from the western area and 38 percent from the eastern area of Libya. The respondents' professional sector and field of activity are recorded in Table 1.

TABLE 1 | Respondents' classification (sectors and activity fields)

Private sector		
Function	n	%
Commissioner General Manager of a company or factory	12	19.04
Administrators	8	12.7
Owners of fishing units	9	14.3
fishermen or processors	20	31.7
Fish sellers	6	9.5
Canning activity	1	1.6
Fish cleaning activity	2	3.2
Marine maintenance and services	3	4.8
Restaurant owners	2	3.2
<b>Total</b>	<b>63</b>	<b>100</b>
Public sector		
Function	n	%
Administrators	13	68.4
Scientific researchers	2	10.5
department heads	3	15.7
Security guard	1	5.2
<b>Total</b>	<b>19</b>	<b>100</b>

## 2. Private sector data analysis

### 2.1. Actions and general impact

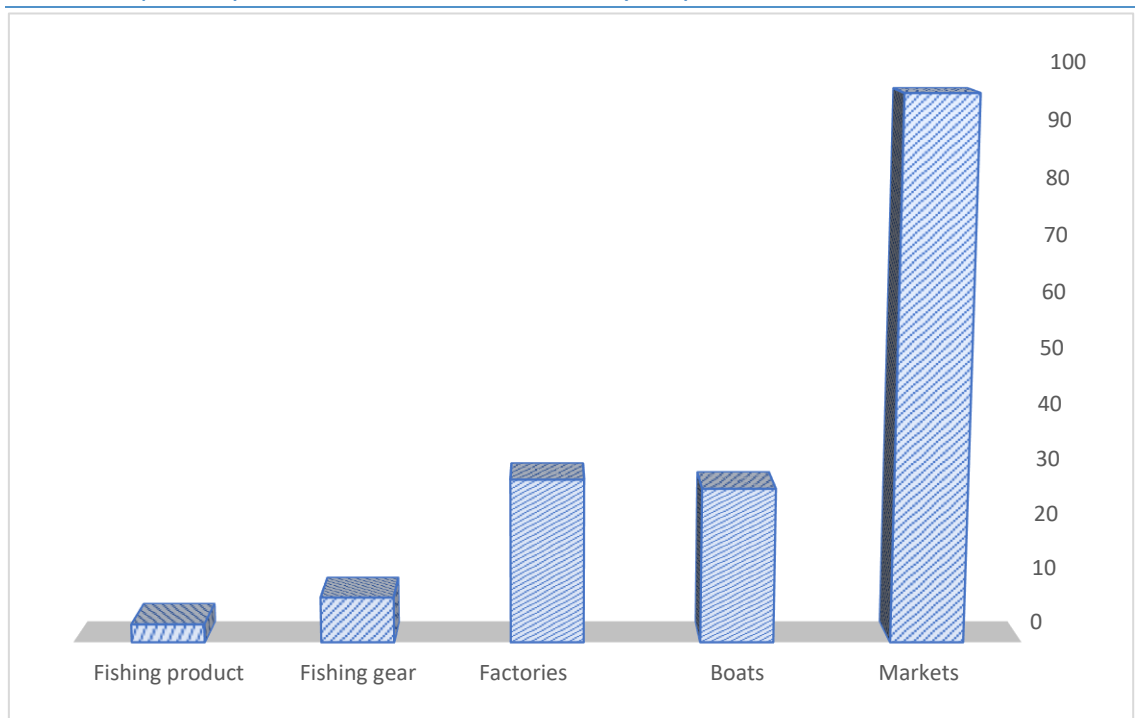
- **Governmental measures and their impact on production and value chain**

The preventive actions taken by Government to curb the spread of the disease had an impact on the entire cycle of the supply chain for marine products (processing, transport and wholesale/retail sales). According to the survey, 59 of the 63 private sector respondents said that they were affected by the pandemic. Thirty-nine reported that trawlers were affected (industrial fishing), followed by coastal fishing and light fishing. Forty-three respondents reported that there were preventive health measures, the most important of which were hand sterilization and physical distancing.

- The most important sources of infection as perceived by respondents

According to the respondents, markets (95 percent) were perceived as the most important sources of infection, followed by boats and factories, fishing products and fishing gears were less likely to transmit infection.

FIGURE 1 | Perception of sources of infection by respondents



Source: FAO subregional office's COVID-19 survey.

- The effects of the measures on the general state of production and the value chain

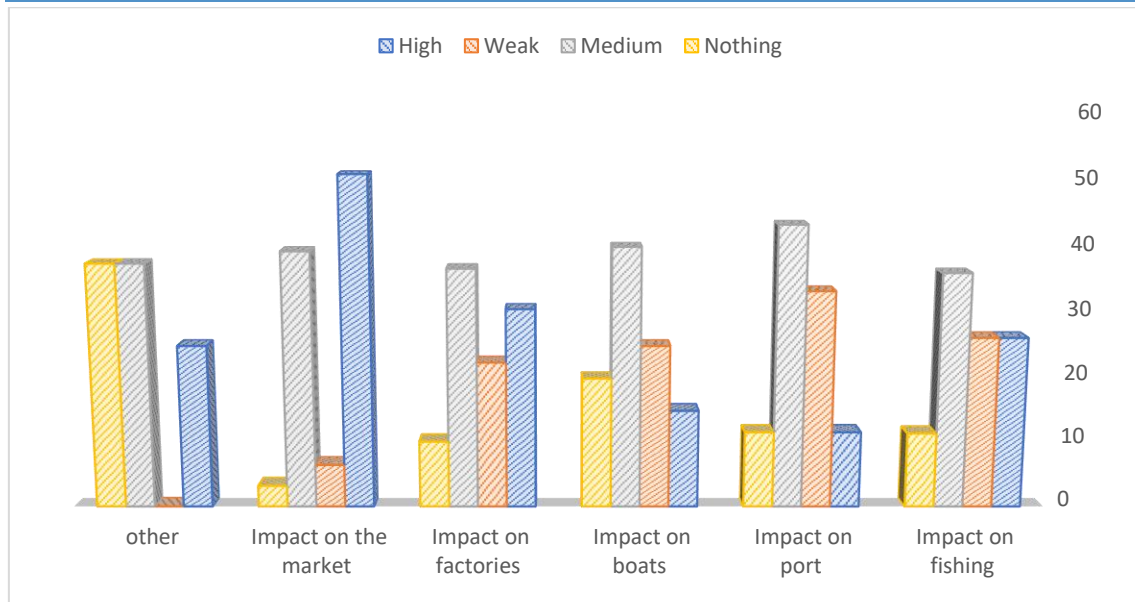
Forty-nine of the sixty-three respondents believed that during the quarantine period, production trends in the fishing sector were declining. The others (14) thought that production was fairly stable, explained by the preventive measures taken, which were related respectively to: containment (44 respondents), demand/supply (28 respondents) and distribution. In fact, the results show a decline in income from fishing activity; this recorded decline was believed to be paralleled by an increase in production costs (47 respondents). However, no social assistance or subsidies were granted to fishermen, according to the survey (59 respondents). Fifty-seven respondents said that the value chain was affected, with the most significant impact being on marketing and export (48 and 41 respondents respectively), followed by ship maintenance and supply.

## 2.2. The impact of COVID-19 on the fishery sector (private sector)

- Impact on health

As shown in Figure 2, fifty percent of respondents to this survey reported that there had been a high impact on marketing and moderate impacts on ports, fishing boats and factories.

FIGURE 2 | Perception of the impact of working places on the infection with COVID-19



Source: FAO subregional office's COVID-19 survey.

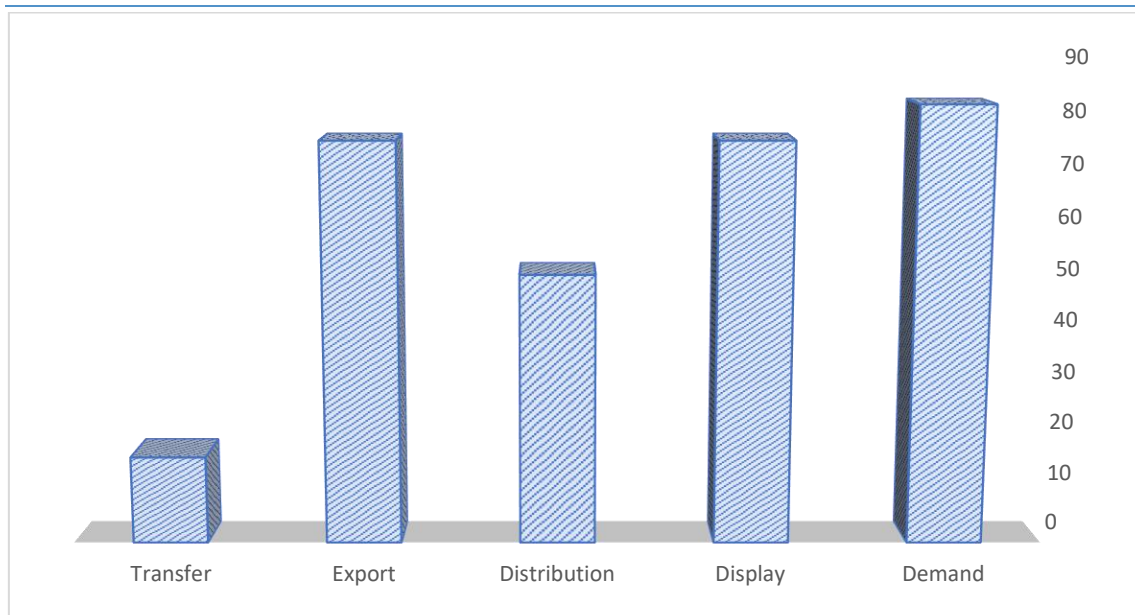
- Impact on production

The COVID-19 pandemic caused a major public health crisis, followed by an economic crisis as a result of the preventive measures taken. The results of this survey show that the private sector was concerned with the impact of the pandemic at the supply and demand level, which is the main driver of the production cycle. Thirty-two of the sixty-three respondents reported that supply had been moderately affected and 37 said that demand had been affected. This was thought to be due to the significant decline in employment (33 respondents) because of the inability to move as well as shortages of labor. All of these important factors had a direct impact on legal production. Illegal fishing activities were not affected (21 respondents) due to poor adherence with quarantine procedures and limited surveillance.

- Impact on the value chain

Concerning preservation and transfer (supply and demand, export, distribution and marketing) the value chain was significantly affected. The level of supply and demand were affected respectively by 75 and 82 percent. In addition there was a significant decline in the availability of public funds –the libyan state subsidies for fuel and electricity-(according to 33 of the respondents). Distribution was also affected by 51 percent, which led to a decrease in the marketing system. In addition, manufacturing and transfer activities were disrupted, as reported by 26 of the respondents.

FIGURE 3 | Perception of the impact of COVID-19 on the different step of value chain



Source: FAO subregional office's COVID-19 survey.

- **Impact on transport**

The implementation of the quarantine system resulted in the inability of workers to reach their workplaces. There was also an inability to transfer fish products from landing and processing sites to wholesale and retail markets. There was an inability to transfer production between cities and regions to reach the main fish markets. There were difficulties in transporting and delivering fuel, ice and other commodities to fishing ports and harbors. In addition there was a failure by most organizations to provide transportation for workers, as reported by 54 of the respondents.

- **Impact on marketing**

Thirty of the sixty-three respondents reported a strong impact of quarantine on shopping for fish products. In addition, 40 cited the closure of markets, 25 cited restrictions in movement, the closure of markets and shops, 20 the closure of restaurants and hotels and 11 a decrease in the level of shopping due to fears of infection. A fall in the rate of exports was mentioned by 42 private sector respondents and 25 noted a fall in the import of fish products. Fifty-three respondents reported higher fish prices, leading to a significant decrease in the possibility of marketing and a decrease in demand for the products, causing losses. This situation led to the emergence of innovative methods of marketing such as selling through social media, the flourishing of delivery services to customers, direct purchases of the product, and a decrease in the services of middleman (brokers) in some places and at certain times.

- **Social impacts**

Fifty-three of respondents admitted that there were losses in income, ranging from 40 to 60 percent. Fifty respondents reported that there were no other sources of income, no social guarantees or insurance, and no public funds or budget to support them in such circumstances.

- **Economic aspects**

Labor was one of the most important sectors affected by the pandemic. Fifty-eight of the 63 private sector respondents confirmed that measures taken to reduce the prevalence of the COVID-19 pandemic had an important impact on the fishery sector. Fifty-nine of them confirmed a shortage of labor, which is considered one of the most important factors of production. Fifty-three agreed that there was a decrease in job offers of 40 to 60 percent, due to this pandemic. These matters became worse, especially because of the lack of any kind of protection (such as social security or insurance) to support workers and professionals in this sector. Many were forced to leave work or change their activities, especially because of the prolonged crisis and their inability to fulfill their financial obligations.

- **Impacts on food security**

Regarding product availability 30 of the private sector respondents said that the level of impact of the pandemic was medium, and 38 said that the arrival and access of products to consumers had been moderate. This provided an idea of how the measures applied to address the pandemic affected food security and highlighted the necessity of developing innovative plans to mitigate these effects.

- **Impact on environmental security**

Forty-three of the sixty-three private sector respondents confirmed that illegal fishing has increased in Libya, as a result of the application of precautionary measures taken by the State. This resulted in a lack of monitoring (35 respondents), due to the application of curfews for employee safety (38), as well as a lack of resources (22). With regard to the possibility of improving the state of fish stocks and environmental conditions, 40 of the respondents reported the possibility of doing so by reducing fishing effort, reducing pollution, making fishermen particularly aware, strictly applying laws, and developing, improving and supporting effective fishery management (19 respondents).

### **3. Public sector data analysis**

#### **3.1. Actions and general impact**

- **Governmental measures and their impact on production and value chain**

Preventive action by governments to reduce the spread of the disease had an impact on the whole supply value chain for marine products (processing, transportation, wholesale or retail sales). According to the survey, 15 of the 19 public sector respondents reported that these activities were affected by the pandemic. All of the respondents felt that there was an important impact on the labor system, while others (three) noted impacts on operations, production and marketing. All the respondents reported that coastal fisheries had been affected, followed by trawlers (10 respondents) and then fishing with lights. Eighteen of the 19 respondents reported that there were preventive health and safety measures, the most important of which were the sterilization of hands, individual procedures and physical distancing.

- **The most important sources of infection as perceived by respondents**

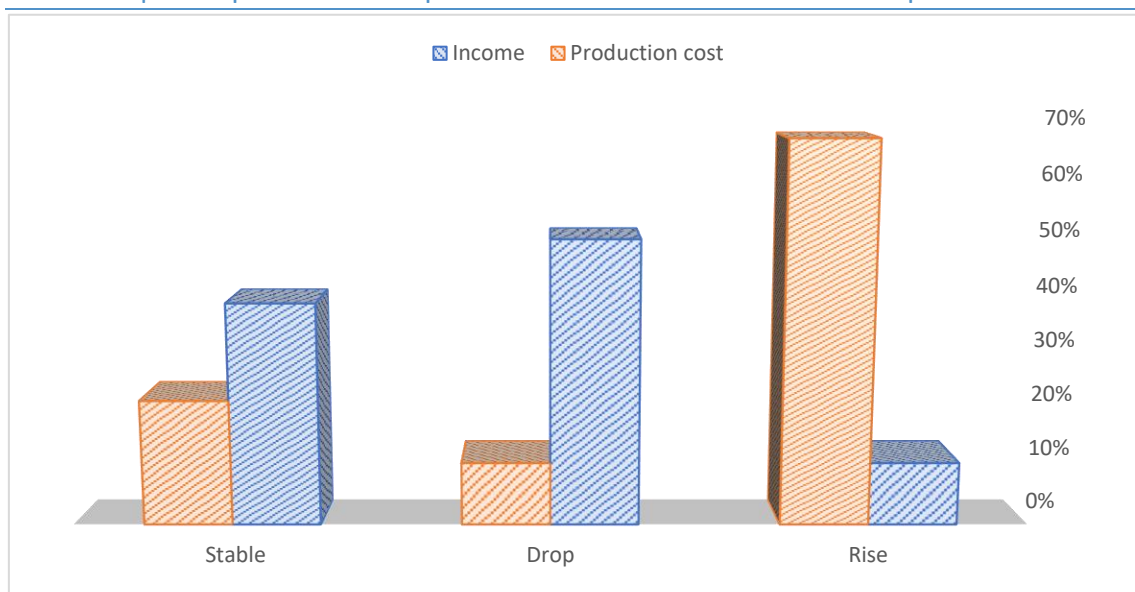
The most important sources of infection as perceived by all the respondents were the markets, followed by factories and fishing boats. Fishery products and fishing gears were thought to be lesser causes of contagion.



- The effects of the measures on the general state of production and the value chain

As shown in Figure 4, about 61 percent of respondents believed that production in the fishing sector was declining during the quarantine period while the others thought that production was stable. Official data estimates indicate that the total 2019 production was 15 125 tonnes while only 10 650 tonnes were produced in 2020. This was attributed to the preventive measures taken. The results showed a decline in income from fishing activity (50 percent of respondents). This decline paralleled a rise in production costs for the activity. However, no social assistance or subsidies were granted to fishermen, according to 18 of the 19 public sector respondents. Twelve of the respondents affirmed that the value chain was affected, stating that the most important impacts were on export and marketing (respectively 65 and 53 percent) and then on ship maintenance and supply.

FIGURE 4 | Perception of the impact of COVID-19 on the income and production cost



Source: FAO subregional office's COVID-19 survey.

### 3.2. Impacts on the public sector

- Impact on health

Five of the nineteen public sector respondents in this survey estimated that there were high risks in the markets, moderate impacts in ports and factories, and weak risks on fishing boats.

- Impact on production

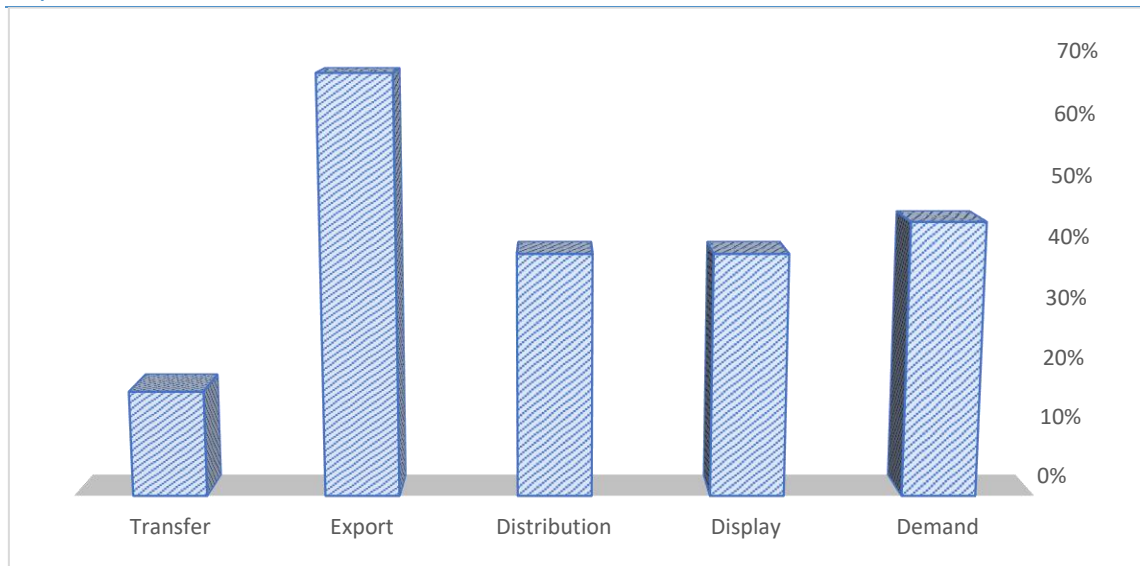
Concerning the impact of the pandemic on the level of supply and demand (which is the main engine in the production cycle), nine public sector respondents stated that supply had been moderately affected and 14 said demand had been affected. This was thought to be due to the significant decline in employment (eight respondents), which is the key element of the production cycle, caused by the immobility and quarantine of laborers, the shortage of migrant workers (which contribute a significant proportion of this activity) and the disruption on the availability of raw materials.



- **Impact on the value chain**

According to 13 of the 19 public sector respondents, the value chain was heavily affected (Figure 5), for example by the smuggling of marine products across the Libyan-Tunisian and Libyan-Egyptian borders, as well as transshipment. The level of supply and demand was affected, according to eight of the respondents. This contributed to low levels of distribution, which, according to seven respondents, also negatively affected the marketing system. Three respondents said that there was a disconnection between manufacturing and transfer activities.

**FIGURE 4 | Perception of the impact of COVID-19 on demand, display, distribution, export and transfer**



*Source: FAO subregional office's COVID-19 survey.*

- **Transportation**

As a result of quarantine measures, there was a lack of access of laborers in the workplace, as well as an inability to transport fish from ports and processing sites to the wholesale and retail markets. There was also an inability to transport products between cities and regions to reach the main markets, and difficulties to access fuel, ice and major operating supplies. In addition, all respondents noted that most enterprises did not provide transportation for workers in fishing ports and harbors.

- **Marketing**

Ten of the public sector respondents noted that, due to quarantine measures, there was a moderate effect on the possibility of shopping for fish products. In addition, seven reported market closures. Twelve respondents reported a cessation in exports, while eight noted a high impact on restaurants and hotels; seven respondents expressed poor marketing and five a fear of infection. The market was affected by a high export rate, according to 12 respondents; by fish product supply (six respondents) and by a rise in fish prices (17 respondents) which led to a noticeable decline in marketing potential and a decline in product demand, a loss of 40 to 60 percent of income was reported by eight respondents.

- **Social impact**

Twelve of the 19 public sector respondents stated that they experienced losses in income of 40 to 60 percent. Ten respondents from the public sector reported that they had no other sources of income apart from their government employment. All respondents said that they enjoyed a form of general social security but that this did not cover the impact of the COVID-19 pandemic during this period. They had no insurance, alternative funds or any budget to support them in such circumstances.

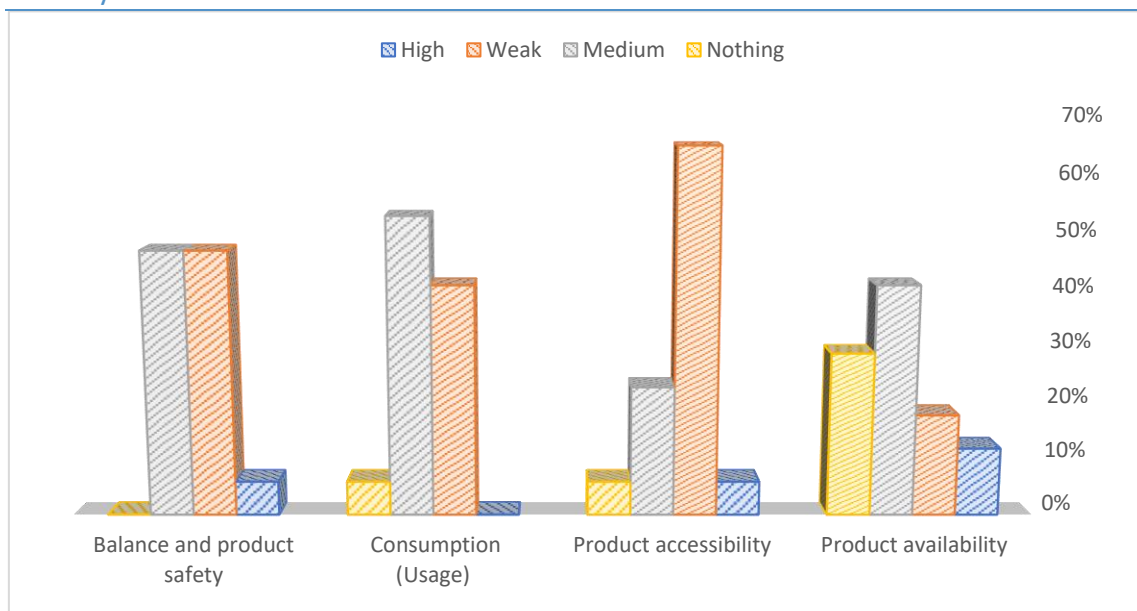
- **Economic impact**

Eleven of the public sector respondents confirmed that measures taken against the spread of the COVID-19 pandemic had had a substantial impact on the work of the fishery sector; seventeen stated that there had been a shortage of labor and 11 admitted that job offers had decreased by 40 to 60 percent.

- **Impact on food security**

With regard to product availability, eight of the nineteen respondents from the public sector emphasized that the level of impact of the pandemic on food security was moderate. With regard to the potential for consumer product access, 12 of the respondents reported that the level of impact of the pandemic was weak, unlike that observed by private sector respondents, who believed it to be moderate. Fifteen of the public sector respondents reported that storage capacity was insufficient, an important factor for this sensitive type of food. A plan to solve this deficiency, which causes a major problem in peak production seasons, was thought essential to avoid wastage (Figure 6).

**FIGURE 5 | Perception of the different level of the impact of COVID-19 on the food security**



Source: FAO subregional office's COVID-19 survey.

- **Impact on environmental security**

Ten of the 19 respondents from the public sector said that there was no effect on illegal fishing in Libya as a result of the application of precautionary measures taken by the State. These

measures were thought by eight respondents to cause a lack of surveillance, curfews to ensure the safety of employees (13 respondents), and a lack of resources (two respondents). Fourteen of the 19 respondents thought that there was a possibility of improving the state of fish stocks and environmental conditions by biological closure, reducing fishing effort (10 respondents), reducing pollution, making fishermen particularly aware, applying laws, and by developing, improving and supporting management.

### SUMMARY OF MITIGATION PROPOSALS BY RESPONDENTS

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The respondents' proposals to mitigate the effects of the actions taken by the authorities in response to the COVID-19 pandemic, can be summarized in the following points:

1. Encourage educational and awareness-raising campaigns for fishermen to prevent and reduce the spread of COVID-19.
2. Use of rotational work and electronic means of communication to complete and review official procedures.
3. During the pandemic, exempt fishermen from taxes and fees, support them financially, provide them with operating supplies, and provide the fisheries sector with foreign labor (fishermen).
4. Exclude those engaged in the fishing profession from quarantine measures to facilitate the movement of product and supplies, and facilitate navigation procedures.
5. Encourage and train the private sector to deal with e-commerce to facilitate sale and purchase of marine products.
6. Create a fund to support fishermen in times of crisis and emergency.

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