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Socio-Economic Condition, Challenges, and Problems Encountered by Fisherfolks in Marine Biodiversity Conservation and Protection in Pilar, Capiz

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ABSTRACT

The diversity and quantity of organisms found in the world's oceans and seas is referred to as marine biodiversity. The abundance of life in the seas is huge since the earth was shielded by water to a degree of about 70%. Because people still rely on the resources of the Earth for their livelihood, health, and well-being, it is crucial to preserve marine biodiversity. Marine biodiversity is prized for its inherent value, ecological services it offers, and direct benefits to humans. The following goals guided the conduct of this study was to assess the socioeconomic standing of fisher folks of Pilar, Capiz, identify the difficulties that fisher folks encounter and, to identify the issues that fisher folks in Pilar Bay face when it comes to the preservation and conservation of biodiversity. Three hundred two (302) fisher folks participated in the researchers' mixed-method study, which was conducted in seven coastal barangays of Pilar. A stratified sampling strategy was used to choose them. The tool used to get information from the respondents was a questionnaire. The findings were presented descriptively using the calculated frequency counts (f) and relative frequency or percentages (%). To ascertain the difficulties and issues respondents faced with biodiversity conservation and protection, the average age-weighted value or weighted mean was employed. According to the study's findings, the majority of respondents were married men between the ages of 31 and 40 who had completed secondary school, had one to three family members, and made between Php 5001 and Php 7000 per month. The majority of respondents obtained their funds from lending individuals and institutions, lived in wooden-type homes, and fished in the deep open sea region for 6 to 9 hours every day using trawls as their fishing gear. They also used motorized boats that caught 30-41 kg of fish per day, representing roughly 16 different species. The respondents concurred that they are dealing with cultural, environmental, and economic difficulties. In addition to agreeing on environmental issues, the respondents firmly agreed that they have experienced human issues and governance with the conservation and protection of maritime biodiversity.

INTRODUCTION

One of the most significant animal protein sources for human consumption is marine fish, particularly in developing nations with coasts. In the Philippines, marine fishing is another significant sector. Many people thought the ocean was so big and strong that neither the marine environment nor the marine fisheries resources could be altered fifty years ago. We all agree that manmade issues like overfishing, habitat damage, pollution, the introduction of exotic species, and climate change are mostly to blame for the decline of fisheries resources fifty years later. The Philippines' and the world's fisheries are in a dire state right now. Together with rising fish demand and population expansion, overfishing, illicit fishing, and habitat loss are pushing fisheries production farther into the abyss. Fishing villages are experiencing an alarming rise in protein deficit, which seemed unthinkable just 20 years ago. Thus, species richness and abundance in the world's oceans and seas are referred to as marine biodiversity. Additionally, there is a vast abundance of life in the oceans because water makes up to 70% of the planet. Because people still rely on Earth's resources for their livelihood, health, and well-being, it is imperative that marine biodiversity be protected.

Marine biodiversity is prized for its inherent value, ecological services it offers, and direct benefits to humans. Disease, pollution, climate change, habitat modification, overexploitation, and invasive species are just a few of the man-made hazards to marine ecosystems. Natural hazards also exist, such as storm-induced physical damage and natural cycle-induced variations in temperature and salinity. These habitats are protected using a variety of conservation strategies that include management, monitoring, and international collaboration.

It is difficult to find answers for these issues. To stabilize and reverse the detrimental trends now affecting fisheries and coastal ecosystems, difficult choices must be taken. The following goals guided the conduct of this study: 1. ascertain the socioeconomic status of the fishermen in Pilar, Capiz, 2. Identify the difficulties that fishermen confront, and 3. Identify the difficulties that fishermen face in protecting and conserving biodiversity in Pilar Bay.

LITERATURE REVIEW

According to Dela Cruz, M., continuous growth in population and increasing demand for fish and fish products have resulted in degraded fishery habitats and competing uses among stakeholders. Based on the survey

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of fishermen in the Municipality of Cabuyao, Laguna, fishermen have been involved in fishing for more than half of their lives. The net annual income generated by municipal fishermen ranged from P16,632.00 – P70,224.00. The annual average net income of the fishermen is still below the annual per capita poverty threshold. Fishing is a livelihood and is essential to a large part of the population in the municipality of Cabuyao, Laguna. Sustaining the benefits derived from fishery can only be achieved if environmental, socio-economic and legal/institutional issues are fully addressed. Environmental issues include land-based pollution as it affects the lake's water quality. The socio-economic issues include conflicts in lake usage between residents and non-residents, usage of illegal and active fishing gears, low income and no adequate privileges for fisher folks.

According to Bianchi *et al.* (2000) in their study entitled “Marine biodiversity of the Mediterranean Sea: situation, problems and prospects for future research” that despite the sea's enormous cultural and economic significance for the Mediterranean countries, Mediterranean marine biodiversity has only gotten a small portion of the attention given to its terrestrial equivalent. More than 8500 species of macroscopic marine animals, or between 4% to 18% of all marine species worldwide, are thought to reside in the Mediterranean Sea. Given that the Mediterranean Sea makes up only 0.82% of the global ocean's surface area and 0.32% of its volume, this is a striking statistic. Historical (its study tradition predates that of nearly every other sea), paleogeographic (its turbulent geological history over the past five million years has been determining the occurrence of distinct biogeographic categories), and ecological (its variety of climatic and hydrologic situations within a single basin probably has no equals in the world) factors may all contribute to the Mediterranean Sea's high biodiversity. The combined effects of climate change and human activity are rapidly changing the biodiversity of the Mediterranean today, yet there are currently few species or ecosystem conservation mechanisms in place. In order to comprehend the function and trends of Mediterranean marine biodiversity, marine ecological research should: (1) re-value scientific fields like taxonomy, biogeography, and systematics that are currently out of style with funding agencies; and (2) begin long-term biodiversity monitoring at the Mediterranean scale, perhaps through a globally coordinated network of marine protected areas.

MATERIALS AND METHODS

In this study, the researchers employed a mixed-method research approach. This approach is centered on gathering, evaluating, and combining quantitative and non-quantitative data. Instead of sticking to just one method of data collection and analysis, it enables researchers to consider a variety of methodologies. In Pilar, Capiz, this study was carried out in seven barangays along the shore. In the province of Capiz, it is a seaside municipality. The municipality makes up 3.01%

of Capiz's total area, with a land area of 77.99 square kilometers, or 30.11 square miles. 47,100 people were living there as of the 2020 Census. This accounted for 5.85% of the Capiz province's entire population, which is equivalent to 0.59% of the Western Visayas region's total population. According to these numbers, there are 604 people per square kilometer, or 1,564 people per square mile. Politically, Pilar is categorized as a fourth-class economy. The study's 302 respondents were fisherfolks from seven barangays along the coast. Three hundred two (302) fishermen were chosen as sample responses out of 1407. Stratified sampling was used to choose them, and Cochran's Formula was used to determine sample sizes by barangay. Of the 237 fishermen in Barangay Dayhagan, 51 were chosen as study participants; 23 were chosen from among 107 fishermen in Barangay Balogo; 46 were chosen from among 215 fishermen in Barangay Casanayan; 39 were chosen from among 182 fishermen in Barangay San Ramon; 48 were chosen from among 223 fishermen in Barangay Poblacion; 52 were chosen from among 241 fishermen in Barangay Natividad; and 43 were chosen from among the 202 fishermen in Barangay Binaobawan. The tool utilized to collect information from the respondents was a questionnaire. To better comprehend the respondents, it was translated into Hiligaynon and consisted of two sections. Part 1 asks about the respondents' socioeconomic circumstances, whereas Part 2 focuses on the difficulties and issues fisher folks face in protecting and conserving marine biodiversity. Prior it being given to fisher folks, the questionnaire underwent pre-testing. For the benefit of the responders, it was translated into Hiligaynon. Ten fisher folks (10) from barangay Natividad participated in a pre-test to ensure its validity and dependability. Prior to the actual interview, a letter of authorization was received from the local mayor and the college satellite director. In addition to physically distributing the questionnaire to the various barangays under investigation, the researchers also asked the respondents all of the questions included on the questionnaire. While interviewing respondents, the researchers translated the questionnaire's contents into Hiligaynon languages. Inquiries on respondents' socioeconomic circumstances and environmental issues that are pertinent to their fishing activities were also made. To draw findings and consequences, the questionnaire responses from the respondents were meticulously tallied, examined, and evaluated. The findings were presented descriptively using the frequency counts (f) and relative frequency or percentages (%) that were calculated. To ascertain the difficulties and issues respondents faced with biodiversity conservation and protection, the average weighted value or weighted mean was employed. The respondents were asked to rate the seriousness of the issues and challenges they faced in protecting and conserving biodiversity using the following scale: 5, strongly agree (scale from 4.21-5.00); 4, agree (3.41-4.20); 3, undecided (2.61-3.40); 2, disagree (1.81-2.60); and 1, strongly disagree (1.00-1.80).

RESULTS AND DISCUSSION

Socio Demographic Profile

The respondents' sociodemographic profile is displayed in Table 1. According to the data, just 15 (4.97%) of the 302 responders were female, while 287 (95.03%) were male. This suggested that fishing is still dominated by male laborers.

Only two, or 0.66%, of the 302 respondents were widowed, while 290, or 96.03%, were married and 10 or 3.31 were single. This suggested that married people made up the majority of the responders.

Of the 302 respondents, 139 (46.03%) were between the ages of 31 and 40, 106 (35.10%) were between the ages of 41 and 50, and 57 (18.87%) were between the ages of 20 and 40. This indicates that nearly majority of the respondents were between the ages of 31 and older.

Of the 302 respondents, only 7 (2.32%) had a college degree, 267 (88.41%) had a secondary degree, and 28 (9.27%) had an elementary degree. This suggested that the majority of those surveyed had completed high school.

107, or 35.43%, of the 302 respondents had family members of ages 4-6, while 195, or 64.57, have family members of ages 1-3. This indicates that a large number of responders have family members aged 1-3.

105, or 34.77%, of the 302 respondents make between Php 3001 and Php 5000 per month, 46, or 15.23%, make between Php 1000 and Php 3000 per month, and 151, or 50%, make between Php 5001 and Php 7000 per month. This indicated that half of the respondents earned between Php 5001 and Php 7000 per month. This monthly salary is below the poverty threshold.

Table 1: Distribution of respondents according to their socio-demographic profile.

Profile	Frequency	Percentage
Gender		
Male	287	95.03
Female	15	4.97
Total	302	100
Civil Status		
Married	290	96.03
Signle	10	3.31
Widowed	2	0.66
Total	302	100
Age		
20 – 30 years old	57	18.87
31 – 40 years old	139	46.03
41 – 50 years ols	106	35.10
Total	302	100
Educational Attainment		
Elementary Graduate	28	9.27
Secondary Graduate	267	88.41
College Level	7	2.32

Total	302	100
Family Members		
1-3	195	64.57
4-6	107	35.43
Total	302	100
Monthly Income		
Php 1000-3000	46	15.23
Php 3001-5000	105	34.77
Php 5001 – 7000	151	50.00
Total	302	100

Source of Funds

The respondents' financial sources are displayed in Table 2. According to the statistics, only 94 or 31.13% of the 302 respondents had their own capital, while 120 or 35.10% obtained money from lending people (such as Bombay or 5/6), and 102 or 33.77% obtained it from lending institutions. This suggested that the majority of respondents exclusively contribute money to lending organizations.

Table 2: Distribution of respondents according to their source of funds

Source of Capital	Frequency	Percentage
Lending Institution	102	33.77
Lending Individual	106	35.10
Owned	94	31.13
Total	302	100

Type of House

The respondents' home type is displayed in Table 3. 188, or 62.25%, of the 302 components were composed of wood, 76, or 25.17%, of a concrete and wood combination, 29 of which, or 9.60%, were composed of concrete, and 9 of which, or 2.98%, were composed of nipa. This suggested that wood was used to build the majority of the respondent's homes.

Table 3: Distribution of respondents according to their type of house

Type of House	Frequency	Percentage
Concrete	29	9.60
Wooden	188	62.25
Nipa	9	2.98
Combination (Concrete & Wood)	76	25.17
Total	302	100

Fishing Area

The respondents' fishing area is displayed in Table 4. 68, or 22.52%, of the 302 respondents fished in shallow surface regions, while 234, or 77.48%, fished in deep-

open sea areas. This suggested that the majority of those surveyed were fishing in open-shallow waters.

Table 4: Distribution of respondents according to their fishing area

Fishing Area	Frequency	Percentage
Shallow surface area	68	22.52
Deep-Open sea Area	234	77.48
Total	302	100

Fishing duration

The respondents' fishing duration is displayed in Table 5. 225, or 74.50%, of the 302 respondents spent around 6–9 hours looking for fish, 50, or 16.56%, spent roughly 10–12 hours, and 27 (or 8.94%) spent three to five hours at the fishing area. This suggested that most responders spent six to nine hours at the fishing area.

Table 5: Distribution of respondents according to their duration in fishing

Duration in Sea	Frequency	Percentage
3-5 hours	27	8.94
6-9 hours	225	74.50
10-12 hours	50	16.56
Total	302	100

Type of fishing gear

The type of fishing gear used by the respondents is displayed in Table 6. The trawl was employed by 127 (42.05%) of the 302 responders, the hook and line by 94 (31.13%), the scoop net by 58 (19.20%), and the gill net by 23 (7.62%). This suggested that a large number of responders fished with trawls.

Table 6: Distribution of Respondents according to the type of fishing gear

Type of Fishing Gear	Frequency	Percentage
Gill net	23	7.62
Trawl	127	42.05
Scoop net	58	19.20
Hook and Line	94	31.13
Total	302	100

Table 9: Distribution of respondents according to their type of fish catch.

Common Name	English Name	Scientific Name
Gurayan	Shorthead Anchovy	Encrasicholina heteroloba(Ruppell 1837
Sapsap	Ponyfish	Leiognathus equula(Forsskal, 1775)
Aso-os	Lady Fish	Elops saurus (Linneaus,1766)
Palad	Speckled tonguesoie	Cynoglossus puncticeps Richardson 1847
tuloy/tamban	Smooth belly sardinella	Sardinella longiceps(valenciennes 1847
tabagak	Borneo river sprat	Amblygaster leiogaster(Valenciennes, 1847
Hasa-hasa	Short-bodied mackerel	Clupeoides borneensis(Bleeker 1851)
kugaw	Striped threadfin	Polydactylus plebeius (Broussonet1782

Type of fishing boat

The type of fishing boat used by the respondents is displayed in Table 7. 302 out of 302 respondents, or 100%, reported using a banca or motorized boat. This suggested that practically every responder fished from a banca or motorized boat.

Table 7: Distribution of respondents according to the type of fishing boat

Type of Fishing Boat	Frequency	Percentage
Motorized boat	302	100

Volume of catch daily

The respondents' daily catch volume (kg) is displayed in Table 8. Of the 302 responders, 125 (41.39%) catch 31–40 kg daily, 94 (31.13%) catch 21–30 kg daily, 56 (18.54%) catch 41–50 kg daily, and 27 (8.94%) catch 10–20 kg daily. This suggested that the majority of responders catch between 31 and 40 kg every day.

Table 8: Distribution of respondents according to the volume of catch per day

Volume of catch per day	Frequency	Percentage
10-20 kgs	27	8.94
21-30 kgs	94	31.13
31-40 kgs	125	41.39
41-50 kgs	56	18.54
Total	302	100

Kind of fish catch

The respondents' daily catch volume (kg) is displayed in Table 8. Of the 302 responders, 125 (41.39%) catch 31–40 kg daily, 94 (31.13%) catch 21–30 kg daily, 56 (18.54%) catch 41–50 kg daily, and 27 (8.94%) catch 10–20 kg daily. This suggested that the majority of responders catch between 31 and 40 kg every day.

Abo	Sin Croaker	Eleutheronema tetradactylum (Shaw1804
Silag	Commerson's Anchovy	Johnius carutta (Cuvier 1830)
galunggong	Blue mackere scad	Decapterus macarellus (Cuvier 1899)
Bisugo	Goldern Thread Bream	Decapterus macrosoma (Bleeker 1851)
Pak-an	Blackfin scad	Alepes melanoptera(Swainson,1839)
Lawayan	Common pony fish	Leiognathus equulus (Forsskal 1775)
Gisaw	Largescale mullet	Liza macrolepis (Smith 1849)
Lagaw	Notchedfin threadfin bream	Nemipterus nemurus (Bleeker 1897)

Economic Challenges faced by Fisher folks

The respondents' financial difficulties are displayed in Table 10. The respondents agreed with the following statement on the economic difficulties they encountered, with a mean score of 3.92 overall. In particular, the remark on the decline in daily catch or "Naga nubo kag saka nga panguha" (m=4.57) was highly agreed with by them. They concurred with the following statements: lack of storage facilities/kulang sang lugar nga bulutangan (m=4.10), poverty/kaimulon (m=3.73), lack of alternate

income generation opportunities/wala sang iban nga palangitan-an (m=4.13), fishermen's reliance on traders, aratdars, village moneylenders, and boat owners for loans at exorbitant interest rates/naga dependi lang sa tag-iya ka baroto, kag manug pa utang (m=3.99), inability to purchase fishing equipment and life insurance/wala life insurance kag insurance ka guba sang baroto (m=3.47), and lack of fishermen's groups/cooperatives/wala sang kaigo nga cooperatiba (m=3.50).

Table 10: Economic challenges of fishermen

Economic Challenges faced by Fishermen		Mean	Verbal Interpretation
1.	Dwindling of daily catch/Naga nubo kag saka nga panguha	4.57	Strongly Agree
2.	Lack of storage facility/kulang sang lugar nga bulutangan	4.10	Agree
3.	Poverty/kaimulon	3.73	Agree
4.	Lack of alternate income generation opportunity/wala sang iban nga palangitan-an	4.13	Agree
5.	Dependence of fishermen on traders, aratdars, village moneylenders, boat owners for loans at usurious rates of interest/naga dependi lang sa tag-iya ka baroto, kag manug pa utang	3.87	Agree
6.	Lack of capacity to procure fishing inputs such as boats and nets from own financial resources/wala ikasarang mag bakal ka baroto kag gamit sa pangisda	3.99	Agree
7.	No insurance coverage for life and fishing equipment/wala life insurance kas insurance ka guba sang baroto	3.47	Agree
8.	Non-existence of fishermen groups/cooperatives/wala sang naga kaigo nga cooperatiba	3.50	Agree
TOTAL		3.48	Agree

Environmental challenges faced by the respondents

The respondents' environmental issues are displayed in Table 11. The respondents agreed with the following statement on the environmental issues they encountered, with a mean score of 3.90 overall. In particular, they strongly agreed with the findings regarding climate-related extreme events and natural hazards, including typhoons, sea level rise, high population density in coastal

areas, and damo nga tawo ukon pamilya ang ara sa higad dagat (m=4.57). The respondents concurred with the following statements: rising sea temperatures (m=3.64), habitat damage (m=3.60), fish migration from one area to another (m=3.87), sudden changes in weather (m=3.67), and ocean acidification (naga taas ang acidity lebel ka dagat).

Table 11: Environmental Challenges faced by the respondents

Economic Challenges faced by Fishermen		Mean	Verbal Interpretation
1.	Ocean acidification/naga taas ang acidity lebel ka dagat	3.50	Strongly Agree
2.	Habitat damage/naga ka guba nga balayan ka isda	3.60	Agree

3.	Rising Sea temperatures/naga taas ang temperature sa tubig sa dagat	3.64	Agree
4.	Migration of fishes from one region to another/pag kadto sang mga isda sa iban nga lugar	3.87	Agree
5.	Climate related extreme events and natural hazards, such as typhoons, sea level rise,/ grab inga kalamidad pareho sang bagyo kag pag taas ka tubig	4.51	Strongly Agree
6.	High Population Density in Coastal Areas/damo nan ga tawo ukon pamilya ang ara sa higad dagat	4.57	Strongly Agree
7.	Sudden change of weather/gulpi nga ilis ka panahon	3.62	Agree
TOTAL		3.90	Agree

Cultural Challenges faced by the fisherfolks

The respondents' cultural problems are displayed in Table 12. The respondents agreed with the following statement on the cultural obstacles they encountered, with a mean score of 3.50. They were in agreement with the statement that the nature and knowledge of the sea/ka adman kag kaalaman parti sa pangisda kag sa lawod (m=3.87), but

they disagreed with the following statements: religious rituals, beliefs, and practices among the fishermen/mga retwal, pag pati parti sa pangisda (m=3.35), and the transition from traditional to modern fishing techniques/pag balhin sa kinaangdan nga pangisda pa kadto sa modern ng pama agi sang pangisda (m=3.30).

Table 12: Cultural Challenges faced by the fisherfolks

Economic Challenges faced by Fishermen		Mean	Verbal Interpretation
1.	Shift from traditional to modern fishing techniques/pag balhin sa kinaangdan nga pangisda pa kadto sa modern ng pama agi sang pangisda	3.30	Undecided
2.	Religious Rituals, beliefs and practices among the fisherfolk/mga retwal, pag pati parti sa pangisda	3.35	Undecided
1.	Nature and knowledge of the Sea/ka adman kag kaalaman parti sa pangisda kag sa lawod	3.87	Agree
TOTAL		3.50	Agree

Human Problems encountered by fisherfolks

The human issues that respondents faced with regard to the conservation and protection of marine biodiversity are displayed in Table 14. The respondents highly agreed with the following statement on the human issues they faced with the conservation and protection of marine biodiversity, with a mean score of 4.21 overall. they were particularly in agreement about the following: destructive fishing methods (Maka guluba nga pama-agi sang

pangisda; m=4.55); habitat destruction (m=4.50); coral destruction (m=4.87); human pollution (polusyon dulot sang mga tawo; m=4.57); and eco-tourism and recreation (m=4.50). They agreed on the following statement on overexploitation/sobra subra na nga pag gamit sang resources sa dagat (m=3.99), overfishing/sobra subra nga panguha sang isda (m=3.90), seabed mining/pag mina sang duta sa dalom ka dagat (m=3.64), offshore mining/pag mina sang duta sa higad baybay (m=3.64).

Table 13: Human Problems encountered by fisherfolks

Human Problems		Mean	Verbal Interpretation
1.	Overexploitation/Sobra subra na nga pag gamit sang resources sa dagat	3.99	Agree
2.	Human Pollution/polusyon dulot sang mga tawo	4.57	Strongly Agree
3.	Habitat destruction/Pag ka guba sang balayan sang isda	4.50	Strongly Agree
4.	Overfishing/sobra subra nga panguha sang isda	3.90	Agree
5.	Seabed Mining/Pag mina sang duta sa dalom ka dagat	3.64	Agree
6.	Coral destruction/pag ka guba sang mga corals	4.87	Strongly Agree
7.	Offshore mining/Pag mina sang duta sa higad baybay	3.64	Agree
8.	Destructive Fishing Method/Maka guluba nga pama-agi sang pangisda	4.55	Strongly Agree
9.	Eco-tourism and Recreation/eco-turismo	4.50	Strongly Agree
TOTAL		4.24	Strongly Agree

Natures problem encountered by fisherfolks

The respondents' natural issues with protecting and conserving marine biodiversity are displayed in Table 15. The respondents agreed with the following assertions regarding the natural issues they faced in the conservation and protection of marine biodiversity, with a mean score of 4.11 overall. In particular, the statement about sea level

rise/pag taas ka tubig sa dagat was strongly agreed with by the respondents ($m=4.87$). They concurred on the following statements on ocean acidification (pag taas ang acidity lebel ka dagat), non-native species invasion (pag buhi sang indi native nga mga species sang isda; $m=3.60$), and climate change (Pag iba sang klima; $m=4.10$).

Table 14: Natural problems encountered by the respondents

Natural Problems		Mean	Verbal Interpretation
1.	Climate change/Pag iba sang klima	4.10	Agree
	Non Native species invasion/pag buhi sang indi native nga mga species sang isda	3.60	Agree
2.	Ocean Acidification/ pag taas sang acidity lebel ka dagat	3.90	Agree
3.	Seas Level Rise/Pag taas sang tubig sa dagat	4.87	Strongly Agree
TOTAL		4.11	Agree

Problems on governance

The governance issues that the respondents faced are displayed in Table 16. The respondents strongly agreed with the following statement about governance as the issue they faced in the conservation and protection of marine biodiversity, with a mean score of 4.28. Specifically they strongly agreed on the following statement, illegal fishing/illegal nga pag pangisda ($m=4.57$), conflicting policies/konflikto sa polisiya ($m=4.30$), weak resource management and governance mechanisms/mahuyang nga

pag manage sang gobyerno sa aton resources ($m=4.87$), significant lack of ecological expertise in decision-making institutions and processes/kakulangan sang mga expert sa kalikasan sa pag ubra sang mga plosiya ($m=4.35$), lack of conservation knowledge and expertise among key stakeholders/ka kulangan sa nahibaluan sa pagkonserba sa aton palibot ang mga mangiungisda ($m=4.30$), lack of sustainable livelihood for local stakeholders/ka kulangan sang diritso kag stable nga pangabuy-anan ($m=4.67$).

Table 15: Problems on governance encountered by the respondents

Governance Problems		Mean	Verbal Interpretation
1.	Illegal Fishing/illegal nga pag pangisda	4.57	Strongly Agree
2.	Conflicting Policies/konflikto sa polisiya	4.30	Strongly Agree
3.	Weak resource management and governance mechanisms/mahuyang nga pag manage sang gobyerno sa aton resources	4.87	Strongly Agree
4.	lack of political will for conservation of marine biodiversity/kulang sa tampad nga pag pa tupad para sa consebasyon sang aton resources sa dagat	3.64	Agree
5.	Insufficient enforcement of environmental laws/.kulang sa pag implemetar sang mga layi para sa environment	3.60	Agree
6.	Significant lack of ecological expertise in decision-making institutions and processes/kakulangan sang mga expert sa kalikasan sap ag ubra sang mga plosiya	4.35	Strongly Agree
7.	lack of conservation knowledge and expertise among key stakeholders/ka kulangan sa nahibaluan sa pagkonserba sa aton palibot and mga mangiungisda	4.67	Strongly Agree
8.	lack of sustainable livelihood for local stakeholders/ka kulangan sang diritso kag stable nga pangabuy-anan	4.30	Strongly Agree
TOTAL		4.28	Strongly Agree

CONCLUSIONS

Based on the result of the study most of the respondents were male, married, age 31-40 years old, finished secondary education, had 1-3 members in the family, and a monthly income of Php 5001-7000, borrowed their capital from lending individuals and lending institutions, with a wooden type of houses, fishing in the deep open sea area with time duration of 6-9 hours a day using

trawl as their fish gear, with a motorized boat having a fish catch of 30-41 kgs/day of about 16 kinds of fishes. The respondents agreed that they are facing economic, environmental, and cultural challenges. Degraded fishing habitats and conflicting usage among stakeholders are the results of ongoing population increase and rising demand for fish and fish products. Only by adequately addressing environmental, socioeconomic, and legal/institutional

challenges can the advantages of fishing be sustained. It is highly recommended that the national and local stakeholders prioritize marine and coastal resource management to ensure food is on the table every day. They should develop an ecosystem-based management program to address critical threats to marine resources, and government officials should strictly enforce the law on marine biodiversity conservation and protection. On the other end CapSU in coordination with LGU should conduct an awareness program on marine biodiversity conservation and protection as extension services to coastal barangays

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