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To cite this article: Ahmed Chasib Al-Shamary *et al* 2024 *IOP Conf. Ser.: Earth Environ. Sci.* **1371** 022012

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The Impact of the COVID-19 Pandemic on the Commercial Catch of Marine Fish

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Abstract. In the present study, the commercial catch was studied and the catch was compared before and after the Corona pandemic by catching the catch by selecting three stations for the study, the first in the mouth of the Shatt al-Arab, Two station in the mouth of the Shatt al-Arab and marine waters, and three station in the See waters, within Lang Anwar 2 and for the period between December 2017 and 2021 And depending on periods and a questionnaire method for fishermen working in the fishing sector, the results show that the commercial fish catch was greatly affected by Covid 19, and the highest catch was for shrimp, then commercial fish such as *Tenulosa ilisha*, and *E.coioides* .also A fisherman and the results were that the catch was also affected in terms of bringing it for sale or marketing the catch .

Keywords. Commercial fish, COVID-19, Shatt Al-Arab, Marine water.

1. Introduction

The quantity and distribution of many species in the marine ecosystem vary significantly. One of the primary responsibilities of fishery scientists is to determine each species' abundance, fluctuations, and the variables that influence them [1]. The Arabian Gulf is a semi-enclosed shallow sea with subtropical climate [2]. Marine fish that live in deeper water and enter shallower intertidal and sub-tidal zones, in particular during the growing season play an important role as predators in coastal areas [3]. The area will pique the interest of government agencies, environmental organizations, and the international scientific community seeking a fundamental understanding of coral marine ecosystems and today's global climate [4]. The seas and oceans are key sources of protein food, with fish accounting for around 20% of global protein consumption [5,6]. In the Arabian Gulf, More than 465 fish species have been identified, all belonging to the Chondrichthyes and Osteichthyes [7]. Fisheries is one of the most important renewable natural resources in the Gulf, and it comes after oil wealth in its importance. Marine fisheries still depend on artisanal fishing, which the targeting of benthic species and marine fish in the northern Gulf region [8].



2. Material and Methods

Iraq's marine waters are at the extreme northwestern portion of the Arabian Gulf. Three study stations, separated by 15-20 kilometers, were chosen.. Station one, which is located at (29 ° 50'17.98 "N; 48 ° 43'53.28" E), (29°46'48.85"N; 48 ° 43'53.16 "E), includes the area between the effects of the Shatt Al-Arab estuary and open maritime waters. The bottom of this station is rocky and deep. The maritime waters are defined by the station's two coordinates (29° 43'33.41 "N; 48° 43'43.46 "E), (29° 43'33.38 "N; 48° 49'34.85 "E), (29° 40'04.13 "N; 48° 43'43.39 "E), and (29° 40'04.02 "N; 48° 49'34.96 "E). It has a depth of over 20 metres. (Fig.1).

2.1. Fish collecting and identification.

As part of a regional fish survey, fishing-survey boats Anwar 2 (16 m length, 4.5 m width, and 2 m draft) with 150 horsepower were employed to collect fish from three study locations. Each boat is outfitted with a 5x5 cm mesh trawl net and a 3x3 cm mesh bago. The net pull rope measures 75-100 meters in length. The net was pulled for three hurs. Fish were caught every month for a year, from December 2018 to December 2019. [9], and Janury 2017 to December 2018, and January 2020 to December 2021 (Al-Nasr Fishing Association) .identified according to [5 ,10 ,11].

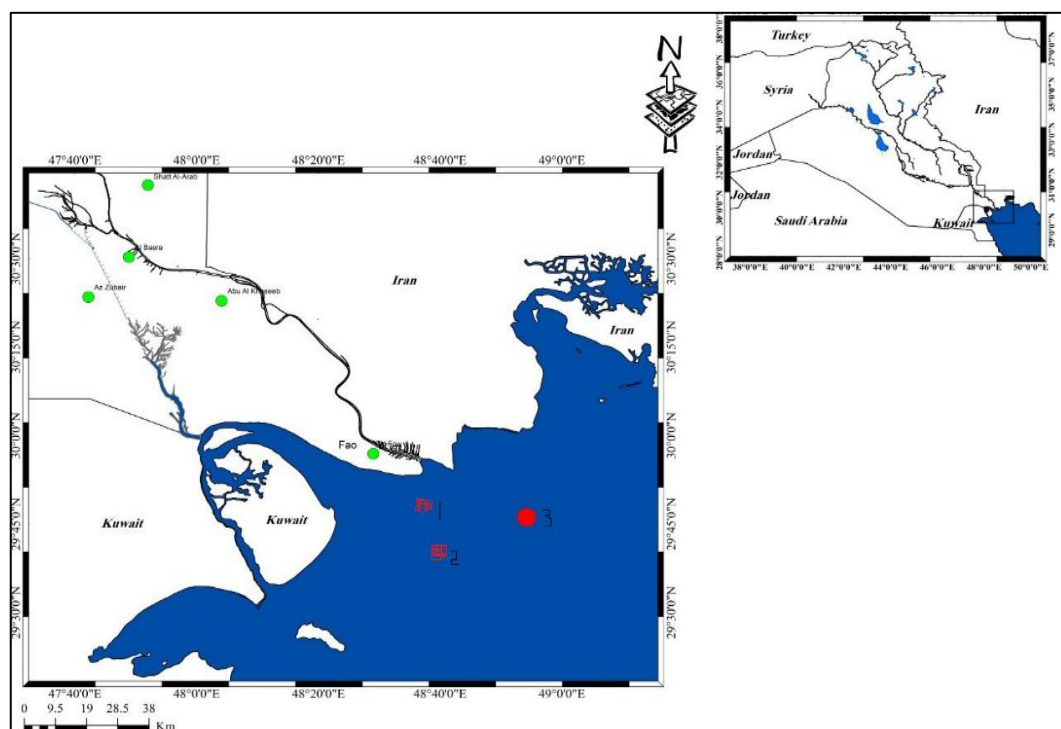


Figure 1. Shows the stations of the fishing area.

3. Results

Fig.(2) shows commercial fish, including *P.kaakan*, *P.argenteus*, *T.ilisha*, *O.ruber*, *E.coioides*, and shrimp, in 2017. It is noted that shrimp appeared in all months of the year, followed by the appearance of commercial fish in some months of the year. We notice the appearance of *T.ilisha* fish in three months in large quantities in April, May, and June, while the rest of the fish appeared with low weights. While It is noted in (Fig.3) the appearance of shrimp in the year 2018 in large weights throughout the year of fishing, while the rest of the commercial fish, including *T.ilisha*, appear in ten months, *P.argenatus* in four months, the appearance of the *P.argenatus* fish in four months, and the appearance of the rest of the caught fish with low weights.

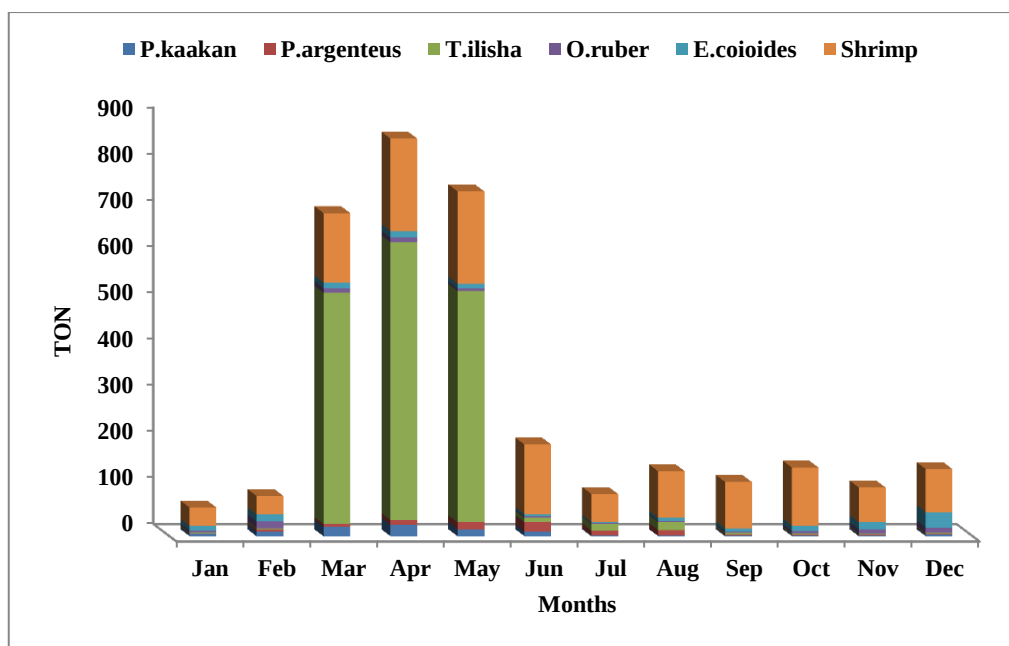


Figure 2. It shows the weights of shrimp and commercial fish caught in 2017.

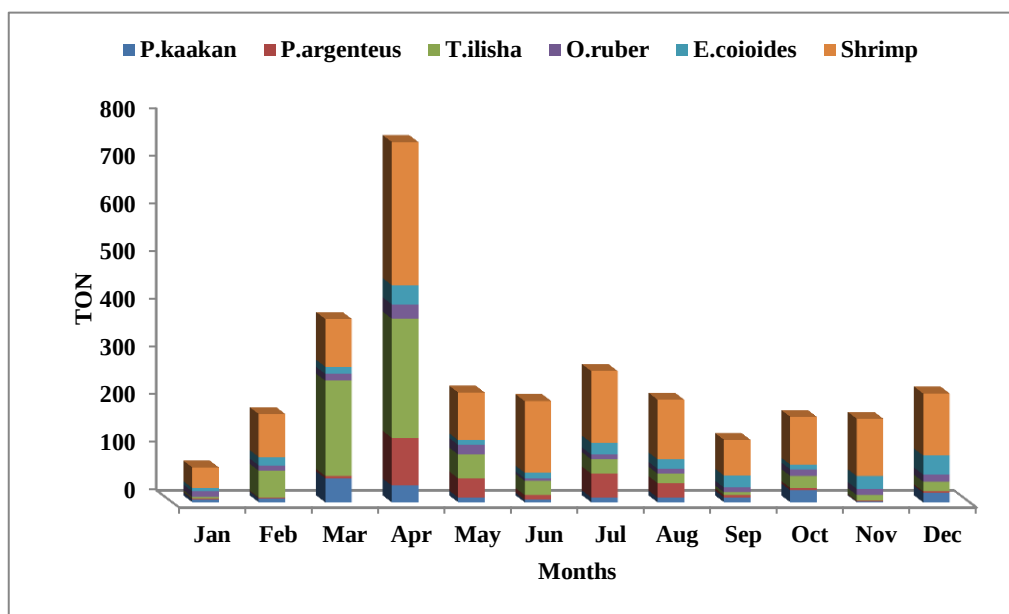


Figure 3. It shows the weights of shrimp and commercial fish caught in 2018.

The catch of shrimp was its highest catch in March, the catch of the *T.ilisha* species was in eight months, and its highest catch was in June, and the catch of the *E.coioides* species was in nine months in the year 2019, while the rest of the species were caught in a few months (Fig. 4).

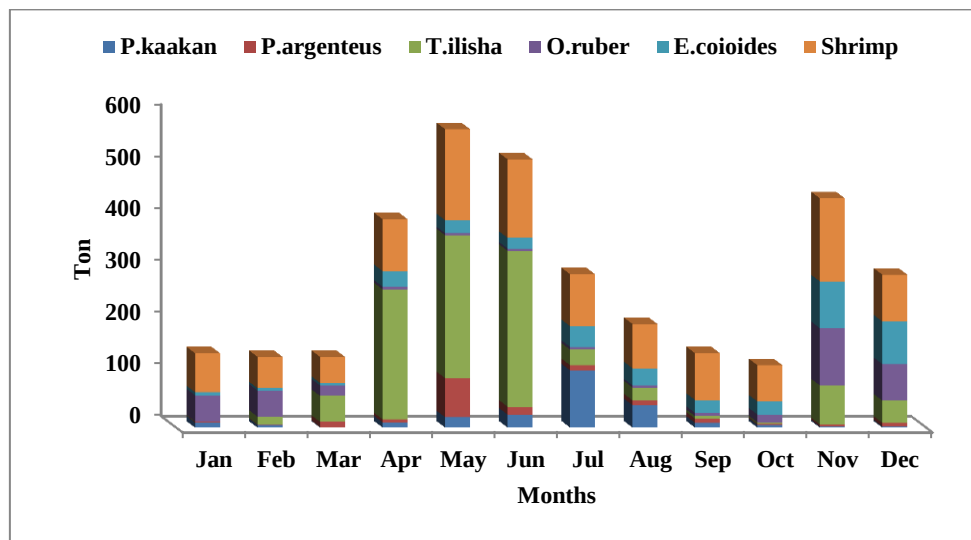


Figure 4. It shows the weights of shrimp and commercial fish caught in 2019.

Notes (Fig .5) as usual, the shrimp catch, which was in all months of the year, and its highest catch was in October, while the catch of other commercial fish was distributed over the months of the year in 2020.

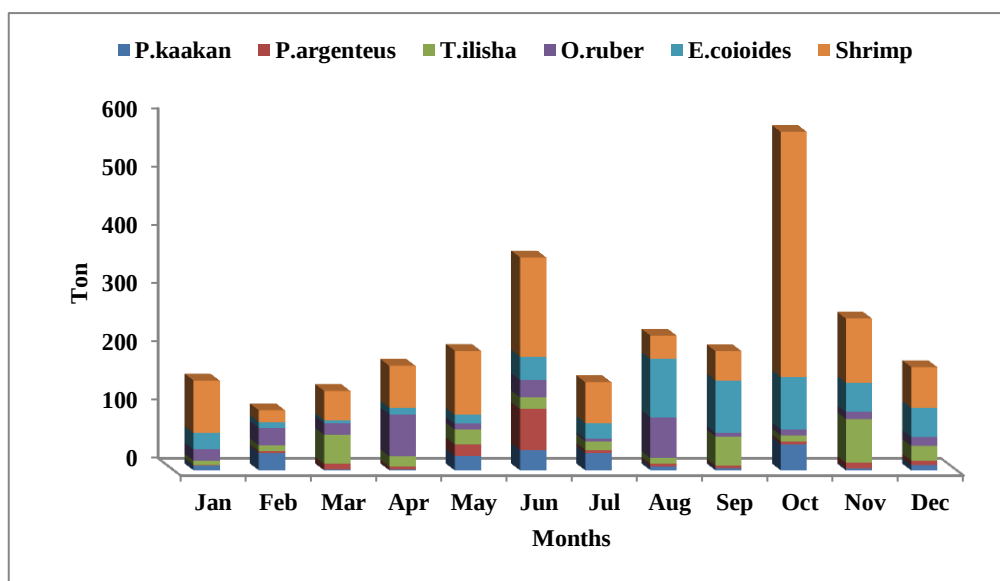


Figure 5. It shows the weights of shrimp and commercial fish caught in 2020.

We conducted a questionnaire for 100 fishermen and administrators in 16 paragraphs, and the results of this questionnaire were that COVID-19 harmed the catch and its scarcity, and the fishermen did not go out to fish for fear of death, and comparing the catch with previous years was better. A questionnaire was conducted for the fishermen segment, and the results of the questionnaire according to forms (1 and 2) showed whether the catch was available in light of the pandemic or not, whether it was not purchased, and the answer was yes, Fig (6,7,8). It was a questionnaire for Fishermen and administrators in light of Covid 19, which consisted of 100 fishermen. The questions for the fishermen were as follows:

1-The amount of catches decreased significantly during the COVID-19 period

-Yes

-I can't predict

-No

2-The impact of Covid 19 included fishing activity
in a wandering net manner-
by trawling method-
-both ways

3-Decreased fishing effort during the pandemic period
-Yes
-I can't predict
-No

4-The most affected species in terms of the amount of catch during Covid 19
--Yes
-I can't predict
-No

5- Were health prevention measures applied during the fishing stage
-Yes
-I can't predict
-No

6- Did the legal and health authorities conduct field visits to markets to implement health procedures
and measures for selling healthy catches
-Yes
-I can't predict
-No

7- Was the catch that came to Al-Fao city sold at the same previous prices, or less or more, in light of
COVID-19
-Yes
-I can't predict
-No

8- The most prominent species that witnessed an increase in prices
-Yes
-I can't predict
-No

9- The catch was first sold at sea in light of Covid-19
-Yes
-I can't predict
-No

10- The number of workers per boat was the same as before or less in light of the Corona pandemic
-Yes
-I can't predict
-No

11- Were several fishing staff infected with the disease during the fishing period at sea? During the
fishing period at sea
-Yes
-I can't predict
-No

12- Some fishermen were fishing while injured.

-Yes

-I can't predict

-No

13- Have there been deaths among fishermen due to the coronavirus pandemic?

-Yes

-I can't predict

-No

14- Did the Corona pandemic have an impact on the activity of non-Iraqi fishermen?

-Yes

-I can't predict

-No

15- Was the non-Iraqi catch marketed to Iraq or not, and was it expensive or cheap in light of the coronavirus pandemic?

-Yes

-I can't predict

-No

16- Impacts on the living conditions of fishermen in light of the Corona pandemic

-Yes

-I can't predict

-No

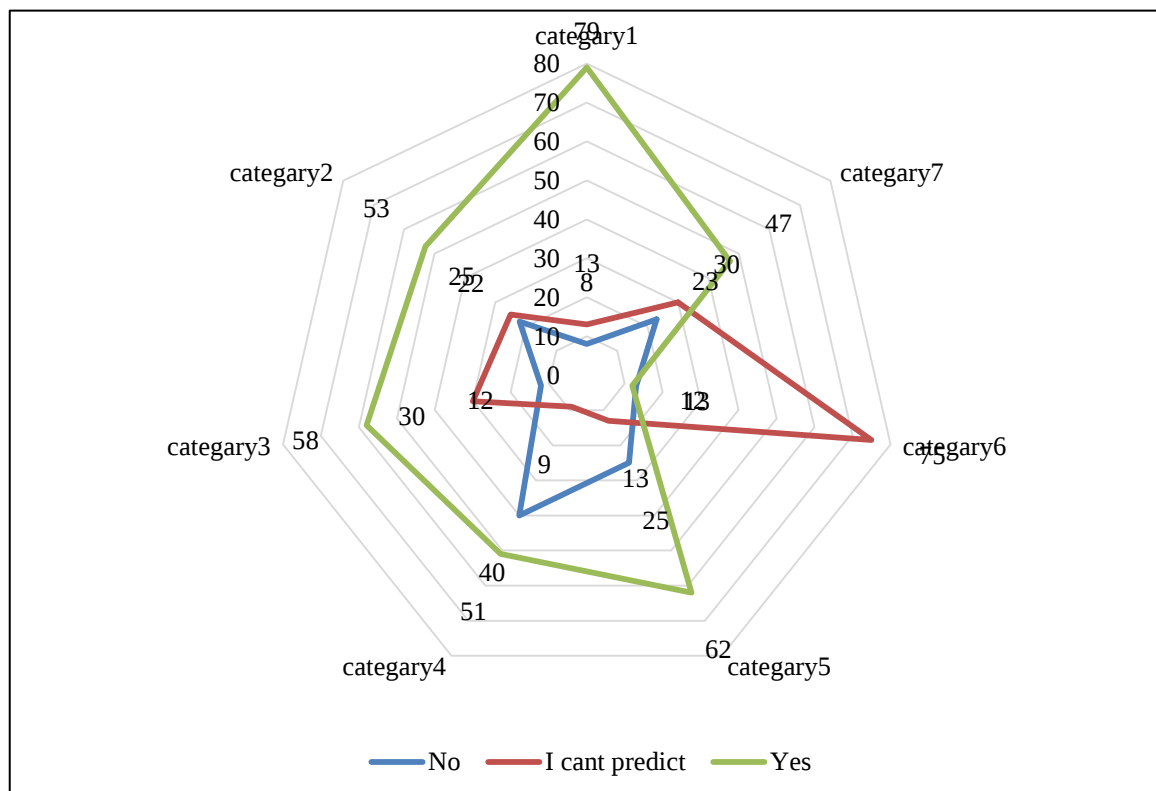


Figure 6. Shows the results of the fishermen's questionnaire from 1-7.

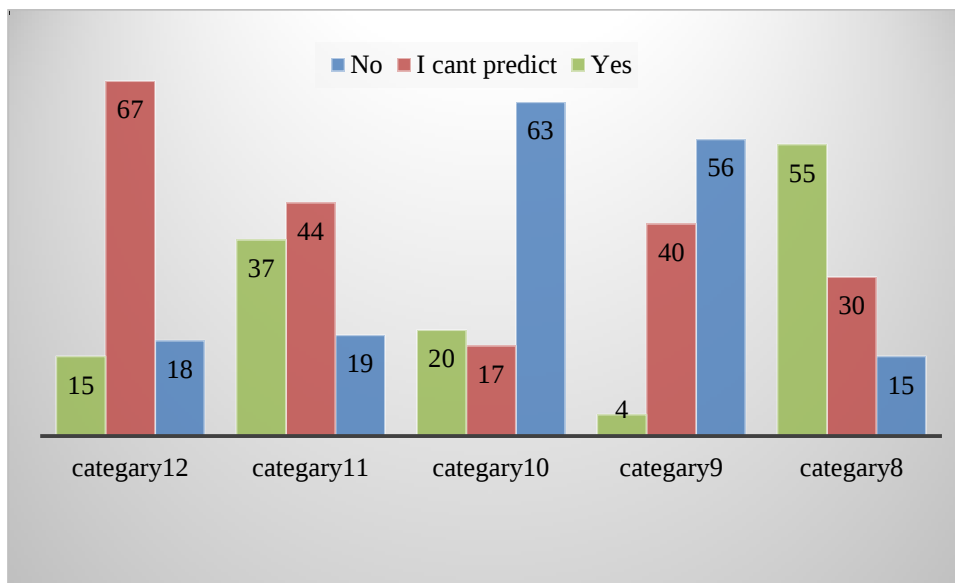


Figure 7. Shows the results of the fishermen's questionnaire from 8-12.

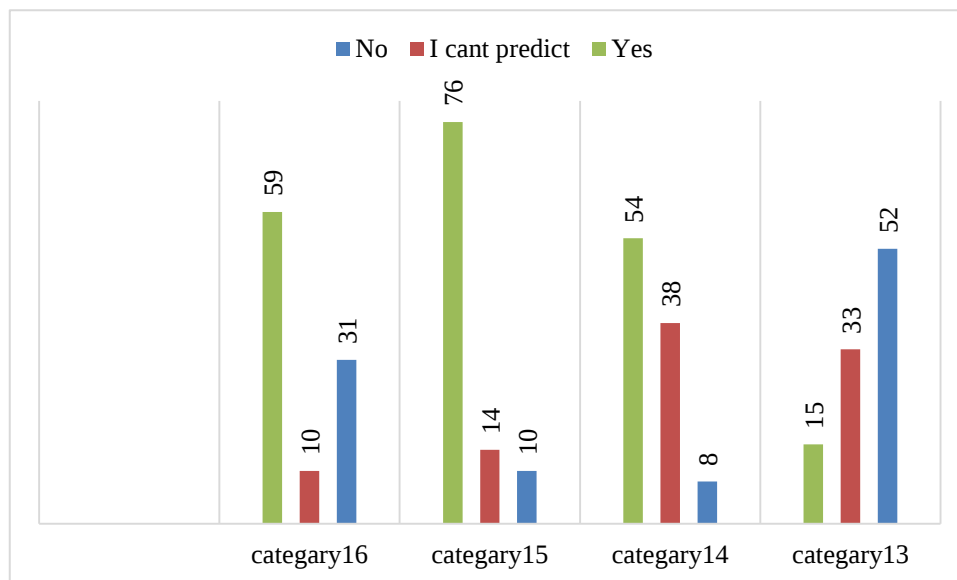


Figure 8. Shows the results of the fishermen's questionnaire from 13-16.

4. Dissection

When studying the catch quantities before COVID-19, it is noted that the catch quantities were large in 2017 and 2018, especially "shrimp and some commercial fish." Such as Zubaida and shrimp 0.39% and 38.25% of the total catch for the year 2017. This is consistent with what [9]. He found 2152 tons during his study at The head of the Shatt al-Arab for the period from December 2018 to December 2019. The present study confirms that the catch during the Covid 19 began to decline, and the reasons may be due to the fishermen not going out to the catch for fear of "disease" and also "because of the measures to prevent fishing in light of Covid 19, and thus a decrease in the market price for the years 2019, 2020, 2021 and when compared to previous years, This is consistent with Qasim's [12]. memorandum during his study of fishing efforts and fishermen in Iraqi marine waters, and while it must We would like to point out that one of the reasons for some commercial fish is the accompanying climatic changes that have been related recently and as indicated in the results of the questionnaire above. During his investigation of marine waters, the modest number of fishing boats in the Present study resulted in a decline in commercial fish catches. Al-Shamary [13] reported that fishing boats,

climate changes, and fishermen's overfishing all contributed to a reduction in fish catches compared to earlier years while studying Iraqi marine waterways.

The 16 points in the questionnaire for 100 fishermen and administrators proved that the catch was available during the Corona pandemic, but the demand for it for purchase was weak from the local population for fear of Covid 19. This is the same thing I reached [13,14,15] arrived at during his study on catching seasonal fish in the intertidal environment. It seems that the Corona pandemic affected the catch and fishermen, as the shrimp was not affected by the catch, which is more than other commercial fish, because it faced the appropriate conditions for it due to the lack of fishing in Iraq and neighboring countries, and the sabour came in second place because the migration of the sabour was increasing and freely in the fishing years 2017, 2018, 2019 and 2020.

Conclusion

The total catch of commercial fish and shrimp was affected by the Corona pandemic compared to previous years in terms of fishing effort, fishermen, their livelihood, and their health status.

Acknowledgment

Special thanks to Al-Nasr Fish Marketing Association in Al-Faw district for providing us with information about catch quantities.

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