Fish Fights Over Fish Rights: Managing Exit from the Fisheries and Security Implications in Southeast Asia

Philippine Case Study on Conflicts Arising from Zoning of Municipal Waters

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1. Introduction

Consciousness about the state of the environment has come into sharp focus in the last two decades. It has become an important concern in the agenda of nations and legislators, and has spawned movements and cause-oriented groups that have critically monitored impacts of development on the environment. This vigilance has brought to the fore conflicts of interest among the stakeholders affected by changes in structure, processes and management. The emergence of such conflicts is particularly evident in the use of natural resources, with rising population and declining resource base serving as drivers to these clashes among interested groups seeking to gain advantage over the other.

In the case of fisheries, conflict among and between groups of fishers and between traditional and new users of the marine resources has been increasingly the subject of reporting in national and local dailies. However in the scientific literature there are as yet few studies that have addressed fisheries conflicts and its personal, community and institutional aspects.

Bennett et al. (2001) explores the nature of fisheries conflict and has identified a typology to represent the dynamics observed in its causation and management. Warner (2000) points to four reasons that might explain the emergence of conflict: (a) demographic change, (b) natural resources competition, (c) pressure of development leading to changes in government policy, and (d) structural injustices.

Bennett et al. (2001) asserts that institutional characteristics shape how and when conflicts may arise and whether institutions will succeed in managing conflicts. When

transaction costs (such as time, money and effort of fishers and governance) increase, new institutions emerge and evolve to minimize these transaction costs. There is a circular relationship in that conflicts can raise transaction costs which challenge the effectiveness of institutions which in turn can lead to further conflict.

Bennett et al. (2001) states that the requisites for effective fisheries management are strong and flexible institutions rooted in clear property rights, management systems rooted in community traditions, fair law enforcement and a competent State. Property rights can also remain on the theoretical level if there is neither competent means of enforcement nor the political will to enforce. The subject legislation of this current Philippine study in fact looks at the codified property rights with regards the use of municipal waters, which however provides areas of flexibility such as in the use of the 10.1-15 kilometer zone. The failure of formal and informal institutions to manage resources efficiently will lead to conflict because of the perception of inequality or injustice among the stakeholders (Bennett 2001).

Bennett applied the typology of Warner in analyzing the data obtained on three different countries. His results show that institutional failure is a critical factor in the emergence of conflict. In Bangladesh, transaction costs to fishers have been increased by the lack of support network, lack of active promotion of fisheries management for sustainable livelihoods, and corruption. In Ghana, although reforms initially lowered transaction costs for the state, the implementation of decentralisation offset the aforementioned gain by transferring (thus increasing) the costs to lower management levels. This resulted to weakened enforcement regimes.

Bennett concludes that co-management is the best response to conflict because transaction costs, power and responsibility are shared. Moreover the support of government and state institutions, such as law enforcement, stable markets, clear political processes are critical for long-term effective and sustainable conflict management.

The Philippine Situation. Philippine waters have been judged as overexploited and its marine resources badly depleted. This contributes to the explanation (the other being the rapid growth of aquaculture) for why, although the Philippines ranked twelfth (1998) among the fish producing countries, the participation of capture fisheries in that production has been declining. In particular the municipal fisheries sub-sector's production has been declining from 54.3% in 1978 and 46.7% in 1987 (Subade, 1999) to only 33.7 % in 2002 (DA-BAS). This trend is attributed to the decreasing number of operational municipal

fishing boats, the existence of uncontrolled destructive capture methods and a consequently degraded marine environment.

Conflict in use of municipal waters in the Philippines. Decline in municipal fisheries production may also be attributed to conflict in the use of municipal waters. The 1998 Fisheries Code may have addressed this by stipulating that municipal waters should be reserved for the use of municipal fishers, although providing some flexibility for local government to allow certain commercial fishers in the 10.1-15 kilometer zone. In turn, ordinances have been promulgated by local governments to implement the provisions of this Code on access to municipal waters. The resulting management regime is expected to have created or intensified conflict among competing resource users, between those who are advantaged and disadvantaged. Although not extensively addressed in this research, there is the added complication introduced by DENR's Department Administrative Order 17 which imposes a stricter interpretation of the limits of municipal waters using the farthest offshore island rather than main coastline as the point of reckoning for distance.

The potential conflicts that arise from this zoning regulation include those within municipalities, between municipalities, between municipal and commercial fishing sector and between fishers and local government/implementing agencies.

The Visayan Sea. Among the rich marine waters in the Philippines is the Visayan Sea. In 2000, it contributed 13.8% and 14.2% to the total production of commercial and municipal fisheries, respectively (BFAR 2000). It is the most productive municipal fishing ground in the country (BFAR 2002).

The Visayan Sea is located in central Philippines and covers an area of 5,184 sq. km. from latitude $11^{o}00'$N to latitude $11^{o}45'$N and from longitude $123^{o}06'$E to longitude $124^{o}05'$E. It is bounded by four provinces (Iloilo, Negros Occidental, Cebu and Masbate), 22 municipalities and three national geographical regions (6,7,8).

The alarm has been raised that unless committed intervention is taken, marine life in the Visayan Sea is in danger of extinction. The key issues and concerns afflicting the Visayan Sea include resource depletion, unsustainable fishing methods, habitat degradation and resource use conflicts. Research data do not categorically point to overexploitation due to questions on methods used, data reliability, and inadequate samples (Aprieto & Villoso 1979, Armada 1999, BFAR 2001). The BFAR (2001) stock assessment report from January 1998-December 2001 indicates that (a) catch per unit effort of trawls, Danish Seines, ring nets and purse seines decreased during the period, (b) the dominant species are

under high fishing pressure, and (c) exploitation has exceeded the maximum sustainable levels.

A review of secondary data led Vakily (2004) to the analysis that the Visayan Sea is definitely not underexploited, most probably fully exploited, and very likely overexploited. In his perspective as the director of the Visayan Sea Coastal Resources and Fisheries Management Project, there is not enough data, not enough precision and no measure of certainty to state the extent of over capacity or warrant a conclusion on the absolute state of exploitation of this resource. What can be stated with some certainty however is that the Visayan Sea is fully to over-exploited. Nevertheless there is a need for fisheries management in view of the popularly perceived depletion and the increased fishing effort. In view of this need, there has been strong advocacy and action to organize resource based alliances among political units to more effectively manage the Visayan Sea, and portions of it. There are now at least two alliances that have been created or reinforced within the umbrella of the Visayan Sea Project. These are the NIACDEV in Northern Iloilo and NNARMAC in Northern Negros Occ.

Management of access to municipal fisheries is expected to intensify conflict among competing resource users, between those who are advantaged and disadvantaged by the management regime.

Central to fisheries coastal resource management is fisheries law enforcement. In its statement of policies, RA 8550 or the 1998 Philippine Fisheries Code gives preferential use of municipal waters to municipal fisherfolk. Ordinances have been promulgated by local government to implement the provisions of the Fisheries Code. Inevitably this has created conflicts. Although not extensively addressed in this research, there is the added complication introduced by DENR's Department Administrative Order 17 which imposes a stricter interpretation of the limits of municipal waters using the farthest offshore island rather than main coastline as the point of reckoning for distance.

The potential conflicts that arise from this zoning regulation include those within municipalities, between municipalities, between municipal and commercial fishing sector and between fishers and local government/implementing agencies.

Goals and Objectives. The general goals of the research are:

1. To develop a broad framework for addressing approaches for reducing overcapacity in the fisheries of Southeast Asia; and

2. To examine where conflicts may arise and to provide plans to ameliorate these conflicts and its role in reducing conflicts and enhancing national and regional security.

The research will attempt to meet these broad goals by pursuing the following specific objectives:

1. To describe the socio-economic conditions of fishers in selected areas around the Visayan Sea.
2. To know the perceptions of fishers with regards fishing capacity and changes in the state of fisheries.
3. To explore the acceptability of certain exit strategies or approaches to reducing overcapacity.
4. To document the types and causes of conflict that have arisen out of the municipal zoning regulation and the manner by which the stakeholders are responding to the conflicts.

2. Method

To enable an understanding of the dynamics of fishing overcapacity, conflicts and security issues in the Philippines, a case study is drawn of the fisheries conflicts arising from zoning regulations. A semi-structured questionnaire was used within an interview context to gather information on the study variables. These were complemented by key respondents interview and focus group discussions.

Selection of the Study Municipalities. Two municipalities and one city along the Visayan Sea area were selected to provide insight into the issues under study. The municipalities selected represent different levels of fisheries resource management and organization. Consultation with the Visayan Sea Project officers yielded information of types of access to municipal waters being implemented.

One type is represented by the municipality of Daanbantayan, Cebu which provides for exclusive use of municipal waters only to its own municipal fishers, thus excluding even fisherfolk of neighboring municipalities. Moreover Daanbantayan is in an area where no coastal resource alliance has yet been organized among neighboring municipalities in this side of the Visayan Sea.

Another type is the case of the municipality of Concepcion, Iloilo which allows selective fishing in the 10.1-15 km. area for commercial fishers. However, it was noted that these commercial fishers used active gears, which is not really allowed in municipal waters.

Escalante City represents an area where management is not as organized and active but where local government is firm in implementing fishery laws. The city of Escalante has likewise been experiencing a level of controversy on the designation of the marine protected areas or fish sanctuaries.

These three areas were selected to provide the basis of the Philippine case study because of the expected variety of conflicts that may have arisen from their respective access regimes.

Respondent Sample. A total of 258 fishers were interviewed for the Philippine case study. Table 1 shows the distribution by type of fisher and by location.

Table 1. Study Respondents by Type of Fishers and Location

	Concepcion		**Escalante**		**Daanbantayan**	
Fishers	No.	%	No.	%	N	%
Municipal	53	49.1	52	57.8	30	50.0
Commercial	55	50.1	38	42.2	30	50.0
owner	*13*	*23.6*	*5*	*13.0*	*3*	*10.0*
owner-captain	*11*	*20.0*	*0*	*0*	*0*	*0*
captain	*19*	*34.6*	*16*	*42.0*	*4*	*13.3*
crew	*12*	*21.8*	*17*	*45.0*	*23*	*76.7*
Total	108	100.0	90	100.0	60	100.0

This was augmented by interviews of key informants which included the municipal mayor, chair of the MFARMC, the fishery coordinator, the chair and some members of the Bantay Dagat, members of the seaborne patrol, barangay fishwarden, available officer of fishers' association, the city's Executive Assistant for Agriculture, barangay leaders, the police, and the head of Barangay Fisheries and Aquatic Resources Management Council, as the case may be.

Sampling. Two groups of respondents were identified: municipal fishers and commercial fishers. Some key informants were asked to identify fishers who to their knowledge have encountered conflict of any type as long as it is pertinent to their fishing operations. The list generated was augmented by a snowball method wherein those interviewed were asked to name some other fisher who may have experienced conflict in their fishing operations.

Interview Schedule. The interview questionnaire consisted of seven parts:

Part 1. Profile of respondents

Part 2. Household characteristics

Part 3. Lifestyle indicators

Part 4. Characteristics of Fishing Activity/Production

Part 5. Assessment of fish catch and fishing activity

Part 6. Reactions to exit strategies/ Needs and assistance

Part 7. Conflicts and responses

Procedure. Two sets of interview schedule were formulated, one for municipal fishers and one for the commercial fishers. The interview schedule was pre-tested with the municipal and commercial fishers from a municipal barangay in southern Iloilo. All interviews were conducted in the local language by four trained enumerators under the supervision of the research team.

The field work was carried out in June to July 2004. Data collection was always preceded with a prior visit with the town mayor and other local officials, with whom a dialogue on the study was conducted.

After data analysis, focused group discussions was undertaken to report back to the barangay and obtain their feedback on the findings.

3. Description of the Study Area

Concepcion, Iloilo.

The municipality of Concepcion is located 112 kilometers northeast of Iloilo City at 12364' longitude of the Meridian Greenwich and 1113'52" north latitude (The Municipality of Concepcion, 2000). Concepcion has 17 islands with an aggregate land area of about 34.94 km^2 or 36.01% of its total land area of 97.02 km^2. Concepcion has 25 barangays, 14 of which are mainland barangays and 11 are island barangays. Of the 14 mainland barangays, five are coastal barangays.

Barangay Bagongon was chosen as the specific study site because it is popularly recognized as having witnessed many conflicts between municipal and commercial fishers. Most of the commercial fishers (mainly trawlers) in Concepcion reside in this barangay along with many municipal fishers. The barangay is the second biggest barangay of Concepcion in terms of land area (6.14 km^2) inhabited by 1957 residents (projected

population for year 2004). It is a remote fishing village; about a 50-minute boat ride from the mainland under normal weather condition.

The municipal population growth rate is 2.79, higher than the national rate of 2.31 In 2004, the projected population of Concepcion is about 38, 224. More than half of the total population (52.28%) live in the islands. Fishing is the main source of living of most of the people.

Coastal Resources Management. Concepcion is the seat of the Northern Iloilo Alliance for Coastal Development (NIACDEV), with the town mayor, its local chief executive, serving as the chair of the Alliance since it was formed in 1998. The Alliance aims to make northern Iloilo as the fish and other marine products capital of Western Visayas. Concepcion is popularly recognized as the "showcase" municipality in Northern Iloilo in terms of fisheries management and regulation practices.

As indicators of the municipality's relatively high level of coastal resource management, one can point to: the full-time appointment since 2001 of a coastal resource management officer; the creation in 2001 of its Municipal Fisheries and Aquatic Resources Management Council (MFARMC), the creation of barangay level FARMCs in six coastal barangays, and the existence of nine fisherfolk organizations. In March 2004, fisherfolk registration started. There are 2221 registered municipal fishers and 318 commercial fishing vessels. Among the municipal fishers 932 use motorized boats and 894 use non-motorized boats. The municipal waters was delineated with the assistance from the National Mapping and Resource Information Authority (NAMRIA) .

The *Bantay Dagat* (Sea Patrol) was formed in 1995. The local chief executive heads the Bantay Dagat team. One team on duty is composed of a police officer and two drivers; in addition they are backed up by a pool of 24 fish wardens who are also municipal fishers. The cost of operation is about P2000 daily (mainly for the fuel). The budget for the operation of the Bantay Dagat is derived from the fines and penalties from violations and fishery rentals that amount to millions annually. Despite the extensive municipal water, the Bantay Dagat has to contend with only two functional main patrol boats and three smaller patrol boats stationed in Barangays Loong, Nipa and Botlog.

Regulations Pertinent to the Use of Municipal Waters. One significant issue affecting Concepcion's use of municipal waters is the unclear definition of the municipal waters brought about by DAO (Department Administrative Order) 17 issued by the Department of Environment and Natural Resource (DENR), which uses the outermost offshore island rather than the general coastline (RA8550, 1998 Fisheries Code) as the point

for reckoning fifteen kilometers. Using DAO 17 definition, the municipal waters of Concepcion would start from Baliguian Island, which is about 22.5 km away from the mainland. This means that under the zoning regulation, commercial fishers are allowed to fish only beyond 37.5 km away from the general coastline of the mainland. Although this order was revoked on March 17, 2003 after it became effective on June 6, 2001, the confusion still remains.

Other conflicting legislation exist. A municipal ordinance was passed in 1999 to allow commercial fishers to fish within the 10.1 to 15 km of the municipal waters if they pay fishery rentals of P2,500, good for two weeks. This 10.1 km is in the area of Danao-Danao Island. Fishers call this the "second canal". This area is said to be equidistant to Concepcion and Cadiz, Negros Occidental. However, active gears like trawl and Danish seines are not allowed to fish in the municipal waters. Beach seines (locally called *sensoro*), however, are allowed below 7 km if they catch anchovies and "lobo-lobo" (fish smaller than anchovies). This fishing privilege is abused with the use of fish finder and superlight and they catch any fish in sight. Also, municipal legislation states that the use and exploitation of the municipal water is reserved exclusively for local fishers, but municipal fishers from other municipalities are allowed to fish in Concepcion if they secure mayor's permit and uses legal gear.

Monitoring, control and enforcement of fishery laws is difficult and costly given the size of the municipal waters and the number of resource users. The local Bantay Dagat has only two patrol boats and is dependent on the information coming from deputized fish warden (volunteer fishers) based in the islands. Commercial boats are faster than the patrol boats. Commercial fishers also have "watchers" at the port reporting to them using cellular phones when the Bantay Dagat are in operation. The major regular violators identified were also government officials.

Encroachment of the municipal waters by the commercial fishers and of the marine protected areas is a daily problem. These commercial fishers are from Concepcion, nearby municipalities like Ajuy, Cadiz and Sagay, Negros Occidental and even from municipalities in Masbate. It was reported that these "outsiders" tend to use destructive fishing gears like purse seines and big Danish seines.

Escalante City, Negros Occidental.

The city of Escalante is located at the northeastern part of Negros Island. The city is composed of 21 barangays, 7 of which are coastal. It has a land area of 192.7-sq. km., while

the municipal water, which has been delineated by the National Mapping and Resource Information Authority (NAMRIA), has an area of 220 sq. km. The coastline stretches 37 km, excluding the city's only island (Bagong Banua).

In 2003, Escalante City had a population of 88,577. The 7 coastal barangays have a total population of 37,425, which is more than 40% of the total city population. Of the 19,276 hectares land area, more than 96% are agricultural. Farming, fishing and merchandising are the main sources of livelihood in the city. Sugarcane is planted in approximately 62% of the agricultural area. The rest are planted with coconut, corn and rice.

In 2003, the Bureau of Fisheries and Aquatic Resources (BFAR) and the National Fisheries Research and Development Institute (NFRDI) assessed selected sites in northern Negros and concluded that coral reefs in Bagong Banua and Malabagon are in fair condition. The study observed infestation of crown-of-thorns in some sites, and the prevalence of dead corals, which are remnants of blast fishing activities within the area. The condition of coral reefs in other areas in Escalante is unknown. No assessment has been done for mangrove and seagrasses, although mangroves are present in the barangays of Cervantes, Washington, Japitan, Old Poblacion and Rizal (Calumpong and Mendez 1997).

Coastal Resources Management. In 2000, the city of Escalante and 8 other cities and municipalities established the Northern Negros Aquatic Resources Management Advisory Council (NNARMAC). The NNARMAC is an alliance of local government units in northern Negros, which serves as a coordinating body to manage the area's fisheries and aquatic resources. The alliance is relatively young compared to the more organized Northern Iloilo Alliance for Coastal Development (NIACDEV) in northern Iloilo.

Escalante City maintains an organized Bantay Dagat equipped with 3 patrol boats, each with communication equipment and a Global Positioning System (GPS) to identify location. Between 1998 and 2003, the Bantay Dagat has collected more than PhP 1.3 M as penalties for the violation of fishery laws. Seventy percent of the amount is used for the maintenance and operating expenses of the Bantay Dagat. The rest is spent for personnel incentives. The Bantay Dagat of Escalante is considerably one of the "operational" Bantay Dagat in the region, and is actively patrolling the coast against illegal fishing activities.

Local fishers have also been slow in organizing themselves into a collective group for fisheries management and conservation. A few of the fishers are members of a fisherfolk organization and 3 other cooperatives. The coastal barangays have yet to establish their Barangay Fisheries and Aquatic Resources Management Councils (FARMC). The City

FARMC has been recently created but it has to make a more active role in the management and utilization of the city's fisheries and aquatic resources.

Regulations Pertinent to the Use of Municipal Waters. In order to help manage Escalante's fisheries, a number of local laws have been passed. Municipal Ordinance No. 43 is regarded as the principal fisheries law in the city. It is notable that the ordinance has not been updated since the R.A. 8550 or the Fisheries Code of the Philippines had been passed in 1998. Municipal Ordinance No. 43 establishes the zoning regulation in Escalante City. It provides that Danish seines are not allowed to operate 7 km from the shoreline, while trawls and purse seines are not allowed to operate 10 km from the shoreline.

In 2003, the City Council approved the establishment of the Escalante Bay Marine Sanctuary through City Ordinance No. 156. The proposed sanctuary has a total area of 1323.5 ha and is situated near the Bagong Banua Island (Fig. 2). However, its creation has been delayed pending the approval of the Sangguniang Panlalawigan of Negros Occidental.

Daanbantayan, Cebu

Daanbantayan is a fourth class municipality located in the northernmost tip of the island of Cebu. It lies about 147 kilometers from Cebu City.

It has a total population of 69,335, of which 58,954 live in coastal barangays. The estimated number of fishers is 11,000. Of the municipality's twenty barangays, fifteen are coastal, inclusive of two island barangays. One island barangay (Logon) is within 5-10 kilometers from the shoreline of Daanbantayan and the other (Carnaza) is 10-15 kilometers away. The total land area of the municipality is 10,545 hectares and the length of its shoreline in the mainland is 67 kilometers. The main products of Daanbantayan are marine products, coconut, buri, maguey, bamboo, corn and coal.

Coastal Resource Management. Unlike the two other study areas, Daanbantayan is not a member of any coastal resource management alliance.

Nevertheless it has established its Municipal Fisheries and Aquatic Resources Management Councils (MFARMC), whose head reported in the interview for this study that Barangay FARMCs were organized three years ago, but are inactive. Members do not come to meetings called by MFARMC because they find travel to the venue costly and perceive no benefit from their attendance. As of the time of the research it was reported that only 600 of the 11,000 fisherfolk in Daanbantayan are registered, despite the ordinance in late 2002 requiring them to register.

The Bantay Dagat created in 2002 consists of nine members and is provided by the municipality with six pumpboats and a 1.3 million allotment per year. The equipment available to them are a camera, megaphone, and a telescope. Due to lack of funds the municipality is unable to provide them with a geographical positioning system (GPS) which would otherwise have facilitated the task of apprehending violators of the zoning regulation. The team operates from four in the morning to five in the afternoon. At night, a seaborne patrol of six members also operates. Each warden is paid a thousand pesos monthly and can expect to receive 10% share of fines and 25% from the total catch of violators. However this sharing scheme seems not to have been implemented up to the time of this study.

Regulations Pertinent to the Use of Municipal Waters. Despite the non-existence of a CRM alliance, the local government has enacted a number of fisheries ordinances which regulate fishing effort. One is the stipulation that hulbot-hulbot (Danish seine) and purse seine methods of fishing are prohibited in municipal waters, i.e. 15 kilometers of the coastal and island barangays. Thus Daanbantayan implements the exclusive use of municipal waters for its fisherfolk.

There is an understanding among the three neighboring municipalities of Daanbantayan, Bogo, and Medellin that they are going to implement the exclusive use of their respective municipal waters. However encroachers would be advised properly before cases are filed against them. Informants cited that some fishers as far as Leyte had tried to ask for permit to operate in their municipal waters but were not allowed due to this municipal exclusivity agreement.

An ordinance requiring fishers to register was also passed in 2002. By ordinance in 2002, the Daanbantayan municipal Bantay Dagat task force was created under the office of the mayor. Its purpose is to fully implement and enforce all existing fishery laws and ordinances relative to the protection, conservation and preservation of aquatic life and marine resources within the municipality's territorial waters.

In 2002 likewise, an ordinance was passed requiring the color code and registry markings of all sea vessels in the coastal barangays in the municipality of Daanbantayan, and prescribing penalties for violations thereof. The intent of the ordinance is to more effectively monitor the legitimacy of the fishing boats operating in the municipal waters.

4. Socio-demographic Characteristics of Respondents

In all study areas the municipal fishers were consistently older than the commercial fisher respondents by approximately ten years. See Table 2 for the socio-demographic characteristics. Except in Concepcion which shows about the same value, the average age at which respondents started fishing is slightly lower for municipal compared to commercial fishers. For both groups this is in their teenage years, except for Cebu commercial fishers whose average is 20 years old. The average number of years fishing is consistently higher for municipal (26-29 years) compared to commercial fishers (16-19 years). Household size is about 5-6 members. The higher modal educational attainment is found among the commercial fishers of Concepcion (elementary graduate) and Daanbantayan (high school level) while most of the municipal fishers in all three study areas have only had some elementary education.

Table 2. Selected socio-demographic characteristics of Fishers

Variable	Concepcion		Escalante		Daanbantayan	
	Mun n=53	**Com n=55**	**Mun n=52**	**Com N=38**	**Mun n=30**	**Com n=30**
age of the respondents	42.96	33.96	45.92	35.42	46.10	36.57
age start fishing	16.31	15.64	16.98	18.65	18.83	20.17
Number of years fishing	26.66	18.82	28.94	17.57	28.43	16.07
Sex						
Male	100%	98.2	100%	100%	96.7	100%
Female	0	1.8%	0	0	3.3	0
Civil Status						
Married	92.5%	72.7%	96.2%	65.8%	93.3%	66.7%
Single	7.5%	23.6%	0	31.6%	3.3%	30.0%
Widower	0	3.6%	3.8%	2.6%	3.3%	3.3%
Educational attainment						
Primary Education						
• Elementary	49.1%	30.9%	73.1%	36.8%	50%	16.7%
• Elementary Grad	26.4%	30.2%	13.5%	18.4%	20%	26.7
Secondary Education						
• High School	13.2%	10.9%	0	21.1%	16.7%	20.0%
• High School Grad	9.4%	12.7%	11.5%	18.4%	10%	20.0%
Tertiary Education						
• Vocational	1.9%	1.8%	0	0	0	0
• College	0	5.5%	0	2.6%	3.3%	6.7%
• College grad	0	0	1.9%	2.6%	0	10.0

The annual household income is higher for commercial fishing households. Daanbantayan commercial fishers had the highest average annual household income at P61,060 while among municipal fishers the highest average is P37,223 in Escalante. Household size ranges from 4.7-5.5 members. A greater percentage of commercial than municipal fishers own the land where their house is built, although in Escalante this difference is minimal. Among the three areas, Concepcion's municipal fishers are better off in terms of land ownership. About 90% on the average own their houses, of which many are made of light materials among the municipal fishers. More of the commercial fishers in Concepcion and Daanbantayan report having houses of permanent materials.

The highest access to electricity is found among fishers in Cebu, which probably speaks more of the higher economic development in this province. Overall, there are also more commercial fishers with access to electricity compared to municipal fishers. Wood is the most common fuel for cooking and only in Concepcion is there an elevated usage of charcoal, as well. In Cebu LPG is slightly more popular than wood.

Table 3. Characteristics of Fishing households

	Concepcion		**Escalante**		**Daanbantayan**	
Variable	**Mun n=53**	**Com n=55**	**Mun n=52**	**Com n=38**	**Mun n=30**	**Com n=30**
Annual Income	31311.98	55094	37223.08	41969.74	32863.33	61060.53
Household Size	4.94	4.76	5.07	5.5	5.03	5.23
Own land where house is	35.8%	65.5%	19.2%	21%	13.3%	56.7%
Pernanent materials	11.3%	45.5%	34.6%	23.7%	30%	40.0%
Semi permanent	37.7%	23.6%	23.1%	47.4%	23.3%	30.0%
Light materials	49.1%	30.9%	42.3%	28.9%	46.7%	30.0%
Access to electricity	50.9%	80%	65.4%	71%	70%	90%
Electic Bill	115.2	194.7	177.73	247.44	235.04	911.11
Fuel used in cooking						
charcoal	37.7%	78.2%	13.5%	26.3%	3.3%	20%
Wood	90.6%	67.3%	94.2%	84%	93.3%	53.3%
LPG	5.7%	21.8%	17.3%	13.2%	20%	56.7
others	0	5.5%	0	0	0	0
Source of water						
Deepwell	81.1	78.2%	82.7%	81.6	13.3%	33.3%
Shallow well	13.2	18.2%	7.7%	7.9	0	16.7
Rain	0	0	0	0	0	0
Filtered	0	0	0	5.3	0	6.7%
Pipes	26.4	10.9%	0	2.6	86.7%	36.7%

5. Fishing and Fishing Related Activities

While the boats used by municipal fishers are by definition less than three gross tons, the boats used by commercial respondents in Concepcion and Escalante are also less than three gross tons but with active gears. See Table 4 showing fishing related characteristics. In a few cases in Concepcion it was learned that some respondents misdeclare their tonnage in order to avail of privileges given to boats smaller than three gross tons. The tonnage reported by commercial fishers in Daanbantayan ranges from 20.1 to 150 tons.

In Concepcion, municipal fishers were using simple and passive fishing gears, which are not highly exploitative, and are appropriate to use in the shallow nearshore where most of them fish. The table shows that two variants of longline, “kitang” and “labay”, were the most popular gears used by the municipal fishers (54.72% and 39.62 %, respectively). In Concepcion, “kitang” is vertical longline and “labay” is horizontal longline. A longline is an extremely long line with a large series of baited hooks and requires periodic attention at more or less fixed interval of time. A small number of municipal fishers were engaged in traditional hook and line (5.67%), troll line (9.43%), squid jig (3.77%), crab pot (7.55%), and bottom set gill net (13.21%).

On the other hand, most (94.55%) of the commercial fisher-respondents in Concepcion were involved in trawl fishing. Three commercial fishers were engaged in gillnet fishing. Trawl is a more efficient active gear and is appropriate to use offshore. It can be destructive and has the potential to overexploit the resource.

In Escalante, some of the fishers use multiple gears. Because gillnets and longlines were the most common fishing gears in Escalante, majority of the respondents chosen were operators of the said fishing gears. All of the respondents from the commercial sector were baby trawlers, except one who was a mid-water trawler.

In Daanbantayan the most common among the municipal fishers is the drift gillnet followed by the drop line and then the bottom set gillnet and crab pots. All respondents own their gear and 83% own their boats. Eighty percent of municipal boats are motorized and of less than three gross tons. On the other hand, seventy-seven percent of commercial fisher respondents were affiliated with only six Danish seines (of which five are referred to as zippers and one as a hulbot-hulbot) and a purse seine. As was explained in the separate report on Daanbantayan, there was difficulty locating commercial vessel respondents plying the Visayan Sea outlying the northern section of Cebu.

Table 4. Characteristics of fishing activities

Variable	Concepcion		Escalante		Daanbantayan	
	Mun n=53	**Com n=55**	**Mun n=52**	**Com n=38**	**Mun n=30**	**Com n=30**
No. of boats	53	30	52	19	30	7
Tonnage						
<3 GT	100%	65.5	100%	100%	83.3%	6.7%
3.1-20 GT	0	9.1	0	0	0	0
20.1-150	0	0	0	0	0	80%
Fishing days in a month	15.94	17.96	23.16	17.57	26.40	21.20
Fishing trips/day						
Once	92.5	76.4	88.5%	100%	100%	10%
Twice	7.5	7.3	11.5%	0	0	0
Others	0	0	12.7%	0	0	0
<>1 week	0	0	0	0	0	90%
Total fishing hours a day	8.55	11.69	11.90	14.79	9.2	14.26
License	28.3%	69.1%	15.4%	76.3%	40%	100%

In general fishers in Concepcion and Escalante go on a single fishing trip per day and average 16-23 days a month. The commercial fishers in Daanbantayan can go for a week on a fishing trip and return in less days only when their supply runs out. They average fourteen hours of fishing daily. As with the other commercial fishers in the two other places, the daily fishing hours are longer compared to that of municipal fishers.

6. Assessment of Fish Catch and Fishing Activity

The fishers were asked to evaluate their catch five years ago compared to their current catch. They were then also asked to compare the future catch (five years hence) with the present. Their responses were captured in a forced choice response format.

The majority of the municipal fishers and the commercial fishers for the three areas claim that their volume of fish catch in the past is higher compared to the present. They however are pessimistic of the future because they expect that their catch will decline. The higher catch five years ago is due to there being fewer fishers, few high efficiency gears, no illegal fishing and no restrictions in fishing activity. The municipal fishers blame the decline in their catch to the operation of the commercial fishers. On the other hand, the small scale commercial fishers in Concepcion and Escalante hold the large scale commercial fishers like the purse seines and danish seines to be responsible for the destruction of their

fishing areas. Moreover, the enormous capacity of these vessels to catch large volumes of fish also limits their catch. A single operation of these large-scale vessels is equivalent to one month of hard work in fishing for the small-scale fishers. Their pessimism over the future is their expectation that more people will enter fishing as an occupation because for the poor and unskilled, it is always a last resort to earn a living. For those with capital it is a profitable enterprise. Catch is also expected to further decline because of the predominance of destructive gears. However, a significant percentage of the large-scale commercial fishers in Daanbantayan, which are composed of danish seines and purse seines, assert that the volume of their fish catch remained the same. The irony of it is that these large-scale commercial fishers admit that they are destructive and they have larger fishing capacity but they have to continue their operations because fishing is also their main source of income. There is also the belief that fisheries management regimes will eventually lower production. In Daanbantayan the municipal fishers, more than the commercial ones, experience the decline in fish volume through the years.

For most of the municipal fishers, the size of their fish catch in the past remains the same as the present, stressing that the size of fish will not all of a sudden be giant fish, crab and shrimps. Rather most of the fishers catch the same species that stop growing after they reach maturity. Depending on the season caught, size of squid varies. Those who believe that size will be smaller blame overfishing in which even juveniles are captured by fine mesh nets.

Their responses on changes in the value of fish catch relate prices and volume of the species caught. According to fishers the prices of the fish products were lower in the past but they can still catch higher volume during that time. Presently, the prices of fish products are higher but they now have lower volume of catch. Most fishers declared that they used to have larger income from fishing and they expect their future to be gloomy because they expect lower income. Aside from similar reasons as given by the municipal fishers, the commercial fishers show more appreciation for the expenses entailed in fishing and its effect on income. This may be because crew members share of catch is affected by operational expenses of the boat. While this is also the same for municipal fishers, the number of fishers sharing the catch is fewer and may mainly be family members.

When asked to compare the past and present composition of their catch, the municipal fishers from Concepcion and Escalante claim that they used to catch higher value of first class fish species but because of the emergence of the destructive gears, they are now catching third class species. Most of both types of fishers in Daanbantayan however claim

that their catch remained unchanged and will still be the same in the future. The commercial fishers also said that the composition of their catch remained constant because they have been fishing in the same area.

The length of time fishing for most of the commercial and municipal respondents from the three study areas will still be the same in the future, for the main reason that they will still follow the same schedule of fishing regardless of volume of catch. Only the commercial fishers in Daanbantayan and the municipal fishers in Concepcion claimed that they used to have shorter fishing time in the past, and this is because it was easier and quicker to find the fish. Although most of the respondents say that the fishing time still remains the same, there are also a number of the commercial fishers in Concepcion who contend that they now have longer fishing time because they are forced to fish farther requiring longer fishing time on their part. About 32 % in Concepcion said that in the future, they expect longer fishing time because they need to wait until they have a catch because it is their only source of income to buy family's needs.

All of the respondents pointed out that there are fewer fishers in the past compared to the present because not many knew of this occupation. According to them it will still continue to increase in the future because of the entry of the sons of the fishers who for lack of education have no other employment options. However there is also a set of respondents who think that the future increase in number of fishers will be due to the attractiveness of fishing as a profitable enterprise. The increase in population is also cited as reason for increase in fishers.

7. Reactions to Exit Strategies

The pattern of popularity of the different exit strategies varies from area to area although there is an apparent consensus on the preference for the banning of some gears and the giving of alternative livelihoods.

Banning of certain gears. Most of the respondents strongly supported the prohibition of some fishing gears to rehabilitate the aquatic habitats, increase fish population, and to prevent illegal fishing activities like dynamite fishing, cyanide fishing and use of destructive and highly efficient gears like Danish seines and trawls. They believe that trawls destroy coral reefs and the Danish seines catch juvenile fish because they use fine- meshed nets. A single night's catch of these seines is equivalent to the municipal fisher's two-week catch. There is a preponderant concern in Concepcion that some gears catch even the immature fish, thus decreasing future fish stocks. Many

of the baby trawlers did not consider themselves as destructive. The fishers said that the government should take the lead role in eliminating illegal fishing.

Alternative jobs outside fishing. Those who agree with the option for alternative jobs realize that with their getting on in age, fishing has become heavy, difficult and hazardous work. They hope that the new jobs outside of fishing will be lighter than fishing. Many agree, on condition that the earnings should at least equal their income from fishing. Others felt that fishing was inseparable from their lives, and working on land would not be as gratifying.

In further exploring the feasibility of promoting alternative livelihoods, respondents were asked to state the skills outside of fishing, which can be pursued for themselves, their spouse, or children. Many indicate they would be able to do something in business, carpentry, mechanic work, construction, masonry, driving, farming, and handicrafts making. Because of their limited education, their choices for employment is narrower.

The single most important assistance they express as needed to leave fishery is capital. Most of them expect the assistance to come from the local government unit in the form of either a loan or a grant.

Limitation of catch and of fishers. Similarly there is an overall dislike for the establishment of a maximum limit of catch and the limitation in the number of fishers.

The fishers cannot imagine how limitation of catch can be effected as, once fish is caught, putting back to sea possibly dead fish would serve no purpose. More importantly fishers opine that limiting catch according to scale of operation would make their operations less viable and would mean lower incomes for them. They cannot see the logic of limiting catch when in fact they already have been experiencing lower catch. Some fishers suggest that limitation should apply only to commercial fishers because they have large catches. This effect on income is seen as more marked for municipal fishers as it will affect their ability to support their families.

Limiting the number of fishers is largely unpopular. The limited employment opportunities lead people to fishing as their main source of living. Restricting access would mean hunger for many. Some municipal fishers say that for as long as fishers are using legal gears and are from the same municipality they should be allowed to fish. As local residents, they think they have the right to fish in the municipal waters. They suggest that the commercial fishers should be kept out of municipal waters.

Practice of Closed Season. There is ambivalence for the practice of closed season especially for the municipal fishers in Daanbantayan and Escalante, who are split on this

option. While some appreciate the value for the spawning and biological growth of fish, others see only the impact on their livelihood. They would have no means of income during the proposed close season. However, about 75% of both types of fishers in Concepcion agree with closed season. Most of the latter's municipal (77.4%) and commercial fishers (74.60) agreed to have a closed season. According to them, fish breed and grow during closed season and thus plenty of fish is expected later. To some fishers, the closed season is also rest time for them. To some commercial fishers they will agree to stop fishing even for four months in return for no fishing restrictions for eight months. Those who were against it cited the lack of livelihood during the non-fishing period. Those who were amenable to the proposal said they would like to give the fisheries a chance to recover, especially during the spawning season.

Establishment of MPAs/Sanctuaries. Although there is clear agreement for the establishment of MPA's in Daanbantayan and Concepcion, 86% of the commercial fishers and 32% of municipal fishers in Escalante disagree with it. The reasons given are that MPA's reduce their fishing ground and will ban gleaning activity. Their unexpected negative predisposition toward fish sanctuaries reflect the controversy that has surrounded this issue, which was used by the incumbent mayor's political rivals as an issue against him. There was misinformation allowed to circulate on its have negative impact on the fishers.

8. Conflicts

Respondents were asked about their experience with conflict brought about by the zoning regulation applied to municipal waters. They were guided to include details on the nature and cause of the conflict, the events, persons involved, and manner of resolution.

The Zoning Regulation.

Concepcion, Iloilo. The municipal water of Concepcion is reserved for use by the municipal fishers. Commercial fishers are supposed to operate beyond 15 km of the municipal waters. In Concepcion, an ordinance was passed in 1999 allowing commercial fishers to fish within the 10.1 to 15 km area from the shoreline. Fishers call this "free zone" as the "second canal, " just about 3 km from Barangay Bagongon, in the area of Danao-Danao Island. This "second canal" is said to be equidistant to Barangay Bagongon and Cadiz, Negros Occidental. This fishing right, however, is in exchange for a fishery rental worth P2500 for two weeks.

The commercial fishers of Barangay Bagongon feel that they are being treated as "outsiders" in their own waters. They resent their exclusion in the municipal waters where they believe the fish abound. They believe that the fish path is below 15 km and the ideal fishing area is at 7 km. Their main dilemma is where to fish. They are being forced to travel offshore but this means higher operation cost, decreased income and coming into contact with Bantay Dagat of other municipalities who also resent the presence of "outsiders" in their fishing grounds. They operate inside the municipal waters by taking the risks of being apprehended, fined, imprisoned and fishing gears confiscated.

The commercial fishers expressed disappointed with the fishery laws, which, according to them, are biased in favor of the small fishers. According to them, the access regulation is pushing them out of fishing. They have nowhere to go to. They articulated their need for more government protection because they are the ones that secure licenses and permits and pay taxes, and not the municipal fishers. They said they deserve to be given and be informed of the area where to fish in the municipal waters.

The fishers also expressed no control over the fishery. They oppose the operation of fishers from municipalities in Negros Occidental and Masbate in their municipal water. Most were not aware that the municipal fishers from other municipalities could fish in the waters of Concepcion if they secure permit and license to operate.

Escalante City, Negros Occ. The longline and handline fishers operate nearshore, rarely beyond 5 kms from the coastline, and just around Bagong Banua and the nearby reefs. A few venture near the island of Baliguian, Concepcion and off Molocaboc Island, Bantayan. The gill-netters fish up to a distance of approximately 12 km while a few operate near Bantayan Island. Fish corrals, as well as trap and pot fishers operate nearshore, often at the inter-tidal areas.

Under the Municipal Ordinance No. 43, Danish seines are not allowed to operate within 7 km from the coastline while trawls and purse seines are prohibited within 10 km from the mainland. However, local practice is different. Baby trawlers are allowed to operate after 7 km while municipal Danish seines (*bira-bira*) are allowed beyond 10 km. Other larger fishing vessels like the purse seines, ring net, Danish seines (super *hulbot*) and otter trawls (*mansuria*) are prohibited within 15 km from the coastline.

Baby trawlers are banned within 7 km from the coastline, but when opportunity allows, they operate 2-3 km from the coastline. Towing of trawl may continue as far as 10 km, although operation is limited by the presence of reefs and rocks in certain areas. Depending on the time of the year, the baby trawlers move to different fishing grounds in

pursuit of shrimp stocks. They move to Sacramento and Carmen Reefs in Cadiz City and Baliguian Island, Concepcion where shrimp catch is better during the southwest monsoon.

Daanbantayan, Cebu. Daanbantayan implements the exclusive use of municipal waters demarcated as fifteen kilometers from the coastline. The penalty for violation by commercial vessels with active gears is imprisonment of 1-6 months and individual crewmember liability consisting of a P2,500 fine. As of early 2004 the municipality has recorded having earned so far a million pesos in fines. The fines are used to assist municipal fishers, e.g loans, cooperatives, free nets.

The ordinance on color coding and registry markings on all sea vessels registered in the coastal barangays of Daanbantayan is further intended to facilitate enforcement of zoning. There is an agreement among the neighboring northern municipalities of Daan Bantayan, Bogo, and Medellin that they will implement exclusive use of their respective municipal waters.

The municipal fishers of Daanbantayan used to fish in neighboring municipal waters before the exclusivity agreement among the northern municipalities was forged. This agreement resulted from the strictness of Medellin in applying their own exclusivity regulation, apprehending municipal fishers from Daanbantayan and others in the area. This created some friction (transaction cost) between municipalities so that the joint agreement was a way of resolving growing animosities. Some municipal fishers expressed dissatisfaction with the exclusivity because they would want to fish in the waters of other municipalities, e.g. Sta. Fe, where they believe the fish are more abundant.

There are only two commercial boats, both hulbot-hulbot, based in Daanbantayan. Only one has been allowed to operate in the municipal waters, as a kind of special arrangement. The other hulbot-hulbot does not have the same arrangement because the owner is not politically in good terms with the top local official. The commercial fishers find the zoning ordinance unacceptable and unfair.

Conflicts arising in enforcement

Concepcion, Iloilo. As mentioned, commercial fishers are completely banned in less than 10.1 km. of Concepcion municipal water. However, commercial fishers encroach in the municipal waters. Some factors are favorable to the commercial fishers. The size of the municipal water makes sea patrolling very costly and enforcement of regulations difficult. Barangay Bagongon is far from the mainland where the Bantay Dagat team is based. If there are reports of commercial fishing operation within municipal waters from barangay

fish wardens, commercial fishers are long gone before the Bantay Dagat arrives. Commercial boats were said to be faster than the patrol boats of the Bantay Dagat. It was also reported that commercial fishers have "watchers" at the port where the Bantay Dagat patrol boats are docked. The "watchers" inform commercial fishers when the Bantay Dagat team is in operation. In case of apprehension, the compromise penalty is only P2500, an amount that is very small relative to the value of the fish illegally caught.

As expected, the conflict of commercial fishers with the Bantay Dagat and local government officials for implementing the zoning regulation is most pronounced. They reported that local Bantay Dagat would apprehend those with no license, fishing within 7 km, fishing in restricted areas like the MPAs and would file case and sometimes would settle for fines. More pronounced than this was their dislike of the Provincial Bantay Dagat team sent by the Provincial Governor at the same time of the study. They mentioned that the Provincial Team came unannounced and gave no warnings to violators. They are "stricter" than the local Bantay Dagat in implementing the zoning regulation. Fishing in the "second canal" is no longer allowed; no more fishery rentals. Commercial fishers were told to fish beyond Baliguian Island, which is about 22 km from the mainland. They perceived that the Provincial Bantay Dagat is serious in filing a case, confiscating boats and gears and in prosecuting the crew. Their understanding was that the Provincial Bantay Dagat Team would really want the phase of out of trawl operation. With their frustrations, some commercial fishers expressed their willingness to take up arms against the Provincial Mobile Team.

Municipal fishers expressed approval of the presence of the Provincial Bantay Dagat. They felt more protection with its presence. According to them, the Provincial Bantay Dagat have driven the commercial fishers farther into the sea. With regard to the local Bantay dagat, a number of municipal fishers perceived that they are biased in favor of some trawlers. They claimed that the Bantay Dagat would warn their friends when they are about to perform surveillance operation or do not apprehend illegal fishers who are friends.

The Bantay Dagat team of Ajuy and Cadiz have also apprehended and put to prison or imposed fine for commercial fishers from Concepcion for encroaching in their municipal waters.

One challenging issue in Barangay Bagongon is that the Barangay Captain who owns a number of trawl boats regularly violate the zoning regulation: encroachment into municipal waters and fishing in marine protected area. The deputized fish wardens in Barangay Bagongon are discouraged to apprehend his boats. Their lack of equipment to

gather evidences always put them at the losing end. The deputized fish wardens reported that they do not have a patrol boat for surveillance operation because the engine was confiscated by the Barangay Captain. No one is brave enough to raise a case against the Barangay Captain, whom people perceive as powerful because of his position.

Escalante City, Neg Occ. The current city administration has been credited with the political will in the management of Escalante's fisheries through strict enforcement of fishery rules, proposed creation of a marine sanctuary, and an organized Bantay Dagat.

However, the force of politics provides confusion and complicates the resulting conflicts in fisheries. In the recent local elections, the MPA creation was used as a campaign issue, which muddled the possible benefits of a marine sanctuary. Misinformation regarding the MPA may have intensified local opposition to the MPA.

The Bantay Dagat is among the subject of conflict reported by resource users, although the two sectors make contrasting allegations. The municipal fishers claim that the Bantay Dagat sometimes does not fine violators, and they sometimes do not function. On the other hand, the commercial operators claim that the Bantay Dagat is very strict, and that they make arrests even when the boundaries of the 7 km zone are not clear.

Daanbantayan, Cebu. The Bantay Dagat is the deputized body of the local government to enforce ordinances in the municipal waters. In Daanbantayan, it was created by ordinance in 2002 to curb illegal fishing. Prior to its creation, the responsibility of apprehending fishing violators reposed on the tanod of the town. However it was reported that the tanods were not consistent in enforcement, allowing privileges to their friends and relatives in exchange for some share in their catch.

The Bantay Dagat consists of nine members and is provided by the municipality with six pumpboats and a 1.3 million allotment per year. The equipment available to them are a camera, megaphone, and a telescope. Due to lack of funds the municipality is unable to afford a geographical positioning system (GPS) which would otherwise have facilitated the task of apprehending violators of the zoning regulation. The team operates from four in the morning to five in the afternoon. At night, a seaborne patrol of six bantay dagat officers also operates. Each bantay dagat member (warden) is paid a thousand pesos monthly and can expect to receive 10% share of fines and 25% from the total catch of violators. However this sharing scheme seems not to have been implemented up to the time of this study.

The most common report from the commercial fishers is their conflict with the

Bantay Dagat on the latter's judgment that they have intruded into the inshore area. The commercial crew sees their accusation as a ploy to extort payments from the accosted fishers. On the part of the municipal fishers they complain about the poor enforcement of the zoning regulation by the LGU and the Bantay Dagat. They perceive that special arrangements are made by these regulators to accommodate the incursion of commercial vessels into the zone reserved for the municipal fishers. These municipal fishers are critical of what they see as the LGU's soft handling of violators.

On the other hand, some wardens who are in the team of the Bantay Dagat are also highly critical of the practice of LGU's for releasing violators once the fines are paid. They believe that without imprisonment the violators would simply violate again. There is also a perception that local officials have arrangements that allow commercial boats to operate in the inshore area. Thus they believe that while the Bantay Dagat perform their responsibility of apprehending violators, the political will to fully prosecute is outside their control.

On the part of the Bantay Dagat, the interviewed chair acknowledged that they allow amicable settlements, wherein if the fine is paid no case is filed or if filed, dismissed. All the money goes to the municipality. In general he believes the Bantay Dagat is effective, although their efficiency is affected by lack of gasoline and bad weather which commercial fishers then take advantage of. There is also a lack of policemen to accompany the team for arrest work.

The fish warden also reported that they caught some big-time commercial fishers but when they try to file a case, the court says they can pay the fine and be freed of the charges. The warden believes this method only leads to repeat violation and proposed instead that violators be imprisoned and not allowed to pay the fines. Another problem cited by the wardens is the interference of politicians: councilors, mayors, barangay captains. Apprehending officer or witnesses are approached by violators and appealed to not appear in court. The police admit that because of pity and understanding of the hardship of life, they give in to the appeal. They extract a promise for violators not to repeat in a signed document with municipal officer. They note that lawyers of violators are good/big time and know how to use the law in their favor.

Seaborne police also fall victim to violators. In one case when the officer boarded the zipper to effect arrest, he was brought by the zipper to Bantayan, without his even realizing it. He stayed in the boat for several nights and was scared that they might hurt him. He was rescued at the sea waters of Bantayan. Case was then filed for both the violation and kidnapping.

There is acknowledgement of the tedious process of apprehending and filing a case for violation. Any misstep can easily result in infirmities that work against filing the case. In the case of encroaching commercial fishers they are brought to shore and their boats detained by the Bantay Dagat. Some just pay the fine of P30,000 or so, depending on number of crew. When they succeed in filing a charge this is easily dismissed because of the difficulty of presenting appropriate evidence. One warden believes that no conviction of commercial fisher has ever been made, but he is not sure because it is not his job to follow up cases filed. Their concern (seaborne member) is to "release the violator in good physical condition."

Conflicts among fisheries stakeholders

Concepcion, Iloilo. The conflict in Barangay Bagongon is centered on municipal fishers and commercial fishers. Their increasing number, lack of alternate job have heightened their competition for space and resources, which in turn have increased their conflict, fishing pressure and problems with control and monitoring.

Commercial fishers believed that municipal fishers are "jealous" of their bigger volume of fish catch. They also resented the privilege given to hook-and-line fishers to fish in the buffer zone areas of marine protected areas. Between trawlers and Danish seine operators ('zipper' type), conflict also arise. Trawlers are said to be "jealous" of the big volume of catch of Danish seines. According to a trawler operator, every fisher in Barangay Bagongon or Concepcion is "jealous" of him because he is the main supplier of squid of an international processing plant located in the neighboring municipality (San Dionisio).

Conflict is present between and among commercial and municipal fishers. There were reports of municipal and commercial fishers fishing in the same area that would sometime result to net entanglements (which can be deliberate or accidental) that, most of the time, damage the net of the municipal fishers. One incident led to boat chasing with the trawlers chasing the municipal fisher (vertical long line user) after the latter demanded that the trawlers haul their nets for the longline got entangled. It was a false alarm.

Municipal fishers resented the trawl (from Bagongon and Danao) and hulbot-hulbot (from Tagubanhan, Ajuy) operations. They had many encounters with these commercial fishers. Most believed that commercial fishers (most of the time) would intentionally run-over them and drag their nets. Most incidents resulted to destroyed nets or boat capsized. Their signals and their request for commercial fishers to fish somewhere else were always ignored.

There was a report of trawlers running-over a fish aggregating device of a municipal fisher. The trawlers were armed and threw a bottle of kerosene to the complaining municipal fisher. Others received grave threats from commercial fishers after helping the local Bantay Dagat.

Net and outrigger entanglements resulting to damage of gears and boats among commercial fishers were also reported. One incident led to the throwing of drinking glasses in the sea. The few risk-averse and law-abiding commercial fishers resented the non-compliance of zoning regulation of their fellow commercial fishers.

Overcrowding of municipal fishers in the same fishing area would result to entanglement of nets and the boat being hit (intentional or accidental) resulting to damage. There were also reports of fish stealing from someone else's fish aggregating device and stationary gears.

Escalante City, Neg Occ. In Escalante the overlapping fishing grounds of different fishing gears have resulted in cases of boat crashing and damaged outriggers; some death was even reported. The damage is greater when a bigger boat crash into the boat of a municipal fisher. One account of death was reported when his boat was rammed by a big Danish seine vessel, which sped away after the incident.

It is also inevitable that fishing gears would get entangled, especially when one of the gears is an active gear. Entanglement of the fishing gears is the most frequent conflict recorded. Among municipal fishers, entanglement of gears usually happens when drift gillnets (e.g. *kurantay pangisda* and *pamo*) drift over set lines (e.g. *kitang* and *pasol*) or get entangled with another gillnet. Entanglement among commercial fishers also occurs especially among baby trawlers, or sometimes between a baby trawl and a larger vessel like a purse seine, otter trawl or Danish seine. The baby trawls often figure in entanglement cases with lines and gillnets. In the process, lines and nets that were set by the municipal fishers get entangled, torn or lost. Occasionally, larger fishing vessels also run over the fishing gears of municipal fishers and cause damage to the gears.

Daanbantayan, Cebu. Among commercial fishers the few conflicts reported in the interviews are those between the zipper and the purse seine. The conflict arises in the dropping of their respective nets in adjacent areas, which result in entanglement. Implicit is the need to respect the primacy of whoever reaches the fishing grounds ahead, and consequently for the late comer to put adequate distance before dropping his net.

The municipal fishers report conflicts among each other. They expressed anger toward the dynamite users. There is also reported conflict brought about by competition for

fishing sites, where they drop their gears. They report the intentional cutting of nets they leave unattended resulting in loss of both gear and catch. Bubo gear entangle with fine mesh nets. In general municipal fishers are more forgiving of their fellow municipal fisher, acknowledging that they are both trying to survive and eke out a living from fishing.

Commercial fishers take the municipal fishers to task for the use of dynamite and other harmful fishing methods. They are however apologetic about the damage they unintentionally cause fisher folk when they hit their boats and gear as they pass them at sea. This can result in the sinking/loss and damage of gears. This occurrence is an admission that they encroach on the grounds of the municipal fishers. According to commercial fishers, they have made it a point to compensate for the damage to property, unless they are unaware that they have caused damage.

From the perspective of the municipal fishers, the conflicts between municipal and commercial fishers are brought on by a battle of gears. The hulbot-hulbot entangles their nets or drag their bubo (fish pots) or trawlers drag the nets and even the small boats of the municipal fishers without being aware of it. The hulbot-hulbot also destroys their fish aggregating devise and steal their catch. In most cases they don't stop to compensate for the damage done. The municipal fishers are helpless not only because of the size and swiftness of the commercial vessels but also that some of the latter are armed. The presence of the commercial fishers are seen to have decreased their catch.

Modes of Conflict Management

Concepcion, Iloilo. Small conflicts like net entanglements and boat hits were often settled amicably through payment of damage and asking for apology. Most of the time municipal fishers ignored other municipal fishers fishing in the same area or would leave to avoid the escalation of conflict. In some cases, no resolutions were offered and so the conflict lingered and escalated. Sometimes it was aggravated by more actions to frighten municipal fishers.

Fishers accepted that they are "powerless" and have no choice but to follow regulations, accept penalty for violations when it concerns the Bantay Dagat and the government officials. It is different, however, when it concerns the Barangay Captain. Cases involving him are resolved in the Mayor's office, and most of the time in his favor.

Escalante City, Neg. Occ. Resolution of conflicts involving entanglement of fishing gears is carried out through several means. In the case of 2 municipal fishers, most of the aggrieved persons just kept silent, some of them seeing it futile to ask for damages because

they were both poor anyway. A considerable number of cases were not resolved because the aggressor was not identified. About 20% of the cases were settled among the fishers themselves, considering that they were friends, relatives or acquaintances. In some cases, payment of damaged gears was necessary. A few of the cases were resolved through the intercession of the Bantay Dagat or the police.

In the case of entanglement between 2 baby trawlers or another commercial fisher, all of the cases recorded had been settled amicably between both parties. The trawlers simply disentangled the nets and continued operation. In a few cases, there may be some arguments on who had been the negligent party, but eventually they were able to resolve the issue.

Damage or loss of fishing gears is one of the major conflicts between municipal and commercial fishers. In such cases, the trawler is always considered as the aggressor, although sometimes the trawler would claim otherwise. In most cases, payment of damage or loss of gear is always the resolution of the conflict. Payment would be in the form of money or fish, and is settled directly between the 2 parties. Sometimes the Bantay Dagat, Barangay Captain or the police would have to intercede, although in many cases, the trawlers were ready to pay albeit regretfully because the money would be deducted from their share of the income. A number of municipal fishers said the trawlers ran away while some just kept their silence. A few were settled amicably without payment.

The fishers are generally satisfied with the way the conflict had been resolved. In the case of 2 municipal fishers, about 58% said they were satisfied and a considerable 42% were not (Fig. 16). The unsatisfied fishers include those who felt they should have been paid for the damages but could not ask for one because he knows the other party has no capability to pay. Between the municipal and commercial fishers, satisfaction was high at 75% while those who were not satisfied include those who were not able to catch the “aggressor” and those who felt the payment given was not enough. Resolution of conflicts involving gear entanglement among commercial fishers is often resolved satisfactorily.

Daanbantayan, Cebu. When they can, municipal fishers ask commercial fishers for payment on damages the latter cause. When they are recompensed they are satisfied; however there is dissatisfaction when they are ignored or not attended to. Some fisher folk just move out of the area of conflict, to avoid confrontation. This leaves them with a sense of helplessness as they are not able to do anything in the situation where they are the victim or at a disadvantage. The inaction of the LGU/Bantay Dagat frustrates them. As an

exceptional verbal response, one fisher stated that he wished he also had a gun, but in the same breath he acknowledged that such would be a bad solution.

There is a prevalent sense of dissatisfaction over the lack of resolution regarding the perceived poor implementation of the regulation.

9. Conclusion

The exact status of exploitation of the Visayan Sea has not been ascertained due to lack of accurate and comprehensive fisheries assessment studies. Analysis drawn from the existing research indicates that the Visayan Sea is "not underexploited, most probably fully exploited, and very likely overexploited" (Vakily 2004). Even without precise scientific evidence, the stakeholders have pointed out several signs of overfishing like the decline of catch, rise of low-valued species, increased number of fishers and fishing pressure, the use of highly-efficient fishing gears, and the increasing conflicts between resource users.

Overfishing has increased fishing pressure, competition for declining resources, and adoption of technologically sophisticated harvesting methods. It has also spurred enactment of legislation that seeks to address and stem overfishing, such as RA8550, which incorporates the provision on the use of municipal waters for municipal fishers.

The legislation has naturally limited the access of commercial fishers to waters beyond the 15 kilometers from the municipality's general coastline, whereas in the past they had unrestricted use of the 7km and up area. With this change, conflicts have arisen which are exacerbated by the following factors: poor enforcement of the zoning regulation, extension of privileges to commercial fishers allowing them continued access, and the perception of commercial fishers that the regulation is unfair.

This study has documented the inter and intra- group conflicts reported by the respondents. Among commercial fishers, there is competition for the perceived best spot for fishing. When one fisher does not respect the primacy of whoever arrives first, there is gear entanglement and resulting damage. Among municipal fishers, the overcrowding in the same area, due to their number and perceived best location, also brings on gear conflicts.

The more common conflicts are those between the municipal and commercial fishers. The typical occurrence is the running-over/bumping of municipal fisher's smaller crafts by the commercial boats, resulting in net and outrigger entanglements, loss of small fisher's gears, damage to stationary gear and fish aggregating devices of small fisher and

other craft damage. Certainly, the less visible loss is the decrease in the small fisher's catch because the commercial fishers insist on operating in the municipal waters using their highly efficient gears.

The general response to the competition over space and fisheries resources tends to be non-confrontational, tolerant and, with few exceptions, non-violent. It may even be argued that these have been the same conflicts in the past when there were fewer restrictions on fishing grounds. However, the difference wrought by the introduction of the zoning regulation is that the municipal fishers have been given a legal mandate to protect and to expect state protection of their stakes in the municipal waters.

Although this preferential option to them provided by law is inadequately enforced, the conflicts can escalate into more disturbing and risky clashes. There is a need to recognize that inadequate reinforcement can increase two attributes in the fish: (1) the sense of helplessness and frustration which is disempowering, but also (b) the sense of unfairness, which can empower when critical thresholds are reached. Although the outcomes of these attributes appear countervailing, either way the results are negative: lack of response toward governance, which will be viewed as losing its legitimacy to enforce, or an escalation into more violent modes of dealing with conflict, when fishers take matters into their hands. These aforementioned possible outcomes have security implications.

The escalation into more violent responses to conflict has been hinted at by a few municipal fishers who say they contemplate using arms, the same way the commercial fishers are armed and thus feared by the small fishers. This is clearly going to be a threat to physical peace and security. On the other hand the continued decline in fish-capture can endanger livelihoods and survival particularly of the fisher folk and also the employed crew of commercial vessels. This is surely a social security issue because of resulting widespread unemployment, for which not only is the government ill-prepared to meet but also the entire well-being of the society is threatened.

With successful enforcement, a number of commercial fishers are expected to leave the sector altogether. There is also expected to be impact on total fish production, if commercial fishers decide to exit from fishing. This will result to a threat to food security for the country, unless, instead of exit for commercial fishers they can be assisted to develop and operate as offshore vessels that may venture into much deeper into the Philippine Exclusive Economic Zone.

Given these prospects, it is imperative for government to intervene and in fact it continues to be popularly perceived as the only agent of change and the initiator of needed

action. More dedicated coastal fisheries resource management, as has been advocated (Bennett et al., 2001), may still be the best route of intervention, because it is programmed to empower stakeholders to take responsibility over their resource and thus be more proactive about it. The role of the local government as well as formal and informal institutions are critical to manage the conflicts in fisheries. (There is a need to do additional analysis on the relative advantage, if any, of the municipalities with CRM in place compared to those with have none.)

Less enlightened fisheries management at the present is still towards resource development and utilization, as observed in some local government's efforts in distributing fishing gears. The concept of limiting and regulating the fishing effort is still unfamiliar to local authorities and stakeholders. This is evident in their responses to exit strategies.

Even if enforcement is made entirely effective, and municipal fishers would operate undisturbed in the 0-15 kilometer zone, they still have to operate within the capacity of the resource. A limitation policy on the number of fishers allowed within the municipal waters will probably be instituted, an unpopular option to the fishers. This will mean not admitting additional entrants, which is a strategy that may be resisted by the community. Traditionally fishing has been seen as an open access enterprise and where skills are not needed for entry. For the economically poor this is almost a last frontier to earn a living. Regulating access by limiting number of fisher folk may further impoverish the rural people unless there are other viable options opened up by the national and local economy. The most immediately logical is to provide those displaced or excluded with alternative livelihoods.

In the past, several livelihood projects were implemented but ultimately failed because of poor planning, inadequate production and financial skills, and lack of market support. The efforts to generate and institutionalize complementary and alternative livelihoods should continue to be a continuing program of government, as this is the area where fishers and many rural folks for that matter have the least experience and thus success in. With adequate monitoring and responsive support, the chances for fishers to exit from fisheries may be realistically forthcoming.

With the aforementioned in mind, limiting catch and establishment of closed seasons which are not acceptable exit options to the local fishers because they are perceived as barriers to their main source of livelihood, may become more palatable and acceptable.

In addition, the option of limiting entry in the fishery may be facilitated in the long term by providing educational opportunities for the children of fishers, as priority group. This will prevent their entry or facilitate their exit from fishing inasmuch as currently fishers

foresee that more young people who are unable to afford formal schooling will join their fathers in the fishing sector or apprentice in commercial fishing. Ensuring access to formal education however would not be forthcoming if no external assistance is available to them given their economic circumstance. It requires foresight from the government or any funding agency that instead of programs like giving of fishing gears, or engines to non-motorized boats, they allocate the money to educational scholarship to be given to sons and daughters of fishers.

It will be a challenge to institute effective exit strategies which may need to go through the route of public consultation and legislation. Given the poor track record of the government in implementing regulation, such strategies will be met with resistance and skepticism. However if government is able to show political will and sincerity in implementing new measures to minimize fishing effort and is consistent in pursuing reform, the fishers may support by compliance such reform.

Aside from effective enforcement, certain exit strategies are needed to decrease pressure on the Visayan Sea. In Daan Bantayan the most favored exit strategies are the banning of certain gears, establishment of MPA and the provision of alternative jobs that do not depend on the sea. The least liked are the setting of a maximum catch limit and the limitation of the number of fishers. They are ambivalent about the closed season option. This pattern of response demonstrates the lack of willingness for their fishing activities to be curtailed in a major way. When they agree to banning of gears, it is usually with reference to dynamite/cyanide fishing rather than the gears they currently use. The commercial fishers may not necessarily be referring to active gears of trawling, sonars, fish finders and superlights, the use in municipal waters of which eventually result to depletion of fish.

"Fish Fights Over Fish Rights"
The Case of Concepcion, Iloilo, Philippines

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I Introduction

Conflicts in fishery are commonly known and yet rarely, if ever, been systematically investigated. A deeper knowledge of conflicts in fishery is important in ameliorating these conflicts to promote security and social peace, and to understand its role in reducing overcapacity through appropriate exit strategies.

This paper presents the results of a case-study on the type of conflicts present in the fishery of the Municipality of Concepcion, Iloilo, with particular focus in Barangay Bagongon. This barangay was identified as host to many conflicts present between the municipal and commercial fishers. The main objective of the study is to investigate the conflicts currently affecting municipal and commercial fishers, how these conflicts emerge, and how those conflicts are managed. In addition, the study aims to document the reaction of fishers on exit strategies for reducing overcapacity in the area.

This study is one of the three case-studies in the Visayan Sea area comprising the Philippine study for a three-country research project entitled, "Fish Fighst Over Fish Rights: Managing exit from the fisheries and security implications for Southeast Asia," under the leadership and coordination of the World Fish Center and funded by the Ford Foundation. The other study sites in the Visayan Sea are Escalante City in Negros Occidental and the Municipality of Daan Bantayan in Cebu. The other countries where the project is located are Cambodia and Thailand.

This paper has nine sections. The next section describes the Municipality of Concepcion, its coastal resource management programs, and fishery issues and problems.

The rationale for choosing Barangay Bagongon is also provided. The third section describes the data collection method and the type of fisher-respondents of the study. The fourth section provides the socio-economic description of the fisher-respondents. A description of the fishing activities follows in Section 5. Section 6 presents the fisher-respondents' assessment of the fishery. Ways to minimize the pressure on the marine resources are taken up in Section 7 with the presentation of the fisher-respondent's reaction to the different exit strategies. Section 8 presents the types of conflicts present in the fishery of Concepcion, in general, and Barangay Bagongon, in particular. The last section concludes the study.

2 Description of the Study Area

2.1 Physical Description

Concepcion is a fourth class municipality located east of Panay Island (in Central Philippines) and northeast of the Province of Iloilo (Figure 1). It is bounded on the west by the Municipality of Ajuy, on the north by the Municipality of San Dionisio, and on the south and east by the Visayan Sea. It is located 112 kilometers northeast of Iloilo City at 12364' longitude of the Meridian Greenwich and 1113'52" north latitude (The Municipality of Concepcion, 2000).

Concepcion has 17 islands with an aggregate land area of about 34.94 km^2 or 36.01% of the total land area of Concepcion, which is 97.02 km^2. The biggest island is Pan de Azucar with an area of 18.4 km^2 and the smallest is Bocot island which is uninhabited. The nearest island is Tago Island (the southern promontory is about 200 meters from the mainland) and the farthest island is Baliguian (about 22.5 km from the mainland). The islands are highland masses except for Baliguian, which is a coral reef. The total length of the coastline is about 120 km. The municipal territorial water is about 32,000 ha.

Concepcion has 25 barangays, 14 of which are mainland barangays and 11 are island barangays. Of the 14 mainland barangays, five are coastal barangays.

The population growth rate is 2.79, higher than the national rate of 2.31 In 2004, the projected population of Concepcion is about 38, 224. More than half of the total population (52.28%) lives in the islands. Fishing is the main source of living of most of the people.

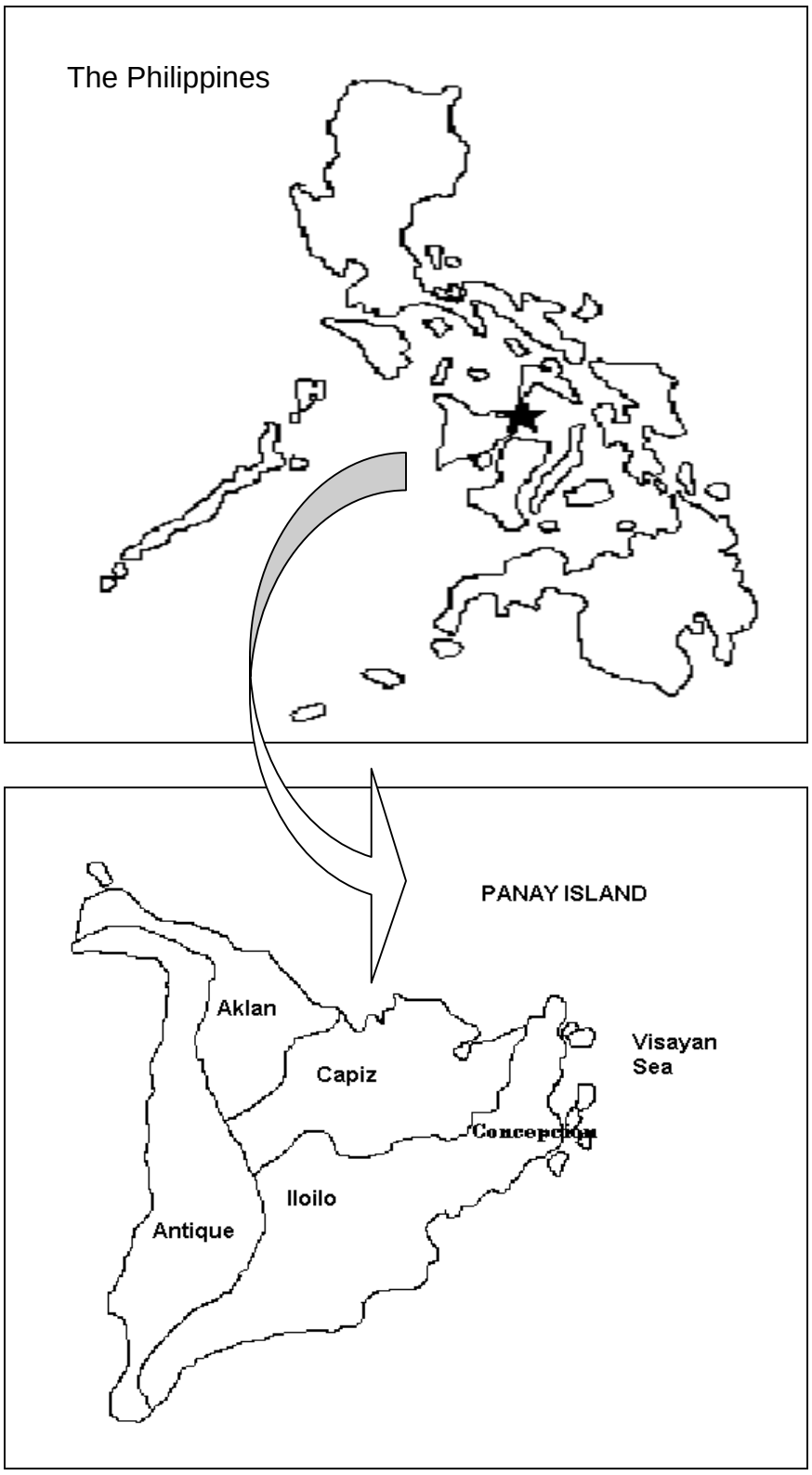


Figure 1 Vicinity Map of the Municipality of Concepcion

2.2 Coastal Resource Management Program

The Municipality of Concepcion is a multi-gear and multi-species coastal marine fishery. The identified gears in Concepcion include, among others, fish shelter (attracting device), gill nets (*pangarong*, pamante, *pamulaw/palubog*, *kutay or kurantay*, *likos*, *likum*-likum), handlines (*panagat*, *intu-intu*, *tina-tina*, *lukon-lukon*, *panglagaw*), longlines (*pangitang*, *labay*, *panibid*), crab lift nets (*bintol*), crab pot (*panggal*), fish/squid pot (*bubo*), fish corrals (*tangkal*, *tangab*). The species identified in Concepcion included, among others, herrings, anchovies, mullets, slimouth, squid, mackerel, goatfish, nemipterid, scolopsis, stingray, grouper, mojarras, whitings, siganid, and lizard fish.

Coastal resource management is considered as a basic service to be provided by the local government. It is popularly recognized as the "showcase" municipality in northern Iloilo in terms of fisheries management and regulation practices. This year, the municipality has passed a Municipal Ordinance No. 2, Series of 2004, an ordinance providing for the sustainable management, conservation and development of the Municipality of Concepcion.

Concepcion is the seat of the Northern Iloilo Alliance for Coastal Development (NIACDEV), with its local chief executive as the chair of the Alliance since it was formed in 1998. The Alliance aims to make northern Iloilo as the fish and other marine products capital of Western Visayas. To contribute to this goal, Concepcion scored high in resource rehabilitation program, capability building, and policy review and formulation.

In 2001, a coastal resource management officer was hired full time by the municipality. The Municipal Fisheries and Aquatic Resources Management Council (MFARMC) was created in 2001. There are also barangay level FARMCs in six coastal barangays (Bagongon, Nipa, Igbon, Savacion, Loong and Plandico) and nine fisherfolk organizations.

The municipal waters was delineated with the assistance from the National Mapping and Resource Information Authority (NAMRIA). Concepcion has nine marine protected areas. There are about 434 modules of artificial reefs in Barangays Bagongon, Tambaliza, Nipa and Botlog. It also has a mangrove reforestation area of about 0.5 ha in Barangay Nipa.

The *Bantay Dagat* (Sea Patrol) was formed in 1995. The local chief executive heads the Bantay Dagat team. Directly under him is the local Chief of Police and the Municipal Councilor on Fisheries. Directly under the Chief of Police are two policemen detailed in this

program and four civilians, two of whom are casuals and two are permanently employed. The police offices are the apprehending officers and the four others are drivers of patrol boats. One team on duty is composed of a police officer and two drivers. The team also derives significant support from 24 fish wardens who are also municipal fishers. The cost of operation is about P2000 daily (mainly for the fuel). The budget for the operation of the Bantay Dagat is derived from the fines and penalties from violations and fishery rentals that amounts to millions annually. The wide municipal waters poses as a challenge to the Bantay Dagat with only two functional main patrol boats and three smaller patrol boats stationed in Barangays Loong, Nipa and Botlog.

2.3 Fishery Management Issues and Problems

A number of major fishery issues and problems are present in the Municipality of Concepcion. One significant issue is the unclear definition of the municipal waters. Concepcion is one of the ten municipalities in Region 6 that has offshore islands. Some official pronouncements were made that DAO (Department Administrative Order) 17 (defining municipal waters from the outermost offshore island) issued by the Department of Environment and Natural Resource (DENR) is being followed. However, official written documents, like the municipal ordinances, adopt the 1998 Fisheries Code definition (defining municipal waters from the general coastline). These conflicting messages have created confusion to the fishers.

Using DAO 17 definition, the municipal waters of Concepcion would start from Baliguian Island, which is about 22.5 km away from the mainland. This means that under the zoning regulation, commercial fishers are allowed to fish beyond 37.5 km away from the general coastline of the mainland. This order, however, was revoked on March 17, 2003 after it became effective on June 6, 2001. Using the 1998 Fisheries Code definition, the municipal waters of Concepcion is only a little past Malangabang Island.

Conflicting legislations exists. A municipal ordinance was passed in 1999 to allow commercial fishers to fish within the 10.1 to 15 km of the municipal waters if they pay fishery rentals of P2,500 good for two weeks. This 10.1 km is in the area of Danao-Danao Island. Fishers call this the “second canal”. This area is said to be equidistant to Concepcion

and Cadiz, Negros Occidental. However, active gears like trawl and Danish seines are not allowed to fish in the municipal waters. Beach seines (locally called *sensoro*), however, are allowed below 7 km if they catch anchovies and "lobo-lobo" (fish smaller than anchovies). In practice, *sensoro* operators abuse this fishing privilege by using fish finder and superlight to catch any fish in sight. Moreover, municipal legislation states that the use and exploitation of the municipal water is reserved exclusively for local fishers. However, municipal fishers from other municipalities are allowed to fish in Concepcion if they secure mayor's permit and uses legal gear.

Encroachment of the municipal waters by the commercial fishers and of the marine protected areas is a daily problem. These commercial fishers are from Concepcion, nearby municipalities like Ajuy, Cadiz and Sagay, Negros Occidental and even from municipalities in Masbate. It was reported that these "outsiders" are usually using destructive fishing gears like purse seines and big Danish seines (locally called *zipper*).

Monitoring, control and enforcement of fishery laws is difficult and costly given the size of the municipal waters and the number of resource users. The local Bantay Dagat has only two patrol boats and is dependent on the intelligence information coming from deputized fish warden (volunteer fishers) based in the islands. Commercial boats are faster than the patrol boats. Commercial fishers also have "watchers" at the port. These "watchers" would report to the commercial fishers (using cellular phones) when the Bantay Dagat is in operation. It was reported that the major owners and financiers of commercial fishing are government officials. Their boats were identified as regular violators.

2.4 Barangay Bagongon

Within Concepcion, the island barangay of Bagongon was chosen as the study barangay (Figure 2). The barangay is the second biggest barangay of Concepcion in terms of land area (6.14 km^2) and inhabited by 1957 residents (projected population for year 2004). It is a remote fishing village; about 50-minute boat ride from the mainland under normal weather condition. The houses of residents are lineally arranged along the shoreline.

Key informants identified this barangay as host to potential conflicts arising from the implementation of the municipal water zoning regulation. Almost all households in the

barangay are dependent on fishing. Most of the commercial fishers (most were trawlers) in Concepcion reside in this barangay along with many municipal fishers.

The barangay captain is a recognized big commercial operator who owns and finances a number of trawl boats. One of the issues reported in this barangay was the confiscation of the engine of the patrol boat by the barangay captain. The patrol boat was donated by the municipality for use of the barangay fishwardens during sea patrolling.

The first 200 meters water area facing the barangay is a marine protected area (MPA). Encroachments of the no-take-zone area of the MPA and of the municipal water near this barangay by commercial fishers and fishers from neighboring municipalities were cited as a daily problem. The barangay is situated in Tagubanhan Island which is a border island between the Municipalities of Concepcion and Ajuy (half of the island belongs to Ajuy and half belongs to Concepcion).

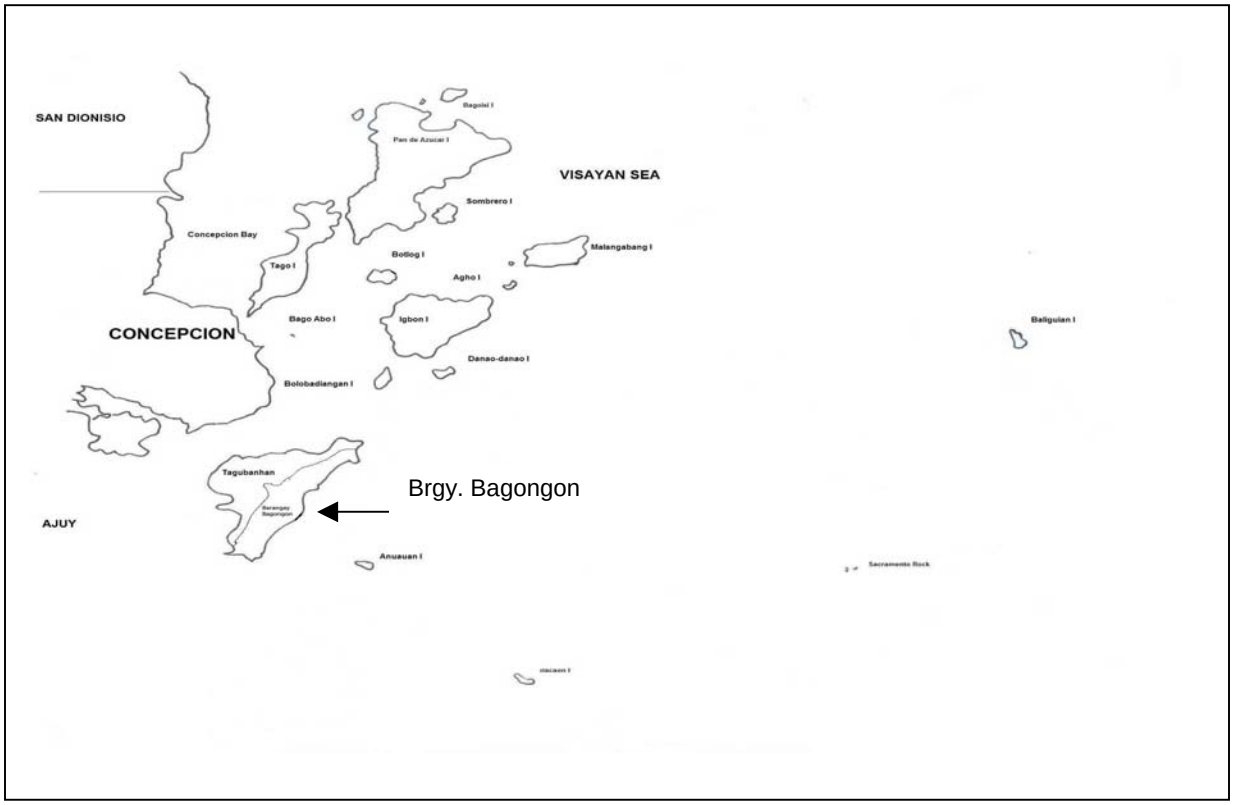


Figure 2 The Municipality of Concepcion showing location of Brgy. Bagongon

3 Data Collection

Data were collected using a combination of semi-structured interview schedule, key informant interviews, and focus group discussion. Prior to data collection, interviews with key informants (local chief executive and coastal resource management officer) were conducted on fishery issues and problems and on specific areas where conflict between municipal and commercial fishers is strong.

Two sets of interview schedule were formulated, one for municipal fishers and one for the commercial fishers. The interview schedule was pre-tested with the municipal and commercial fishers from a barangay adjacent to the Barangay Bagongon. All interviews were conducted in the local language by four trained enumerators under the supervision of the research team. Other key informants were the municipal *Bantay Dagat* Team Leader, the current and former Brgy. Captain of Barangay Bagongon, head of Barangay Fisheries and Aquatic Resources Management Council and other leaders of Barangay Bagongon. The fieldwork was carried out in June to July 2004. The respondents to the survey were 108 fishers in Concepcion. They were selected using as main criterion their experience of conflict as a fisher.

A focus group discussion was conducted on November 20, 2004 with a group of commercial and municipal fishers to validate the results of the survey and clarify some issues that came out in the survey.

3.1 Type of Fisher-Respondents

The study covered 108 fishers (Table 1). Of this, 49.1% were municipal fishers and 50.1 % were involved in commercial fishing as they were identified in Barangay Bagongon. All municipal fishers owned the fishing gears but not the boats they were using. They were the main decision-makers with regard to their fishing activities. The commercial fisher-respondents assumed different roles in the fishing team: most were captains of the boat (head of the fishing crew) (34.6%), followed by owners (23.6%), owner-captains (20.0%) and the crew (21.8%).

Table 1 Type of Fishers

Fishers	No.	%
Municipal	53	49.1
Commercial	55	50.1
owner	*13*	*23.6*
owner- captain	*11*	*20.0*
captain	*19*	*34.6*
crew	*12*	*21.8*
Total	108	100.0

4 Socio-Demographic and Economic Profile of the Respondents

4.1 Individual Characteristics

On the average, the municipal fishers were older by ten years and were ahead in fishing for about eight years than the commercial fishers (Table 2). The youngest among the municipal fishers was 19 years old and the oldest was 67 years old. These were 17 and 54, respectively, among commercial fishers.

In terms of average age in years when started fishing, the commercial fishers were slightly younger than the municipal fishers (15.64 vs. 16.31). The youngest age when started fishing recorded among municipal fishers is six years old while it was seven years old for commercial fishers. Also, there were later-comers to fishing. The oldest start-fishing-age was 36 years and 38 years for municipal and commercial fishers, respectively.

Table 2 Age and Years in Fishing

Characteristics	Municipal *n*=53	Commercial *n*=55	ALL *N*=108
Age (mean, in years)	42.96	33.96	38.34
Age started fishing (mean, in years)	16.31	15.64	15.96
Years in fishing (mean)	26.66	18.82	22.67

Table 3 shows other individual characteristics of the fisher-respondents. Fishing remains a male-dominated occupation. It is important to note, however, that there was a lone

female commercial fisher-respondent. During the focus group discussion, a number of female municipal fishers were identified.

Almost all fisher-respondents were married. In general, educational attainment is low. Most of the fisher-respondents reached or has graduated from elementary education. About three for every ten fishers were not natives to the barangay. This information supports the claim made by the key informants that Concepcion is experiencing migration. Majority were Baptist, followed by Roman Catholics.

Table 3 Selected Individual Characteristics

Characteristics	Municipal *n*=53		Commercial *n*=55		ALL *N*=108	
	No.	%	No.	%	No.	%
Sex						
Male	53	100	54	98.2	107	99.1
Female			1	1.8	1	0.9
Civil Status						
Married	49	92.5	40	72.7	89	82.4
Single	4	7.5	13	23.6	17	15.7
Widower			2	3.6	2	1.9
Educational Attainment						
Elementary	26	49.1	17	30.9	43	39.8
Elementary graduate	14	26.4	21	38.2	35	32.4
High school	7	13.2	6	10.9	13	12.0
High school graduate	5	9.4	7	12.7	12	11.1
Vocational course	1	1.9	1	1.8	2	1.9
College	0	0	3	5.5	3	2.8
Residence (in years)						
Since Birth	32	60.4	43	78.2	75	69.4
Not since birth	21	39.6	12	21.8	33	30.6
Religion						
Roman Catholic	21	39.6	29	52.5	50	46.3
Baptist	30	56.6	25		55	50.9
Protestant	1	1.9		45.5	1	0.9
Aglipayan	1	1.9	1	1.8	2	1.9

4.2 Household Characteristics

On the average, the reported estimated household annual income of the fishers is low, with the municipal fishers having lower income than the commercial fishers (P31311.98 vs.

P55094.55). The average household size was almost the same but smaller than expected (4.94 and 4.76). Few of both types of fishers received external economic support from family members and relatives (32.07% and 18.2% of municipal and commercial fishers, respectively). Majority of the municipal fishers were squatters while majority of the commercial fishers owned the land where their houses were built. Ownership of other forms of land was very limited. Most of both types of fishers were owners of the house where they reside (88.7% and 92.7% of municipal and commercial fishers, respectively).

Less than half of the commercial fishers (about 46%) and few (11. 3%) municipal fishers lived in concrete houses. About half of the municipal fishers and most (80%) of the commercial fishers had electricity at home. The barangay had a generator that provides electricity during night time (6 to 10 pm). Most (90.6%) of the municipal fishers used gathered firewood for cooking while most (78.2%) commercial fishers used charcoal. Deep well was the main water source of most fishers.

Table 4 Selected Household Characteristics

	Municipal *n*=53		Commercial *n*=55	
Characteristics	No.	%	No.	%
Reported Annual income (mean)	31311.98		55094.55	
Household Size (mean)	4.94		4.76	
Own land where house is built	19	35.8	36	65.5
Received external economic support	15	32.07	10	18.2
Owned house	47	88.7	51	92.7
Lived in concrete house	6	11.3	25	45.5
With electricity at home	27	50.9	44	80
Electric bill (mean)	115.25		194.7	
Fuel used in cooking				
charcoal	20	37.7	43	78.2
Wood	48	90.6	37	67.3
LPG	3	5.7	12	21.8
others			3	5.5

5 Fishing Activity Profile

5.1 Fishing Gears Used

Municipal fishers were using simple and passive fishing gears, which are not highly exploitative, and are appropriate to use in the shallow nearshore. Table 5 shows that two variants of longline, "kitang" and "labay", were the most popular gears used by the municipal fishers (54.72% and 39.62 %, respectively). In Concepcion, "kitang" is a vertical longline and "labay" is a horizontal longline. A longline is an extremely long line with a large series of baited hooks and requires periodical attention at more or less fixed interval of time. A small number of municipal fishers were engaged in traditional hook and line (5.67%), troll line (9.43%), squid jig (3.77%), crab pot (7.55%), and bottom set gill net (13.21%).

On the other hand, most (94.55%) of the commercial fisher-respondents were involved in trawl fishing as the owner/owner-captain (23), captain (17), and as a crewmember (12). Three commercial fishers were engaged in gillnet fishing. Most reported that their fishing paraphernalia were less than 10 years old, with the latest just acquired this year and the oldest was set-up in 1978.

It was reported that trawl fishing started in the 1980s. Trawl is a more efficient active gear that is appropriate to use offshore. It can be destructive and has the potential to overexploit the resource.

Table 5 Fishing Gears Used *

Fishing Gears	Municipal n=53		Commercial n=55	
	No.	%	No.	%
gillnet			3	5.45
trawl			52	94.55
hook & line	3	5.67		
long line ("kitang")	29	54.72		
long line ("labay")	21	39.62		
troll line ("into-into")	5	9.43		
squid jig ("kawil")	2	3.77		
Crab pot ("panggal")	4	7.55		
bottom set gillnet ("palubog")	7	13.21		

*multiple response

5.2 Ownership of boats

All boats used by the 53 municipal fisher-respondents were below 3 gross tons. Only 51 boats were owned and two were rented boats from relatives. Of these 53 boats, 25 (49.02%) were motorized. The modal horsepower of the boat engine is 10, followed by eight horsepower.

Among the commercial fishers, 23 were owners of boats. These boats were powered by engine with 85 horsepower (mode). Only five of these boats were reported to be greater than 3 gross tons and the rest were less than 3 gross tons. Ocular inspection, however, revealed that the boats were greater than 3 gross tons. The misreporting is expected because commercial fishers needed to justify their operation in the municipal waters.

5.3 Species caught

Table 6 shows the species caught by the municipal fishers. The most popular specie was lagaw (long-tailes nemiptepids). Among commercial fishers, the trawlers caught squid while the gillnetters caught bulaw (mackerel) and tabagak (herring).

Table 6 Species Caught by the Municipal Fishers

Species	No	%
Lagaw (long-tailed nemiptepids)	38	71.70
Kasag (blue crab)	4	7.55
Lawayan (slipmouth)	1	1.88
Lokus (squid)	2	3.77
Latab (spotted mojarras)	6	11.32
Lambiyaw (therapons)	2	3.77
Tabagak (herring)	2	3.77
Bagudlong (crevalles)	2	3.77
Opus-opus (ribbon-finned scolopsis)	8	15.09
Bulaw (mackerel)	2	3.77
Aso-os (whitings)	1	1.88
Abo (croacker)	1	1.88

5.4 Fishing Schedule

The reported number of fishing days in a month by municipal and commercial fisher-respondents slightly differed (Table 7). On the average, the municipal fishers spent about 16 fishing days in a month, with their responses ranging from one to 30 days. The commercial fishers, on the average, spent about 18 fishing days a month, with a minimum of three days to maximum of 28 days and majority (54.5%) of them for 24 days.

In a fishing day, the commercial fishers spent longer fishing hours than the municipal fishers did (8.55 hours vs. 11.69 hours). Travel time to a farther distance and longer actual fishing time accounted for this. Almost all (92.5%) municipal fishers and most (76.4%) of the commercial fishers reported only one fishing trip a day.

Table 7 Fishing Schedule

	Municipal *n*=53	Commercial *n*=55
Fishing days in a month	15.94	17.96
Range	1 to 30	3 to 28
Total fishing hours a day	8.55	11.69
Range	2 to 13	1 to 15
Percentage with one fishing trip daily	92.5	76.4

5.5 Fishing Area within the Municipal Waters

The fishers were asked where they fish (Table 8) by indicating the number of kilometers from their barangay and by pointing the location on a grid map. The information from municipal fishers revealed that most of them do not really go farther than seven kilometers, leaving a wide area of municipal waters underexploited by municipal fishers. Majority (62.26%) of them cited that they usually operate below 3 km distance. Others in 3.1 -7 km (35.85%), 7.1 – 10 km (13.21%), 10.1 – 15 km (9.43%), and greater than 15km (1.89%). Eight hook-and-line fishers also reported that they fish in the buffer zone area of the marine protected area located in front of the barangay.

Commercial fishers are not supposed to fish within municipal waters. In Concepcion, a municipal ordinance in year 1999 was passed allowing commercial fishing after 10.1 km of the municipal waters from the general coastline. That is, commercial fishing is allowed past the island of Malangabang. This was validated by the commercial fishers using the grid map, during the focus group discussion, and during interviews with key informants. Most of them point to the "second canal" as their main fishing ground. The second canal is said to be equidistant to Concepcion and Negros island. They believed that this is the fish path.

A considerable number (72.72%) were risk-lovers by fishing below 10 km. They knew that this is illegal and the municipal *Bantay Dagat* would apprehend them. There were also those who could not determine their location in terms of kilometers but would cite using mountains and fish aggregating devices as reference points. Others reported to just follow the other fishers; to fish where most fishers are.

Table 8 Fishing Area Within the Municipal Waters*

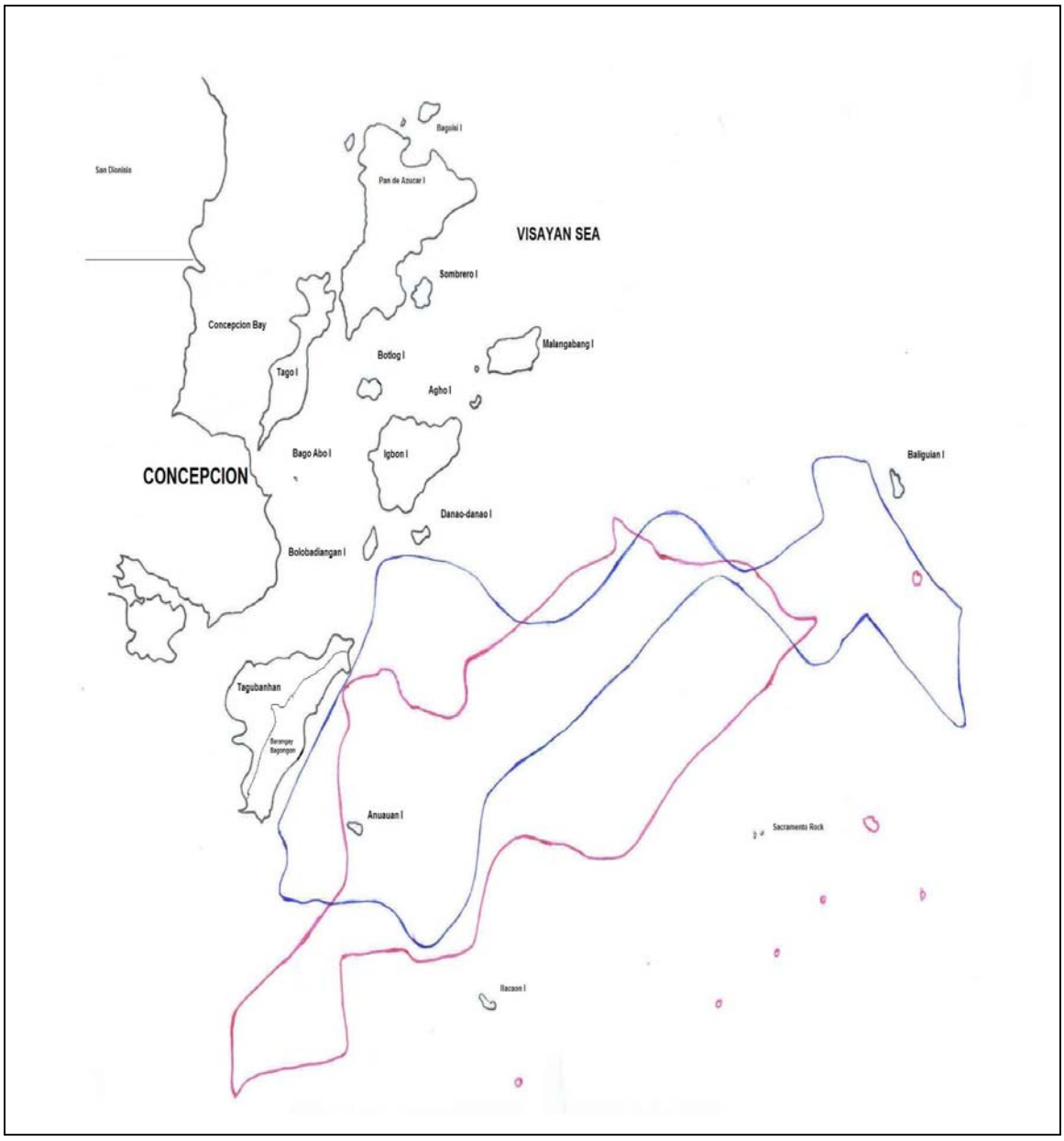
Fishing Area	Municipal *n*=53		Commercial *n*=55	
	No.	%	No.	%
<3 km	33	62.26	3	5.45
3.1-7 km	19	35.85	12	21.82
7.1-10 km	7	13.21	25	45.45
10.1-15 km	5	9.43	23	41.82
> 15 km	1	1.89	13	23.64
MPA (buffer zone)	8	15.09		
Just follow others			3	5.45
Can't determine distance in kilometers			10	18.19

*multiple response

With this information, it is not surprising why competition and conflict arise between these two groups of fishers. They were fishing in the same fishing ground. This information was validated using the grid map.

Results from the grid map exercise indicated that the commercial fishers were encroaching in the municipal waters. The overlap of the fishing grounds of the two groups of fishers became more obvious as shown in Figure 3. This overlap is within the municipal

waters of Concepcion. Although the figure shows that the fishing ground of the municipal fishers extend up to the Baliguian island (about 22.5 km from the mainland), most of them were concentrated in the area near the barangay, just about Danao-Danao Island.



Legend: Blue – fishing ground of municipal fishers; Red – fishing ground of commercial fishers

Figure 3 Fishing Grounds of Municipal and Commercial Fishers

During the focus group discussion with the commercial fishers, they revealed that they were now more careful in fishing inside the municipal waters because of the Provincial *Bantay Dagat* who are stationed at Malangabang Island starting July 2004. According to the trawlers, the coming of the Provincial *Bantay Dagat* made fishing more difficult because they are being pushed beyond the Baliguian Island (about 22.5 km away from the mainland). The Provincial *Bantay Dagat* were considered stricter that the local *Bantay Dagat* in implementing the zoning regulations. They reported that Provincial *Bantay Daga*t accept no compromise penalty but stricter in apprehending fishers, putting them to jail, imposing fine, and confiscating the gear and boats (more of this is discussed in Section 8).

Both types of fishers determined distance of their fishing grounds by using mountains and islands as bases. The local term is *iskwala* (or square) or *mermada* (or estimate using). Using *iskwala*, the boat is located at the center of the square, with the islands and mountains as side points. The choice of the fishing ground was most influenced by the belief on the fish path (for the municipal fishers) and also by the zoning regulation (for the commercial fishers) (Table 9).

Table 9 Reasons for The Chosen Fishing Ground in the Municipal Waters

	Municipal *n*=53		Commercial *n*=55	
Reason	No.	%	No.	%
Boat capacity	6	11.3	2	3.6
Zoning regulation	3	5.7	22	40.0
Fish path	36	67.9	18	32.0
Others	8	15.1	11	20.0

5.6 Other Fishing Grounds

Even with the vast municipal waters of Concepcion, few municipal fishers (13.2%) and most commercial fishers (81.8%) reported to fish in other fishing grounds (Table 10). The fishing grounds visited by few municipal fishers were Ajuy, Sagay, Escalante, and Cadiz.

Commercial fishers also reported to have visited nearby fishing grounds of neighboring municipalities (Ajuy and Carles), Negros (Cadiz, Manapla, Sagay), Capiz, and

even Bantayan area (Cebu). Cadiz is the most popular other fishing area to most commercial fishers.

Table 10 Other Fishing Grounds

Places	Municipal *n*=53		Commercial *n*=55	
	No.	%	No.	%
	7	13.2	45	81.8
Ajuy	5	9.4	12	21.8
Sagay	1	1.9	6	10.9
Escalante	1	1.9		
Cadiz	3	5.7	43	78.2
Manapla			25	45.5
Victorias			13	23.6
Bantayan			5	9.1

Varied reasons were given by municipal fishers for fishing in other fishing grounds. This include "limited own municipal water", "nearby", "season of target species," and "allowed to fish".

As expected, majority of the commercial fishers who fish in other fishing grounds cited "limited own municipal waters' as the reason (Table11). Except for the reason "to avoid apprehension," the other reasons were the same as the municipal fishermen.

Table 11 Reasons for Fishing in Other Fishing Grounds

Reasons	Municipal *n*= 7 of 53		Commercial *n*=45 of 55	
	No.	%	No.	%
Limited own municipal water	1	14.29	28	62.22
Nearby	2	28.57	6	13.33
Avoid apprehension			9	20.00
Season of target species	3	42.86	7	15.56
Allowed to fish	2	28.57		
Follow others	2	28.57		

6 Assessment of Fish Catch and Fishing Activity

The Municipality of Concepcion lacks reliable biological data from which to base a claim if the fishery resource is overfished or not. As proxy to the lack of reliable fisheries data, the perception of key informants and the fisher-respondents on the status of the fishery resources were taken.

This section presents the assessment of the fisher-respondents of the fishery resources. They were made to compare, relative to what is the present, the past (5 years ago) and future (5 years from now) volume of fish catch, size of species caught, value of fish catch, composition of fish catch, length of fishing time, and number of fishers.

The fisher-respondents reported decreasing volume of fish catch, change in composition of fish catch (shift to lower-valued species and catch of juvenile fish) and increasing number of fishers. This assessment is suggestive of an overfished resource. This assessment is similar to the one made by the key informants. The details are below.

6.1 Volume of Fish Catch

According to 92.50% of the municipal fishers and 63.60% of the commercial fishers, the volume of fish catch was higher five years ago compared to the present (Figure 4). The commercial fishers attributed the higher catch in the past to the small number of fishers (or trawlers) allowed to fish anywhere and facing no restrictions. They said trawlers "drag" anywhere; there were no apprehensions. The municipal fishers said that catch was higher in the past even if most of them were using non-motorized boats because there were few trawlers and Danish seines operators.

Majority of the municipal fishers (54.70%) and 40.00% of the commercial fishers believed that fish catch would be lower in the future. Both types of fishers agreed that the entry of more individuals into fishing (that increases competition and conflict) and the use of fine-meshed nets (that catches even juvenile fish) would result to lower volume of fish catch in the future. Even trawlers realized that their daily operation harm the resources by not allowing juvenile fish to mature. Some commercial fishers manifested low understanding of the impact of fishery regulations by saying that the strict implementation of fishery

regulations like zoning, on the use of destructive gears and other illegal gears, and the observation of closed season would result to lower catch.

Few municipal (22.60%) and commercial (14.50%) fishers were hoping for a higher fish catch in the future for different reasons. To the municipal fishers, catch would improve if commercial fishers are banned in the municipal waters. To the commercial fishers, technological innovation in gear and craft could result to higher volume. The fishers who thought that the volume of fish catch in the past is the same as today and would remain the same in the future cited seasonality of fishing as the reason.

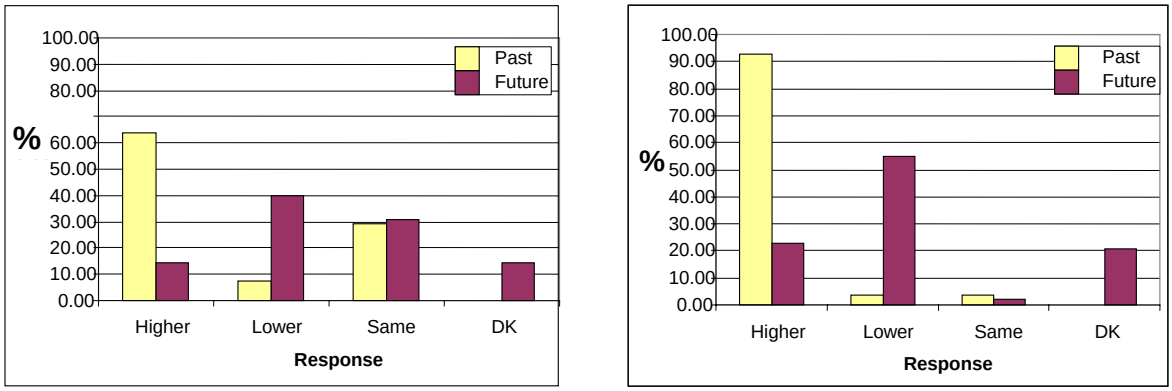


Figure 4 Assessment of Past and Future Volume of Fish Catch

6.2 Size of Fish Species Caught

Majority of both types of fishers believed that the past and future size of their fish catch is the same compared to the present (municipal fishers, 62.30% and 50.90%, respectively; commercial, 74.50% and 80.00% respectively) (Figure 5). The municipal fishers believed said that the species they catch have the same size because they would stop growing at a certain age. The commercial fishers reasoned that they have been using nets of the same mesh-size for their target specie, which is squid. According to them, the size of squid is seasonal: bigger during northeast monsoon months (locally termed as *amihan*), November to February, and smaller during southwest monsoon months (locally termed as *habagat*), June to October.

About 35.80% of the municipal fishers said that the size of their fish catch were bigger *in the past. Before, the fish could grow bigger because there were few trawlers*, zippers (a type of Danish Seine but bigger than *hulbot-hulbot*, another Danish seine type), and *hulbot-hulbot* operators that catch juvenile fish. The sea was not yet overexploited and the fish "eat well". Also, about 22.60% of the municipal fishers had expectation of smaller fish in the future because even the small ones are caught in the present, and there would be more fishers competing for few fish (even for the small ones).

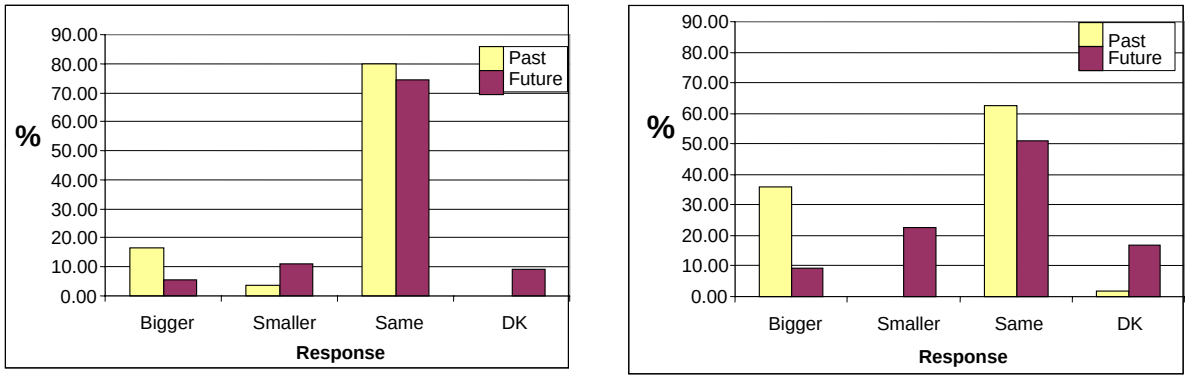


Figure 5 Assessment of Past and Future Size of Fish Catch

6.3 Value of Fish Catch

According to 83% of the municipal fishers, past income derived from fishing was higher than today (Figure 6). This was because they used to catch first class fish, and had bigger volume of catch even when the price was relatively low. Majority (52.80%) of the municipal fishers believed that future income from fishing would be lower largely because of smaller catch volume. About 21% were hopeful to receive higher income because of the anticipation that the decline in volume of fish catch will be offset by higher price.

The commercial fishers had varied responses with regard to the past and future value of their fish catch. Although more (43.60%) reported higher value in the past, more (32.70%) were expecting lower value in the future. Those who reported higher value of fish catch in the past cited that before it was easy to recover the cost of operation from the income received from fishing because fuel was cheaper. Those who reported lower income cited the

lower price of fish catch; although volume was bigger, price was lower. About 27% foresee a lower income from fishing because of higher cost of operation (fuel cost going up!) and commercial fishers are further pushed offshore.

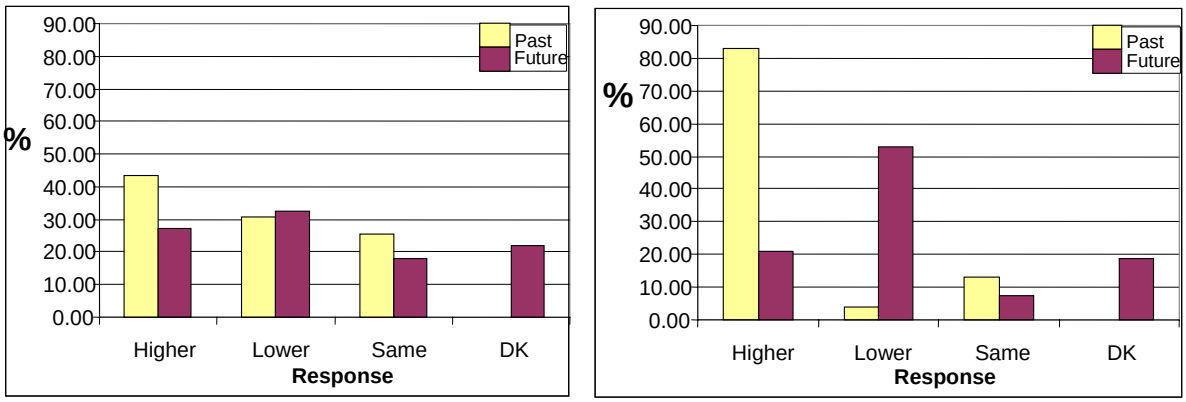


Figure 6 Assessment of Past and Future Value of Fish Catch

It was widely recognized that trawl fishing made better lives for the people involved in it. Trawl owners reported that their income enabled them to build concrete houses, send their children to school, and operate passenger boats. They reported that the implementation of the zoning regulation resulted to the tremendous decline in their income. However, it was reported that the substantial amount of the derived income from trawl fishing goes to the owners and trickled a little to the crew.

6.4 Composition of Fish Catch

The claim of majority (56.60%) of the municipal fishers that they used to catch first class fish in the past supported their response of receiving higher income from fishing in the past (Figure 7). They said they used to catch “bansa (great barracuda)”, “inid (honeycomb grouper)”, “tangigue (Spanish mackerel)”, “latab (spotted mojarras)”, “alatan (slately sweetlips),” and other “putian (white)” fish considered as first class. Majority (52.80%), however, had expectations of catching third class species in the future. They blamed the

present operation of the trawl and Danish seines (*zipper* and *hulbot-hulbot* type) as the culprit for disappearance of the first class fish.

Most of the commercial fishers claimed they still catch and will be targeting to catch squid, a third class fish specie (67.30% and 65.50%, respectively).

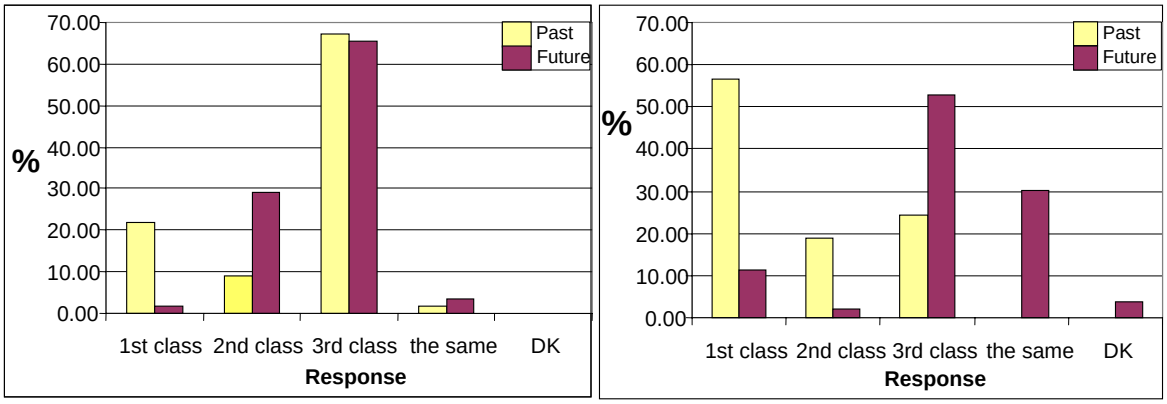


Figure 7 Assessment of Past and Future Composition of Fish Catch

6.5 Length of Time Fishing

Responses of fishers with regard to the length of fishing time spent in the past and in the future varied (Figure 8). About 42% of the municipal fishers said that fishing time in the past was shorter because there was plenty of fish nearby. In contrast, about 19% said that fishing time was longer because there was plenty of fish to catch. About 38% said that fishing time was the same as today because they follow the same schedule regardless of whether there is catch or none.

In the future, about 35% said that fishing time would be the same because they follow the same schedule. About 32% said that they expect longer fishing time because they need to wait for the fish, to follow the fish offshore, or to travel farther. They need to wait until they have catch because it is their only source of income to buy family's needs. About 21% expected shorter fishing time because of two contrasting reasons: there would be no more fish to catch because of many fishers competing for few fish, and there would be plenty of fish to catch because of the fishery regulations implemented in the present.

About 44% of the commercial fishers reported the same fishing time in the past as today because they use the same volume of fuel. About 38% said that they fished shorter in the past because there was plenty of squid. About 15% fished longer in the past because there were plenty of fish to catch and they can fish anywhere without fear of being apprehended, and fuel was cheaper. About 46% said they expect the same fishing schedule to be followed in the future. About 27% expect longer fishing time because they are pushed farther offshore and there would be less squid to catch.

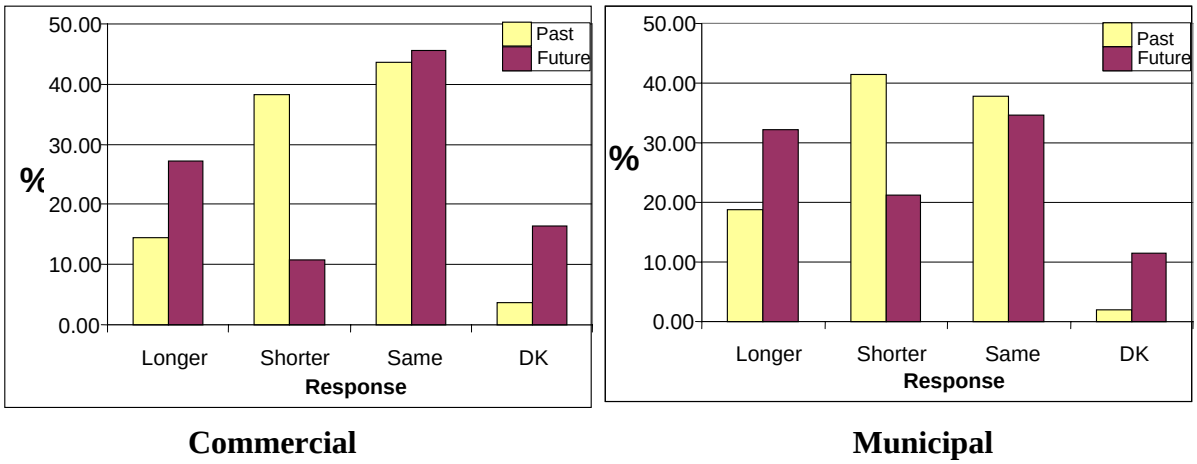


Figure 8 Assessment of Past and Future Length of Time Fishing

6.6 Number of Fishers

Most of the municipal fishers agreed that there were fewer fishers in the past and they were expecting more fishers in the future (83% and 67.90% respectively) (Figure 9). They said there were few people in the barangay, and few people who knew how to fish. They were expecting more fishers because more young people are not in school and consider the sea as the main source of living. There were also many fishing boats being constructed, more people migrating to the barangay, and worse living conditions drive more people to enter fishing.

About 82% of the commercial fishers said that there were fewer fishers in the past because of lower population, and fewer people who can afford to invest in fishing boats and

nets and other fishing assets. The increase in population and more people learning how to fish were the main reasons cited for the expected increase in the number of fishers in the future by about 44% of them. In contrast, about 33% said there would be fewer fishers because people are discouraged of poor catch and stricter implementation of fishery regulation on zoning and on the use of illegal gears.

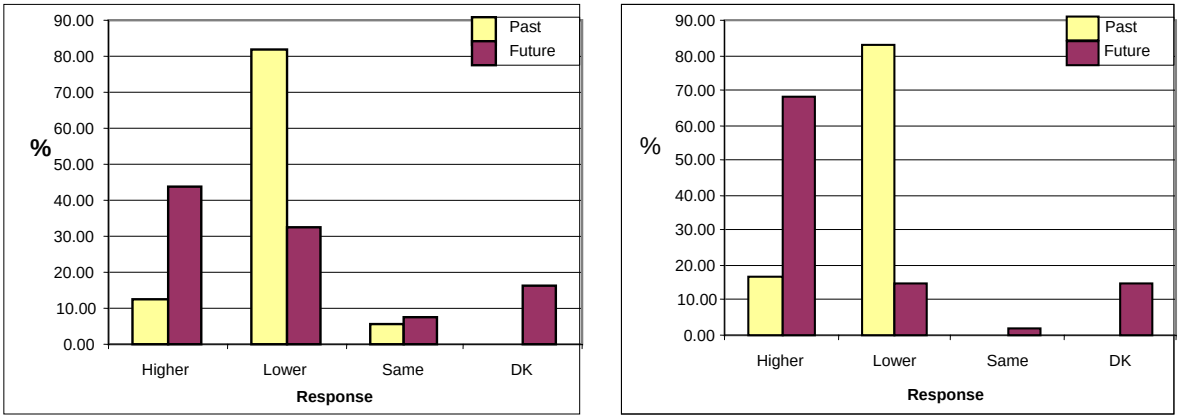


Figure 9 Assessment of Past and Future Number of Fishers

7 Reaction to the Exit Strategies

This section presents the reactions of the fisher-respondents to strategies that can facilitate exit to fishing and reduce overcapacity. These include banning of some gears, limiting catch, provision of alternative livelihood, observance of closed season, establishment of marine protected areas, and limiting the number of fishers.

7.1 Banning the Use of Some Gears

Most municipal fishers (84.90%) and commercial fishers (74.5%) agreed to ban the use of other gears (for as long as it is not the type of gear they were using) (Figure 10). Most municipal fishers agreed to ban trawl and Danish seine (*zipper* and *hulbot-hulbot* types) operation. They believed that trawls destroy coral reefs and the danish seines catch juvenile fish because they use fine-meshed (local term is *simput-simput*) nets. The municipal fishers

were disturbed with the competition posed by these commercial fishers who they claimed were fishing in the same fishing grounds as they do. They claimed that their two-week catch is just an overnight catch for these commercial fishers. To the municipal fishers, the banning of these commercial fishers would benefit them in terms of increased catch, which in turn would mean higher income.

Commercial fishers (who were trawlers) agreed to ban Danish seines because they catch juvenile fish and destroy coral reefs. Other fishing gears and practices they agreed to ban because of their harmful impact to the fishery resources were *zipper*, use of dynamite in fishing, and (some crew mentioned) even their own gear, the trawl. They thought banning these gears would allow the fish stock to grow and reproduce to benefit not only the present but also the next generation.

The Danish seine fishers were said to be from the nearby barangay in the same island of Tagubanhan but within the jurisdiction of the Municipality of Ajuy. Their boats were said to be fast, and no boat in the area can outran them. Trawlers claimed that Danish seine operators catch bigger volume of fish than they do.

The few trawl fishers who disagreed on the banning of any gear reasoned that trawling is the only skill they know that can support their family. They claimed that the use of non-motorized boat (locally called *manu-manu*) could not feed their families and send their children to school. One trawl boat to be phased out would mean four to ten families to go hungry.

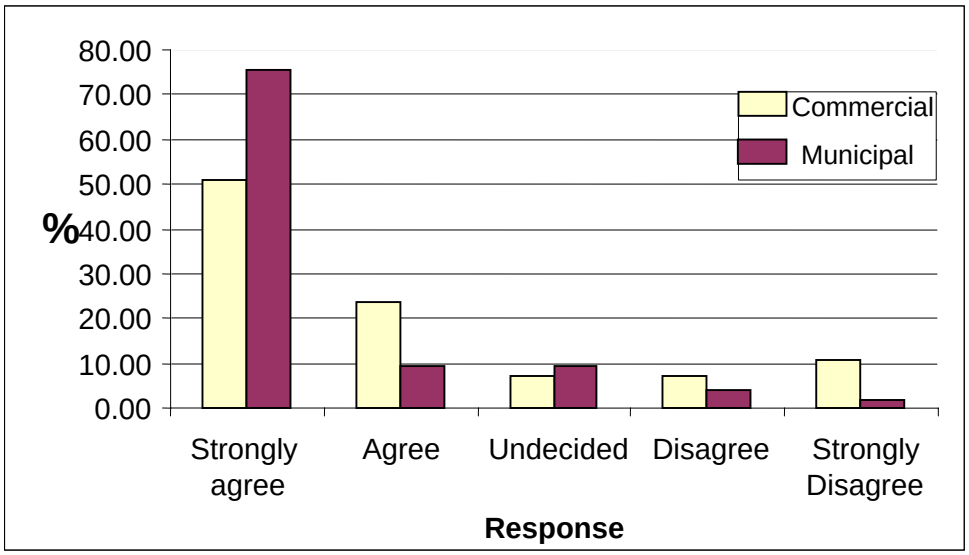


Figure 10 Response to the banning of some gears

7.2 Catch Limit

Limiting catch was not popular with most municipal (73.60%) and commercial (87.20%) fishers (Figure 11). To the municipal fishers, the strategy is impractical given that most of them were using longlines. They fish to catch fish, and their catch were always not enough to feed their family and cover operation cost. One even claimed, "There's no more fish. What is there to limit!" Few (24.50%) municipal fishers agreed on limiting catch for as long it would only apply to commercial fishers. They claimed that commercial fishers catch big volumes and throw the small-sized fish to waste.

Most commercial fishers also found this strategy to be impractical given that most of them catch squid and the volume is declining. They asked, "How could we control the volume of squid that goes inside our nets? What are we going to do with excess catch? They are dead." Limiting catch is tantamount to pushing fishers to go hungry.

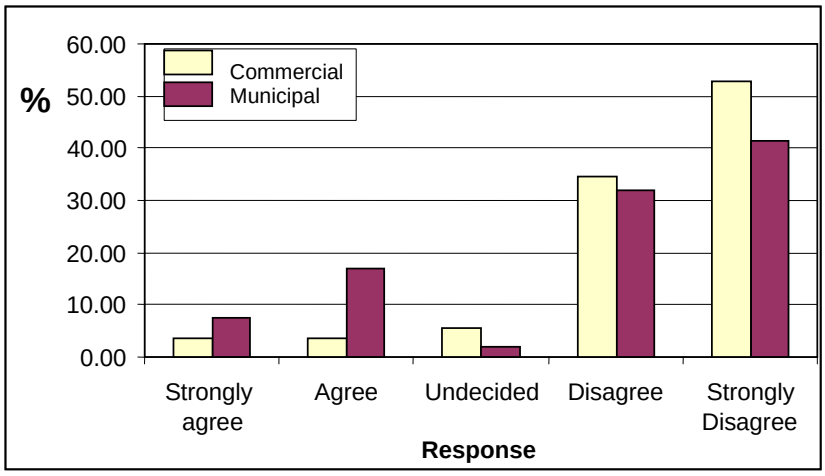


Figure 11 Response to limiting fish catch

7.3 Closed Season

Most of the municipal (77.4%) and commercial fishers (74.60) agreed to have a closed season (Figure 12). The respondents understand and appreciate the benefits of having a closed season. According to them, the fish breed and grow during closed season and thus plenty of fish is expected later. To some fishers, the closed season is also rest time for them.

To some commercial fishers they will agree to stop fishing even for four months in return for no fishing restrictions for eight months.

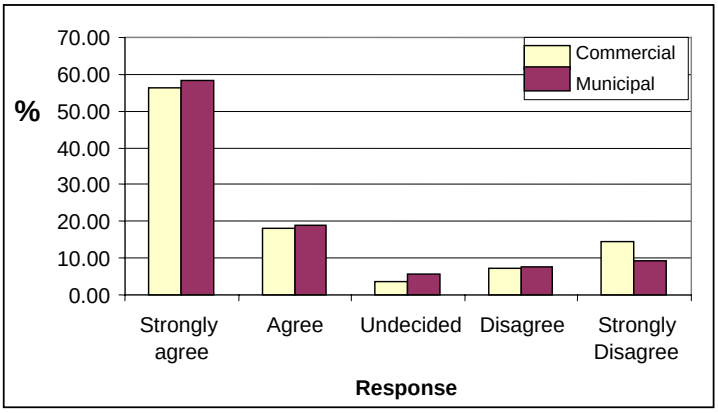


Figure 12 Response to having closed season

7.4 Alternative Livelihood

Most of the municipal (86.83%) and commercial (78.20%) fishers agreed to exchange fishing with an alternative livelihood not related to the sea (Figure 13). Their agreement is a manifestation of their disappointment with their low catch and the desire for a less-risky work environment. To them, fishing is a risky occupation; whenever they go out to the sea, they put their life at risk. They, however, set requirements for the alternative livelihood. It should help improve life conditions, can feed and clothe the family, and most important, it can send the children to school. The others who disagreed cited that fishing is the only skill they know and consider the sea as the main source of living. Others see no hope for farming given the absence of a fertile land in the barangay.

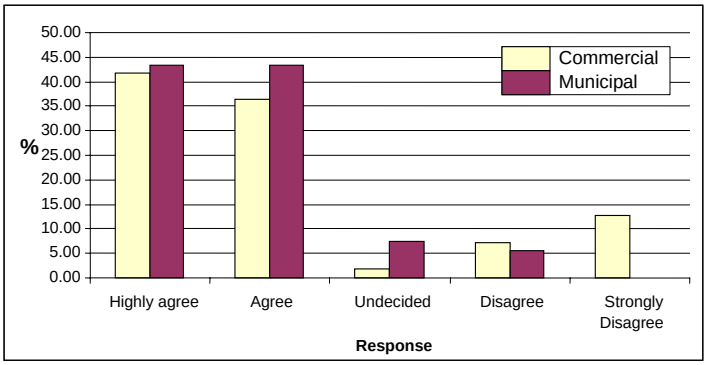


Figure 13 Response to the introduction of alternative livelihoods

Majority of both the municipal (26.4%) and commercial (29.1%) fishers reported that they have skills in doing business. Other fishers also reported carpentry, being a mechanic, construction work, masonry, driver, farming, and handicrafts making. However, except for doing business, these skills have no market in the barangay. Doing business would mean selling dried fish or running a small store.

It is notable that fishers reported livelihood options introduced to them before. These were fish sauce making, bamboo craft making and shell-craft making. These were not sustained mainly because they lack the skill in marketing their products.

7.5 Establishment of Marine Protected Areas (MPAs)

The municipal water fronting Barangay Bagongon, 200 meters from the shoreline extending seaward, is a marine protected area (MPA) since 2002 (Municipality of Concepcion, 2003). The Save the Children-US under the People and Environment Co-existence Development Project (PESCO-DEV) spearheaded the establishment of the MPA. The MPA in Bagongon is one of the first five MPAs established in Concepcion. Currently, Concepcion has nine MPAs.

Most of the municipal (90.60%) and commercial (83.6%) fishers agreed to the establishment of marine protected areas (Figure 14). This positive response maybe is a reflection of their realized positive effects of the MPA in their area. Fishers understand that MPAs are shelters where fish breed and grow.

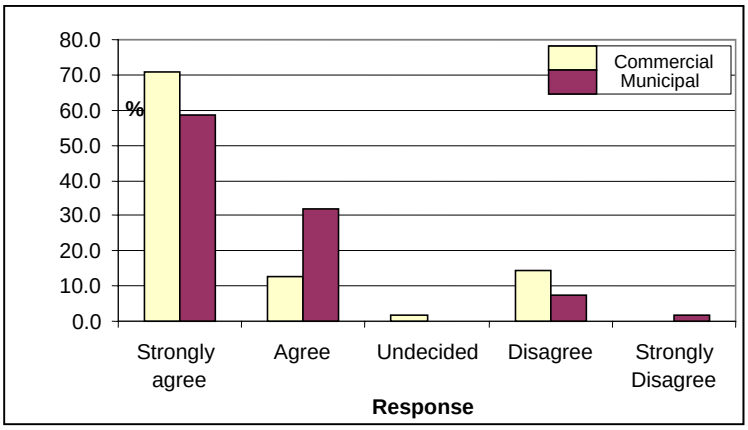


Figure 14 Response to the establishment of MPAs

7.6 Limiting the Number of Fishers

Majority of the municipal (54.79%) and commercial (60.10%) fishers did not agree to limiting the number of fishers in the area (Figure 15). The limited employment opportunities lead people to fishing as their main source of living. Restricting access would mean hunger. They said that for as long as fishers are using legal gears they should be allowed to fish. As local residents, they think they have the right to fish in the municipal waters. If ever there are fishers who must be banned to fish in Concepcion, those are the fishers from other municipalities.

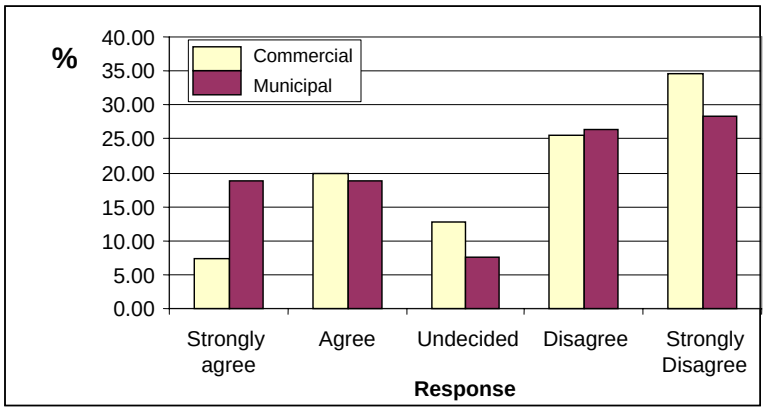


Figure 15 Response to limiting the number of fishers

8 Conflicts and Their Resolutions

In studying the reported types of conflicts in the fisheries of Concepcion, in general, and in Barangay Bagongon in particular, the typology produced by Bennet, *et al.* (2001) was used (Table 11. This section provides the details of the reported conflicts that fall under Types 1, 2 and 3.

Table 11 Bennet, *et al* (2001) typology of fisheries conflicts

Type 1	Who controls the fishery	e.g. Access issues
Type 2	How the fishery is controlled	e.g. Enforcement issues, quota allocation issues, co-management issues
Type 3	Relations between fishery users	e.g. Issues between different groups (linguistic, religion, ethnic), issues between scales of users (artisanal, semi-industrial)
Type 4	Relations between fishers and other users of the aquatic environment	e.g. Issues with tourism, conservation and industrial development
Type 5	Relationship with fishers and non-fishery issues	e.g. Issues over the environment, politics, economic change, elites, corruption

8.1 Conflicts Arising from Access Regulation

Licenses and permits are used to regulate access to the fishery. It was reported that the Bureau of Fisheries and Aquatic Resources of the Department of Agriculture (BFAR-DA), located in Iloilo City, grant license and permits for the conduct of fishery activities. Municipal and commercial fishers were said to be discouraged in securing these permits and licenses because of high transaction cost (time, money, documents/information required). On the other hand, local officials are also disappointed that fishers using illegal gears like trawl and beach seine were still given licenses to operate. New national orders are out stating that licensing of commercial fishers would only be until July 2004. Licensing of municipal fishers will also be given to local governments.

The use of the municipal waters of Concepcion is reserved to the municipal fishers. Commercial fishers are supposed to operate beyond 15 km of the municipal waters. In Concepcion, an ordinance was passed in 1999 allowing commercial fishers to fish within the 10.1 to 15 km area from the shoreline. Fishers call this "free zone" as the "second canal," just about 3 km from Barangay Bagongon, in the area of Danao-Danao Island. This "second canal" is said to be equidistant to Barangay Bagongon and Cadiz, Negros Occidental. This fishing right, however, is in exchange for a fishery rental worth P2500 for two weeks.

With this zoning regulation, which prevents access of commercial fishers to the municipal waters, the commercial fishers of Barangay Bagongon felt that they are "outsiders" in their own waters. They resent their exclusion in the municipal waters where they think where the fish are. They believed that the fish path is below 15 km and the ideal fishing area is at 7 km. Their main dilemma is where to fish. They are being forced to travel offshore but this means higher operation cost, decreased income and coming into contact with *Bantay Dagat* of other municipalities who also resent the presence of "outsiders" in their fishing grounds. They operate inside the municipal waters by taking the risks of being apprehended, fined, imprisoned and fishing gears confiscated.

The commercial fishers expressed disappointment with the fishery laws, which, according to them, are biased in favor of the small fishers. According to them, the access regulation and the zoning regulation are pushing them out of fishing. They have nowhere to go. They articulated their need for more government protection because they are the ones that secure licenses and permits and pay taxes, and not the municipal fishers. They said they deserve to be given and be informed of the area where to fish in the municipal waters.

The fishers also expressed no control over the fishery. They oppose the operation of fishers from municipalities in Negros Occidental and Masbate in their municipal water. Most were not aware that the municipal fishers from other municipalities can fish in the waters of Concepcion if they secure permit and license to operate.

8.2 Conflicts Arising from Management of Resources

Legislations say that commercial fishers are completely banned in less than 10.1 km. However, commercial fishers encroach in the municipal waters. The failure by the *Bantay Dagat* to adequately police the municipal waters, increases encroachment and other illegal activities in the municipal waters.

Some factors are favorable to the commercial fishers to encroach into the municipal waters and use illegal gears. The size of the municipal water make sea patrolling very costly and enforcement of regulations difficult. Barangay Bagongon is far from the mainland where the *Bantay Dagat* team is based. If there are reports of commercial fishing operation within municipal waters from the barangay fish wardens (volunteer fishers), commercial fishers are long gone before the *Bantay Dagat* arrives. Commercial boats were said to be faster than the patrol boats of the *Bantay Dagat*. It was also reported that commercial fishers have "watchers" at the port where the *Bantay Dagat* patrol boats are docked. The "watchers" inform commercial fishers when the *Bantay Dagat* team is in operation. In case of apprehension, the compromise penalty is only P2500, an amount that is very small relative to the value of the fish illegally caught.

In the case of commercial fishers coming from other municipalities, the local *Bantay Dagat* have no jurisdiction over them once they are out of the municipal waters of Concepcion. They were mostly encroaching in the area of Barangay Bagongon because it is a border barangay.

As expected, the conflict of commercial fishers with the *Bantay Dagat* and local government officials for implementing the zoning regulation is most pronounced. They reported that the local *Bantay Dagat* would apprehend those with no license, fishing within 7 km, fishing in restricted areas like the MPAs and would file case and sometimes would settle for fines.

More pronounced than this was their dislike of the Provincial *Bantay Dagat* team sent by the Provincial Governor at the same time of the study. They mentioned that the Provincial Team came unannounced and gave no warnings to violators. They are "stricter" than the local *Bantay Dagat* in implementing the zoning regulation. Fishing in the "second canal" is

no longer allowed; no more fishery rentals. Commercial fishers were told to fish beyond Baliguian Island, which is about 22.5 km from the mainland.

Commercial fishers perceived that the Provincial *Bantay Dagat* are serious in filing a case, confiscating boats and gears and in prosecuting the crew. Their understanding was that the Provincial *Bantay Dagat* Team would really want the phase out of trawl operation. With their frustrations, some commercial fishers expressed their willingness to take up arms against the Provincial Team.

The municipal fishers expressed approval of the operation of the Provincial *Bantay Dagat*. They felt more protection with its presence. According to them, the Provincial *Bantay Dagat* have driven the commercial fishers farther into the sea. With regard to the local *Bantay dagat*, a number of municipal fishers perceived that they are biased in favor of some trawlers. They claimed that they would warn their friends when they are about to perform surveillance operation or do not apprehend illegal fishers who are friends.

The *Bantay Dagat* team of Ajuy and Cadiz have also apprehended and put to prison or imposed fines for commercial fishers from Concepcion for encroaching in their municipal waters.

One challenging issue in Barangay Bagongon is that the Barangay Captain who owns a number of trawl boats regularly violates the zoning regulation: encroachment into municipal waters and fishing in the marine protected area. The deputized fish wardens in Barangay Bagongon were said to be discouraged to apprehend his boats. Their lack of equipment to gather evidences always put them at the losing end.

The deputized fish wardens based in Brgy. Bagongon reported that they do not have a patrol boat for surveillance operation because the engine was confiscated by the Barangay Captain. No one is brave enough to raise a case against the Barangay Captain, whom people perceived as powerful because of his position. They also reported that once the barangay captain admonished them for “bypassing” him when they submitted intelligence information to the local *Bantay Dagat*.

8.3 Conflict Between Fishery Groups

The conflict in Barangay Bagongon is centered on municipal fishers and commercial fishers. Their increasing number (which is a consequence of their limited skills and lack of alternative job) have heightened their competition for space and resources, which in turn have increased their conflict, fishing pressure and problems with control and monitoring.

Municipal fishers were blaming the commercial fishers for the decline in their fish catch, destruction of corals, and disappearance of first class fish. These were the reasons why they wanted to ban commercial fishers. To the commercial fishers, municipal fishers were just "jealous" of their bigger volume of fish catch. They also reported that they resent the privilege given to hook-and-line fishers to fish in the buffer zone areas of marine protected areas.

There were reports of municipal and commercial fishers fishing in the same area that would sometime result to net entanglements (which can be deliberate or accidental). These net entanglements usually result to the damage of the net of the municipal fishers. One incident reported was a boat chasing. The trawlers chased (to frighten) the municipal fisher (vertical long line user) after the latter demanded that the trawlers haul their nets for his longline got entangled. It was a false alarm.

Municipal fishers resented the trawl (from Bagongon and Danao) and hulbot-hulbot (from Tagubanhan, Ajuy) operations. They had many encounters with these commercial fishers. Most believed that commercial fishers (most of the time) would intentionally run-over them and drag their nets. Most incidents resulted to destroyed nets or boats capsized. Their signals and their request for commercial fishers to fish somewhere else were always ignored.

There was a report of trawlers running-over a fish-aggregating device of a municipal fisher. The trawlers were armed and threw a bottle of kerosene to the complaining municipal fisher. Others received grave threats from commercial fishers after helping the local Bantay Dagat.

Conflict is also present among commercial fishers. Trawlers were said to be "jealous" of the big volume of catch of Danish seines. On the other hand, according to one trawler operator, every fisher in Barangay Bagongon or Concepcion is "jealous" of him because he is

the main supplier of squid of an international processing plant located in the neighboring municipality (San Dionisio).

Net and outrigger entanglements resulting to damage of gears and boats among commercial fishers were also reported. One incident led to the throwing of drinking glasses in the sea. The few risk-averse and law-abiding commercial fishers also resented the non-compliance of zoning regulation of their fellow commercial fishers.

Overcrowding of municipal fishers in the same fishing area resulted to net entanglements and the boat being hit (intentional or accidental) resulting to damage. There were also reports of fish stealing from someone else's fish aggregating device and stationary gears.

8.4 Conflict Management

The types of conflicts reported in the fishery of Barangay Bagongon were chronic conflicts. These conflicts arise because of the presence of legislations denying access of commercial fishers to the municipal waters, the perceived unfair law enforcement, and the competition between municipal and commercial fishers over space and resources.

Fishers settle small conflicts among themselves. Settlement of net entanglements and boat hits were often through payment of damage and asking for apology. Fishers reported that they usually settle their conflicts when they return to the shore. They agreed that talking things out while offshore result to intense arguments. In the case of fishing in the same area, most of the time municipal fishers would ignore the others or would leave the area to avoid the escalation of conflict.

The barangay captain has the authority to settle conflicts in the barangay. However, in the case of fishery conflicts between the municipal and commercial fishers, no report was made that the resolution of conflict was facilitated by the barangay captain. During the focus group discussion with the commercial fishers, they reported conflict cases among themselves where the resolution was facilitated by the barangay captain. This is expected given that the barangay captain was perceived to be biased in favor of commercial fishers being the owner and financiers of trawlers.

Fishers accepted that they are “powerless” and have no choice but to follow regulations, accept penalty for violations when it concerns the *Bantay Dagat* and the government officials. It is different, however, when it concerns the Barangay Captain. Cases involving him are resolved at the municipal level, and most of the time in his favor.

There were also conflict cases between fishers that were not resolved. In general, however, the fishers reported that their barangay is a peaceful community because almost everyone is a relative, and each one understands everyone’s dependence on fishing for a living.

9 Conclusions

Almost all residents of Barangay Bagongon are fishers. Their low educational attainment, limited skills, lack of alternate job, lack of economic assets have driven them to fishing and consider the fishery as their main of source of living.

One of the greatest challenges is the competition between municipal and commercial fishers, leading to conflicts, higher fishing pressure and problems with control and monitoring. The presence of legislations denying access of commercial fishers to the municipal waters and the perceived unfair law enforcement have increased this competition, which in turn have increased their conflict. The size of the municipal water and the distance of Barangay Bagongon from the mainland make enforcement of fishery regulation costly and difficult.

The types of conflicts reported in the fishery of Barangay Bagongon were chronic conflicts that frequently did not involve arms or violent means. In general, fishers look at these conflicts and problems as normal part of their life at sea, but still they hope for more peaceful co-existence, better management of the resource, and fair law enforcement.

The reported competition over space and resources and the resulting conflicts can help explain why most fishers were in favor of some exit strategies. Generally, fishers were in favor of banning some gears for as long as they were not the gears they were using. Municipal fishers expressed favor to ban commercial fishers, particularly trawlers and Danish seines. They were blaming the commercial fishers for the decline in catch volume, disappearance of fish catch, catch of juvenile fish, and destruction of fish corals.

Fishers were also in favor of the introduction of alternative job so they can go out of fishing, which they consider as a risky occupation (because of the bad weather) and the uncertainty of catch (given what they perceived as an overfished resource). There was also a favorable response to the establishment of marine protected areas and the observance of closed season. Fishers believed that through these means, fish could breed and grow. This would mean more fish for them later and also fish for the next generation.

The kind of low-level chronic conflicts reported can also explain why most fishers were not in favor of limiting the number of fishers and catch. They expressed understanding of each other's dependence on fishing, income status, and the depleting resources.

Based on the types of conflicts reported it seems that the presence of conflict between the municipal and commercial fishers could not pressure the fishers to leave fishing. However, the conflict with the *Bantay Dagat* and other law enforcers can pressure the commercial fishers to go out of fishing. Commercial fishers were denied access to municipal waters and were pushed to go offshore, which make fishing a very costly activity.

Most fishers, however, desire to have alternative job so they can get out of fishing. The introduction of livelihood options to facilitate exit from fishing is a great challenge given the far distance of Barangay Bagongon from the mainland, the lack of fertile lands in the Barangay, low education, limited skills, and old age of some fishers. Very few fishers reported to have other skills aside from fishing. Those who have other skills reported that they know how to run a "business", being a mechanic and carpentry. These skills, however, have no demand in the community.

In the past, some livelihood options introduced in the Barangay were fish sauce making, shell-craft making, and bamboo craft making. These were not sustained due to the lack of market for the products. If ever the same kind of livelihood options will be offered, the fishers need to know not only the skill on production side but also marketing.

The hope for no entry or exit in the fishery rests largely on the young people in Barangay Bagongon. Fishers foresee more fishers in the future because more young people are out of school or were already apprentice in commercial fishing. Educational opportunities and/or skills training for the young people are important to prevent their entry or facilitate their exit from fishing. This, however, would not be forthcoming if no external assistance is available to them given their economic circumstance. It requires foresight from

the government or any funding agency that instead of programs like giving of fishing gears, or engines to non-motorized boats, they allocate the money to educational scholarship for sons and daughters of fishers.

"Fish fights over Fish Rights"
The Case of Escalante City, Philippines

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1. Introduction

This study aims to examine the conflicts in fisheries in Escalante City and how it is related with overfishing and the fisheries management strategies in the area. It also aims to determine the attitudes of the resource users towards conflicts and exit strategies in fisheries.

Escalante City is chosen as one of the 3 study sites because we wanted to know the conflicts that would be present in an area where management is viewed to be not as organized and active compared to the other sites in the Visayan Sea region. We also wanted to know the conflicts that may arise in a situation where the local government unit is firm in implementing fishery laws.

2. The study site

The city of Escalante is located at the northeastern part of Negros Island (Fig. 1). The city is composed of 21 barangays, 7 of which are coastal. It has a land area of 192.7 sq. km., while the municipal water, which has been delineated by the National Mapping and Resource Information Authority (NAMRIA), has an area of 220 sq. km. The coastline stretches 37 km, excluding the city's only island (Bagong Banua).

In 2003, Escalante City has a population of 88,577. The 7 coastal barangays have a total population of 37,425, which is more than 40% of the total city population. In the coastal barangays, the females slightly outnumber the males (19,045:18,380).

Of the 19,276 hectares land area, more than 96% are agricultural. Farming, fishing and merchandising are the main sources of livelihood in the city. Sugarcane is planted in approximately 62% of the agricultural area. The rest are planted with coconut, corn and rice.

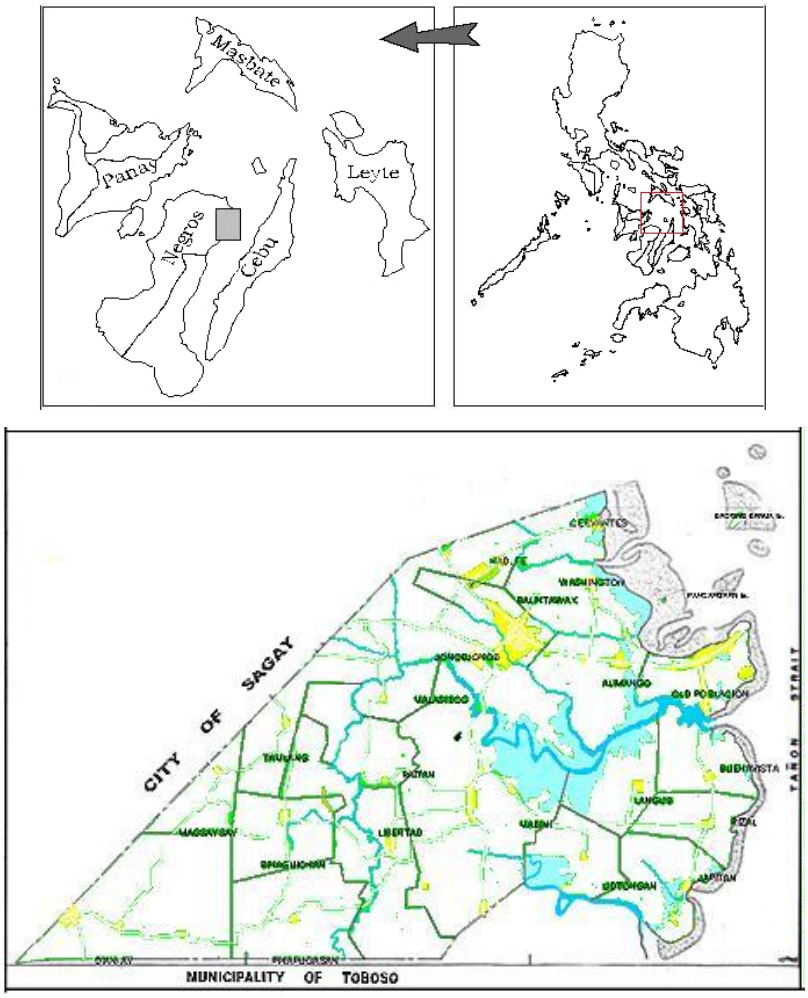

Fig. 1. Location and map of Escalante City, Negros Occidental.

There are no available records on the status of Escalante City's coastal resources. In 2003, the Bureau of Fisheries and Aquatic Resources (BFAR) and the National Fisheries Research and Development Institute (NFRDI) assessed selected sites in northern Negros and concluded that coral reefs in Bagong Banua and Malabagon are in fair condition. The study observed infestation of crown-of-thorns in some sites, and the prevalence of dead corals, which are remnants of blast fishing activities within the area. The condition of coral reefs in other areas in Escalante is unknown. No assessment has been done for mangrove and

seagrasses, although mangroves are present in the barangays of Cervantes, Washington, Japitan, Old Poblacion and Rizal (Calumpong and Mendez 1997).

Escalante used to be called Manlambus, a Visayan term which means “to strike with a club” (Gonzaga 2004). Manlambus was a common practice during ebb tide when fish is abundant in the mangrove forests. This suggests that the city used to have rich fishery and aquatic resources. Unfortunately, there is no stock assessment study conducted in the region, thus the real status of fishery resources is unknown.

Table 1. Fisheries-related legislation in Escalante City

Legilation Number	Year passed	Title
Municipal Ordinance Nos. 19 & 32	1994	An Ordinance banning fishing boats such as hulbot-hulbot, and trawls, and/or purse seines to catch fish within 7 km from the shoreline of the Municipality of Escalante
Municipal Ordinance No. 43	1996	An Ordinance regulating the use of the body of waters, fishing and/or fisheries in the territorial jurisdiction of Escalante
Resolution No. 98-119	1998	Authorizing the Municipal Mayor to utilize the penalties collected under Municipal Ordinance No. 43 for Bantay Dagat Operations
Municipal Ordinance 100	2001	Authorizing the creation and maintenance of a separate trust fund, to be known as the Bantay Dagat Trust Fund, in which all fines and penalties collected under R.A. 8550, Ordinance No. 43 and other related ordinances and laws, shall be deposited, and shall be used for the purposes specified hereunder.
City Ordinance Nos. 140 & 140A	2003	An Ordinance to create the city Bantay Dagat Coordinating Council
City Ordinance 141	2003	An Ordinance to create the city Bantay Dagat Task Force
City Ordinance 156	2003	Declaring a portion of the Escalante Bay as marine sanctuary

In order to help manage Escalante’s fisheries, a number of local laws have been passed (Table 1). Municipal Ordinance No. 43 is regarded as the principal fisheries law in the city. It is notable that the ordinance has not been updated since the R.A. 8550 or the Fisheries Code of the Philippines had been passed in 1998. Municipal Ordinance No. 43 establishes the zoning regulation in Escalante City. It provides that Danish seines are not allowed to operate

7 km from the shoreline, while trawls and purse seines are not allowed to operate 10 km from the shoreline.

Escalante City maintains an organized Bantay Dagat equipped with 3 patrol boats, each with communication equipment and a Global Positioning System (GPS) to identify location. Between 1998 and 2003, the Bantay Dagat has collected more than PhP 1.3 M as penalties for the violation of fishery laws. Seventy percent of the amount is used for the maintenance and operating expenses of the Bantay Dagat. The rest is spent for personnel incentives. The Bantay Dagat of Escalante is considerably one of the "operational" Bantay Dagat in the region, and is actively patrolling the coast against illegal fishing activities.

In 2003, the City Council approved the establishment of the Escalante Bay Marine Sanctuary through City Ordinance No. 156. The proposed sanctuary has a total area of 1323.5 ha and is situated near the Bagong Banua Island (Fig. 2). However, its creation has been delayed pending the approval of the Sangguniang Panlalawigan of Negros Occidental.

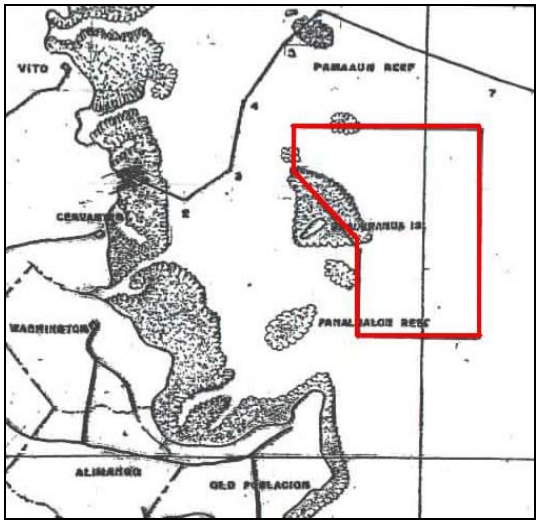

Fig. 2. Location of the Escalante Bay Marine Sanctuary

In 2000, the city of Escalante and 8 other cities and municipalities (Victorias, Manapla, Cadiz, Sagay, Toboso, San Carlos, Calatrava and Don Salvador Benedicto) established the Northern Negros Aquatic Resources Management Advisory Council (NNARMAC). The NNARMAC is an alliance of local government units in northern Negros, which serves as a coordinating body to manage the area's fisheries and aquatic resources.

The alliance is relatively young compared to the more organized Northern Iloilo Alliance for Coastal Development (NIACDEV) in northern Iloilo.

Local fishers have also been slow in organizing themselves into a collective group for fisheries management and conservation. A few of the fishers are members of a fisherfolk organization and 3 other cooperatives. The coastal barangays have yet to establish their Barangay Fisheries and Aquatic Resources Management Councils (FARMC). The City FARMC has been recently created but it has to make a more active role in the management and utilization of the city's fisheries and aquatic resources.

3. Methods

The study interviewed 52 municipal and 38 commercial fishers. The snowball approach was used, wherein fishers who were referred to have experienced conflicts in fisheries were chosen. Key informants including the City Mayor, the city's Executive Assistant for Agriculture, Bantay Dagat Chair and personnel, barangay leaders, and the police were also interviewed.

Table 2. Fishing gears used by the municipal fisher-respondents.

Bottom set gillnet	14
Longline	12
Fish corral	8
Multiple handline	6
Pot/ trap	6
Drift gillnet	3
Simple handline	2
Troll line	2
Drive-in gillnet	2
Squid jig	1

Table 2 shows the fishing gears used by the respondents from the municipal fisheries sector, some of whom use multiple gears. Because gillnets and longlines were the most common fishing gears in Escalante, majority of the respondents chosen were operators of the said fishing gears. All of the respondents from the commercial sector were baby trawlers,

except one who was a mid-water trawler. Of the trawlers interviewed, 45% were crewmembers, 42% were boat captains, and 13% were boat owners.

A focus group discussion was conducted on October 15, 2004 to validate the data gathered and to further elucidate the conflicts in fisheries in Escalante City. Some of the respondents in the survey, key informants and local authorities were invited.

4. Results and Discussion

4.1 Socio-economic profile of the respondents

The municipal fishers-respondents were relatively older with an average age of 46 years against 35 years for the commercial fishers-respondents (Table 3). Age of municipal fishers-respondents ranged from 26 to 80 years, while commercial fishers-respondents have ages that ranged from 18 to 63 years. The municipal fishers started fishing at an earlier age than the commercial fishers. The earliest age the respondents started fishing was 6 years old, while the oldest at 47 years. The municipal fishers had spent more years in fishing than the commercial fishers.

Table 3. Profiles of respondents interviewed in the study.

	Municipal	Commercial
Ave. age (years)	46	35
Ave. age started fishing (years)	17	19
Ave. number of years spent fishing	29	18
Annual household income (in Philippine peso)	37,223.08	41,969.74
Annual income from fishing (in Philippine peso)	21,784.62	19,507.89
Ave. number of persons in the household	5	6
Educational attainment		
Primary education	86.6	55.2
Secondary education	11.5	39.5
Tertiary education	1.9	5.3
Own land where house is built (% yes)	19.2	21.1
Own house (% yes)	94.2	97.4

Most of the respondents said fishing was their major source of livelihood. A few others (15% municipal and 8% commercial) had other forms of livelihood like farming,

carpentry, driving, and acting as fish wardens. Household incomes were augmented by working family members, as well as financial help from relatives.

The municipal fishers seemed to earn more from fishing, although the commercial fishers had a higher household income. Both groups however had incomes that are way below the poverty level. Most of them do not own the land where their house was built.

Most of the municipal fishers (87%) and about half (55%) of the commercial fishers never set foot in high school. Most of the municipal fishers were only able to finish primary education. Only a few of the respondents were able to finish college.

All of the municipal fishers-respondents and 68% of the commercial fishers-respondents were married. Majority of the respondents are Catholics (94%) and had been living in Escalante since birth (80%).

4.2 Fishing and fishing activities

The city has no updated fisheries statistics and reported values are probably lesser than the actual values. There are 1055 recorded fishers in Escalante, with 516 motorized and 398 non-motorized boats.

Table 4 shows the types of fishing gears recorded in Escalante city. There are no available data on the actual number of fishing gears but the most dominant ones are the longlines, handlines, and gillnets.

4.2.1 Municipal fishers

The most common species caught by the municipal fishers are threadfin breams, crabs, squids, yellowstripe scads, mackerels, mojarras and scads. Among the municipal fishers-respondents, about 80% used motorized boats less than 3 GT with horsepower that ranged from 3 to 16. They operated an average of 23 days in a month. Depending on the type of gear, fishing operation may last from 2 to 24 hours.

About 85% of them said they did not have license to fish, and they saw no need to get one. The 15% said they paid the barangay the amounts PhP25-50 for the boat and PhP40-120 for the fishing gear.

About 41% said they operate less than 3 km from the shore; 36% said they operate until 7 km from the shoreline; about 20% said they operate within the 7-15 km zone; and 3% operated beyond 15 km from the shoreline. Most base the distance from shoreline using the mountains, the island and other landmarks as bases.

About 46% of the respondents said they operate in waters outside Escalante in search of fish. These included the waters of Bantayan (Cebu), Concepcion (Iloilo), Sagay, Cadiz, San Carlos, Toboso, and Calatrava (Negros). Among those who fish outside Escalante, only 9% said they have license to operate.

Table 4. Fishing gears recorded in Escalante City

	English Name	Local Name
LINES	Hook and line	Taga; lambo
	Bottom set longline	Kitang
	Multiple handline	Pasol; sunshine
	Troll line	Bunso-bunso
	Squid jig	Saranggat
NET	Bottom set gillnet	Palubog
	Crab gillnet	Kurantay pangasag
	Drift gillnet	Kurantay pangisda; pamo
	Drive-in gillnet	Padlas
	Trammel net	Pamalo
WEIRS	Fish corral	Bungsod; pahubas
TRAPS	Crab pot	Panggal
	Fish pot	Bubo
HAND INSTRUMENTS	Spear	Pana;compressor
SEINES	Ring net	Kubkob
	Purse seine	Porseyn
	Danish seine	Hulbot-hulbot; zipper
	Baby Danish seine	Hulbot-hulbot; bira-bira
TRAWL	Baby trawl	Trol
	Mid-water trawl	Palupad
	Bottom trawl	Mansuria

4.2.2 Commercial fishers

The commercial fisheries sector in Escalante is composed of one unit Danish seine, another mid-water trawl and an undetermined number of baby trawls. There is no definite number of baby trawls operating because not all vessels are registered. The baby trawl is a scaled-down version of the otter trawl, which the locals have modified to circumvent the law, which prohibits the use of fishing vessels that are more than 3 GT. The baby trawlers target

the shrimps, which command high prices in the market. Aside from shrimps, they also catch other species like crabs, squid, cuttlefish, and small fishes, which they collectively call “trash fish.” Profit is divided into 3 parts- 1 part each to the owner, boat captain and crewmembers.

Among the interviewed baby trawlers, almost all are using vessels that are less than 3 gross tons. Trawl vessels in Escalante are even smaller than the vessels used by baby trawlers in Concepcion, Iloilo. About half of the boats use engines with 4dr5 horsepower. The rest use boats with engine horsepower that range from 60 to 88. Cost of operation ranged from PhP500-1500, mostly spent in crude oil.

The baby trawlers in Escalante operate at nighttime, at an average of 18 days a month. About 78% said they have license to operate, mostly from the Office of the City Mayor. Payments ranged from PhP700-4,000 for the boat and PhP8,000 for the gear. One respondent said they paid PhP15,000 to the Maritime Industry Authority (MARINA). Most of the respondents, especially the crew did not have any knowledge about the registration process, hence could not give details about licenses.

About 75% said they fish in the area 7-10 km from the shoreline of Escalante; 15% said they operate 3-7 km from the shoreline; and the rest said they operate beyond 10 km. To determine distance from the shore, about 56% said they use the mountains, landmarks and the island as bases. About 23% said they base distance from the electric lights on shore. A few others said they base distance from the amount of gasoline consumed. About 55% said they operate in the area because of zoning limits. About 35% said they fish in the area because of the presence of shrimps and about 9% said they are limited by the capacity of the boat.

Almost all (97%) said they operate outside Escalante depending on the season. They move to Cadiz City and Baliguian Island, Concepcion, Iloilo in search of shrimps. All of the respondents said they have permit to operate in Cadiz and Concepcion. About 13% said they are free to operate in other waters and about 10% said they have limited catch in Escalante. Almost all of the respondents said zoning regulations in Escalante is unfair (they are not allowed to operate 7 km from the shoreline) and that Escalante’s Bantay Dagat is too strict.

4.3 Assessment of fish catch and fishing activity

The following are the perceptions of fishers regarding fisheries production, fisheries management and exit strategies.

4.3.1 On the volume of catch

Most of the respondents claimed that they used to catch more fish in the past because there used to be fewer fishers (Fig. 3A). They also claimed that the illegal fishing practices like dynamite fishing and poaching of commercial fishers like Danish seines and trawls depleted the fisheries. A number of municipal fishers (21%) believed that catch has improved during the past few years because of improved monitoring against illegal fishing. The baby trawlers added that they used to catch more in the past because they were free to fish anywhere in Escalante's territorial waters, a practice they could no longer do because they have been banned from operating nearshore.

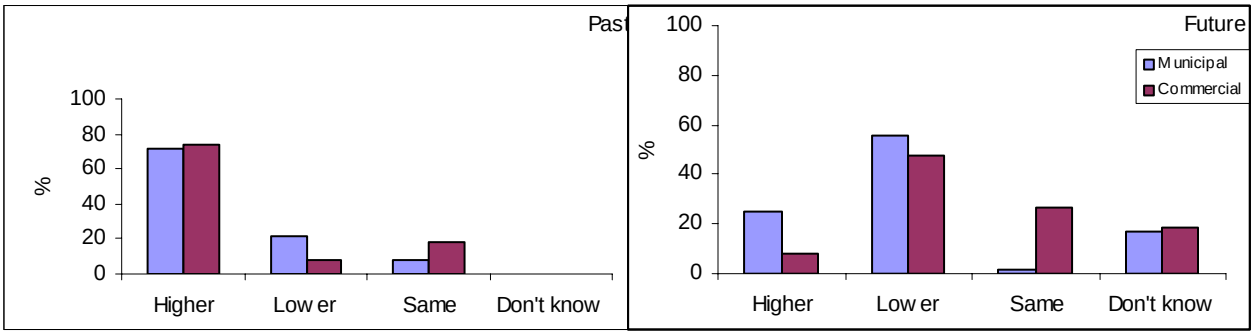

Fig. 3. Perception of municipal and commercial fishers regarding the volume of catch.

They believed that catch would be lower in the future (Fig. 3B) because they expect more people to engage into fishing due to lack of employment opportunities and because some illegal fishing practices remain unchecked. About 25% of the municipal fishers were hopeful that catch would improve if the local government would continue its campaign against illegal fishing. Another hindrance that baby trawlers believed would reduce their

catch is the prohibition from operating nearshore. Also, they believed that the creation of a sanctuary would reduce their fishing ground, thus the reduction of their catch.

4.3.2 On the size of fish caught

Most of the municipal and commercial fisheries respondents said that the size of fish caught has not changed, and that fish stops growing after it reaches a certain age (Fig. 4A). A considerable number of municipal fishers (38%) claimed that they used to catch bigger fish in the past, when illegal fishing was not yet rampant. Most of the baby trawlers believed that shrimps have the same size and they also stop growing after reaching maturity. Also, they said that shrimp size varies on the locality.

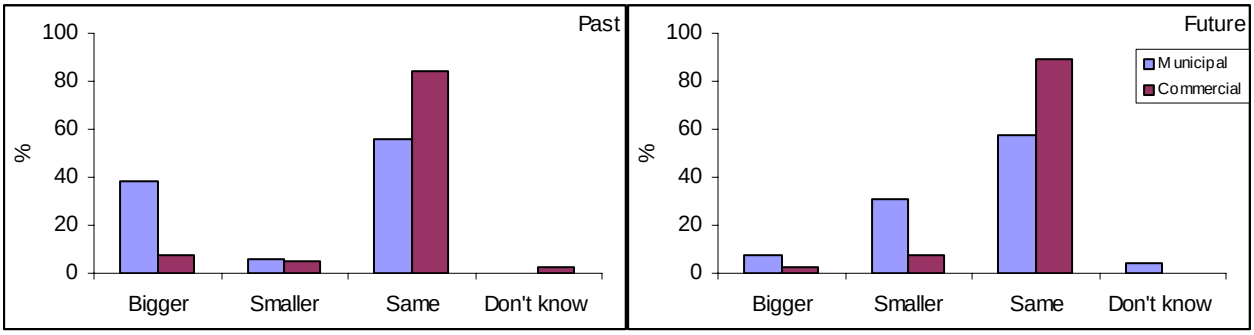

Fig. 4. Perception of municipal and commercial fishers regarding the size of fish caught.

Most of the respondents from both sectors also believed that size of fish caught in the future would be the same with the present (Fig. 4B). About 31% of municipal fishers believed that they would catch smaller fish in the future because of overfishing, too many fishers and poaching by the large fishing boats.

4.3.3 On fishing income

In the past, the municipal and commercial fishers said they had higher income owing to the abundance of fish (Fig. 5A). Perception of municipal and commercial fishers on their fishing income is mostly based on the price of fish. While most acknowledge that they used to catch more in the past, 29% of the municipal fishers believed that income was still lower

because fish commanded a lesser price compared to the present. In the same manner, about 27% of the municipal fishers believed that income has not really changed because the decline in the volume of catch is countered by the increase in fish prices. The commercial fishers acknowledged that they used to catch more shrimp in the past, including trash fish, which they call sideline (because the trawl owner is only interested in the shrimps, and the fish are shared by the crew thus they can get additional income from trash fish). Also, income was higher because fishing operations in the past were not hampered by local prohibitions. Another factor was the cheaper price of gasoline so that operation cost was lower. Like the municipal fishers, perception of commercial fishers regarding income is based on the price of fish, thus 34% believed income had not really changed because the decline in catch was offset by the increase of shrimp price.

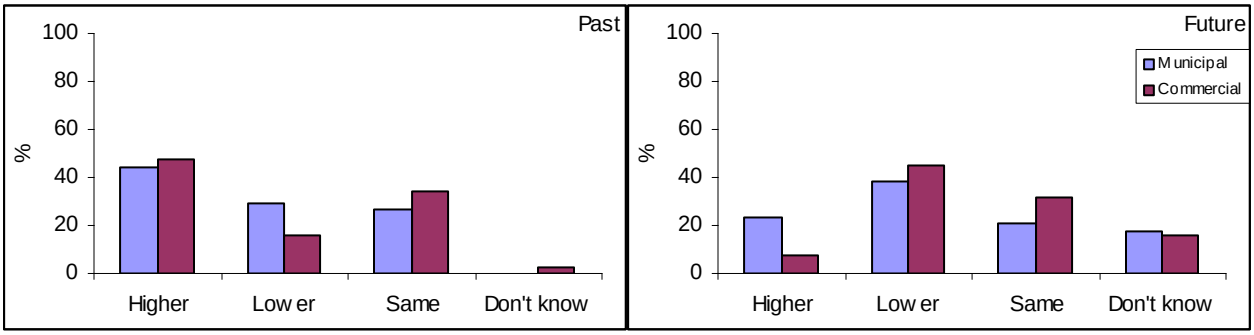

Fig. 5. Perception of municipal and commercial fishers regarding their income from fishing.

The fishers believed that fishing income in the future would be lower because of poor catch (Fig. 5B). Some baby trawlers believed that the strict implementation of zoning laws would result in fewer catch, thus reducing their income. Some fishers believed that income would be the same because of market factors like the increasing price of fish, squid and shrimp. Others hoped that catch would improve through improved monitoring against illegal fishing activities.

4.3.4 On composition of catch

When asked to compare the composition of fish, most of the municipal fishers claimed they used to catch high-value species in the past (Fig. 6A) like Spanish mackerels,

groupers, snappers and big crabs. They believed that these high-valued fish would become scarce in the future because of the increase in the number of fishers and poaching (Fig. 6B) and catch composition would be dominated by low-value species. There were some fishers who claimed catch composition has not changed, and would probably be the same in the future. This is especially true to highly selective fishing gears that target only 1 or 2 species, like the sardine gillnet, crab pots and handlines that that target pelagic species.

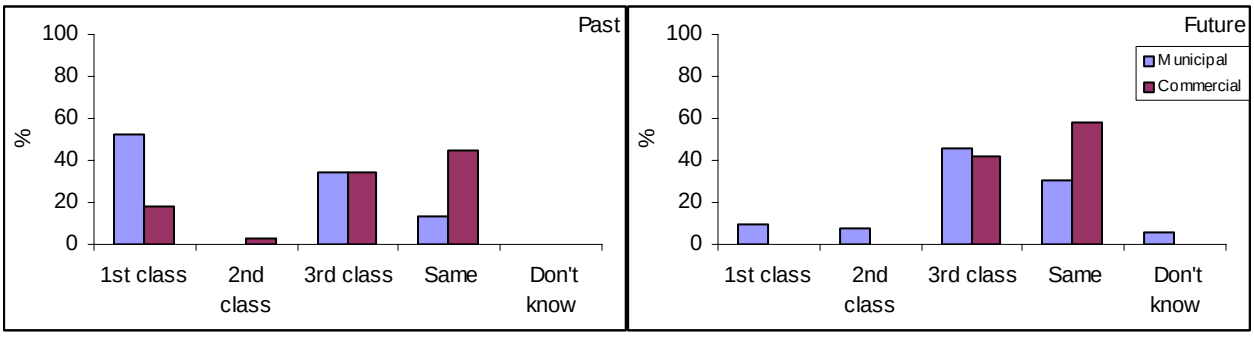

Fig. 6. Perception of municipal and commercial fishers regarding catch composition.

The commercial fishers claimed they catch they same species (Fig. 6A), alluding to the fact that their target species, which are shrimps, remain the same. They believed they would still be catching the same shrimp in the future, along with the small fish species they call “trash fish” (Fig. 6B).

4.3.5 On length of time spent fishing

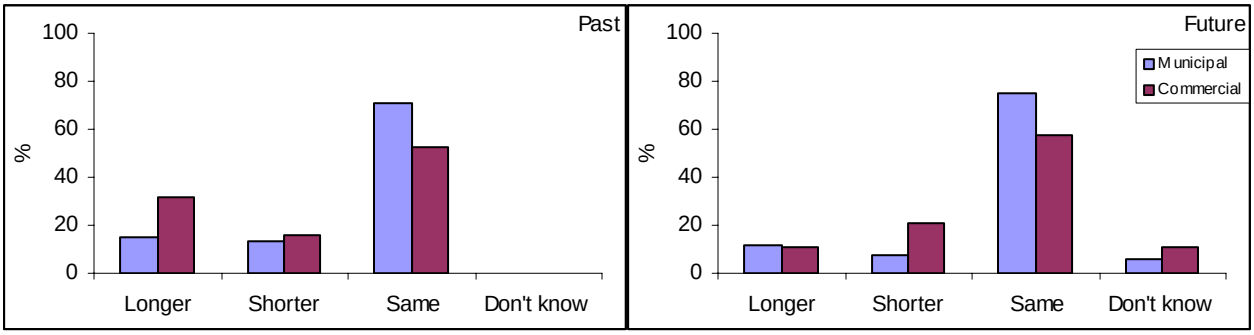

Fig. 7. Perception of municipal and commercial fishers regarding length of time spent fishing.

Fishers from both sectors claimed that the amount of time they spent during fishing has not changed (Fig. 7A) and would not change in the future (Fig. 7B). This is because they stick to the same schedule, and regardless of whether they have catch or none, they would still end fishing operation and go back to shore.

About 32% of the commercial fishers said that they used to spend more time fishing in the past because they used to have the freedom to fish anywhere and anytime. About 13% municipal and 16% commercial fishers said that the abundance of fish made fishing time shorter. They believed that they would be spending even more time fishing in the future because their fishing ground is farther from shore, thus travel time would be higher.

4.3.6 On the number of fishers

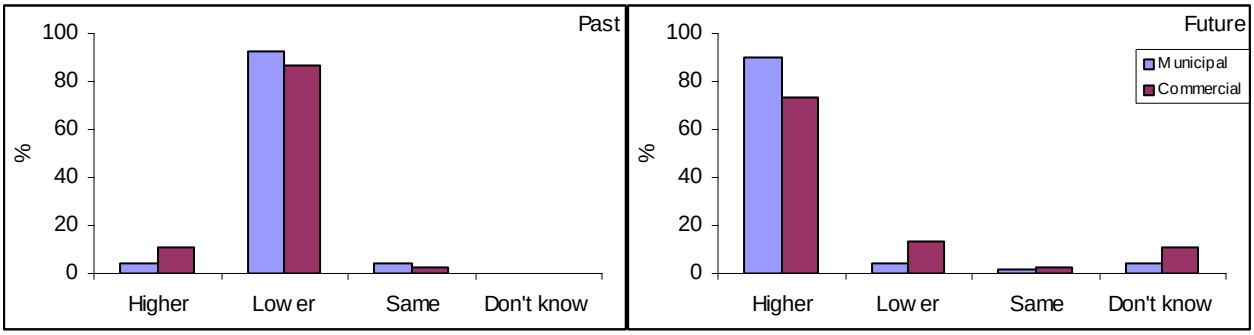

Fig. 8. Perception of municipal and commercial fishers regarding the number of fishers.

Fishers from both sectors acknowledged that there used to be fewer fishers in the past mainly because of a smaller population (Fig. 8A). Other fishers attributed this to the absence of motorized fishing vessels, and that people used to work in the sugar mills, called *haciendas*.

They also believed that more people would engage into fishing because of increasing population and the lack of employment opportunities (Fig. 8B). They also acknowledged that they may not be able to send their children to school, thus they too would someday become fishers.

4.4 Reactions towards exit strategies

4.4.1 On banning of some gears

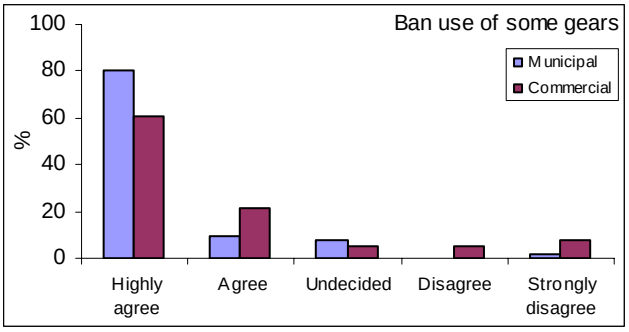

Fig. 9. Attitude of fishers towards the banning of some gears.

Most of the respondents strongly supported the prohibition of some fishing gears (Fig. 9) to rehabilitate the aquatic habitats, increase fish population, and to prevent illegal fishing activities like dynamite fishing, cyanide fishing and use of destructive and highly efficient gears like Danish seines and trawls. Many of the baby trawlers did not consider themselves as destructive. The fishers said that the government should take the lead role in eliminating illegal fishing.

4.4.2 On setting maximum limit on amount of catch according to scale of operation

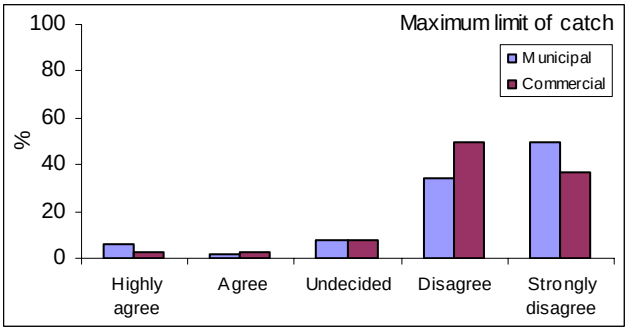

Fig. 10. Attitude of fishers towards limiting catch.

The concept of catch quotas or limitation of catch is unacceptable to the fishers (Fig. 10) although they did not exactly grasp the concept and how it is practiced. On the contrary,

they even aspire to catch more. The fishers could not imagine the idea of shooing “excess” fish away from the net, or to return the “excess” dead fish.

4.4.3 On establishing non-fishing seasons

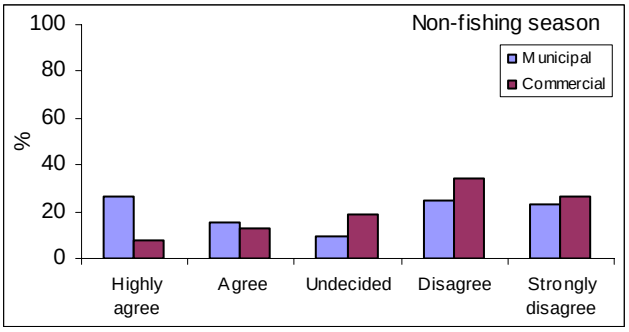

Fig. 11. Attitude of fishers towards creation of non-fishing seasons.

The fishers are split on the issue of establishing closed and open seasons in fisheries, although more are against the proposal (Fig. 11). About 48%of the municipal fishers were against the proposal, while 42% are agreeable. The commercial fishers were mostly against the creation of non-fishing seasons (60%) against 21% who were amenable. Those who were against it cited the lack of livelihood during the non-fishing period. Those who were amenable to the proposal said they would like to give the fisheries a chance to recover, especially during the spawning season.

4.4.4 On alternative livelihood

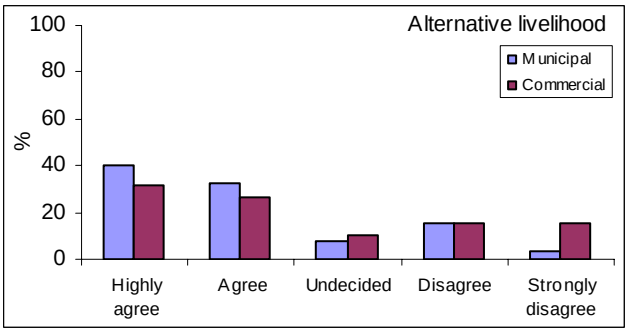

Fig. 12. Attitude of fishers towards alternative livelihood.

About 19% of the municipal fishers and 32% of the commercial fishers did not agree to quit fishing (Fig. 12) because they knew no other job. Most of the older respondents believed they were too old to find any other work. Others felt that fishing was inseparable from their lives, and working on land would not be as gratifying.

However, most of the fishers agreed to be given alternative jobs that are not dependent on the sea. A number of them said fishing is a difficult and hazardous job. They said they would be willing to work on land-based jobs as long as there is security of tenure and they may be able to feed their families.

Among those who were agreeable to leave fishing, about 26% identified carpentry and construction work as possible alternative jobs (Table 5). Another 25% would like to go into business like retailing and vending. About 17% would like to work in the farm and 14% would like to work as drivers. Because of the lack of education and training, employment options of the fishers were limited to menial work.

Majority of the respondents had no college degrees (recall table 3), thus they have very limited choices for employment. The prevalence of persons who lack education in the fishing sector could also suggest that fishing is viewed as a last alternative for those who cannot find employment. Most of the respondents acknowledged that they may not be able to send their children through college, so they expect them to go into fishing as well.

Table 5. Skills of fishers that may help find other means of livelihood.

	Total (%)	Municipal fishers (%)	Commercial fishers (%)
Carpentry & construction	26.2	24.3	28.6
Business	24.6	29.7	17.9
Farming & hacienda	16.9	21.6	10.7
Drive	13.8	5.4	25.0
Mechanics	9.2	5.4	14.3
Factory work	3.1	2.7	3.6
Laborer	3.1	5.4	0
Electrician	1.5	2.7	0
Baker	1.5	2.7	0

4.4.5 On the creation of marine protected areas

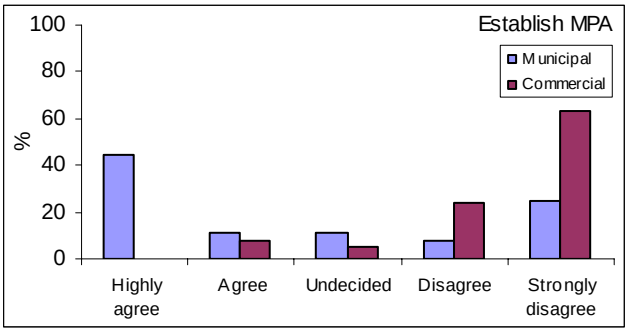

Fig. 13. Attitude of fishers towards the creation of marine protected areas.

Most of the municipal fishers agreed with the establishment of a marine sanctuary in Escalante City (Fig. 13) to give fish a chance to spawn and reproduce. They also said that this would deter poaching and illegal fishing. Municipal fishers who were against MPAs (33%) said it would reduce their fishing ground, and they would no longer be able to glean.

About 87% of commercial fishers were against the creation of a marine sanctuary in Escalante because this would greatly reduce their fishing ground. They also believed that gleaning would be prohibited once an MPA is in place.

4.4.6 On limiting number of fishers

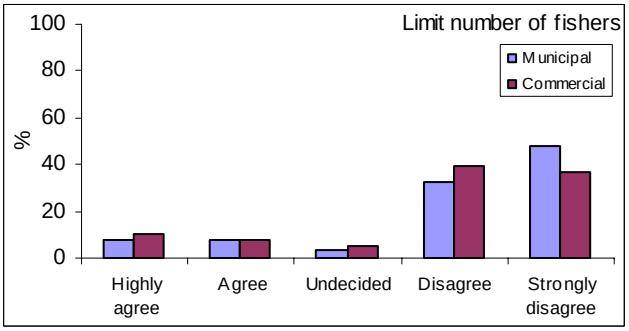

Fig. 14. Attitude of fishers towards limiting number of fishers.

Livelihood was the main reason why fishers from both municipal and commercial sectors were against the idea of limiting the number of fishers. They believed that the large commercial fishing vessels should be limited entry into Escalante's waters. Some suggested

that they should limit the entry of non-Escalante residents, and make the waters exclusive to their use.

During the focus group discussion, participants suggested that the exclusive or preferential use of Escalante residents should be included in the revised local fisheries ordinance. Another suggestion was to urge the NNARMAC to harmonize and facilitate the revision of fisheries ordinances among member municipalities.

4.5 Conflicts

4.5.1 Zoning conflicts

Figure 15 shows the fishing grounds of different fishing gears. The longline and handline fishers operate nearshore, rarely beyond 5 kms from the coastline, and just around Bagong Banua and the nearby reefs. A few venture near the island of Baliguian, Concepcion and off Molocaboc Island, Bantayan. The gill-netters fish up to a distance of approximately 12 km while a few operate near Bantayan Island. Fish corrals, as well as trap and pot fishers operate nearshore, often at the inter-tidal areas.

Baby trawlers are banned within 7 km from the coastline, but when opportunity allows, they operate from 2-3 km from the coastline. Towing of trawl may continue as far as 10 km, although operation is limited by the presence of reefs and rocks in certain areas. Depending on the time of the year, the baby trawlers move to different fishing grounds in pursuit of shrimp stocks. They move to Sacramento and Carmen Reefs in Cadiz City and Baliguian Island, Concepcion where shrimp catch is better during the southwest monsoon.

Figure 15 also shows the overlapping fishing grounds of different fishing gears. Because of this, cases of boat crashing, damaged outriggers and even death were reported. The damage is greater when a bigger boat crash into the boat of a municipal fisher. One account of death was reported when a big Danish seine vessel, which sped away after the incident, rammed a municipal fisher aboard his boat.

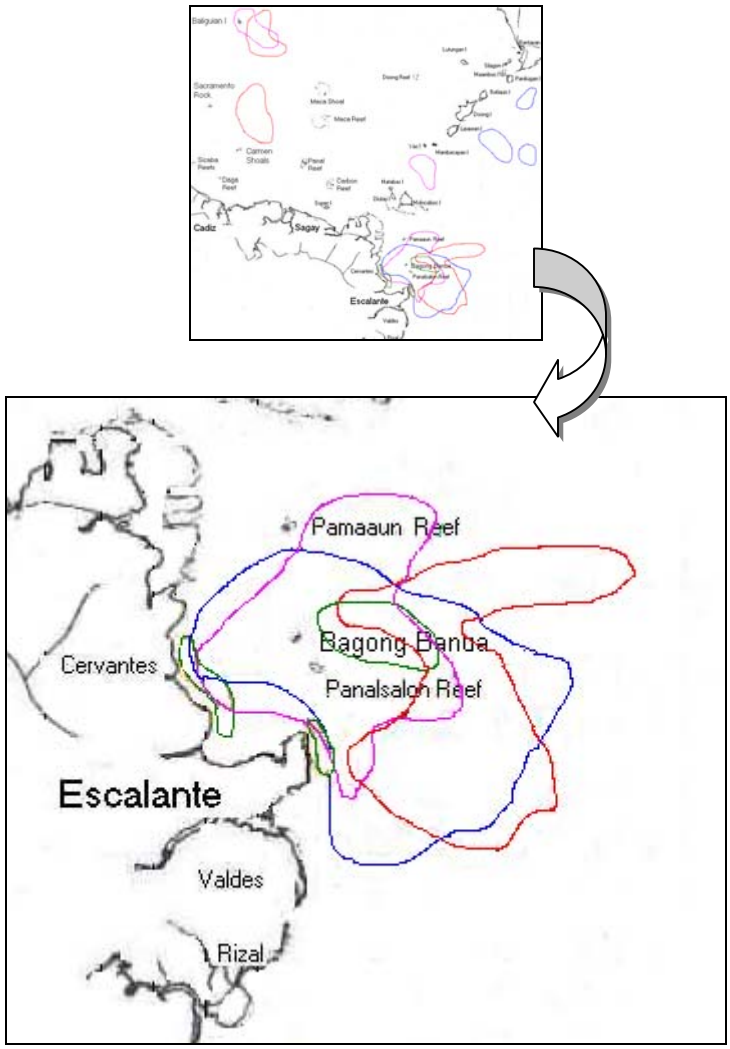

Fig. 15. Fishing ground of Escalante fishers using various fishing gears. Legend: red line- baby trawl fishing ground; blue line- gillnet; pink- handline; green- weirs, traps and pots operators.

It is also inevitable that fishing gears would get entangled, especially when one of the gears is an active gear. Entanglement of the fishing gears is the most frequent conflict recorded. Among municipal fishers, entanglement of gears usually happens when drift gillnets (e.g. *kurantay pangisda* and *pamo*) drift over set lines (e.g. *kitang* and *pasol*) or get entangled with another gillnet. Entanglement among commercial fishers also occurs especially among baby trawlers, or sometimes between a baby trawl and a larger vessel like a purse seine, otter trawl or Danish seine. The baby trawls often figure in entanglement cases

with lines and gillnets. In the process, lines and nets that were set by the municipal fishers get entangled, torn or lost. Occasionally, larger fishing vessels also run over the fishing gears of municipal fishers and cause damage to the gears.

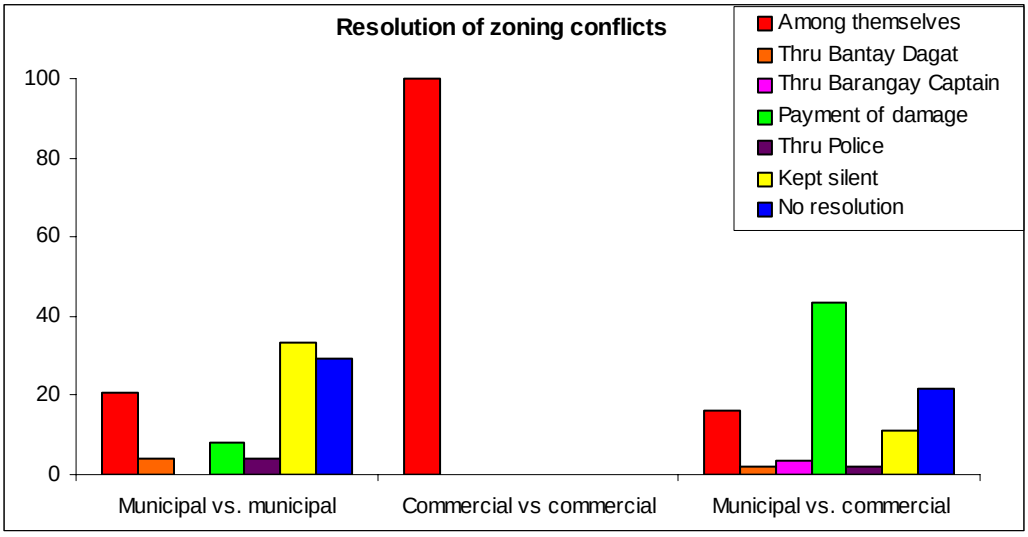

Fig. 16. Resolution of conflicts brought by the entanglement of fishing gears.

Resolution of conflicts involving entanglement of fishing gears is carried out through several means (Fig. 16). In the case of 2 municipal fishers, most of the aggrieved persons just kept silent, some of them seeing it futile to ask for damages because they were both poor anyway. A considerable number of cases were not resolved because the aggressor was not identified. About 20% of the cases were settled among the fishers themselves, considering that they were friends, relatives or acquaintances. In some cases, payment of damaged gears was necessary. A few of the cases were resolved through the intercession of the Bantay Dagat or the police.

In the case of entanglement between 2 baby trawlers or another commercial fisher, all of the cases recorded had been settled amicably between both parties. The trawlers simply disentangled the nets and continued operation. In a few cases, there may be some arguments on who had been the negligent party, but eventually they were able to resolve the issue.

Damage or loss of fishing gears is one of the major conflicts between municipal and commercial fishers. In such cases, the trawler is always considered as the aggressor, although sometimes the trawler would claim otherwise. In most cases, payment of damage or loss of

gear is always the resolution of the conflict. Payment would be in the form of money or fish, and is settled directly between the 2 parties. Sometimes the Bantay Dagat, Barangay Captain or the police would have to intercede, although in many cases, the trawlers were ready to pay albeit regretfully because the money would be deducted from their share of the income. A number of municipal fishers said the trawlers ran away while some just kept their silence. A few were settled amicably without payment.

The fishers are generally satisfied with the way the conflict had been resolved. In the case of 2 municipal fishers, about 58% said they were satisfied and a considerable 42% were not (Fig. 16). The unsatisfied fishers include those who felt they should have been paid for the damages but could not ask for one because he knows the other party has no capability to pay. Between the municipal and commercial fishers, satisfaction was high at 75% while those who were not satisfied include those who were not able to catch the "aggressor" and those who felt the payment given was not enough. Resolution of conflicts involving gear entanglement among commercial fishers is often resolved satisfactorily.

4.5.2 Unclear delineation of fishing grounds for commercial fishing vessels (de jure vs. de facto)

Under the Municipal Ordinance No. 43, Danish seines are not allowed to operate within 7 km from the coastline while trawls and purse seines are prohibited within 10 km from the mainland. However, local practice is different. Baby trawlers are allowed to operate after 7 km while municipal Danish seines (*bira-bira*) are allowed beyond 10 km. Other larger fishing vessels like the purse seines, ring net, Danish seines (super *hulbot*) and otter trawls (*mansuria*) are prohibited within 15 km from the coastline.

The inconsistency has brought confusion among resource users. To further complicate the matter, the fishers have flawed understanding regarding the zoning regulations in Escalante. Most of the respondents have different ideas regarding the municipal waters; many of them believed that it extends to 7 or 10 km from the coastline.

During a focus group discussion, the participants agreed that Escalante should revise its fisheries ordinance in accordance with R.A. 8550 or the Fisheries Code of the Philippines.

It would also be an opportunity to clarify the zoning regulations to be implemented in Escalante.

4.5.3 Competition for the same resource

Conflicts are bound to occur when 2 or more groups are competing for a single fishery, especially in a small fishing ground like Escalante. This is true among crab fishers, who employ different gears like crab pots (*panggal*) and bottom-set gillnet (*kurantay*). Both camps accuse each other of sabotage or theft of fishing gear.

Another case is between fishers that employ drive-in gillnets (*padlas*) and fish corrals (*tangkop*). A *padlas* is a type of gillnet set nearshore and employs scares by swimming towards the net and sometimes with the use of rocks. Occasionally, the *padlas* fishers operate near fish corrals and this cause the resentment of the *tangkop* operators who believe that fish that were supposed to enter their weirs have been driven away by the *padlas* fishers.

4.5.4 Establishment of MPAs

The creation of the Escalante Bay Marine Sanctuary was met with opposition from the local fishers. Municipal fishers claimed that the creation of an MPA would prohibit gleaning, while the baby trawlers lamented the reduction of their fishing ground. The local government has assured the fishers that gleaning would not be affected, as the proposed site is offshore, approximately 2 km from the coastline.

The unclear policy regarding the creation of the MPA has also bought confusion among resource users. While the local government seems to enforce the MPA, City Ordinance 156 that created such MPA is not yet legally binding. The Sangguniang Panlalawigan of the Province of Negros Occidental has deferred approval of the city ordinance pending some pre-requisites required for an MPA creation, such as site surveys, consultations and recommendation from the City Fisheries and Aquatic Resources Management Council (CFARMC).

4.5.5 Politics

Politics is a major factor in the success or failure of fisheries management, especially with the powers granted to the local government units (LGUs) by R.A. 7160 or the Local Government Code. The present administration has been credited with the political will in the management of Escalante's fisheries through strict enforcement of fishery rules, proposed creation of a marine sanctuary, and an organized Bantay Dagat.

Politics also provides confusion and complicates the conflicts in fisheries. In the recent local elections, the MPA creation was used as a campaign issue, which muddled the possible benefits of a marine sanctuary. Misinformation regarding the MPA may have intensified local opposition to the MPA.

Politics could possibly provide concessions to followers and party mates. A person with 10 trawls can offer a candidate the votes of his 30 crewmembers plus the votes of their spouses, children, in-laws and friends. In exchange, favors can be granted, for example leniency in fisheries violations.

4.5.6 Institutional conflicts

Some fishers claimed there is favoritism usually because of political indebtedness. There were reports that some of the violators were not fined and even allowed to operate nearshore.

The Bantay Dagat is also a subject of conflict among resource users, although the two sectors make contrasting allegations. The municipal fishers claimed that the Bantay Dagat sometimes does not fine violators, and they are sometimes non-operational. The commercial operators claimed that the Bantay Dagat is very strict, and that they make arrests even when the boundaries of the 7 km zone are not clear.

During the discussion, the Bantay Dagat proposed that the city establish boundary markers to identify the 7, 10 and 15 km boundaries. The boundaries of the proposed sanctuary should also be placed with markers.

4.5.7 Piracy and theft

Piracy in the open sea used to be rampant in northern Negros although cases have been greatly reduced. Theft of motors of boats in a single night was also recorded, which remain unsolved. Theft of fishing gears had also been reported.

5. Conclusion

Escalante City has an agricultural-based economy and the city's natural resources form the social safety net that supports large parts of the population. The marine resources are held as common property, and its access is fundamental to the lives of the coastal dwellers. Being open-access, it is likely that over-exploitation and dissipation of resource rents exist.

Unfortunately, the status of Escalante's fisheries is unknown due to lack of fisheries assessment studies. However, even without scientific evidence, the stakeholders have pointed out several signs of overfishing like the decline of catch, rise of low-valued species, increased number of fishers and fishing pressure, the use of highly-efficient fishing gears, and the increasing conflicts between resource users..

The emergence of conflict between stakeholders results from a rapid increase in fishing pressure (both by the harvesters and the consumers); competition for declining resources; technological changes that results in higher harvesting potential; and national and local policy changes that affect fisheries (R.A. 8550, local ordinances).

Among the mentioned factors, politics and legislation seem to be the major factor that affects the degree of conflict. While all the conflicts are offshoots of overfishing, legal establishments have emboldened stakeholders to assert what is legally their share in the resource. Culturally, Visayans probably would not make a big fuss about competition and entanglement of gears because the people are naturally non-aggressive. However, the introduction of new laws regarding zoning of fishing grounds has been utilized by the municipal fishers to protect their stakes in resource exploitation. This assertion and legal mandate intensified the conflicts among the fishers in Escalante.

The sector most affected is the baby trawlers, which provides a considerable share in Escalante's fisheries production, economy and employment. In most cases, the baby trawlers are identified as aggressors in conflicts and culprits in the decline of catch. A visit in the landing sites of baby trawls revealed that many of the vessels are run-down and dilapidated. Most owners are not very eager to repair the vessels because of low profits. Still, baby trawlers continue to operate despite the zoning limitations, reduced catch and higher production costs. Crewmembers have no option because alternative employment is not readily available.

Displacement of livelihood is the major concern for exit purposes. In the past, several livelihood projects were implemented but ultimately failed because of poor planning and support. For example, the city embarked on *Eucheuma* farming, which did not prosper because of poor technological support. Most of the respondents who agree to quit fishing look upon the government to initiate projects on alternative livelihood.

Limiting catch, establishment of closed seasons and marine protected areas, and limiting the number of fishers are not acceptable to the local fishers because they are perceived as barriers to their main source of livelihood. The fishers however agreed that some forms of fishing should be banned to protect the resources.

Politics affects the enforcement of laws and the quality and effectiveness of management strategies applied. Political will is necessary in creating reforms and implementing management strategies. Unclear policies regarding zoning have worsened the conflicts.

Fisheries management at the present is still towards resource development and utilization, as observed in the local government's efforts in distributing fishing gears. The concept of limiting the use and pressure in fisheries is still unfamiliar to local authorities and stakeholders. Thus, the role of the local government as well as formal and informal institutions are critical to manage the conflicts in fisheries.

"Fish Fights Over Fish Rights"
The Case of Daanbantayan, Cebu, Philippines

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Introduction

This research on fisheries conflicts, exit strategies and security issues selected three areas among the municipalities/cities bordering the Visayan Sea, from which to draw pertinent case studies. The selected municipalities represent different levels of fisheries resource management and organization. Consultation with the Visayan Sea Project officers yielded information of types of access to municipal waters being implemented.

Daan Bantayan was selected as a type in which local government provides for exclusive use of municipal waters only to its own municipal fishers, thus excluding even fisherfolk of neighboring municipalities. Moreover, Daanbantayan is in an area where no coastal resource alliance has yet been organized among neighboring municipalities in this side of the Visayan Sea, which is a contrast to the two other selected study areas of Concepcion, Iloilo and Escalante City, Negros Occidental.

1.1 Specific objectives of this study:

To describe the socio-economic conditions of fishers in Daanbantayan

To know the perceptions of fishers with regards fishing capacity and changes in the state of fisheries.

To explore the acceptability of certain approaches for reducing overcapacity

To document the types and causes of conflict that have arisen out of the municipal zoning regulation and the manner by which the stakeholders are responding to the conflicts.

Description of Study Area

Daanbantayan is a fourth class municipality located in the northernmost tip of the island of Cebu. It lies about 147 kilometers from Cebu City.

It has a total population of 69,335 (NSO, 2000), of which 58,954 live in coastal barangays. The estimated number of fishers is 11,000. Of the municipality's twenty barangays, fifteen are coastal, inclusive of two island barangays. One island barangay, Logon, is within 5-10 kilometers from the shoreline of Daanbantayan and the other (Carnaza) is 10-15 kilometers away. The total land area of the municipality is 10,545 hectares and the length of its shoreline in the main land is 67 kilometers. The main products of Daanbantayan are marine products, coconut, buri, maguey, bamboo, corn and coal.

1.2.1 Fishing –related ordinances promulgated in Daanbantayan.

The following fishing-related ordinances have been enacted in the last twelve years. These reflect a wish on the part of local government to regulate fishing effort and to manage their marine resources.

Ordinance no. and date	Ordinance descriptive title
Ordinance 92-04 – Sept. 1992	Prohibiting/banning hulbot-hulbot and purse seine methods of fishing within the 7-mile seawater area of Daanbantayan, Cebu, comprising the coastal and island barangays of the municipality.
Ordinance 98-02 – March 20, 1998	Prohibiting/banning hulbot-hulbot and purse seine methods of fishing within the 15 km seawater area of the coastal and island barangays of the municipality of Daanbantayan, Cebu, Philippines.
Ordinance no. 2001-12 – Dec 14, 2001	Amending 2001-12 and declaring Gato Islet as seasnakes/fish sanctuary and under the management and supervisory authority of the municipal government of Daanbantayan, Cebu.

Ordinance no. 04- 2002 – April 19, 2002	An Ordinance regulating the seaweeds production in Daanbantayan
Ordinance 02-2002- April 5, 2002	Creating the Daanbantayan municipal Bantay Dagat task force under the office of the mayor for the purpose of fully implementing and enforcing all existing fishery laws, rules, regulations and ordinances relative to the protection, conservation and preservation of aquatic life and marine resources within the municipality's territorial waters and providing funds for its creation, operation and other related purposes.
Ordinance 07-2002 - Sept 26, 2002	Declaring the Monad Shoal, Isla de Gato and Lapus-Lapus islet as Marine reserve areas, providing fees and regulations for their use and utilization and penalty for violation thereof.
Ordinance 11-2002 - October 4, 2002	Ordinance requiring all municipal fisherfolk of Daanbantayan to register with the office of the municipal agricultural officer.
Ordinance 05-2002 - November 15, 2002	Ordinance establishing the color code and registry markings of all sea vessels in the coastal barangays in the municipality of Daanbantayan, and prescribing penalties for violations thereof.

Secondary data and pertinent municipal profiles were not found for Daanbantayan. Interviews with key informants however give a picture of the general state of fisheries in the municipality. The Bantay Dagat was created in 2002 to further bolster the effort to catch illegal fishers, which in the past was not too effective due to the collusion between encroaching fishers and the deputized *tanods.* The municipality has established three marine protected areas.

As this research takes special note of zoning regulation, it is established that local government in Daanbantayan implements the exclusive use of municipal waters, demarcated by 15 kilometers from the coastal and island barangays (Ordinance 98-02).

There is an understanding among the three neighboring municipalities of Daanbantayan, Bogo, and Medellin that they will implement the exclusive use of their respective municipal waters. However encroachers would be advised properly before cases are filed against them. It was cited by informants that some fishers as far as Leyte had tried to ask for permit to operate in their municipal waters but were not allowed due to this municipal exclusivity agreement.

The head of the Municipal Fisheries and Aquatic Resources Management Councils (MFARMC) reported that Barangay FARMCs were organized three years ago, but are inactive. Members do not come to meetings called by MFARMC because they find travel to the venue costly and perceive no benefit from their attendance.

As of the time of the research it was reported that only 600 of the 11,000 fisherfolk in Daanbantayan are registered, despite the ordinance in late 2002 requiring them to register.

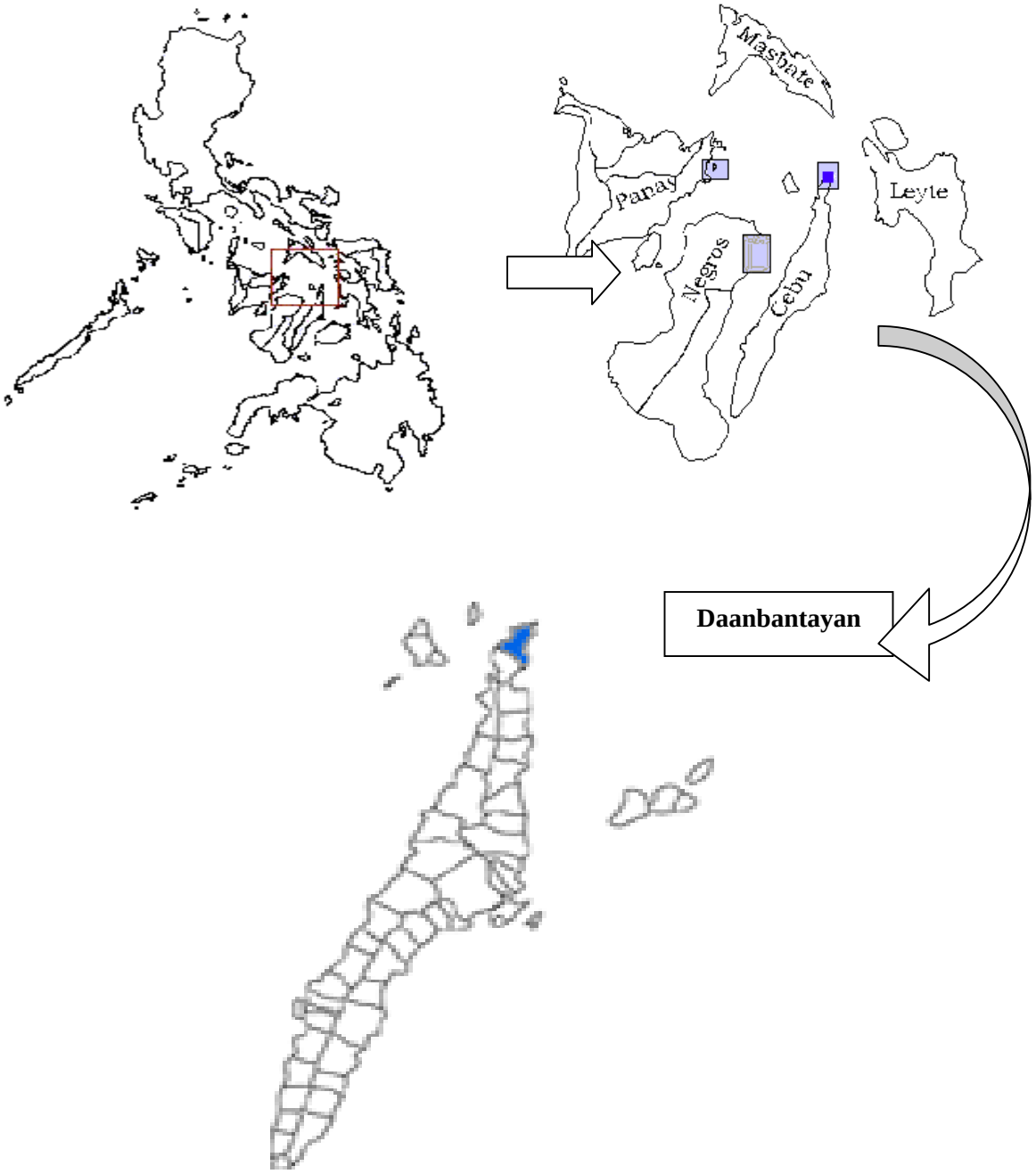

Figure 1. Location of Daanbantayan

Method

The research involved a survey of fishers using a semi-structured interview questionnaire. This was augmented by interviews of key informants consisting of the chair of the MFARMC, the fishery coordinator, the OIC-chair of the Bantay Dagat, members of the seaborne patrol, barangay fishwarden, and the president of the zipper owner's association. The mayor was also interviewed.

3.1 Sampling.

Two groups of respondents were identified: municipal fishers and commercial fishers. Key informants in the persons of the municipal agriculture officer and the barangay captains were asked to identify fishers who to their knowledge have encountered conflict of any type as long as it is pertinent to their fishing operations. The list generated was augmented by a snowball method wherein those interviewed were asked to name some other fisher who may have experienced conflict in their fishing operations. This was straightforward in the case of the municipal fishers. Consequently thirty municipal fishers residing in three barangays (Tapilon, Maya, Bakhawan) of Daan Bantayan were interviewed.

Locating commercial fishing respondents was problematic because the key informants reported the presence of only two hulbots based in Daan Bantayan, despite the reports of commercial boats operating in the municipal waters, with which municipal fishers experience conflict. Only one commercial fisher is allowed to fish in Daan Bantayan. Two respondents were drawn for the commercial respondents.

So the researchers decided to go to San Remigio, about 33 kilometers from Daan Bantayan, where many of the commercial fishers who operate in the Visayan area dock. They would have ventured as well to an even larger dock in Bantayan Island, but for the distance and the poor weather conditions. The commercial respondents were those docked and willing to be interviewed. Thirty respondents participated distributed as follows: 23 or 76.7% crew members, 4 boat captain (13.3%) and 3 boat owners (10%).

3.2 Interview Schedule.

The interview questionnaire consisted of seven parts:

Part 1. Profile of respondents

Part 2. Household characteristics

Part 3. Lifestyle indicators

Part 4. Characteristics of Fishing Activity/Production

Part 5. Assessment of fish catch and fishing activity

Part 6. Reactions to exit strategies/ Needs and assistance

Part 7. Conflicts and responses

4 Socio- Demographic Description of the Respondents

Approximately 93% of municipal fishers are married, compared to 67% among the commercial fisher respondents. See Table 1. Almost all municipal respondents are married compared to the distribution among the commercial respondents. This may be explained by the younger average age of the commercial respondents at 36.6 years to the 46.1 years average among the municipal fishers. See Table 2.

Correspondingly, the municipal respondents have longer experience (average of 28.4 years) in fishing in contrast to that (average of 16.1 years) among the commercial respondents. It is noted that the big majority of the commercial boat respondents are crew members, and as such have the status of employed people compared to the self-employment characteristic of the municipal fishers. As employed persons, involvement in fishing may be an entry job rather than a continuing occupation. For most municipal fishers and most likely commercial boat captain, fishing is a steady occupation. This observation finds some support in the data showing that the average age municipal fishers start fishing is 18 years while among commercial fishers it is 20 years.

Table 1. Civil Status of Respondents

	Commercial		Municipal	
	N	**%**	**N**	**%**
Married	20	66.7	27	90.0
Single	9	30.0	2	6.7
Widow/er	1	3.3	1	3.3
TOTAL	30	100.0	30	100.0

Table 2. Average Age and Years in Fishing

	Commercial	**Municipal**
Average Age	36.6 years	46.1 years
Average yrs Fishing	16.1 years	28.4 years
Average age started fishing	20.17 years	18.8 years

As shown in Table 3 fifty percent of the municipal fishers possess some elementary level schooling. On the other hand, among the commercial respondents, the modal educational attainment is much higher at the high school level.

Table 3. Highest Educational Attainment of Respondents

Educational Level	**Commercial**		**Municipal**	
	N	**%**	**N**	**%**
Elementary	5	16.7	15	50.0
Elem grad	8	26.7	6	20.0
High school	6	20.0	5	16.7
HS grad	6	20.0	3	10.0
Vocational	0	0	0	0
College	2	6.7	1	3.3
College grad	3	10.0	0	0
TOTAL	30	100.0	30	100.0

Household Characteristics

The average number of persons composing the respondent's household is about the same for the two types of respondents at 5.03 for municipal and 5.23 for commercial. Estimated average annual household income is P32,863 for municipal respondents and almost double for commercial respondents at P44,260.

While income give us an indication of the quality of life of the fishers and their households, the estimates are quite crude as these are based on recall and the forthrightness of the respondents. Lifestyle indicators shown in Table 4 give an added picture of their life conditions. On indicators related to housing, a slightly higher percentage of commercial respondents have better circumstances. In terms of light and cooking amenities, commercial respondents are even more advantaged. Moreover the commercial fishers had a mean electric bill of P911 compared to P235 of municipal fishers. The data on water source does not clearly show who is advantaged because piped water can be a community source or it can refer to pipes within the house. Among the commercial fishers, there is a more varied water source including deep well, shallow well, and filtered water.

Table 4. Lifestyle Indicators: Percentage of Respondents Possessing Specified Material Good

Indicator	Commercial	Municipal
Own land where house is	56.7 %	13.3 %
Own other type of land	26.7	33.3
Own house	83.3	86.7
House of permanent materials	40.0	30.0
House of light materials	30.0	46.7
House of semi-permanent materials	30.0	23.3
Has access to electricity	90.0	70.0
Use wood for cooking	53.3	93.3
Use LPG for cooking	56.7	20.0
Piped water	37.7	86.7

6. Fishing and fishing-related activities

6.1 Commercial Fishing Respondents.

Seventy-seven percent of commercial fisher respondents were affiliated with only six Danish seines, of which five are referred to as zippers and one as a hulbot-hulbot. Seven respondents work on the same purse seine. As mentioned in an earlier section, it was difficult to get respondents for the commercial vessels. Eventually three owners, four captains and twenty-three crew members were interviewed, The two respondents of the hulbot-hulbot are residents of Daan Bantayan. The other respondents are from Bantayan Island but were docked at the time of the interview in the municipality of San Remigio, about an hour away.

Table 5. Gears Used by Commercial Fisher Respondents

Gear	Frequency	Percent
Purse seine	7	23.3
Danish Seine		
• Zipper	21	70.0
• Hulbot	2	6.7
Total	30	100.0

The respondents were not knowledgeable of the exact tonnage of their boats and their responses ranged from 20 to 150 gross tons. The interviewers surmise that from the observed size it is likely that the boats belong to the higher range in tonnage. The hulbot- hulbot is less than three gross tons, but, because of its active gear, is prohibited in the municipal waters.

The species caught are sapsap, marot, buray, tuloy, dalinuan, bulaw,liwit, bukaw. The fishing vessels differ in terms of their fishing trips. In general commercial fishers stay about a week at sea. The five zippers spend an average of 23.8 fishing days in a month. The average total number of fishing hours is 12.7. The lone hulbot fishes 12 days per month at one trip per day which takes ten hours daily. The lone purse seine reported sixteen fishing days monthly. Its total fishing hours is twenty hours daily.

When asked about fishing licenses, every respondent said they were licensed. However they were unable to provide details on the license, such as the type of license and

who issued this. Only the three owners could provide information on cost of obtaining a license.

The commercial respondents say they operate in the Visayan Seas at large. However 31% admit to operating as well in municipal waters, beyond three kilometers from the shore. For fifty percent, the reason for fishing where they do is the belief that this is the path that fish take. Thirty-six percent recognize the zoning limitation of municipal waters. The most common (71.4%) method by which respondents determine distance is the use of the geographic positioning system (GPS) Mention is also made of maps and the use of mountains and islands as reference points.

Annual income from fishing averages P48,888.89 among the commercial respondents. Table 6 shows the breakdown of the fishing incomes by type of commercial respondent. The crew member receives the lowest income among the commercial boat players, but their income exceeds the mean income earned by the municipal fisher, although the lower limit income is higher for the municipal fishers.

Table 6. Income From Fishing

Respondent type	N	Mean Income	Range of Incomes
Municipal fisher	30	P16,160.00	P7,200 - P31,200
Commercial –captain	4	P48,250.00	P18,000 - P120,000
Commercial – owner	3	P105,000.00	P40,000 - 215,000
Commercial – crew	23	P40,600.17	P5,000 - P96,000.

6.2 Municipal Fishing Respondents.

Table 7 shows the distribution of gears used by the municipal fishers. The most common is the drift gillnet followed by the drop line and then the bottom set gillnet and crab pots. All respondents own their gear and 83% own their boats. Eighty percent of boats are motorized. The boats are less than three gross tons.

Table 7. Distribution of Gears of Municipal Fishers

Gear		Frequency	Percentage
English Name	**Local Name**		
Drift gillnet	Pamo	13	43.3
Gillnet with floats	pataw-pataw	1	3.3
Bottom set gillnet	Pukot	4	13.3
Dropline	Pasol	7	23.3
Crab Pot	Bubo	4	13.3
Squid Jig	Lumiyagan	1	3.3
Total		30	100.0

Fish caught by municipal fishers are bolinao, lambay, shrimp, lagaw, tuloy, libod, budlatan, tabagak, danggit,samuong, galunggong, squid, labayan,timbungan, salmonite. The annual average catch for municipal fishers for any one species ranges from 11,760 kg (bolinaw) to 240 kg. (salmonite, timbungan)

The average number of fishing days in a month is 26.4 which is considerably higher than the average fishing days of commercial fishers (21 days). Municipal fishers also only take one fishing trip daily. The average total fishing hours daily is nine hours (compared to 14 for commercial), with a range of 4-24 hours.

Only 40% said they have licenses to operate in the municipal waters. About 58% of municipal fishers operate within seven kilometers of the shoreline of the main island. At the 10.1-15 kilometers, at which commercial fishers may be licensed to operate, only 16% of municipal fishers operate. See Table 8. Unlike the commercial fishers most of whom mention GPS as their means for determining distance, the municipal fishers do not possess this equipment. Their most common response is that they use specific mountains and islands. Others mention the amount of gasoline consumed or the time spent moving in a direction. As with the commercial fishers the most popular reason for fishing where they do is the belief that they are on the fish path.

Table 8. Where Municipal Fishers Fish in their Municipal Waters

Distance from shoreline	Frequency	Percentage
Less than 3 kilometers	6	19.4
3.1 – 7 kilometers	12	38.7
7.1-10 kilometers	8	25.8
10.1-15 kilometers	5	16.1

7. Assessment of Fish Catch and Fishing Activity

The fishers were asked to evaluate their catch five years ago compared to their current catch. They were then also asked to compare the future catch (five years hence) with the present. Their responses were captured in a forced choice response format.

7.1 Volume of fish catch.

Compared to the present, an overwhelming majority of municipal fishers view the past as a time of more productive fishing. See Table 9. Although exactly half of the commercial respondents think likewise, about the same number said the volume of fish caught in the past is the same as the present. Only two municipal fishers thought the catch volume was the same during the two periods. The common reasons given for perceived higher volume in the past are the fewer fishers then, the absence of illegal fishing and large boats, and no limitation in catch. The perception of sameness expressed by commercial fishers stems from their belief that fish cannot be caught in entirety and their mobility due to vessel size allows them to seek places where fish are.

Table 9. Assessment of Volume of Fish Catch

	Commercial				**Municipal**			
	Past		**Future**		**Past**		**Future**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Higher	15	50.0	6	20.0	25	83.3	4	13.3
Lower	1	3.3	10	33.3	2	6.7	17	56.7
Same	14	46.7	11	36.7	2	6.7	2	6.7
Don’t know	0	0	3	10.0	1	3.3	7	23.3
TOTAL	30	100.0	30	100.0	30	100.0	30	100.0

When they look to the future, 56% of municipal fishers compared to only 33% of commercial fishers think fish catch volume will be lower. Reasons given for the lower perceived catch volume in the future are the continued increase of fishers and particularly of illegal fishers (dynamite, compressors) and destructive fishing gears (hulbot, zipper). The municipal fishers in particular cite the entry into their fishing area of large fishing vessels with sophisticated fishing methods. More commercial boat respondents believe that catch

will remain the same five years hence, citing almost the same reasons given earlier in their assessment of sameness with regards past catch. As with their assessment of the past catch, the same percentage (6.7%) of the municipal fishers think that future catch will remain the same in volume. The municipal fishers are thus not optimistic of their future, and seem to experience more closely the decline in fish catch.

7.2 Size of Fish Catch.

As to the size of fish caught, the large majority in both groups say it is the same in the past and in the future, although slightly more among municipal fishers say past catch had bigger fish and in the future this will be smaller. The reasons given for their perception does not reveal that they may be catching fish juvenile. See Table 10.

Table 10. Size of Fish Catch

	Commercial				**Municipal**			
	Past		**Future**		**Past**		**Future**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Bigger	3	10.0	0	0	6	20.0	1	3.3
Smaller	1	3.3	2	6.7	1	3.3	4	13.3
Same	25	83.3	25	83.3	22	73.3	22	73.3
Don't know	1	3.3	3	10.0	1	3.3	3	10.0
TOTAL	30	100.0	30	100.0	30	100.0	30	100.0

7.3 Value of Fish Catch.

Almost all of the municipal respondents (28 or 93.3%) opined that the value of their catch in the past brought in higher income. See Table 11. Their reason is that fish then was so plentiful resulting in larger catch and higher income, even if fish cost cheaper. There was less consensus in the response of the commercial fishers, varying into higher, same, and lower income. Aside from similar reasons as given by the municipal fishers, the commercial fishers show more appreciation for the expenses entailed in fishing and its effect on income. This may be because crew members share of catch is affected by operational expenses of the boat. While this is also the same for municipal fishers, the number of fishers sharing the catch is fewer and may mainly be family members.

Table 11. Value of Fish Catch

	Commercial				Municipal			
	Past		Future		Past		Future	
	N	%	N	%	N	%	N	%
Higher Income	12	40.0	6	20.0	28	93.3	2	6.7
Lower Income	7	23.3	7	23.3	1	3.3	22	73.3
Same	11	36.7	10	33.3	1	3.3	3	10.0
Don't know	0	0	7	23.3	0	0	3	10.0
TOTAL	30	100.0	30	100.0	30	100.0	30	100.0

7.4 Composition of Catch.

In assessing the comparative composition of catch in the past and the present, the majority in both groups answered "the same." The second common reply is of catching third class fish. See Table 12. For both groups, the reason for the composition they are able to catch is that they fish in about the same area now and in the past. Thus it is logical to catch the same type of fish. The pattern of response when projecting into future catch composition is similar to their comparison to the past.

Table 12. Composition of Catch

	Commercial				Municipal			
	Past		Future		Past		Future	
	N	%	N	%	N	%	N	%
First Class	3	10.0	1	3.3	2	6.7	0	0
2nd class	1	3.3	1	3.3	0	0	0	0
3rd class	9	30.0	9	30.0	6	20.0	7	23.3
Same	17	56.7	14	46.7	22	73.3	22	73.3
Don't know	0	0	5	16.7	0	0	1	3.3
TOTAL	30	100.0	30	100.0	30	100.0	30	100.0

7.5 Length of Time Spent Fishing.

The majority of commercial fishers took a shorter time fishing in the past compared to the present. See Table 13. The reason given is that it was easier to find the fish and they

can easily get enough fish sooner. For those who took the same time, these fishers say that they have a fixed schedule whether catch is plentiful or not. On the other hand the majority of municipal fishers said they spent the same time fishing in the past as in the present. They have been following the same schedule regardless of catch volume. Those who said they spent a shorter time reasoned that there was more fish in the past.

Table 13. Length of Time Spent Fishing

	Commercial				**Municipal**			
	Past		**Future**		**Past**		**Future**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Longer	0	0	11	36.7	3	10.0	6	20.0
Shorter	18	60.0	2	6.7	8	26.7	4	13.3
Same	11	36.7	11	36.7	18	60.0	19	63.3
Don't know	1	3.3	6	20.0	1	3.3	1	3.3
TOTAL	30	100.0	30	100.0	30	100.0	30	100.0

In terms of the future, there is a shift in the response of both groups toward the possibility of longer fishing time. For the commercial fishers, limitation in fishing ground and the declining fish stock will drive them to travel farther and longer to other fishing grounds. A number of municipal fishers expect to stay longer to be able to catch enough fish and even have to move farther from the near-shore they are accustomed to.

7.6 Number of Fishers.

The general pattern of response is about the same for both groups. Compared to the present, the number of fishers in the past was perceived as lower. In the future this number is seen to be higher compared to the present time. There are more 'don't know' replies among the commercial fishers. See Table 14. The reasons given show their awareness of the increasing population, the increase in capital and skills for lucrative fishing, and their belief that fishing brings sure money if one is hard working

Table 14. Number of Fishers

	Commercial				Municipal			
	Past		Future		Past		Future	
	N	%	N	%	N	%	N	%
Higher	8	26.7	20	66.7	2	6.7	23	76.7
Lower	20	66.7	3	10.0	25	83.3	3	10.0
Same	1	3.3	1	3.3	2	6.7	4	13.3
Don't know	1	3.3	6	20.0	1	3.3	0	0
TOTAL	3	100.0	30	100.0	30	100.0	30	100.0

8. Reactions to Exit Strategies

The respondents were then asked to express their extent of preference of a list of strategies to reduce fishing pressure and sustain their fishery. The response scale ran on a five point continuum from highly agree to highly disagree.

8.1 Ban use of some gears.

Of the six alternatives to which they were asked to react, the most highly favored by both groups, with a consensus among the municipal fishers, is the banning of the use of some gears. Table 15. There is a preponderant concern that some gears catch even the immature fish which is wasteful because they do not even reach the market. Catching juveniles and fingerlings are rightly seen to decrease future fish stocks.

Table 15. Ban use of some gears

	Commercial		Municipal	
	N	%	N	%
Strongly agree	20	66.7	28	93.3
Agree	7	23.3	2	6.7
Undecided	0	0	0	0
Disagree	2	6.7	0	0
Strongly disagree	1	3.3	0	0
TOTAL	30	100.0	30	100.0

8.2 Establish marine protected areas.

The second most popular option for both groups is the establishment of marine protected areas or sanctuaries, although there is higher approval among commercial (86.7%) than among municipal (73.3) fishers. Refer to Table 16. This is understandable because sanctuaries affect mainly the municipal fishers who are the only ones allowed near shore.

Table 16. Establishment of MPA/Sanctuaries

	Commercial		**Municipal**	
	N	**%**	**N**	**%**
Strongly agree	6	20.0	7	23.3
Agree	20	66.7	15	50.0
Undecided	4	13.3	1	3.3
Disagree	0	0	5	16.7
Strongly disagree	0	0	2	6.7

8.3 Provide alternative jobs.

The third commonly approved strategy is the provision of alternative jobs not dependent on the sea, chosen by 73.3% of commercial and 76.6% of municipal fishers. See Table 17. Some agree with this option because with their getting on in age, fishing has become heavy and difficult work. Many agree with the condition that the earnings should at least equal their income from fishing. This is the alternative however with the highest number posting an "undecided" choice. The indecision and disagreement for some comes from their apprehension that they do not have any requisite alternative skills, as fishing has been their life, and also that the income will suffice to support their family. Almost to a fisher those who approve of the choice put the condition that government provide them with the necessary capitalization.

Table 17. Give alternative jobs not depending on the sea

	Commercial		**Municipal**	
	N	**%**	**N**	**%**
Strongly agree	10	33.3	7	23.3
Agree	12	40.0	16	53.3
Undecided	7	23.3	4	13.3
Disagree	0	0	2	6.7
Strongly disagree	1	3.3	1	3.3

In further exploring the feasibility of promoting alternative livelihoods, respondents were asked to state the skills outside of fishing, which can be pursued for themselves, their spouse, or children. For themselves, only 13% and 16.7% of commercial and municipal fishers respectively were not open to the idea of pursuing skills outside fishing. See Table 18. For both groups business and farming were

Table 18. Desired skills for alternative jobs for Fisher

	Commercial		Municipal	
Skills	**Frequency**	**%**	**Frequency**	**%**
Business	5	16.7	7	23.3
Mechanic	7	23.3	1	3.3
Driving	4	13.3	-	--
Carpentry	2	6.7	3	10.0
Construction	1	3.3	2	6.7
Sports	1	3.3	-	--
Livestock	1	3.3	1	3.3
Farming	3	10.0	5	16.7
Factory	1	3.3		
Seaman	1	3.3		
Only Fishing	4	13.3	5	16.7
Launderig			1	3.3
Cooking			1	3.3
Making Crafts			1	3.3
Stevedoring			1	3.3
Waitering			1	3.3
No Answer	-	--	1	3.3
Total	30	100.0	30	100.0

frequently identified. More attractive to commercial fishers is the option of skills leading to becoming a mechanic and a driver, while for the municipal fishers, service types of skills were volunteered. When the question was applied to their spouses, more (53%) commercial fishers gave no response. See Table 19. A larger percentage of municipal

Table 19. Desired skills for alternative jobs for Spouse

	Commercial		Municipal	
Skills	**Frequency**	**%**	**Frequency**	**%**
Business	6	20.0	16	53.3
House work	6	20.0	5	16.7
Factory Work	1	3.3	-	--
Health Service	1	3.3	-	--
Farming	-	--	1	3.3
No Answer	16	53.3	8	26.7
Total	30	100.0	30	100.0

fishers compared to commercial respondents cited business as desired skill for their spouse. House work, probably referring to domestic employment, is an option common to both groups. There were much fewer alternatives they could name for their spouses compared to for themselves. As to skills for their children, they had even more difficulty responding, except to say that their children were still in school or that it would be up to their children what they desired.

For both groups, the single most important assistance they express as needed to leave fishery is capital. Only nominal responses included needs for training, land, education and livestock. Most of them expect the assistance to come from the local government unit in the form of either a loan or a grant.

8.4 Limit Catch and Number of Fishers.

The options to which there is highest disagreement are setting a limit to catch (Table 20) and limiting the number of fishers (Table 21). The fishers cannot imagine how limitation of catch can be effected as, once fish is caught, putting back to sea possibly dead fish would serve no purpose. More importantly fishers opine that limiting catch according to scale of operation would make their operations less viable and would mean lower incomes for them. They cannot see the logic of limiting catch when in fact they already have been experiencing lower catch. Some fishers suggest that limitation should apply only to commercial fishers because they have large catches. This effect on income is seen as more marked for municipal fishers as it will affect their ability to support their families.

The reasons given for disagreement with the option of limiting number of fishers is the loss of their means of livelihood, the absence of alternative jobs and the inability of families to survive.. To them fishing is their life and they know nothing else from which to draw a livelihood.

Table 20. Set maximum limit of catch according to scale of operation

	Commercial		**Municipal**	
	N	**%**	**N**	**%**
Strongly agree	1	3.3	0	0
Agree	0	0	4	13.3
Undecided	3	10.0	2	6.7
Disagree	2	6.7	4	13.3
Strongly disagree	24	80.0	20	66.7
TOTAL	30	100.0	30	100.0

Table 21. Limit number of fishers

	Commercial		Municipal	
	N	**%**	**N**	**%**
Strongly agree	2	6.7	0	0
Agree	3	10.0	2	6.7
Undecided	4	13.3	2	6.7
Disagree	3	10.0	3	10.0
Strongly disagree	18	60.0	23	76.6
TOTAL	30	100.0	30	100.0

8.5 Implement Closed Season.

The option of implementing a closed season had about the same percentage agreeing and disagreeing compared to the earlier options. See Table 22. They are able to appreciate that a closed season during the year would replenish fish stock; however they express the need to have a source of food during this period. They would also like to be assured that closed season would be uniformly implemented on all fishers, as opposed to selective implementation.

Table 22. Prohibit fishing during closed season

	Commercial		Municipal	
	N	**%**	**N**	**%**
Strongly agree	3	10.0	3	10.0
Agree	8	26.6	9	30.0
Undecided	5	16.7	4	13.3
Disagree	2	6.7	3	10.0
Strongly disagree	12	40.0	11	36.7

9. Conflicts

Respondents were asked about their experience with conflict brought about by the zoning regulation applied to municipal waters. They were guided to include details on the nature and cause of the conflict, the events, persons involved, and manner of resolution.

9.1 Zoning Regulation.

Daan Bantayan implements the exclusive use of municipal waters demarcated as fifteen kilometers from the coastline. The penalty for violation by commercial vessels with

active gears is imprisonment of 1-6 months and individual crewmember liability consisting of a P2,500 fine. As of early 2004 the municipality has recorded having earned so far a million pesos in fines. The fines are used to assist municipal fishers, e.g loans, cooperatives, free nets.

The ordinance on color coding and registry markings on all sea vessels registered in the coastal barangays of Daan Bantayan is further intended to facilitate enforcement of zoning. There is an agreement among the neighboring northern municipalities of Daan Bantayan, Bogo, and Medellin that they will implement exclusive use of their respective municipal waters.

9.2 Enforcement.

The Bantay Dagat is the deputized body of the local government to enforce ordinances in the municipal waters. In Daanbantayan, it was created by ordinance in 2002 to curb illegal fishing. Prior to its creation, the responsibility of apprehending fishing violators reposed on the tanod of the town. However it was reported that the tanods were not consistent in enforcement, allowing privileges to their friends and relatives in exchange for some share in their catch. The Bantay Dagat consists of nine members and is provided by the municipality with six pumpboats and a 1.3 million allotment per year. The equipment available to them are a camera, megaphone, and a telescope. Due to lack of funds the municipality is unable to afford a geographical positioning system (GPS) which would otherwise have facilitated the task of apprehending violators of the zoning regulation. The team operates from four in the morning to five in the afternoon. At night, a seaborne patrol of six bantay dagat officers also operates. Each bantay dagat member (warden) is paid a thousand pesos monthly and can expect to receive 10% share of fines and 25% from the total catch of violators. However this sharing scheme seems not to have been implemented up to the time of this study.

9.3 Types of Conflicts.

9.3.1 Intermunicipal conflicts.

Due to the ambiguity of where the territorial boundary between municipalities is, fisherfolk of Daanbantayan complain of their apprehension in the adjacent town of Medellin. Medellin is observed to be strict in reserving their municipal water only for the use of their own resident fishers. As a result, the neighboring northern municipalities of Bogo, Medellin and Daanbantayan have agreed to exercise exclusive use of their respective municipal waters and have started to implement color coding for better monitoring. There continue to be reports of intrusion. On the other hand, the fishers of Daanbantayan accuse Medellin fishers of using dynamite, which of course the latter's local government denies.

Political rivalries exacerbate the territorial conflicts between Daanbantayan and Medellin. During the recent elections political alignments of the respective mayors did not match and this rift has manifested in forms that limit access to each other's sphere, and not just in fishing.

On the other hand, Daanbantayan fisherfolk admit to fishing in the town of Sta. Fe because the latter's coastal waters are more abundant.

9.3.2 Conflict among commercial fishers.

Among commercial fishers the few conflicts reported in the interviews are those between the zipper and the purse seine. The conflict arises in the dropping of their respective nets in adjacent areas, which result in entanglement. Implicit is the need to respect the primacy of whoever reaches the fishing grounds ahead, and consequently for the late comer to put adequate distance before dropping his net.

9.3.3 Conflict among municipal fishers.

The municipal fishers report conflicts among each other. They expressed anger toward the dynamite users. There is also reported conflict brought about by competition for fishing sites, where they drop their gears. They report the intentional cutting of nets they leave unattended resulting in loss of both gear and catch. Bubo gear entangle with fine mesh nets. In general municipal fishers are more forgiving of their fellow municipal fisher, acknowledging that they are both trying to survive and eke out a living from fishing.

9.3.4 Conflict between commercial and municipal fishers.

1. *As narrated by commercial fishers.* Commercial fishers take the municipal fishers to task for the use of dynamite and other harmful fishing methods. They are however apologetic about the damage they unintentionally cause fisher folk when they hit their boats and gear as they pass them at sea. This can result in the sinking/loss and damage of gears. This occurrence is an admission that they encroach on the grounds of the municipal fishers. According to commercial fishers, they have made it a point to compensate for the damage to property, unless they are unaware that they have caused damage.

2. *As narrated by municipal fishers.* The conflicts between municipal and commercial fishers are brought on by a battle of gears. The hulbot-hulbot entangles their nets or drag their bubo (fish pots) or trawlers drag the nets and even the small boats of the municipal fishers without being aware of it. The hulbot-hulbot also destroys their fish aggregating devise and steal their catch. In most cases they don't stop to compensate for the damage done. The municipal fishers are helpless not only because of the size and swiftness of the commercial vessels but also that some of the latter are armed. The presence of the commercial fishers are seen to have decreased their catch.

9.3.5 Conflict between fishers and Local government entities.

The commercial fishers also reported their conflicts with the Bantay Dagat and LGU. Most frequently they did not agree with the judgement of the Bantay Dagat that they have intruded into the inshore area. The commercial crew see this accusation as a ploy to extort payments from the accosted fishers. There are those who find the zoning ordinance unacceptable and unfair.

Some wardens are also highly critical of the practice of LGU's of releasing violators once the fines are paid. They believe that without imprisonment the violators would simply violate again. There is also a perception that local officials have arrangements that allow commercial boats to operate in the inshore area.

On their part, the municipal fishers complain about the poor enforcement of the zoning regulation by the LGU and the Bantay Dagat. They perceive that special arrangements are made by these regulators to accommodate the incursion of commercial

vessels into the zone reserved for the municipal fishers. These municipal fishers are critical of what they see as the LGU's soft handling of violators.

9.3.6 Conflict Resolution.

When they can, municipal fishers ask commercial fishers for payment on damages the latter cause. However they may not succeed if they are ignored or not attended to. Some fisher folk just move out of the area of conflict, to avoid confrontation. This leaves them with a sense of helplessness as they are not able to do anything in the situation where they are the victim or at a disadvantage. The inaction of the LGU/Bantay Dagat frustrates them. As an exceptional verbal response, one fisher stated that he wished he also had a gun, but in the same breath he acknowledged that such would be a bad solution.

9.3.7 Problems in Enforcement.

The Bantay Dagat chair was interviewed to surface his experience in enforcing the zoning regulation. He acknowledged that they allow amicable settlements, wherein if the fine is paid no case is filed or if filed, dismissed. All the money goes to the municipality. In general he believes the Bantay Dagat is effective, although their efficiency is affected by lack of gasoline and bad weather which commercial fishers then take advantage of. There is also a lack of policemen to accompany the team for arrest work.

The fish warden also reported that they caught some big-time commercial fishers but when they try to file a case, the court says they can pay the fine and be freed of the charges. The warden believes this method only leads to repeat violation and proposed instead that violators be imprisoned and not allowed to pay the fines. Another problem cited by the wardens is the interference of politicians: councilors, mayors, barangay captains. Apprehending officer or witnesses are approached by violators and appealed to not to appear in court. The police admit that because of pity and understanding of the hardship of life, they give in to the appeal. They extract a promise not to repeat, signed document with municipal officer. Lawyers of violators are good/big time and know how to use the law in their favor.

Seaborne police also fall victim to violators. In one case when the officer boarded the zipper to arrest violator, he was brought by the zipper to Bantayan, without his even realizing it. He stayed in the boat for several nights and was scared that they might hurt him. He was

rescued at the sea waters of Bantayan. Case was then filed for both the violation and kidnapping.

The following gives an insight on the tedious process of apprehending and filing a case for violation. When they go after dynamite fishers they have to wait until the explosion, so they will have the needed evidence. They then confiscate the paraphernalia, bring to police station and turn over to investigator. An affidavit of complaint and affidavit of witness are executed. Only then is a case ready to be filed and violators detained. Then arraignment is scheduled and court sets the bail bond. If they plead guilty they will just pay fines. E.g illegal possession of explosive is P20,000. Problem is they can afford the fine, and then violate again. They are also not allowed to hold them that long or they themselves will be charged with illegal detention after 24 hours, so they have to file case with necessary evidence.

In the case of encroaching commercial fishers, they are brought to shore and their boats detained. Some just pay the fine of P30,000 or so, depending on number of crew. One believes that no conviction of commercial fisher has ever been made, but he is not sure because he does not follow up cases filed. Their concern (seaborne member) is to "release the violator in good physical condition."

10. Summary and Conclusion

There is no existing reliable data base upon which overfishing or overcapacity can be scientifically established. However the fishers' assessment of the status of their fisheries in the Visayan Sea is a judgment of the decline in the magnitude of fish stocks and the increase in the number of fishers.

The zoning ordinance addresses overcapacity by keeping out the highly efficient gears of commercial fishers from the municipal waters. The ordinance projects the intention of the local government to regulate the use of their municipal waters, lessen the pressure on it and at the same time privileging the small fisher folk. However the interviews with these fishers indicate that the zoning ordinance is frequently violated and such violation is perceived to be tolerated by the authorities. Perceived forms of special arrangements are: when fines are paid, no physical arrests are made; no apprehension is made in exchange for a

share in the catch; for some consideration, local officials allow the hulbot-hulbot to operate eight kilometers from shore area.

The commercial fisher respondents confirm the observation of the small fishers, as they admit to entering the municipal waters when they can. It seems that the commercial fishers believe that in this area (3.1 kilometers and up) they are no longer competing with the municipal fishers, because there are few of the latter who venture this far. However although still a distance from where most of the small fishers operate, they still can affect them through hitting, overrunning or upsetting their nets. They also accept that due to the larger volume of their catch, there is less left for the municipal fishers.

It is thus inevitable for conflict among and between stakeholders to arise. The cost in fuel, time and effort to the commercial fisher increases as he has to go further from the shore to exploit the resource. This will motivate him to violate when he can. On the other hand the municipal fisher is empowered by the ordinance to expect that the municipal waters is exclusively his, unlike in the past when the ordinance did not exist and he had to share the same fishing area with commercial fishers. When this expectation is frustrated by faulty enforcement of the regulation, there is also an emotional cost to the small fisher not to mention the loss of expected increase in catch and income. Although the narration of conflicts hint at averted violence in a few cases, the general response of the small fisher, who is the victim in the conflicts, is more passive, avoiding, and forgiving. This may be expected because there is no strong organized force of small fishers. The BFARMC's exist only in name. But individual resentment towards the authorities who do not do their job of enforcing the regulation may manifest in other ways, such as lack of cooperation and ultimately frustrate effective governance.

On their own, fishers have not developed an effective way to manage conflict. The commercial fishers continue to violate, and feel no pressure to deal with the resulting conflict inasmuch as the authorities have a tolerant attitude toward their violation. The status of fish production of municipal fishers is not improved by the regulation, as would have been expected. It is imperative for government to intervene and in fact it continues to be popularly perceived as the only agent of change and the initiator of needed action. There is no indication from the responses in Daanbantayan that the fishers have a sense of self-empowerment to address their issues and complaints.

The immediately apparent solution to the conflict is to improve enforcement. If enforcement were more effective, municipal fishers would operate undisturbed in the 0-15 kilometer zone, within the capacity of the resource, i.e. incorporating a limitation policy on the number of fishers allowed within the municipal waters. This may mean not admitting additional entrants, which is a strategy that may be resisted by the community. Traditionally fishing has been seen as an open access enterprise and where skills are not needed for entry. For the economically poor this is almost a last frontier to earn a living. Regulating access by limiting number of fisher folk may further impoverish the rural people unless there are other viable options opened up by the national and local economy.

With successful enforcement, a number of commercial fishers are expected to leave the sector altogether. What then will happen to their vessels? Unless sold as scrap, these will be sold to others who plan to enter fishing, perhaps in less regulated water, effectively contributing to overcapacity there. There is also expected to be impact on total fish production, if commercial fishers decide to exit from fishing. This will result to a threat to food security for the country.

Aside from effective enforcement, certain exit strategies are needed to decrease pressure on the Visayan Sea. In Daan Bantayan the most favored exit strategies are the banning of certain gears, establishment of MPA and the provision of alternative jobs that do not depend on the sea. The least liked are the setting of a maximum catch limit and the limitation of the number of fishers. They are ambivalent about the closed season option. This pattern of response demonstrates the lack of willingness for their fishing activities to be curtailed in a major way. When they agree to banning of gears, it is usually with reference to dynamite/cyanide fishing rather than the gears they currently use. The commercial fishers may not necessarily be referring to active gears of trawling, sonars, fish finders and superlights, the use in municipal waters of which eventually result to depletion of fish.

It will be a challenge to institute effective exit strategies which will need to go through the route of public consultation and legislation. Given the poor track record of the government in implementing regulation, such strategies will be met with resistance and skepticism. However if government is able to show political will and sincerity in implementing new measures to minimize fishing effort and is consistent in pursuing reform, the fishers may support by compliance to such reform.

Annex 1: The Visayan Sea Fisheries Profile

Geographical location

The Visayan Sea is located in central Philippines and covers an area of 5,184 sq. km. from latitude 11º00'N to latitude 11º45'N and from longitude 123º06'E to longitude 124º05'E. It is bounded by Masbate Island on the north, Cebu Island on the southeast, Negros Island on the south and Panay Island on the west (Fig. 1). The following are the municipalities that form the perimeter of the Visayan Sea:

- Iloilo: Carles, Balasan, Estancia, Batad, San Dionisio, Concepcion, Ajuy;
- Negros Occidental: Cadiz City, Sagay City, Escalante City;
- Cebu: Bantayan, Santa Fe, Madridejos, Medellin, Daanbantayan;
- Masbate: Balud, Milagros, Cawayan, Placer, Esperanza.

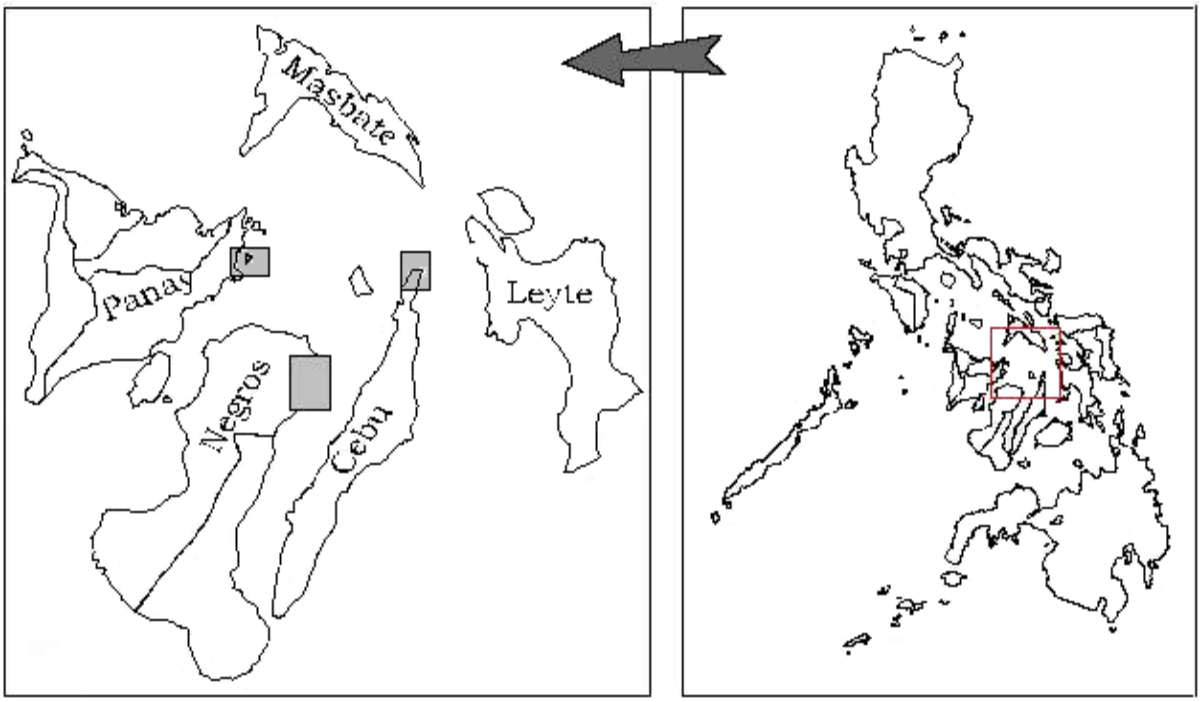

Fig. 1. Map of Visayan Sea and location of the 3 study sites- Concepcion, Iloilo; Escalante City, Negros Occidental and Daan Bantayan, Cebu.

Oceanographic profiles

The southwest sector of the Visayan Sea has a depth that range from 20-40 m. The northeast sector is relatively deeper ranging from 41-180 m. The bottom topography is generally level, with gently rolling seabed with minimum ascents and descents (Aprieto 1978). The same study by Aprieto from March 1976 to April 1977 showed that Visayan Sea

has an average water temperature of 27.3ºC (±1.48ºC) through the entire water column ranging from 16.8ºC- 29.9ºC. The surface waters had an average temperature of 27.9ºC while the bottom waters averaged 26.8ºC in temperature. Average salinity of the entire water column was 33.20 ‰ (±0.61 ‰). Average dissolved oxygen for the entire water column was 6.41 mg/l (±0.63 mg/l) ranging from 1.51 mg/l- 8.20 mg/l.

Fisheries production

The Visayan Sea is one of the biggest and most productive fishing grounds in the Philippines. In 2000, it contributed 13.8% and 14.2% to the total production of commercial and municipal fisheries respectively (BFAR 2000). It is the most productive municipal fishing ground in the country (BFAR 2002).

Major pelagic species caught in the Visayan Sea are sardines, anchovies, scads and bullet tuna (Armada 1999; BFAR 2001). Table 1 provides a list of the most common pelagic species caught in Visayan Sea.

The major and most common commercial fishing gears that exploit the pelagic resources include the ring nets, purse seines, bagnets and seine nets. The dominant municipal fishing gears include the drift gillnets, encircling gillnets, drive-in gillnets, beach seines, multiple handlines and troll lines.

Table 1. Common pelagic species caught in Visayan Sea.

Scientific name	English name	Local name
Auxis thazard	Bullet tuna	Aloy
Decapterus macrosoma	Roundscad	Galunggong
D. muruadsi	Roundscad	Galunggong
Dussumiera acuta	Herring	Balantiong
Euthynnus affinis	Eastern little tuna	Kanturayan, aloy
Mene maculata	Moonfish	Bilong-bilong
Rastrelliger brachysoma	Short-bodied mackerel	Buglay, gumaa, hasa-hasa
R. kanagurta	Striped mackerel	Bulao
Sardinella fimbriata	Sardine	Tabagak
S. gibbosa	Sardine	Tabagak
S. longiceps	Sardine	Tuloy
Selar crumenopthalmus	Scad	Marot
Selaroides leptolepis	Yellow-striped trevally	Dalinuan
Stolephorus commerson	Anchovy	Balingon
S. indicus	Anchovy	Balingon

Table 2 lists the most common demersal species caught in Visayan Sea, which consisted mainly of squids, shrimps, crabs, slipmouths, pomadasids, nemipterids, goatfishes, croakers, lizardfishes, priacanthids and mojarras (Warfel and Manacop 1950; Aprieto and Villoso 1979; Armada 1999; BFAR 2001).

The major commercial fishing gears that target demersal species include the Danish seines, mid-water trawls and otter trawls, while the most common municipal fishing gears

are the baby trawls, municipal Danish seines, hook and line, longline, bottom-set gillnets, crab pots and traps.

Table 2. Common demersal species found in Visayan Sea.

Scientific name	English name	Local name
Gerres abbreviatus	Mojarra	Latab
Leiognathus bindus	Slipmouth	Sapsap
L. splendens	Slipmouth	Sapsap
Loligo sp.	Squid	Lokus, nokus
Metapeneaus ensis	Shrimp	Pasayan
Nemipterus hexodon	Threadfin bream	Lagao, bakan
Pomadasys hasta	Pomadasid	Alibalay
Priacanthus tayenus	Bigeye	Bukaw, bukaw-bukaw
Sardinella gibbosa	Sardine	Tabagak
Saurida spp.	Lizardfish	Karaho
Sepia sp.	Cuttlefish	Bagolan
Sillago sihama	Whiting	Asoos
Upeneus bensasi	Goatfish	Timbungan

Status of fisheries

Data collected by the Bureau of Fisheries and Aquatic Resources (BFAR) have been mainly used in the assessment of the pelagic fisheries in the Visayan Sea. It is generally acknowledged that data gathered by the Bureau from 1950-1986 are generally reliable. When the function was relegated to the Bureau of Agricultural Statistics (BAS), the quality of data had not been dependable because of different methods, lack of training and reduced budget.

In October 1976, a resource evaluation workshop conducted by BFAR and the South China Sea Fisheries Programme provided estimates of the potential yield of the resources and identified effects of fishing for development or possible management (SCS/GEN/76/7 1976). The pelagic resources were divided into 6 major groups- roundscads, chub mackerels, sardines and herrings, anchovies, big eye scads, and squids and cuttlefishes. The fishing effort was standardized to bagnet units. It was observed that anchovies, squids and cuttlefishes have been exploited beyond their sustainable yields. While the 4 other groups were exploited below sustainable levels, the catch per bagnet effort (CPUE) were found to have consistently decreased every year.

In 1977, another resource evaluation was conducted by the South China Sea Fisheries Programme, which involved the stock assessment of different species of mackerels and roundscads in the South China Sea and surrounding areas (SCS/GEN/78/17 1978). While the Visayan Sea was not singled out as a resource base, it was mentioned that it is one of the major fishing grounds of mackerels and roundscads. A unique observation on the roundscad fishery in the Philippines is that the commercial fishery thoroughly depended on catching immature fish because adults were not present in the fishing grounds.

Warfel and Manacop (1950) conducted 2 trawl drags between the 17 and 20 fathom contours of western Visayan Sea and caught an average of 615 lbs of marketable fish per

tow. The catch consisted mainly of large slipmouths, pomadasids, nemipterids, goatfishes and croakers. In April 1976 to March 1977, Aprieto and Villoso (1979) caught an average of 60 kg/hr from a total of 144 2-hr drags. The catch consisted of lizardfishes, slipmouths, nemipterids, priacanthids, goatfishes and mojarras. A study of Armada (1999) between July 1977 and June 1998 showed that baby trawl has an average catch of 44.9 kg/day, while the mid-water trawl has an average catch of 96.8 kg/day. The baby trawl mostly caught *Apogon*, *Upeneus*, *Platycephalus*, *Scolopsis* and *Leiognathus*, *Metapenaeus*, *Sepia*, and *Loligo*.

The same study by Armada (1999) estimated the number of fishing gears in the Visayan Sea and their corresponding average catch per unit effort (Table 3). Fishing gears with high catch per unit efforts are the commercial fishing gears.

Table 3. Average catch per unit effort of fishing gears in Visayan Sea (Armada 1999).

	No. units	CPUE		No. units	CPUE
Purse seine	68	1365.00	Stationary bagnet	27	14.00
Ring net	46	713.01	Fish corral	619	7.77
Modified seine net	2	322.59	Crab liftnet	142	7.00
Bagnet	41	300.00	Spear fishing	1382	6.17
Liftnet	15	224.00	Hook and line	5251	5.99
Beach seine	202	135.00	Crab pot	211	5.50
Mid-water trawl	41	96.83	Crab gillnet	1222	5.29
Encircling gillnet	750	95.19	Drive-in gillnet	81	5.15
Danish seine	489	87.16	Troll line	426	4.85
Longline	940	57.00	Squid jig	3560	3.54
Baby trawl	736	44.93	Scissor net	293	2.50
Drift gillnet	1126	35.11	Multiple handline	371	2.43
Bottom set gillnet	1595	14.74	Fish pot	1001	2.29

A stock assessment report by BFAR (2001) from January 1998- December 2001 showed that trawl CPUE has a monthly average that range from 242 kg/day to 1583 kg/day, a figure that is higher than those reported in the past studies. These data may not be entirely dependable because the report acknowledges that they cannot monitor all the catch of the vessels because they land the fish in other areas, outside of their study sites in search of higher selling price of fish. Dominant species caught were sardines (*Sardinella gibbosa, Sardinella fimbriata, Sardinella longiceps*) slipmouths (*Leiognathus bindus*), and mackerels (*Rastrelliger brachysoma*). The same report said that catch per unit effort of trawls, Danish seines, ring nets and purse seines decreased from 1998-2001. The report said that the dominant species- *Selaroides leptolepis, Sardinella gibbosa, Sardinella fimbriata, Sardinella longiceps,* and *Rastrelliger kanagurta*- had high fishing pressure, and that exploitation has exceeded the maximum sustainable levels.

Annex 2: Workshop Results

National Workshop
"Fish Fights over Fish Rights: Managing Exit from the Fisheries and Security Implications in Southeast Asia"
October 25-26
University of the Philippines Visayas, Iloilo City

OBJECTIVES:

1. To discuss the conflicts in aquatic resources arising from ZONING REGULATIONS, overcapacity in the fisheries and those that may lead to security problems in the Philippines and consequently in the Southeast Asian region.

2. To develop approaches and guidelines for managing fishing capacity and conflicts brought about by access to declining aquatic resources and in so doing, address national and regional security.

Objectives	Workshop Activities	Workshop Outputs
1. Discuss the conflicts in aquatic resources arising from ZONING REGULATIONS, over-capacity in the fisheries and those that may lead to security problems in the Philippines and consequently in the Southeast Asian region.	1.1. Presentation of the research results by national project team.	1.1.1. Feedback from stakeholders, preliminary synthesis of the level of fishing capacity and the impact on conflicts in the case study areas.
2. Develop approaches and guidelines for managing fishing capacity and conflicts brought about by access to declining aquatice resources and in so doing address national and regional security.	2.1. Group discussions to understand the policy-making protocols affecting fisheries and identify approaches for national governments for managing capacity and reducing the conflicts that may lead to national/regional security.	2.1.1. A country-specific theoretical framework and procedural guidelines for managing fishing capacity and conflicts arising from access to declining aquatic resources.
	2..2. Discussion on research and management implications for research results and recommendations.	2.2.1. Recommendation for follow-up activities (e.g. manage- ment and research areas)

Workshop Outputs

Workshop 1

1. What are the evidences of overcapacity?
   - Catch composed of juveniles
   - Decrease in volume of catch.
   - Catch composition: less of "Class A" fishes
   - Use of more efficient gears
   - Emerging conflict among resource users
   - Increase in number of fishing crafts
   - Fishers fish in farther areas

2. Suggestions on how overcapacity may be adequately measured.
   - Strict implementation of fisherfolk, fishing vessel and gear registration.
   - Strengthening of Bureau of Agricultural Statistics as responsible agency in fisheries data collection
   - Return the statistical data collection to BFAR (including personnel).
   - Access to results of special studies done on measuring overcapacity.

3. What are the current and potential impacts (of conflicts) that threaten security of incomes and livelihood, peace and order, and food security?
   - Uncertainty in delineation of fishing zones (defined boundaries)
   - Conflicting laws (e.g. allowing commercial fishing in 10.1-15 km but use of active gear is banned within the municipal waters)
   - Further depletion of fishery resources (pseudo open access).
   - Reduce the capacity of the resource to regenerate.

4. How can we forestall and/or reduce these impacts?
   - Coming up with a unified / consistent/ complementary fishery ordinances within the same ecosystem.
   - Include 3.1-20 gt in the municipal fishing.
   - Look into production, marketing system, etc. to determine the proper gross tonnage and type of gears to be used within the municipal waters.
   - Appropriate IEC campaigns
   - Amendment of relevant provisions of the RA 8550.

5. Why has zoning not adequately addressed the overcapacity problem?
   - First it is important to note that "zoning" is defined as the **delineation of municipal waters.**
   - Zoning was not designed to address overcapacity issues. (rather the issue was to protect municipal fishery from activities of commercial fishery).
   - Conflicting provisions of the fisheries law.
   - Lack of political will to properly implement existing rules and regulations.

6. What security issues are arising from violations of zoning regulations?
   - Threat to Bantay Dagat
   - Economic survival of fisherfolk (livelihood of fishing)
   - Social peace
   - Population growth
   - Conflicts with new entrants (migrants, jobless)
   - Degradation of the environment
   - Negative effect on the fisheries resources.

7. How can the goals of zoning be more effectively achieved?
   - Clearer definition of goals
   - Strict law enforcement with proper logistic support
   - Develop strategies to make people comply rather than relying on enforcement only
   - Proper implementation of the law.
   - IEC (increase level of awareness)
   - Search for win-win situation for both commercial and municipal fishery sector.
   - More area-specific fisheries data/information needed
   - Needs political will and long-term strategy of political decision-makers.

8. Who should make the zoning rules and what criteria should be considered?
   - INITIATOR: National government
     LGUs
     Alliances of municipalities
   - CRITERIA to be considered:
   - Ecology
   - Combination of water depth/ distance from shore

9. What modifications/ better approach can you suggest to regulate entry/ effort?
   - Extent the concept of zoning to municipal waters.
   - Complement zoning by measures addressing the issue of access management.
   - regulations concerning the level of fishing effort affecting the resources (no. of fishers, gears, boats)
   - regulation concerning the spatial distribution of fishing effort.
   - Licensing and registration mechanism should be established and enforced.

10. How do we enhance stakeholder awareness and participation?
    A. IEC campaign (preferably in local dialect)
       Environmental education
       Film showing
       Informal talks
       Trainings and seminars
       Study tours
       Quiz Bee
    B. PRA / PCRA

C. Cultural Contests / Activities
   Singing Poetry Puppet show
D. Media
   Stickers Flyers Posters Billboards

Pre-requisites: Organized fishers
Affirmative action of the LGU's

10. In what way do stakeholders participate in the formulation of policies/regulations?
    A. Organized M/CFARMC's and fisherfolk organizations
    B. Involvement in PRA/PCRA wherein results are made as bases (e.g. for MPA establishment)
    C. Participation in public hearings
    D. Establishment of a system where regular consultations can be held (i.e. Provincial Technical Working Group)
    E. Ordinances should be disseminated through concerned agencies and other institutions.

11. To what extent are fishers (municipal, subsistence, commercial) consulted?
    - Minimal
    - Public hearings are mandated but attendance is poor
    - Passage of position papers
    - MOAs
    - Letters of invitations are sent to fisherfolk federation head

    NOTE: Separate consultations with commercial and subsistence fishers. Joint consultation with commercial and subsistence fishers. More effective to get active participation if BFAR goes to areas to hold consultations.

WORKSHOP 2

1. What framework for managing fishing capacity can you suggest?
    - Address the issues on production in the short run and productivity in the long run.
    - Focus on the optimum utilization of the resource (e.g. eco-tourism, etc.)
    - Utilization of the underutilized area (>15 km) supported with biological data and cost-benefit analysis; government subsidy, etc.
    - Proper implementation of licensing and registration (regulate number of both municipal and commercial fishing vessels)
    - Contextualized definition of overcapacity (biological, economic, etc)
    - Framework is applicable only for Visayan Sea

2. What are the laws and regulations that enable communities to manage fishing resources?
    - RA 8550
    - AFMA
    - LGC
    - NIPAS Act

3. What are the mechanisms provided by law and government that facilitate enabling policies?
    - Implementing Rules and Regulations (IRR)
    - Fisheries Administrative Orders (FAO's)

- Department Administrative Orders (DAOs)
- Executive Orders (EOs)
- Municipal Fishing Ordinances

4. What are the pressures that promote the enforcement of these regulations?
   - Awareness of the state of the resource
   - Pressure from active environmental NGOs
   - Compliance to international agreements
   - Media
5. What are the pressures that hamper the enforcement of these regulations?
   - Law enforcers are not professionalized (lack of training, lack of logistics, etc.)
   - Lack of focus on the enforcement strategy (blast fishing: blasting caps)
   - Political will
   - Lack collaboration with PNP and other institutions
   - Lack of personnel (law enforcers)
   - Inefficient judicial system

6. Recommendations for follow-up activities
   - Establishing network of key players (ELAC, PNP, MFARMCs, etc.)
   - Specific IEC on fishery laws
   - Special courts on environment/fisheries
   - Provide land-based/ sustainable livelihood options (participatory approach/ need-based)

Annex 3: Questionnaire

Code_____
Verification Date_____
Status_____
Date of interview _____
Time Start _____ End _____

Good morning! I am _____, a researcher for the UPV research study on the problems and conflicts in Fisheries in the Philippines. This study is undertaken with support from World Fish Center in Malaysia and Ford Foundation.

Maayong aga! Ako si _____, researcher sa UPV parti sa mga problema kag konplikto sa mga pagpangisda sa Pilipinas. Ginasuportahan ini nga pagtuon sang World Fish Center sa Malaysia kag Ford Foundation.

Gusto ko mamangkot sa imo nahanungod sa inyo barangay. Ang tanan nga impormasyon nga ihatag mo gamiton lamang sa amon nga research. Pasalamatan guid namon sang daku kon masabat mo sang husto ang tanan nga mga pamangkot.

Name: _____
Address: _____
Interview location:_____
Province: _____
Barangay:_____
Sitio: _____

Question	Answer			Remark
What fishing gear do you use?				
Type	Commercial Municipal		1 2	
What is your role on the boat	Owner: Captain: Crew:	Year started	1 2 3	Compute years: _____

Part 1 Profile of the Respondent

No.	Question	Answer		Remark
1	What is your sex?	Male Female	1 2	
2	What is your age (Pila ang imo edad sang ulihi mo nga birthday?)	_____ years		
3	What is your civil status? (May asawa ka?)	Married Single Widow/er Others, specify_____	1 2 3 4	
5	What is your religion? (ano ang imo relihiyon?)	R. Catholic Protestant Aglipayan Others, specify_____	1 2 3 4	

6	How many years have you been residing in this address ? (Pila katuig ikaw nga naga puyo diri? (if not since birth) Ano nga tuig kamo nagsaylo diri)	Since birth *if not since birth, What **year** did you move here? _____	1 2	Compute years: _____
7	Number of years in fishing At what age did you start to fish (ano ang edad mo sang nagumpisa ka pangisda?)	Age _____		Years in fishing: _____

II. Household Characteristics

1. How many people are living in your house? _____
   (Ma pila kabilog nga tawo ang nagapuyo/kaupod diri sa inyo balay?)
2. Please provide information for the following table

No	Name of Household Member *optional	Relationship to respondent 1- Spouse 2- Son 3- Daughter 4- Relative 5- None	Age	Sex 1-M 2-F	Civil Status 1- Married 2-Single 3-Widower 4- Others, specify	Staying in the house? (Naga-puyo sa balay?) 1 – Yes 2 – No	In school (Naga-eskwela) 1 – yes 2 – No	Highest Educational Attainment (Ano ang natapusan?) 1- Elementary 2- Elementary grad 3- High school 4- High school grad 5- Vocational 6- College 7-College grad 8- Post grad	Working? (May trabaho?) 1 – yes 2 – No	What work? (Ano ngapangitan-an?) * take note of seasonality		Estimated Net Income per year (limpyo nga kita)	
										Main (mayor nga pangitan-an)	Others	Main	Others
1	**Respondent**	- - - - -	- - -	- - -	- - -	- - -							
2													
3													
4													
5													
6													
7													
8													
9													
10													

1. Do you receive any (outside the household) support for the family's expenses? If yes, please provide information below
   (May ginabaton ka nga suporta para sa galustuson sang imo pamilya?)

Source of financial support 1- Family member 2- Relative 3- Others_____	Cash (State amount) Pila ang ginahatag/gina-amot kada tuig? (start with monthly question)	Non-cash Ano ang ginahatag/ginaamot?		Total
		Item	Estimated cash value	

*probe

TOTAL _____ annual income (to be computed by DC)

III. Lifestyle Indicators

No.	Question	Answer		Remark
1	Do you own the land where your house is built? (Imo bala ang duta nga ginatindugan sang balay ninyo?)	Yes No	1 2	
2	Do you own other types of land? (Gapanag-iya ka bala sang iban nga duta?)	Yes No	1 2	It no, proceed to no. 4
3	What other types of land do you own? (Ano mga klase nga duta ini?) *multiple answers	Agricultural land Residential lot Commercial lot Others_____	1 2 3 4	
4	Do you own your house? (Kaugalingon mo bala ang balay ini?)	Yes No	1 2	If yes, proceed to no. 6
5	What is your living arrangement?	Staying with relatives Staying in the house for free Renting the house: ₱_____ Others: _____	1 2 3 4	
6	What is your house made of? *Ask only if info cannot be determined by mere observation	Permanent materials Light materials Semi-permanent materials Others: _____	1 2 3 4	
7	Do you have electricity/generator in your house? (May koryente kamo?)	Yes No	1 2	If no, proceed to no. 11.
8	How much is your latest monthly electric bill or cost for fuel? (Pila ang bill niyo sa koryente o bayad nyo sa gasolina sang nagligad nga bulan?)	₱ _____		
9	What do you use in cooking? (Ano ginagamit nyo magluto) *multiple answers	Wood Charcoal LPG Others: _____	1 2 3 4	
10	What is your main source of cooking and drinking water? (Ano ang mayor nyo nga ginakuhaan sang tubig ilimnon kag pagluto?) *multiple answers	Deep well/ water pump Shallow Well Rain Filtered water Pipe water system (ex. MIWD) Others: _____	1 2 3 4 5 6	

Part IV Fishing Activity Characteristics

1. What gears do you use in fishing? Please fill up the table below.

No.	Type of the Gear	Year when acquired	Type of ownership 1-owned 2- partnership 3- Others, specify _____	Relationship to owner 1- relative 2- friend 3-others: _____	Where do you fish 1-within municipal waters 2 adjacent municipal waters 3- both 4. others: _____
1					
2					
3					
4					

No.	Question	Answer		Remark
2	Do you own a boat?	Yes No	1 2	If yes, please fill up the table below.

Name of the boat *MV FV	Year acquired	Type of ownership 1-owned 2- partnership 3- Others, specify _____	Relationship to owner 1- relative 2- friend 3-others: _____	Is the boat motorized? 1- yes 2- no	What is the gross **tonnage**? 1- < 3 gross tons 2- 3.1-20 3- 20.1-150 4- > 150.1	If motorized What is the Horse power of the engine (HP)

No.	Question	Answer		Remark
1	How many fishing days in a month ____ in a week (Pila ka beses sa isa ka semana?)	_____ days		DC will compute fishing days in a week: _____
2	How many fishing trips on a regular fishing day ? (Mga pila ka beses ka nagapangisda sa dagat sa isa ka adlaw?)	Once Twice Others: _____	1 2	
3	What is your usual schedule in a single trip? 1- preparation of the gear: 2- travel/search time 3_1, 3_2 ,3_1 …- fishing time 4- others, pls specify	12:00 am 12:00 pm 1:00 am 1:00 pm 2:00 am 2:00 pm 3:00 am 3:00 pm 4:00 am 4:00 pm 5:00 am 5:00 pm 6:00 am 6:00 pm 7:00 am 7:00 pm 8:00 am 8:00 pm 9:00 am 9:00 pm 10:00 am 10:00 pm 11:00 am 11:00 pm		DC will compute for total hours spent: _____
4	Do you have a license to fish (May lisensya ka mangisda?)	Yes No	1 2	If no, proceed to # 6
5	What are these licenses? (Ano ini nga mga lisensya?)	Where did you secure this license fish in **your** municipal waters and how much did you pay? (Sa diin ninyo ginkuha ang lisensya para makapangisda kag pila ang ginabayad ninyo?) 1 - Mayor's office 2 - Coast guard 3 - Others	How much?	
	1 - Boat: 2 - Gear: 3 - Crew:	_____ _____ _____	₱ _____ ₱ _____ ₱ _____	
6	Where do you fish in **your** Municipal waters? (Sa diin parte nga dagat sang inyo munisipyo ikaw masami nga nagapangisda?) *provide location as well as distance/ grid #	<3km 3.1 – 7 km 7.1- 10 km 10.1 – 15 > 15 km MPA/sanctuary	1 2 3 4 5 6	DC identify grid #: _____ *Multiple responses
7	How do you determine distance from the shore (Paano mo mabal-an ang kalayuon sa higad dagat?)	_____ _____ _____ _____		* probe
8	Why do you choose to fish in this area? (Ngaa ginpili mo mangisda sa sina nga lugar?)	Boat capacity Zoning limit Fuel available Fish path Others: _____	1 2 3 4 5	

9	Do you fish in **other** municipal waters? (Naga pangisda ka man sa dagat sang iban nga munisipyo?)	Yes No *if yes What municipality? _____	1 2	
10	Why do you fish in **other** municipal waters? (Ngaa gapang-isda ikaw sa iban nga munisipalidad?)	Limited own municipal waters Nearby With license Others _____	1 2 3 4	
11	Do you have a license to fish in **other** municipal waters? (May lisensya ka bala mangisda sa iban nga munisipalidad?)	Yes No	1 2	
12	What are these licenses? (Ano ini nga mga lisensya?)	Where did you secure this license fish in **your** municipal waters and how much did you pay? (Sa diin ninyo ginkuha ang lisensya para makapangisda kag pila ang ginabayad ninyo?) 1 - Mayor's office 2 - Coast guard 3 - Others	How much?	
	1 - Boat: 2 - Gear: 3 - Crew:	_____ _____ _____	₱ _____ ₱ _____ ₱ _____	
13	Where do you fish in **other** Municipal waters? (Sa diin parte nga dagat sang inyo munisipyo ikaw masami nga nagapangisda?) *provide location as well as distance/ grid #	<3km 3.1 – 7 km 7.1- 10 km 10.1 – 15 > 15 km MPA/sanctuary	1 2 3 4 5 6	DC identify grid #: _____ *Multiple responses
14	Why do you choose to fish in the area? (Ngaa ginpili mo mangisda sa sina nga lugar?)	_____ _____ _____ _____ _____		
15	* for operator only Do you give guidelines where to fish Gahatag ka guidelines kung diin mangisda?	Yes No	1 2	

Part VI Production Trend

1. Production schedule. Fill up the table below. Mark X the months when fish catch/production is high, low or stop operation.

		Species (local name)	Estimated. Volume in kg per trip	# of trips per month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Annual Production
High	- gear$_1$																
	- gear$_2$																
Low	- gear$_1$																
	- gear$_2$																
Stop	- gear$_1$																
	- gear$_2$																

* estimate conversion from local unit to kg: _____

2. Production based on last **week** fishing prior to interview (Date_____; *approx.* _____ *fishing trips*)

Name of Gear	Fishery product/ Species	Volume of fish catch			Volume consumed/given away			Volume sold		
		Qty in local unit	Eq. in kg of local unit	*Total in kg*	Qty in local unit	Eq. in kg of local unit	*Total in kg*	Qty in local unit	*Eq. in kg of local unit*	*Total in kg*

Name of Gear	Fishery product/ Species	OUTLET			PRICE RECEIVED				
		Name	Type	Location	Per local unit of measure	Qty in local units	*Total value in local units*	*Total qty in kg.*	*Price per kg*

3. *Annual Production, Value of Catch and Total Revenue* (*To be computed by the DC)

Species	*Total annual production*	*Total annual amount sold*	*Price received*	*Total value of catch*	*Total Revenue*

Part VII Costs Incurred

1. What is your total (estimate) cost for every fishing trip? ₱_____
*refer to the running cost per trip

2. How many workers do you have?_____

No.	Question	Answer		Remark
3	What is your sharing scheme	Percentage (_____% owner & _____% crew) Flat rate Flat rate + _____% of catch Flat rate + _____% of catch + trash fish Others, specify: _____	1 2 3 4 5	

4. Running costs per fishing trip

Item	Qty/trip	Cost/unit	*Total cost /trip*
Crude oil			
Battery			
Gear oil			
Lube oil			
Food & Groceries			
Ice			
Others:			

Part VIII Assessment of Fish Catch and Fishing Activity

	Compared to your current catch, how do you assess your catch 5 years ago?	Why?	Compared to your current catch, how do you foresee your catch 5 years from now	Why?	Remarks
Volume of fish catch 1- higher 2- lower 3- the same 4- don't know					
Size of fish catch 1- bigger 2- smaller 3- the same 4- don't know					
Value of fish catch 1- higher income 2- lower income 3- the same 4- don't know					
Composition of catch 1- 1st class 2- 2nd class 3- 3rd class 4- the same 5- don't know					
Length of time spent fishing 1- longer 2- shorter 3- the same 4- don't know					

Number of fishermen 1- higher 2- lower 3- the same 4- don't know					

IX. Reactions to Exit Strategies

What are your suggestion(s) for ways in reducing fishing pressure? (Paano ninyo mapahaganhagan ang pagpangisda para indi matam-an ang aton kadagatan)	

What is your opinion or reaction to the following ways to reduce fishing pressure and sustain fishery? Please rate your answer as follows:
1= Highly agree 2= Agree 3=Undecided 4=Disagree 5=Strongly Disagree

Strategy	Rate	Why	How best to implement strategy (Paano ini mapatigayon)
1. Ban use of some gears (Dilian ang paggamit sang iban nga gamit pangisda)			
2. Set the maximum limit on amount of catch according to scale of operation (Limitahan ang kadamuon nga kuha sa lugar)			
3. Nobody should fish during non-fishing season (Patihon ang mando parte sa closed season)			
4. Give alternative jobs not depending on the sea. (Hatagan sang alternatibo nga pangabuhian nga wala nagadepende sa dagat.)			
5. Establishment of MPA/Sanctuaries (Pagtukod sang MPA/Sanctuaries)			
6.Limit number of fishers (Limitahan ang kadamuon sang manugpangisda sa lugar.)			

X. Needs and Assistance for Exit

Support Available

No.	Question	Answer		Remark
1	Are you a member of any fishing organization? (Miyembro ka bala sang asosasyon sang mangigisda?)	Yes No	1 2	* if no proceed to question #4
2	What is the name of this organization? (Ano ang ngalan sang asosasyon?)			
3	How long have you been a member of this organization? (Pila ka na katuig nga miyembro diri?)	_____ years		

4	Have you received support for your fishing activities in the last five years? (1999)	Yes No	1 2	If yes, fill up the table next page

Type of support (Ano klase nga support)	When (San-o)	From whom? (Halin sa) 1- LGU 2- NGO 3- Research & Academic institution 4- Others, _____	Rate the usefulness of the support 1- very useful 2- useful 3- not useful	Why

1. What are the other income earning skills outside fishing that you would like to pursue?
Luwas sa pagpangisda, ano pa gid ang abilidad ninyo nga matun-an para mapangitan-an sa pila kaadlaw?

Household member	Skills aside from fishing
Respondent	
Spouse	
Children	

2. What kind of assistance do you need, or expect to enable you to leave the fishery?

What are the needs and the assistance that you expect? 1- land for farming 2- capital for other livelihood 3- training on skill development for other livelihood 4- others _____ * multiple responses	From whom 1. BFAR 2. DENR 3. LGU 4. Others _____	How do you think this assistance can be provided? 1- Loans payable thru installment 2- Free from the government 3- Free from the international agencies thru NGO 4- Our village should raise common funds 5- We expect partial subsidy from the government. 6- Others _____

CONFLICT QUESTIONS FOR **MUNICIPAL FISHERFOLK**

No.	Questions	Answer
	RELATION WITH OTHER MUNICIPAL FISHER	
1	Can you state what the municipal regulation is regarding fishing zone? *Ano nga regulasyon ang ginapatuman sa mga magagmay kag komersyal nga mangingisda nahanungod sa kon di-in sila puede makapangisda* ?	State
2	How many other municipal/small scale fishers operate in the same area (e.g. waters of _____) that you do? *Mga pila ka manug panagat (small scale) ang nagapangisda sa lugar nga ginapangisdaan mo?*	Give number: _____
3	Do you see yourself to be competing with them (small scale fisher) for the fish catch? (i.e. Does their catch reduce what you can catch for yourself?) *Gina kabig mo bala ang iban nga manugpanagat nga kompetensya sa imo pagkuha sang isda? (Naga kabuhinan bala ang imo kuha kon ara man sila ga pangisda?*	____ Yes ____ No Why?
4	Describe your relationship with these other fishers. (e.g. Under what circumstances do you interact) *Ano ang relasyon mo sa iban nga mangingisda? Pila na sila?*	Are they / How many Relatives Friends Acquaintances Total strangers
5_a	Are the other municipal fishers, fishing in the same area as you also from (study area) _____? **Ini bala nga mga mangingisda residente man sang (study area) _____?**	____ Yes ____ No If no, about how many (percentage) of these other municipal fishers are not from (study area) _____? *Kung indi, mga pila ka porsyento sang manug-panagat ang indi residente?* _____ Where are they from? *Taga diin sila* (Name of municipality) _____

5_b	To your knowledge, do they have a license to fish here? *Sa imo ihibalo, may ara bala sila licensiya nga mag pangisda diri sa_____?*	____ Yes ____ No
5_c	Do you think you should be given preferential treatment over fishers from other minicipalities in the grant of fishery licenses? *Sa imo banta, dapat bala nga mas paboran kamo bilang residente sa paghatagay sang licensiya?*	____ Yes ____ No Why?
5_d	Are there regulations or arrangements that give you more advantage (or protect you) than fishers from other municipalities? *May ara bala nga regulasyon ang inyo banwa para matagaan sang bentaha (ukon proteksyon) ang mga residente nga manug pangisda labaw sa mga indi residente? Kon may ara, ano ini nga mga regulasyon? Kon wala, ano ang imo suggestion/ gusto mapatupad?*	____ Yes ____ No If yes, what are these/ if no, what do you suggest?
5_e	*If yes to # $5_{d,}$ if no go to 6_a How are these regulations or arrangements enforced? *Kun may ara, paano ini gina implementar sa inyo*? *Paano*.	Describe:
5_f	Are these arrangements effective? **Epektibo bala ini nga mga pag-areglo?**	____ Yes ____ No Elaborate & Describe:

6_a	What is the effect of the operation of other small scale fisherman on you? Are there occasions when what you want is also what other fishers want, and not all of you can get this good at the same time? Ano ang epekto sang ila pag-pangisda sa imo? May mga tinion bala nga indi mo mahimo ang imo luyag bangud kay ara man sila nga nagapanagat upod sa imo? May conplikto ka bala sa mga kapareho mo nga mo nga small scale fisher?	____ Yes ____ No If yes, elaborate on reply to "what is the effect" (answer the table below)
6_b	Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang conplicto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon?	

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No Why?

No	**Questions**	**Answer**

RELATION WITH COMMERCIAL VESSELS

7	How about commercial vessels. Do they fish in the same area as you? *May ara man bala nga mga dalagko nga manug pangisda ukon* commercial fishers *nga naga pangisda man sa inyo gina pangisdaan?*	____ Yes ____ No Elaborate if needed

8	Where are they from? *Taga diin sila?*	____ Same (residente) ____ Others if other please specify: _____
9	Describe their effect on your operation as a municipal fishers? *Ano ang epekto sang ila operasyon sa imo bilang isa ka "magamay nga manug-panagat"?*	Describe:
10	Do you consider them legal/illegal? *Gina kabig mo bala sila nga legal o illegal?*	____ Legal ____ Illegal Why/ why not?
11	Are you aware of any case or instances in which the respective LGU officials give special favors for the commercial fishers (or the municipal fishers) regarding access in municipal waters? *May mga tinion bala nga ginapaburan sang mga opisyales ang mga konersyal nga mangingisda*?	____ Yes ____ No If yes, ano nga paagi/ ano nga pabor:
12_a	Are there existing regulations or arrangements that protect your operation from them? State regulation. May ara bala regulasyon/ pag-intindihanay nga naga protektar sa imo batok sa ila operasyon? Ano ini nga mga regulasyon?	____ Yes ____ No If yes, what are those?
12_b	How are these regulations or arrangements implemented? (What are the existing structures that implement this regulation)	Describe:

	Paano gina implementar ang ini nga mga regulasyon o pag-intindihanay? (Ano nga ahensiya ang gapalakat/ gaimplementar sini sa inyo?) Paano.	
12_c	Do you consider the implementation of the regulation to be effective or not? Why? *Sa imo pagtan-aw, epektibo bala ang implementasyon sang sini nga mga regulasyones? Kun hoo/indi, nga-a?*	____ Yes ____ No If yes, why?
13_a	What is the effect of the operation of the commercial fisherman on you? Are there occasions when what you want is also what other fishers want, and not all of you can get this good at the same time? Ano ang epekto sang pagpangisda sang komersyal nga mangingisda sa imo? May mga tinion bala nga indi mo mahimo ang imo luyag bangud kay ara man sila nga nagapanagat upod sa imo? May konplikto ka bala sa mga komersyal nga mangingisda?	____ Yes ____ No If yes, elaborate on reply to "what is the effect" (answer the table below)
13_b	Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang konplicto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon)?	

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No Why?

14_a	Have you experienced other conflicts with other individuals or groups in the conduct of your fishing activities (may include bantay dagat, LGU, etc…)	____ Yes ____ No If yes, elaborate:

14_b Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang conplicto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon?

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No Why?

14_c	Do you know other conflicts of any kind in other barangays? **May nabal-an ka nga mga kinagamo nga nagakatabo sa iban nga barangay?**	____ Yes ____ No If yes, elaborate:

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution

15	Are there individuals/organizations/institutions that help resolve disputes among fishers? *Nay nagabulig bala sa inyo nga mga tawo o grupo para maresolbar ang mga kinagamo?*	____ Yes ____ No If yes, answer the table below

Name of the individual organizations/institutions	Describe what disputes	How it was resolved

QUESTIONNAIRE FOR **COMMERCIAL FISHERMAN**

No.	Question	Answer
1	What is your understanding of the zoning regulation being implemented in the waters of_____? **Unsa ang imo pagsabot sa zoning regulation diri sa inyo?**	State
2	Under what circumstances do you fish in the… *Sa ano nga mga tion nga nagapangisda kamo sa…* (*refer to the table below)	

Do you fish in the 10 km and below if yes, how many km? Are you allowed? If no, under what circumstance do you fish in this area	Do you fish in the 10.1-15 km zone? Under what circumstances do you fish in the area?

Who makes the decision to fish in this area?	How many other fish in the same area as you? (*estimate number)	Who makes the decision to fish in this area?	Who are the others that fish in the same area as you? (*estimate number)
Operator ____		Operator ____	
Captain ____	Municipal fishers	Captain ____	Municipal fishers
Crew ____	Commercial vessels	Crew ____	Commercial vessels

3	What do you think is the effect of your fishing effort on the fishing activity of municipal fishers? Explain. *Unsay imong epekto sa operasyon sa mga magagmay nga manugpanagat?*	Explain
4_a	Have you ever experienced conflict (you both want the same thing, e.g. fishing ground, school of fish) **with other commercial fishers**?	____ Yes ____ No Explain

	Nakaeksperyensya ka na ba gubot sa parehas nimo nga komersyal nga manugpangisda?	

4_b	Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang konplikto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon, ngaa? **Maistorya man nimo nako kun unsa ang mga nahitabo ug kinsang mga tauhana, gi unsa paghusay?**

Conflict	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No Why?

5_a	Have you ever experienced conflict (you both want the same thing, e.g. fishing ground, school of fish) **with municipal fishers**? **Nakaeksperyensya ka na ba gubot sa magagmay nga manugpangisda?**	____ Yes ____ No Explain

5_b	Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang konplikto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon, ngaa? **Maistorya man nimo nako kun unsa ang mga nahitabo ug kinsang mga tauhana, gi unsa paghusay?**

Conflict	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No If yes, why?

			Easy	Difficult
6	What are the arrangements that make it difficult/easy for you to fish in the **0-10** or **10.1-15** km zone. Unsa nga mga reglamento ang ang lisod kaayo ug dali pod para managat sa **0-10** o sa **10.1-15** *km zone? Paano?*	0-10 km		
		10.1-15 km		
7	Do you think the regulation being implemented on zoning of fishing activity is fair/just? Why/why not? Sa imo panan-aw,ang mga gina-implementar nga regulasyon, mayo ba? Ngano man?	____ Yes ____ No Why?		

8_a	What other conflicts have you experienced with other individuals or groups in the conduct of your fishing activities (may include bantay dagat, LGU, etc…) *Nakaeksperyensya ka na ba gubot sa ubang tawo, o grupo? (bantay dagat, LGU, etc.)*	
8_b	Have respondent tell the story and interviewer ensures that these aspects are specified in story: Initiating event (ano ang ginhalinan sang conplicto), consequent events (mga nasunod nga hitabo), persons involved (sino ang iban nga karakter sa istorya), how resolution was reached (paano na resolbar ang konplikto), what is the resolution if any (ano ang nadesidihan/ginpatuman), and level of satisfaction with resolution (nagustuhan mo bala ang desisyon? **Maistorya man nimo nako kun unsa ang mga nahitabo ug kinsang mga tauhana, gi unsa paghusay?**	

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution
					Satisfied? ____ Yes ____ No Why?

14_c	Do you know other conflicts of any kind in other barangays? *Naa ka bay nabal-an uban pang konflikto sa ubang baranggay?*	____ Yes ____ No If yes, elaborate:

Conflict (*use additional paper if needed)	Initiating event	Consequent events	Person involved	Resolution	Satisfaction with resolution

9	Are there individuals/organizations/institutions that help resolve disputes among fishers? *Naa bay tawo/organisasyon/institusyong gatabang sa inyo?*	____ Yes ____ No If yes, answer the table below

Name of the individual organizations/institutions	Describe what disputes	How it was resolved