



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(6): 2985-2990
© 2022 TPI
www.thepharmajournal.com
Received: 23-04-2022
Accepted: 29-05-2022

Ifqa Mushtaq Siddique
M.F.Sc. Scholar, Division of
Social Sciences (Fisheries
Extension), Faculty of Fisheries,
Sher-e-Kashmir University of
Agricultural Sciences and
Technology of Kashmir
(SKUAST-K), Rangil,
Ganderbal, Jammu and
Kashmir, India

Dr. Rizwana Malik
Assistant Professor, Division of
Social Sciences (Fisheries
Extension), Faculty of Fisheries,
Sher-e-Kashmir University of
Agricultural Sciences and
Technology of Kashmir
(SKUAST-K), Rangil,
Ganderbal, Jammu and
Kashmir, India

Dr. Peerzada Mohammad Iqbal
Senior Professional Assistant,
Faculty of Fisheries, Sher-e-
Kashmir University of
Agricultural Sciences and
Technology of Kashmir
(SKUAST-K), Rangil,
Ganderbal, Jammu and
Kashmir, India

Sadiya Farooq
M.F.Sc. Scholar, Division of
Aquaculture, Faculty of
Fisheries, Sher-e-Kashmir
University of Agricultural
Sciences and Technology of
Kashmir (SKUAST-K), Rangil,
Ganderbal, Jammu and
Kashmir, India

Corresponding Author
Ifqa Mushtaq Siddique
M.F.Sc. Scholar, Division of
Social Sciences (Fisheries
Extension), Faculty of Fisheries,
Sher-e-Kashmir University of
Agricultural Sciences and
Technology of Kashmir
(SKUAST-K), Rangil,
Ganderbal, Jammu and
Kashmir, India

Impact of pandemic (Covid-19) on select fisheries market: A supply chain analysis in district Srinagar, J&K

Ifqa Mushtaq Siddique, Dr. Rizwana Malik, Dr. Peerzada Mohammad Iqbal and Sadiya Farooq

Abstract

The Pandemic Covid-19 crises caused unprecedented lockdowns, hitting hard the small scale fisheries sector and its market. The aim of the study was to assess the immediate effect of covid-19 pandemic on small scale fisheries in Kashmir valley. The primary data was collected through personal visits. A well-structured interview schedule comprising of 16 open ended questions was used to collect data from 80 fisher respondents from 3 fisher dominant areas (viz Moti Mohalla, Tailbal, Dobhighat) of district Srinagar, J&K, India. The data collected was analyzed using different statistical tools like MS-Excel, PAST-4 and SPSS. The outcome of the study concluded that most of the small scale fishers suffered a substantial impact on income, marketing and supply chain of fishes and fish products. The study also revealed that, despite normalization and re-opening of markets most of the fishers have not recovered from their financial losses.

Keywords: Covid-19, lockdown, pandemic, fisheries, income

Introduction

Corona viruses are a large family of viruses that causes illness in humans and animals. Several corona viruses have been reported that are responsible for causing infections in humans, ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome and Severe Acute Respiratory Syndrome [1]. The recently discovered novel corona virus SARS-CoV-2 caused the Corona virus Disease 2019 (World Health Organization). Initiating from Wuhan City, (China) on 31st of December 2019, the novel pandemic immobilized the world by posing a great shock to the health of people and economy of the world [2]. On analyzing the devastating extent of the pandemic, World Health Organization declared COVID-19 as a global emergency on 30th of January 2020 and a pandemic on 11th of march 2020 (Johns Hopkins Corona virus Resource Center [3]).

In Kashmir a strict lockdown was imposed from 26th of March 2020, leading the whole capture fisheries to halt. Although Covid-19 does not affect fish, the fisheries sector is still subjected to indirect impacts of the pandemic through restriction imposed on fishing operations, reduced fish prices, changing consumer demands and market access. The study focused specifically on the impact of the pandemic on small-scale fisheries and its market.

Materials and Methods

Locus of study area: The present study was carried in district Srinagar of Jammu and Kashmir. The union territory falls in Northern India, with Srinagar as summer capital and Jammu as winter capital. There are about 1230 water bodies in entire union territory of Jammu and Kashmir. The major lakes in Srinagar are Dal Lake, Nigeen Lake and Anchar Lake. With River Jhelum flowing in the heart of the city.

Selection of study area: District Srinagar was purposively selected for the study as it is one of the major fish producing district of Kashmir and also it was easily accessible during the pandemic. Among the lakes Dal lake was purposively selected as it is inhabited by majority of fishers. A list of fishers dominant mohallas/areas around Dal Lake was procured from department of fisheries. The department of fisheries has divided Dal lake into two sub circles, "A" and "B". The sub circle "A" comprises of fisher dominant areas like Tailbal (A), Dobhighat, Merak Shah Colony and sub circle "B" consisted of Motimohalla, Tailbal (B) and

Sheikh Mohallah. The 3 fisher dominant areas viz Dobighat and Tailbal (A) from sub circle "A" whereas MotiMohalla and Tailbal (B) from subcircle "B" were randomly selected by using a chit method.

Selection of respondents: A total number of 80 respondents were selected by random sampling method and constituted both male (38) and female (42) fishers. A total number of 44 respondent fishers were selected from MotiMohalla, 18 from Tailbal and 18 from Dobighat Dargah. The sample size was taken proportionally according to the total population size.

Data collection: The principal researcher collected the primary data by in personnel visits to fishing communities by maintaining all the necessary SOPs. The data was collected using a structured interview schedule which consisted of 16 open ended questions assessing the effect of covid-19 on marketing and supply chain.

Data analysis: The different statistical tools and approaches were used to analyze and interpret the collected data. The software's used during the study were Microsoft-EXCEL used for tabulation and frequency distribution.

Results

If there has been change in your income estimate the percentage in comparison to the same period previous year?

Table 1 depicted that 27.5% of respondents recorded 70% decline in their total income, followed by 21.25 % reported 50% of decline and 20% of respondents claimed to face 60% of decline in income when compared to last year. The table also reported that 11.5% and 10 % of respondents faced 80% and 85% reduced incomes due to covid-19. Also, a small population of about 5% reported 75% and 90% of reduction in their income.

Table 1: Impact on income of fishers when compare to last year

Statement	50%	60%	70%	75%	80%	85%	90%
Change in income as compared to same period previous year?	17(21.25)	16(20.00)	22(27.5)	4(5.00)	9(11.25)	8(10.00)	4(5.00)

If there has been change in amount of fish sold estimate the percentage in comparison to the same period last year?

It is evident from table 2 that 30% of respondents have faced

60% change in amount of fish sold, followed by 70% and 80% reduction in total amount of fish sold, faced by 25% and 20% of respondents respectively.

Table 2: Impact on amount of fish sold when compare to last year

Statement	50%	60%	65%	70%	75%	80%	90%
Change in fish sold as compared to same period last year?	9(11.25)	24(30.00)	3(3.75)	20(25.00)	7(8.75)	16(20.00)	1(1.25)

What changes have you encountered in the amount of fish sold during covid-19?

It is observed from table 3 that all the respondents agreed that

the pandemic has significantly decreased their amount of total fish sold.

Table 3: Changes in amount of fish sold

Statement	Increase (%)	Decrease (%)	No effect (%)
What changes have you encountered in the amount of fish sold during COVID?	0 (0.00)	80(100.00)	0 (0.00)

Change in fish prices during covid-19?

The results in table 4 concluded that majority of respondents (85.00%) strongly felt that there was a sharp decline in fish

prices whereas small portion of population of about 6.25% believed there was no change in fish prices (Table 4).

Table 4: Changes in fish prices

Statement	Increase (%)	Decrease (%)	No effect (%)
Change in fish prices during COVID-19?	7(8.75)	68(85.00)	5(6.25)

How has the crises impacted the way you sell your product?

Data tabulated in table 5 revealed 58.75% of respondents felt that disruption of local markets responsible for reduced marketing whereas 26.25% of respondents found that

disruption of regional markets hindered their marketing. Moreover a small population of about 15% felt that the marketing was also affected by other factors like closure of all kind of markets, decrease in demand and reduced fishing activities.

Table 5: Impact on marketing of products

Statement	Disruption in operation of local markets	Disruption in operation of regional markets	Other
How has the crisis impacted the way you sell your product?	47(58.75)	21(26.25)	12(15)

Post lockdown, People prefer buying fishes from?

On analyzing the data tabulated in table 6 it was found that 51.25% of respondents reported that people prefer buying fishes from fish markets whereas 26.25% felt that people

prefer buying fishes from vendors. Also 22.5% experienced that people buy fishes from retailers and fish shops like kaloo fish shop.

Table 6: Post lockdown People prefer buying fishes from

Statement	Fish markets	Vendors	Retailers and fish shops
Post lockdown People prefer buying fishes from?	41(51.25)	21(26.25)	18(22.5)

How has supply chain for fish products been affected?

Table 7 revealed that, 52.5% respondents believed that supply chain of fish products like smoked fishes (called as phari in Kashmiri) and fry’s (called as Hogad) have been affected due to disruption in transportation whereas 23.75% of respondents

reported that disruption in processing was the main reason. 22.5% felt other reasons like unavailability of fishes, decreased demand and restrictions imposed, responsible for difficulties in supply chain of fish products.

Table 7: Effect on supply chain of fish products

Statement	Disruption in transportation	Disruption in processing	Other
How has supply chain for fish products been affected?	43(53.75)	19(23.75)	18(22.5)

How has the supply chain for fishes been affected?

It was observed from the data in Table 8, that 35% of respondents found that closure of markets was responsible for declination in supply chain of fishes. Also 31.25% respondents expressed that both the closure of markets and

unavailability of transportation and consumers was the main cause of reducing fish supplies. The table further revealed that 33.75% of respondents reported that other reasons like reduced demands, reduced fishing activities were responsible for disruption in supply chain.

Table 8: Effect on supply chain of fishes

Statement	Closure of markets	Unavailable transport and consumers	Other
How has the supply chain for fishes been affected?	28(35)	25(31.25)	27(33.75)

What is the affect of production of other products from water bodies (Nadroo, water chestnuts etc.)?

From table 9 it can be depicted that majority of respondents (43.75%) felt no change in other products harvested from

water like vegetables, water chestnuts and lotus stem. Also 32.5% of respondents and 23.75% found a decrease and increase in the products respectively.

Table 9: Effect on other products harvested from waters bodies

Statement	Increase	Decrease	No effect
What is the affect on production of other products from water bodies (Nadroo, water chestnuts, vegetables)?	19(23.75)	26(32.5)	35(43.75)

Where did you stored the catch?

Table 10 revealed that majority of respondents (43.75%) stored their catch in traditional baskets with cold water and

ice. Also, it was found that 20% of participants stored their catch in refrigerators and 36.25% respondents managed to store their catch in ice storages.

Table 10: Management of catch

Statement	Refrigerator	Ice	Traditional Baskets
Where did you stored the catch?	16(20)	29(36.25)	35(43.75)

What type of support have been offered by the private /public sectors during the time of crises?

It is evident from table 11 that majority of respondents (72.5%) were provided with free distribution of masks and

sanitizers, awareness programmes, daily commodities and medicines. whereas some of respondents (27.5%) were reported that they were given relaxation in utility payments.

Table 11: Support offered by private and public sectors

Statement	Financial securities/ unemployment payments	Delay in utility payments	Other
What type of support have offered by the private/public	0(0.00)	22(27.5)	58(72.5)

What support would you require from the private /public sectors during this crises in order to continue contributing to food security and generating income?

The table 12 depicted that 35% of respondents expected micro loans and 33.75% respondents demanded for promotion of

fish consumption. Also, 31.25% of respondents expected some other support from government like financial helps, distribution of funds, to address the problems faced by them on larger scale.

Table 12: Type of support required by fishers

Statement	Micro loans	Promotion of fish consumption	Other
What support would you require from the private/public sector during this crisis in order to continue contributing to food security and generating income?	28(35)	27(33.75)	25(31.25)

How did you sell your catch after lockdown?

Table 13 reported that majority of the respondents (63.75%) directly sell their catch to consumers. 18.75% of fishers sell

their product via retailers and about 17.5% of respondents required middleman for marketing of catch.

Table 13: Marketing channel followed

Statement	Direct	Retailer	Middlemen
How did you sell your catch after lockdown?	51(63.75)	15(18.75)	14(17.5)

How are you currently planning to cope with the cash flow?

It was interpreted from table 14 that 48.75% respondents applied for micro and macro loans where as 33.75% delayed

their payments. Also, a small portion of about 17.5% participants consumed their savings and also indebted themselves to resist with the cash flow.

Table 14: Ways to cope up with the cash flow

Statement	Loans	Delaying payments	Savings/Debits
How are you currently or planning to cope with the cash flow?	39(48.75)	27(33.75)	14(17.5)

What is the current situation regarding the supply of production materials and operations?

The data tabulated in table 15 reported that majority of respondents (70%) experienced there was complete disruption

in the supply and operations after lockdown whereas 30% of respondents reported sufficient supply of raw materials and operations.

Table 15: Post lockdown scenario of supply of raw materials and operations

Statement	Total disruption of supply and operation	Satisfactory supply and operation	No effect
What is the current situation regarding the supply of production materials and operations?	56(70.00)	24(30.00)	0(0.00)

What kind of alternate occupation would you prefer in case of similar emergency in future?

Table 16 depicted that majority of respondents (26.25%) have not decided any specific occupation. it was also reported from

table that 18.75% respondents choose laborer (18.75%) as their first preference followed by farming (15%), clerical work (13.75%), house hold chores (12.5%), embroidery artisans (10%) and dairying (3.75%).

Table 16: Different substitute works fishers opted

Statement	Clerk	Dairying	Embroidery Artisans (Tilawork, Aari work)	Farming	Household Works	Labor	Not decided
What kind of alternate occupation would you prefer in case of similar emergency in future?	11(13.75)	3(3.75)	8(10)	12(15)	10(12.5)	15(18.75)	21(26.25)

Discussion

The covid-19 crises had shocked aquaculture value and supply chain with special reference to capture fisheries. The pandemic caused a sudden financial disturbance, mental and social. It halved the demand for fish and fish products and massively disrupted the marketing and supply chain [4].

Effect of covid-19 on fishing operations and income as compared to last year

The results of the present study revealed that majority of respondents experienced 60-70% of reduction in their income and the amount of fish sold when compared to same period previous year. Sudden outbreak of pandemic and imposition of lockdown gave them no time for preparedness to tackle the upcoming issues and challenges. Similar studies have been carried by [5, 6, 7, 8, 9]

Impact of covid-19 on marketing of fish

All of the respondents under study agreed that pandemic significantly decreased their amount of total fish sold. The main cause behind this was restrictions on movement, transport, supply of input materials, no marketing, decreased demand from customers and deflation of fish and fish products. Findings are in a line with studies carried by [10, 11, 12,

13, 14]

Effect of covid-19 on demand of fish

The initial challenge was to restore the supply system. With a relaxation in restrictions, it was expected that marketing and supply chain would return to normal but that didn't happen. As the work resumed the fish prices drastically reduced. The demand of fish and fish products declined because customers were scared of getting infected with fishers or fishes. The fishers preferred to sell their catch at half of the actual prices in order to increase the demand among customers and generate some income for their livelihood. Similar studies have been carried by [15, 16, 17]

Impact of pandemic on fish price

The results further revealed that a part of population under study accused retailers and fish shops who sell their catch to fishers at higher prices and lower prices to customers in order to increase demand among customers and convince them to buy fishes from them at cheaper rates. Also, a minority of respondents experienced no change in fish prices because they sold their catch to their regular customers and retailers at same price thus generated some amount of income to sustain. The studies are similar to [18, 19, 20, 21]

Disruption of markets and changing consumers preferences

The crises negatively affected the way fishers sell their products. Majority of participants believed that the main factor that affected their marketing was disruption and closure of local markets where they used to sell their product because according to them, they had already made a market and gained some regular customers in these local markets that got disrupted due to pandemic

Due to crises not only demand for fish was halved but also the preference of customers changed. With the fear of getting infected with virus majority of respondents claimed that customers swapped from fish markets and vendors to fish shops like kaloo fish shop in Nowhata and fish retailers in Chattbal. Also, customers preferred buying fishes from shops and retailers due to availability of varieties at cheaper rates.

Effect of covid-19 on marketing of fish products and other products harvested by fishers

The results of present study revealed that supply chain and marketing for fish and fish products like Phari (smoked fish), Hogad (driedfingerlings) recorded a significant reduction due to combination of reasons like limited movement of customers as restrictions not lifted properly, disrupted transportation and processing, closure of 50% of markets, decreased demand and reduced number of fish caught. Also, there was no or negligible change in other products like vegetables (saag, nadroo, palak) harvested from water bodies. Similar studies have been carried by Hasan *et al.* (2021) and Hoque *et al.* (2021) which shows effect of covid-19 on marketing.

Storage of fish

As fish being most perishable commodity, it becomes a prime requisite to keep an arrangement for their storage. As ice being conventional and cheap, majority of participants stored their catch in ice storage, traditional baskets with water and ice. Minor part of population under study stored their catch in refrigerators as majority of respondents could not afford refrigerators and other refrigerating techniques as they are expensive.

Effect on marketing channels

The present study concluded that the most of the respondents prefer to market their catch directly to the consumers as they feel it more convenient and profitable method rather than getting engaged in other marketing channels. Also, they have some trust issues regarding their profits when they get involved in other sources of marketing channels like middle man. Whereas a minor part of population under study prefer to sell their product via retailers and middleman. They believe it to be more convenient and profitable way of marketing. The present study is similar to the studies conducted by ^[22, 23].

Support offered from private and public sectors:

In the difficult times of pandemic, the support offered by private and public sectors came up as, free distribution of surgical masks, sanitizers, hand washes, daily essentials and other sort of essentials like medicines and some awareness programs. Where as a part of participants confessed of giving relaxation of utility payments, payback, and increase in payback tenure and also decrease some interest rates on micro loans.

Also, a small number of respondents claim of no support, as

the distributors being biased and thus distributed the essential commodities among their known ones. Majority of respondents expect the support in means of micro loans, promotion of fish consumption among consumers, address their problems and challenges, financial support and some funds from government to combat and overcome the loss caused by pandemic.

Mitigating the effect of covid-19

The study further revealed that post lockdown majority of respondents try to combat their loss by applying for micro loans from private and government sectors, delayed payments and financial helps to cope up with the cash flow.

Changing occupations

Natural disasters are an event that cause a huge harm and damage suddenly as they befall anytime without admonishing on asking about the backup or some other profession in case of similar emergency in future. We got to know that majority of male respondents wanted to change their occupation and apply for some kind of government clerical jobs, ambulance driver, laborers, carpenters, masons and vegetable vendors so that they can generate a good income from such professions and resist if same kind of emergency occurred in future. Whereas female respondents preferred household work, embroidery artisans like needle work, Tillawork, Aarikaam, stitching, and cleaners in government offices.

Also, a part of population have-not decided anything as of now because they believe and feel that they are not capable of doing anything other than fishing and marketing them.

Conclusion

The work concluded that the Covid-19 almost halved and reduced the demands of fish and fish products that ultimately disrupted the marketing and supply chain. Fishers faced hindrances like restriction on movement and transport, destruction of local and regional markets, reduced demands, decrease in duration of fish caught and amount of fish caught. All these obstacles resulted in the overall reduced income of small scale fishing communities of Kashmir valley.

Acknowledgement

The authors are highly acknowledged to the Faculty of Fisheries, SKUAST-K and respondents for their continuous supports and help.

References

1. Hongzhou Lu, Charles WS, Yi Wei T. Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. *Journal Medical Virology* 2020;92(4):401.
2. Sohrobi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, *et al.* World Health Organization declares global emergency. A review of the 2019 novel coronavirus (COVID- 19). *International Journal of Surgery*. 2020, 71-76.
3. John H. COVID-19 Map-Johns Hopkins Coronavirus resource centre. Johns Hopkins Coronavirus Resource Centre, 2020.
4. Achou B, Boisclair D, d'Astous P, Fonseca R, Glenzer F, Michaud PC. Early impact of the COVID-19 pandemic on household finances in Quebec. *Canadian Public Policy*. 2020;46:217-235.
5. El-Kadhi Z, Elsabbagh D, Frija A, Lakoud T, Wiebelt M,

- Breisinger C. The impact of COVID-19 on Tunisia's economy, agri-food system and households. International Food Policy Research Institute, 2020, 5.
6. Jomitol J, Payne AJ, Sakirun S, Bural MO. The Impacts of COVID-19 to Small Scale Fisheries in Tun Mustapha Park, Malaysia, 2020.
 7. Kaewnurachadasorn P, Smithrithee M, Sato A, Wanchana W, Tongdee N, Sulit VT. Capturing the impacts of COVID-19 on the fisheries value chain of Southeast Asia. *Fish for the People*. 2020;18:2-8.
 8. OECD. The impact of the COVID-19 pandemic on jobs and incomes in G20 economies, 2020.
 9. Albanesi S, Kim J. Effects of the COVID-19 recession on the US labor market: Occupation, family and gender. *Journal of Economic Perspect*. 2021;35:3-24.
 10. Belton B, Rosen L, Middleton L, Ghazali S, Mamun AA, Shieh J, *et al*. COVID-19 impacts and adaptations in Asia and Africa's aquatic food value chains. *Mar. Policy*. 2021;129:104523.
 11. Hasan NA, Heal RD, Bashar A, Bablee AL, Haque MM. Impacts of COVID-19 on the finfish aquaculture industry of Bangladesh: A case study. *Mar. Policy* 2021;130:104-577.
 12. Hoque MS, Bygvraa DA, Pike K, Hasan MM, Rahman MA, Akter S, *et al*. Knowledge, practice and economic impacts of COVID-19 on small-scale coastal fishing communities in Bangladesh: Policy recommendations for improved livelihoods. *Mar. Policy*. 2021;131:104-647.
 13. Loison SA, Shikuku KM, Mohan AB, Babu R, Belton B. Effects of COVID-19 on fish value chains: Descriptive Evidence from India, 2021.
 14. Sunny AR, Sazzad SA, Prodhan SH, Ashrafuzzaman M, Datta GC, Sarker AK, *et al*. Assessing impacts of COVID-19 on aquatic food system and small-scale fisheries in Bangladesh. *Mar. Policy* 2021;(126):104-422.
 15. Froehlich HE, Gentry RR, Lester SE, Cottrell RS, Fay G, Branch TA, *et al*. Securing a sustainable future for US seafood in the wake of a global crisis. *Mar. Policy* 2021;124:104-328.
 16. Love DC, Allison EH, Asche F, Belton B, Cottrell RS, Froehlich HE, *et al*. Emerging COVID-19 impacts, responses and lessons for building resilience in the seafood system. *Global Food Science*. 2021;1:100-494.
 17. White ER, Froehlich HE, Gephart JA, Cottrell RS, Branch TA, Agrawal Bejarano R, *et al*. Early effects of COVID 19 on US fisheries and seafood consumption. *Fish*. 2021;22:232-239.
 18. Mead D, Ransom K, Reed SB, Sager S. The impact of the COVID-19 pandemic on food price indexes and data collection. *Mon. Labour Rev*. 2020;143:1.
 19. Meharoof M, Gul S, Qureshi NW. Indian seafood trade and COVID-19: Anticipated impacts and economics. *Food and Scientific Reports*, 2020.
 20. Amar AB, Belaid F, Youssef AB, Chiao B, Guesmi K. The unprecedented reaction of equity and commodity markets to COVID-19. *Finance Res. Lett*. 2021;38:101-853.
 21. Umar Z, Gubareva M, Teplova T. The impact of COVID-19 on commodity markets volatility: Analyzing time-frequency relations between commodity prices and coronavirus panic levels. *Resource Policy*. 2021;73:102-164.
 22. Khudhair HY, Alsaud AB, Alsharm A, Alkaabi A, Al Adeedi A. The impact of COVID-19 on supply chain and human resource management practices and future marketing. *International Journal of Supply Chain Management*. 2020;9:16-81.
 23. Janny HC, Peter SHLF. Marketing in the Era of COVID-19. *Italian Journal Mark*. 2020;4:249- 370.