THE IMPACT OF COVID-19 PANDEMIC TO THE SOCIO-ECONOMIC STATUS OF THE FISHERFOLK IN THE COASTAL AREAS OF TANGUB CITY, PHILIPPINES

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Abstract

This study analysed the impact of COVID-19 pandemic to the socio-economic status of fisherfolk in the five coastal areas in Tangub City Descriptive statistics were used to assess the income gap of fisherfolk before, during, and after the pandemic. The results revealed that the average income of Php 7,715.00 before the pandemic decreased to Php 4,950.00 during the pandemic, indicating a financial crisis. However, income increased to Php 9,050.00 after the pandemic as fishing activities and other sources of income resumed. This indicates that the COVID-19 pandemic had a negative effect on the socio-economic status of the fisherfolk. Additionally, the fisherfolk faced problems such as sudden weather changes, reduced production volumes, lack of access to technology and financial resources, inadequate fishing materials, and the abundant presence of marine mussels, which damaged boats and fishing nets. Based on these findings, the study recommends that responsible agencies, including the Local Government Unit (LGU) and the Department of Agriculture – Bureau of Fisheries and Aquatic Resources (DA-BFAR), provide financial support in the form of direct assistance, loan facilities, training in sustainable fishing practices, and livelihood programs focusing on value-added activities like fish processing to enhance resilience against future disruptions. Furthermore, future research should investigate the causes of the abundant presence of marine mussels, their economic and environmental impacts, and their implications for other aquatic species in the coastal areas of Tangub City, Philippines.

Keywords: *COVID-19 pandemic, fisherfolk, socio-economic impact, coastal communities, Philippines*

INTRODUCTION

In December 2019, an outbreak of a novel virus was reported in Wuhan, Hubei Province, China. This virus, known as Coronavirus Disease 2019 (COVID-19), has led to the deaths of millions of people worldwide (Ciotti et al., 2020). As the virus spread rapidly, countries and territories across the globe implemented stringent control measures. Lockdowns and shutdowns

were widely adopted as social interventions to curb the spread of the virus (Das et al., 2022). However, these measures caused significant disruptions to businesses and led to a massive economic shock on a global scale (Martin et al., 2020). Consequently, many countries experienced a global crisis that severely impacted socioeconomic conditions. Socioeconomic status is a measure of an individual's or group's combined economic and social position (Baker, 2014). The COVID-19 pandemic posed a significant threat to socioeconomic conditions worldwide. As the virus became uncontrollable, many nations imposed nationwide lockdowns, which severely affected various sectors and had a profound impact on national economies (Gupta, 2022). The livelihoods of individuals were also disrupted, with large declines in income, increased unemployment, and reduced supply of commodities leading to a surge in demand for basic necessities (Mishra et al., 2020). In particular, the demand for fish, both for food consumption and other uses, increased during the pandemic. Consequently, many households in coastal villages turned to fishing as a primary source of livelihood. Fishing is one of the oldest human activities and remains crucial in many countries, contributing significantly to employment, the economy, and the food supply of coastal communities (Ayyappan, 2012). Fisherfolk serve as the backbone of the economy and are essential to food security (Stuart et al., 2003). Fishing provides a critical source of income for coastal populations, helping them meet their daily needs. Unfortunately, the sudden spread of COVID-19 led to economic freezes in many countries, including the Philippines (DTI, 2019). As a result, many workers, including those in government and marginalized sectors, were forced to stop working. Fisherfolk, who belong to the marginalized sectors, were particularly affected as fishing is one of their main sources of income. Many regions reported significant declines in fish prices during this period (Richard, 2013). The market for fish also became an obstacle, as many fish collectors limited their purchases from fisherfolk. This study focuses on the effects of the COVID-19 pandemic on the lives of fisherfolk in the coastal areas of Tangub City, Misamis Occidental, where fishing is a primary source of income due to the proximity to coastal areas.

1.1 OBJECTIVES OF THE STUDY

This study aims to analyze the impact of COVID-19 pandemic to the socio-economic status of the fisherfolks in the coastal areas of Tangub City, Philippines.Specifically, it seeks to:

1. Assess the income gap expe-

rienced by fisherfolk before, during, and after the pandemic.

2. Identify and examine the challenges faced by fisherfolk in the coastal areas of Tangub City during the pandemic.

METHODS

This study employed both quantitative and qualitative research approaches to investigate the challenges faced by fisherfolks in the coastal areas of Tangub City before, during and after the COVID-19 pandemic. To collect data on the impact of the pandemic on their livelihood and income, self-designed questionnaires were developed and validated by the research advisor and the advisory committee. Revisions were made based on their suggestions to align the questionnaires with the study's objectives. A descriptive research design was used, with structured survey questionnaires administered to fisherfolk as the primary method of data collection. This was supplemented by focus group discussions (FGDs) with local community officials to provide additional insights. Descriptive statistics, including means, frequencies, and percentages, were used to analyze the fisherfolk's income before, during, and after the pandemic. The study was conducted in five barangays located along the coastal areas of Tangub City: Barangay Lorenzo Tan, Maquilao, Garang, San Apolinario, and Migcanaway. These barangays were selected because fishing is a primary source of income for the residents, and they represent the most populated coastal areas in the city.

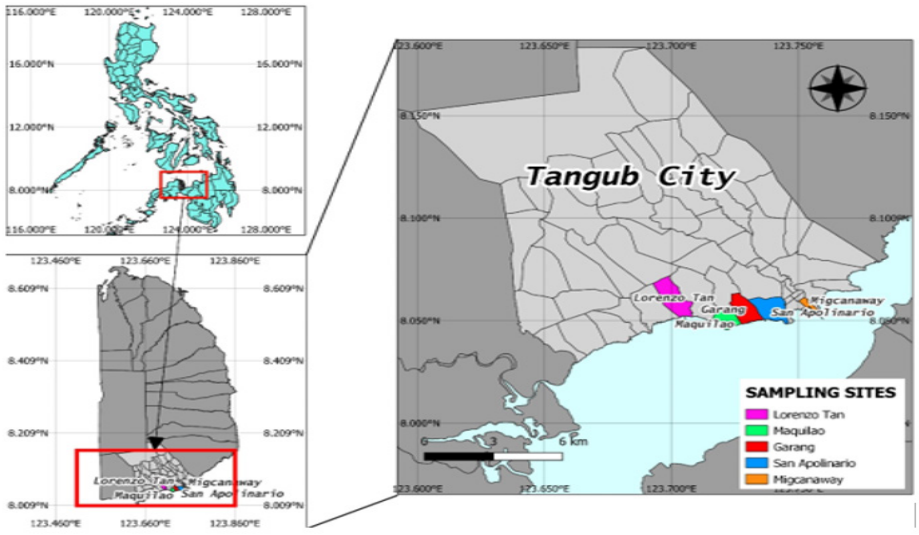

Figure 1. Map of the Five Coastal Areas in Tangub City,identified as the Locale of the Study.

3. RESULTS AND DISCUSSION

3.1 Status of the Fisherfolks Before, During, and After the COVID-19 Pandemic

The COVID-19 pandemic significantly impacted livelihoods worldwide, disrupting lives on a global scale (Sengupta et al., 2020). The pandemic had extensive social and economic effects to marginalized groups, including the complete shutdowns of some fisheries (Bennett et al., 2020).

3.1.1 The Life of the Fisherfolks Before, During, and After the Pandemic in the Five Coastal Areas of Tangub City

The following information illustrates the situation of fisherfolk in the five coastal barangays of Tangub City—Barangay Lorenzo Tan, Maquilao, Garang, San Apolinario, and Migcanaway—before, during, and after the pandemic. Before the pandemic, 52% of fisherfolks reported that their situation was "very okay," as there were no environmental complications or lockdowns to hinder their activities. However, during the pandemic, 95% of fisherfolk reported that their situation was "not okay" due to numerous difficulties, including mobility restrictions and lockdowns, which severely affected the transfer of fish to markets. In the post-pandemic period, 54% of fisherfolk indicated that their fishing activities had returned to being "okay." They reported that they could freely deliver their fish to markets without the hindrance of lockdowns. However, the economic crisis triggered by the COVID-19 pandemic led to an increased incidence of poverty, reduced income, and food shortages, particularly in the fisheries sector (Sumner et al., 2020). Despite these challenges, fisherfolk continue to be one of the backbones of the economy, as fishing remains a primary source of income for many in these coastal communities.

Table 1. *Fishing activity of the fisherfolks before, during, and after pandemic in the five coastal areas in Tangub City*

ISSUES	RESPONSE					
	FREQ.	(%)	FREQ.	(%)	FREQ.	(%)
	Very Okay		Okay		Not Okay	
1. How's your fishing life activity before pandemic?	135	52	126	48	0	0
2. How's your fishing life activity during pandemic?	0	0	13	5	248	95
3. How's your fishing life activity after pandemic?	119	46	142	54	0	0

3.1.2 The Income Status of the Fisherfolks Before, Buring, and After the Pandemic in the Five Coastal Areas of Tangub City

The results revealed that the COVID-19 pandemic had a significant impact on the monthly income of the fisherfolk in the five coastal barangays of Tangub City. All respondents (100%) reported that their income decreased due to the pandemic. Fortunately, the majority of them received assistance from the local government, including cash aid and food deliveries provided by government workers. This support was part of the government's response to the national emergency declared in response to the COVID-19 situation (RA 1146). Additionally, the study showed that prior to the COVID-19 pandemic, none of the respondents (100%) had availed themselves of any livelihood programs from the local government.

Table 2. *Fishing activity of the fisherfolks before, during, and after pandemic in the five coastal areas in Tangub City*

ISSUES	RESPONSE			
	FREQ.	(%)	FREQ.	(%)
	Yes		No	
2.1 Does COVID-19 pandemic affect your monthly income in fishing?	261	100	0	0
	Increases		Decreases	
2.1.1 It increases or decreases?	0	0	261	100
	Yes		No	
2.2 Have you receive any help from the local government unit?*	261	100	0	0
	Food (Freq) (%)		Cash (Freq) (%)	Services (Freq) (%)
	261 100		261 100	0 0
3.1 Did you continue in fishing activity after pandemic?	261	100	0	0
3.2 Does the local government unit conducted livelihood/training program during pandemic?	0	0	261	100

multiple responses*

3.1.3 Other Activities of Fisherfolks Before, During and After the Pandemic

The fisherfolks engaged in activities and had additional sources of income before, during and after pandemic. The study revealed that gleaning was a consistent activity, with 26% of respondents participating in it before the pandemic, 11% during the pandemic, and 36% after the pandemic. According to the fisherfolk, gleaning has long been a reliable source of both food and income, as seashells are readily available along the coastal areas during low tide.,

Despite the pandemic, fishing remained the primary source of income for the fisherfolk after restrictions were lifted. However, many fisherfolk reported that the support provided by the government during the lockdown, while appreciated, was insufficient to meet their needs for the entire duration of the lockdown. One respondent mentioned, "Our family is grateful to have received provisions from our local government, but we feel that the food we received was not sufficient for us." This shortfall led some fisherfolk to turn to home gardening and gleaning as additional means of sustenance. As noted by Sunga and Advincula (2021), gardening was considered an effective way to channel negative emotions brought about by the pandemic. Unfortunately, other activities such as construction work and harvesting leftover grain were temporarily halted during the pandemic but resumed once restrictions were eased. Additionally, most respondents (63%) reported having no other source of income, particularly during the pandemic, though some engaged in recreational activities or maintained fish cages as supplementary income sources.

Table 3. *Fisherfolks other activities before, during and after pandemic*

Fisherfolks' other activities*	Before Pandemic (N=261)		During Pandemic (N=261)		After Pandemic (N=261)	
	(FREQ.)	(%)	(FREQ.)	(%)	(FREQ.)	(%)
Home gardening	7	3	5	2	11	3
Gleaning	69	26	29	11	94	36
Having fish cage	24	9	18	7	17	7
Harvesting left over grain	9	3	0	0	27	10
Construction worker	65	25	0	0	73	28
Playing basketball	29	11	3	1	17	7
None	58	22	164	63	32	12

multiple responses*

3.1.4 Income Gap of the Fisherfolks Before, During and After the Pandemic

The results illustrate the trend in the average total income of the fisherfolks before, during and after the COVID-19 pandemic. According to the survey, the average total income of the fisherfolk before the pandemic was Php7, 715.00. Unfortunately, this figure decreased to Php4, 950.00 during the pandemic. Similar findings have been reported by researchers (Love et al., 2020; Belton et al., 2021), who attributed the decrease in income to movement

restrictions that adversely affected fisherfolk, as well as disruptions in the fish supply, demand, and prices. The pandemic and resulting lockdowns significantly altered the income of the fisherfolk. The monthly total income of the fisherfolk before, during, and after the pandemic was calculated using descriptive statistics, with the total mean being used to determine the average income. After the easing of restrictions in various areas of Tangub City, Misamis Occidental, the average total income of the fisherfolk increased to Php 9,050.00. This clearly demonstrates the impact of the COVID-19 pandemic on the income of fisherfolk. The income gap among the fisherfolk was also highlighted. Figure 2 presents the monthly income of individual fisherfolk, showing a drastic change in their income levels. The line graph, based on raw data from the fisherfolk's income, reveals that the lowest average income occurred during the pandemic due to restrictions. However, their income increased after the pandemic, driven by additional sources of income alongside the continuation of fishing activities.

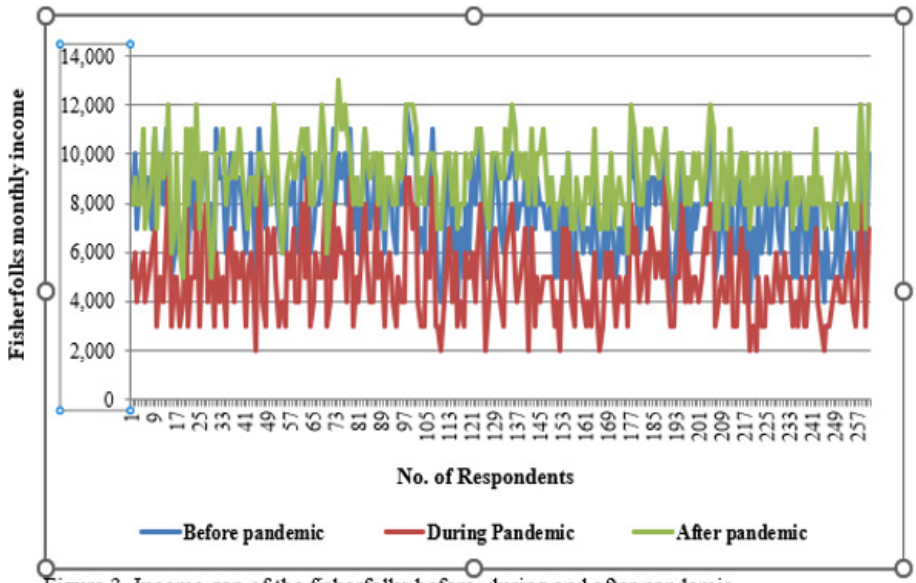

Figure 3. Income gap of the fisherfolks before, during and after pandemic

3.2 Environmental, External, and Other Problems Encountered by the Fisherfolk

The study identified several common problems encountered by the fisherfolk in Tangub City. Environmental issues were significant with 76% of the respondents reporting challenges such as the depletion of fish habitats and sudden weather changes. Water pollution was also a prevalent issue, similar to the ex-

periences of fishermen in Dagupan City (Urbiztondo et al., 2016). External factors posed considerable challenges, with 91% of respondents citing a lack of financial resources and limited access to technology as major issues. These external constraints, coupled with environmental problems, led to a decline in fish availability, subsequently reducing the income of fisherfolk (Coulthard, 2010; Badjeck et al., 2008). A notable environmental challenge reported by 64% of the fisherfolk was the abundance of marine mussels, which were problematic because they could damage boat engines. Research by Menge et al. (2008) supports this observation, noting that mussels tend to proliferate during warmer climatic events, exacerbating the issue. Additionally, 49% of respondents indicated that the lack of essential fishing materials, such as pump boats and nets, further hindered their fishing activities. Many also reported that their fishing nets were frequently damaged by mussels. The study also highlighted several inbound logistics issues, including sudden weather changes and the lack of access to both technology and financial resources. Sudden weather changes, particularly continuous rain or typhoons occurring during high tide, were reported to reduce the volume of fish production. These weather events could also exacerbate water pollution, especially during the "Hanging Amihan" season (Guigue, 2021), when the water is often already contaminated.

Table 4. *Environmental, External, and other problems encountered by the fisherfolks*

PROBLEMS ENCOUNTERED*	Frequency (N=261)	Percentage (%)
1. What are the problems you have encountered in fishing activity?		
1.1 Environmental Problems		
Depletion of fish habitat	86	33
Sudden weather changes	79	30
Water pollution	35	13
Others	-	-
1.2 External Factors		
Lack of financial resources	126	48
Lack of access to technology	112	43
2. Other Problems, specify		
Abundance of marine mussels	168	64
Lack of fishing materials (Pump boat and fishing net)	129	49

multiple responses*

4.CONCLUSION AND RECOMMENDATION

4.1Conclusion

Fishing plays a vital role in the

economic stability of the fisherfolk in Tangub City, particularly within its coastal communities. T significantly impacted these communities, leading to a substantial decrease in monthly income during the temporary lockdowns. The study also revealed that no livelihood programs were extended to the fisherfolk before the pandemic, making them heavily reliant on fishing activities. As a result, they faced severe financial difficulties during the pandemic. Beyond the pandemic, the majority of fisherfolk also identified environmental problems and external factors—such as water pollution, the abundance of mussels, and the lack of essential fishing materials—as significant challenges. These issues have contributed to the reduction of their income, exacerbating the socio-economic difficulties they face. The COVID-19 pandemic has undeniably had a negative impact on the socio-economic status of the fisherfolk in the identified barangays of Tangub City. The reduction in fishing activities during the pandemic directly correlated with a decrease in their income. However, there are opportunities for responsible agencies and other stakeholders to support the fisherfolk and mitigate the adverse effects of the pandemic on their livelihoods.

4.2 Recommendations

Based on the findings, the following are the recommended for the responsible agencies, including the Department of Agriculture (DA), the Bureau of Fisheries and Aquatic Resources (BFAR), and the Tangub City Local Government Unit: The local government, in collaboration with DA and BFAR, should provide financial assistance to fisherfolk adversely affected by the pandemic. This support could include direct financial aid, loan facilities, and subsidies to help stabilize their income. Implement training programs focused on sustainable fishing practices and other livelihood programs. These programs should include value-added activities, such as fish processing, to enhance resilience and adaptability of the fisherfolk to future disruptions, including pandemics and other crises. Future research should investigate the causes behind the proliferation of marine mussels, assessing their economic and environmental impacts, and examining their implications for other aquatic species in the coastal areas of Tangub City. This research will help develop targeted strategies to address these challenges effectively. By addressing these recommendations, the responsible agencies and stakeholders can better support the fisherfolk, enhance their resilience, and improve their socio-economic conditions.

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