SAMUDRA Monograph

The Philippines Tuna Industry: A Profile

Cesar Allan Vera and Zarina Hipolito

International Collective in Support of Fishworkers
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About the Authors

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Abbreviations

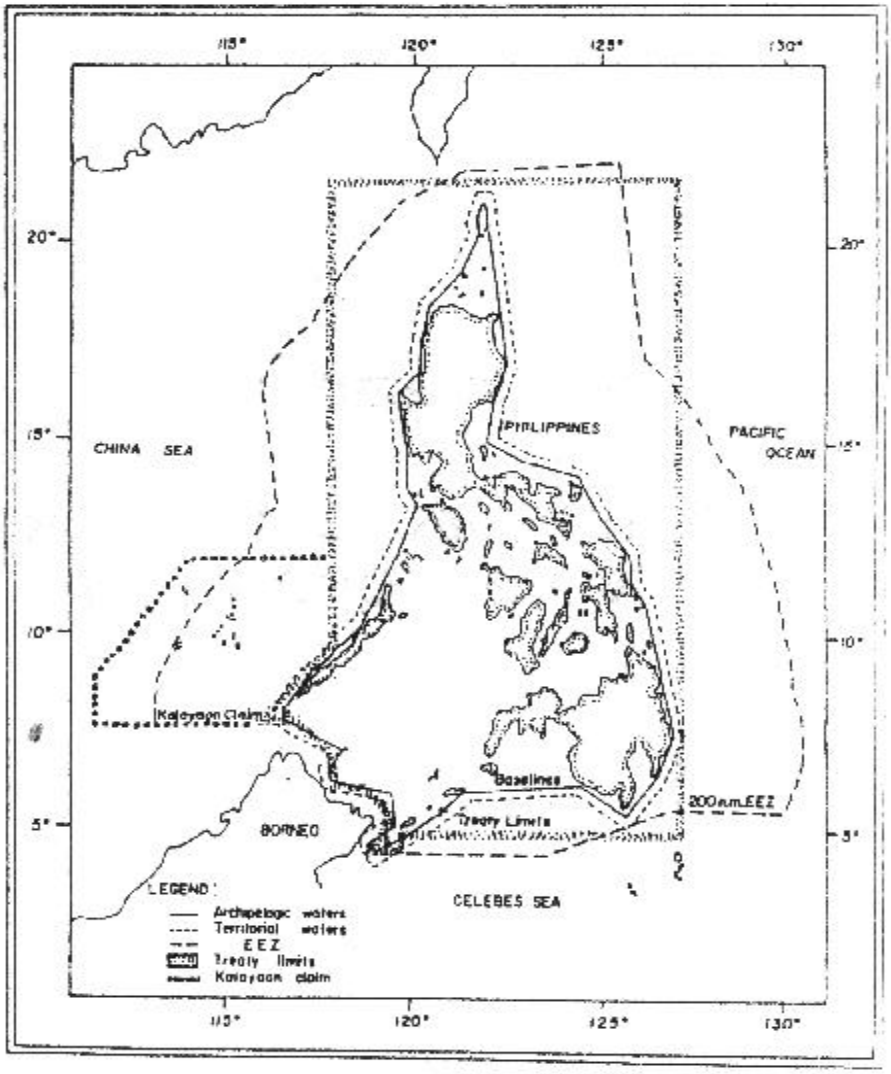
ACEF	Agriculture Competitiveness Enhancement Fund
AFMA	Agriculture and Fisheries Modernization Act
AFTA	Association of Southeast Asian Nations Free Trade Association
ARMM	Autonomous Region of Muslim Mindanao
BAS	Bureau of Agricultural Statistics
BFAR	Bureau of Fisheries and Aquatic Resource Management
CARAGA	The newest region in the Philippines covering the provinces of Agusan del Norte, Agusan del Sur, Surigao del Norte, and Surigao del Sur
CEPT	Common Effective Preferential Tariff
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources
DOLE	Department of Labour and Employment
EEZ	Exclusive Economic Zone
EU	European Union
FAOSTAT	Food and Agricultural Organization of the United Nations Statistics
FARMC	Fisheries and Aquatic Resource Management Councils
General Santos	General Santos City
GMP	good manufacturing practices
GSCFPC	General Santos City Fish Port Complex
GT	gross tonnes
HACCP	Hazard Analysis Critical Control Point
ICCAT	International Commission for the Conservation of Atlantic Tuna
IOTC	Indian Ocean Tuna Commission
NCR	National Capital Region, more popularly known as Metro Manila
MARINA	Maritime Industry Authority
MSY	maximum sustainable yield
MT	metric tonnes
NFPC	Navotas Fish Port Complex
NGO	non-governmental organization
OECF	Overseas Economic Co-operation Fund

PNG	Papua New Guinea
QRT	Quick Response Team
SFFAAI	SOCSKSARGEN Federation of Fishing Associations and Allied Industries
SOCOPA	South Cotabato Purse-seiners Association
SOCSKSARGEN	South Cotabato, Sultan Kudarat, Sarangani, and General Santos
SSOP	Sanitation Standard Operating Procedures
TAC	total allowable catch
UNFSA	United Nations Fish Stocks Agreement (Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks)
WCPFC	Commission for the Conservation of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
WCPO	Western Central Pacific Ocean

Local Terms Used

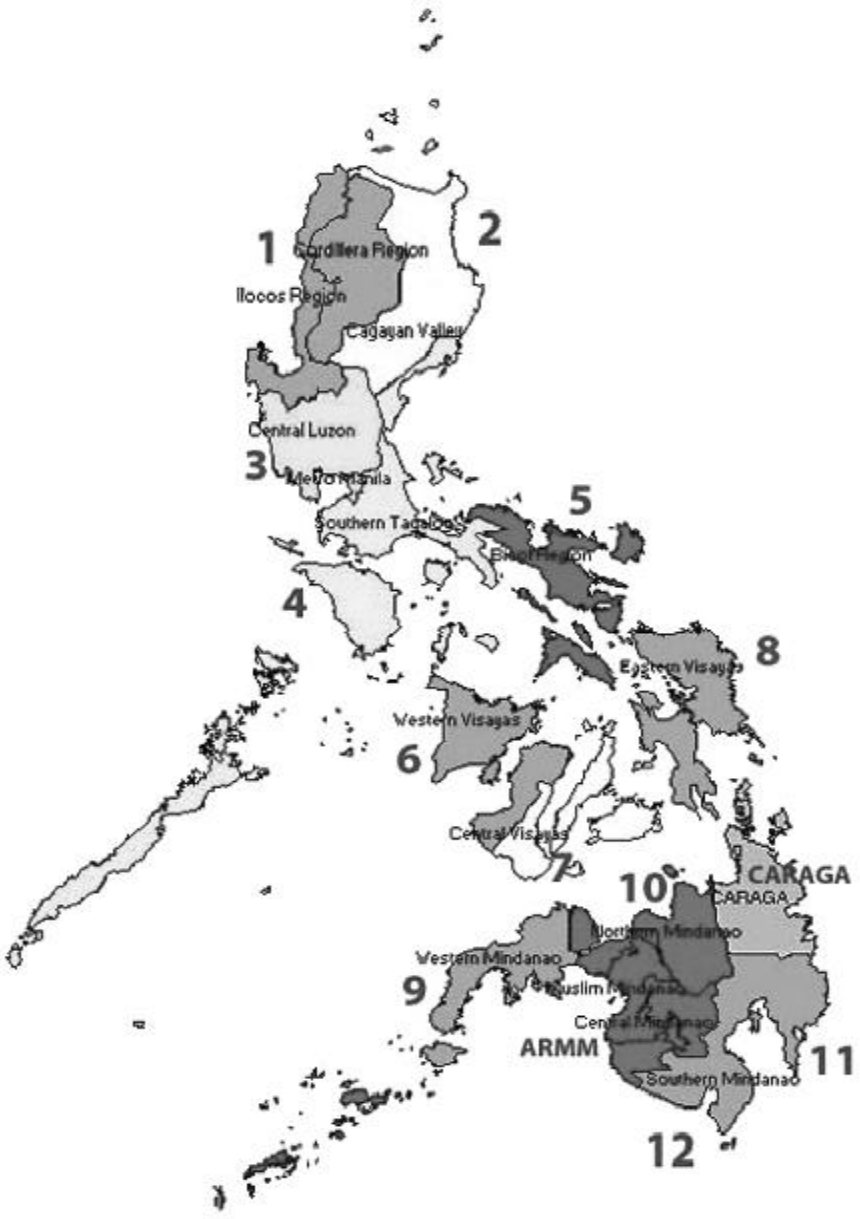
Banca	Small boat with outrigger and a small engine
Banyera	Fish container holding 33 kg of fish
Kawa-kawa	Fleet of auxiliary boats
Payao	Fish aggregating device
Pamariles	Handliners capable of fishing in distant waters
Palaran	Handliners confined only in nearshore municipal waters
Lilima	Sharing system whereby the fisher gets one-fifth of the price of the fish
Inupat	Benefit sharing system whereby the fisher gets one-fourth of the price of the fish
Sukod	Sharing system whereby the boat operator gets 35-40 per cent of the net sales
Segunda	Engine operator and troubleshooter, second-in-command, after the boat operator
Suki	Preferred clients
Jambolero	A broker for the catch of *palaran* fishers

Figure 1: Philippines Marine Jurisdictional Boundaries



Source: BFAR

Figure 2: Regional Map of the Philippines



The Philippines Tuna Industry: A Profile

I. INTRODUCTION

Situated in a region of greatly abundant tuna resources, the Philippines, in 2003, was the fourth largest producer of tuna and tuna-like species in the world. With the highly migratory characteristics of tuna and the export-oriented nature of the local tuna industry, it is inevitable for the Philippines to negotiate with the international community to attain sustainable management and utilization of fishery resources, to optimize trade benefits, and to ensure local food security.

With small-scale fisherfolk being among the most impoverished sectors in Philippines' society, there is a need to ensure that the international negotiations and high-level development and management plans are informed of their conditions, needs and interests.

This study aims to profile the tuna fisheries industry in the Philippines, focusing on the small-scale tuna industry, and offers recommendations for policies and structures to manage tuna fisheries, in the context of conserving stocks, ensuring food security and sustaining the livelihoods of artisanal fishers.

After this introduction, Section II of the report provides an overview of the Philippines' fisheries sector. This section covers the overall production and value for the different sectors in Philippines' fisheries (that is, municipal, commercial and aquaculture); the overall international fisheries trade by volume and value; and significant policies and structures for fisheries governance, in general.

A brief history of the evolution of the tuna fisheries industry is provided in Section III, followed by a presentation on tuna production in the Philippines, in Section IV. This section identifies the major tuna species in the Philippines, and production by species by sector and region.

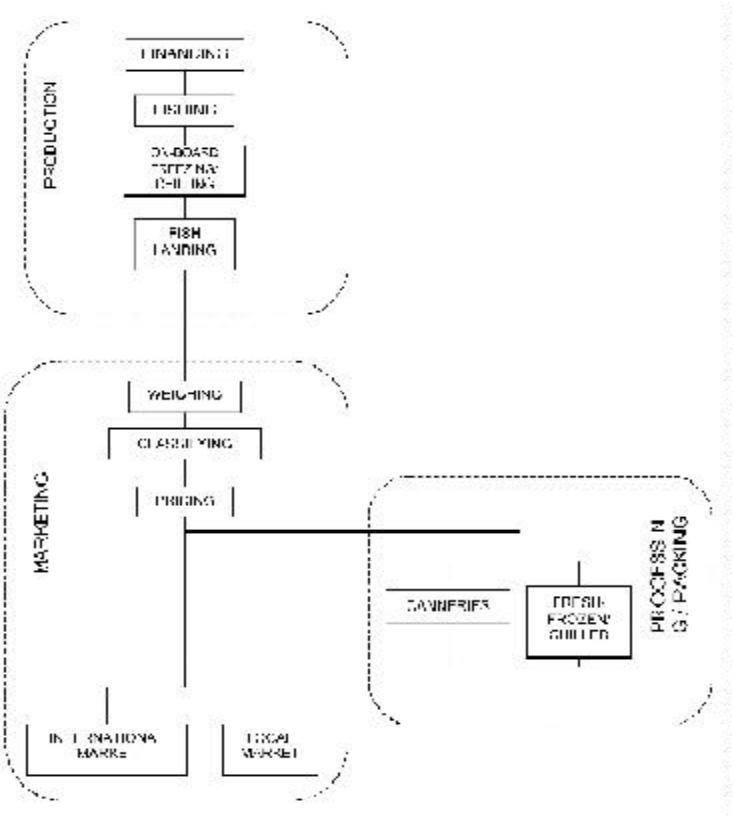
Sections III and IV show that although tuna fishing is practised nationwide, in terms of production (in both local and international waters), processing (including canning) and international trade, the tuna industry is highly concentrated in General Santos City. As such, the study focuses in detail on

the tuna industry in General Santos City. As can be seen in Figure 3, the flow of the tuna industry in General Santos transects three major and sometimes overlapping phases, namely, production, marketing and processing.

Section V profiles the primary tuna producers in General Santos, namely, the handliners and the purse-seiners. Discussions revolve around the fishing gear and vessels, fishing grounds, fishing operations, specific markets, and issues identified by each type of producer.

Section VI discusses the primary post-harvest facilities and processing industries (canneries and fresh / frozen / chilled processing plants). Section VII discusses financing and marketing, interlinked sectors where financiers of tuna producers are often their buyers too. The discussion also covers grade classification of the catch, pricing, selling operations, and international trade of tuna products. Section VIII wraps up the findings on the tuna industry with a presentation on current initiatives to manage and develop the local tuna industry.

Figure 3: Flowchart of Tuna Industry



II. PHILIPPINES FISHERIES

The Philippine archipelago has one of the longest coastlines in the world[1]. The Philippines ratified the United Nations Convention on the Law of the Sea (UNCLOS) in 1984. This has expanded its exclusive economic zone to 2.2 mn sq km (see Figure 1), of which 184,600 sq km make up the continental shelf area[2]. Coral reef areas are estimated at 27,000 sq km.

The Philippines is located within a region of the highest marine biodiversity. It, therefore, comes as no surprise that fisheries play a major role in the lives and livelihoods of Filipinos. However, the diversity and productivity of Philippine marine resources are threatened as coastal ecosystems are degraded and fishing pressure reaches new heights. Coral reef areas have been reduced to only 5 per cent. Around 30-50 per cent of seagrass beds have been lost in the past year. Only 20 per cent of mangrove forests remain. The degradation of these coastal ecosystems has been largely attributed to anthropogenic causes (destructive fishing practices, fishpond expansion, industrial pollution, tourism development, rapid runoff due to deforestation).

A. PRODUCTION

The Philippines ranked 11th in the world in fisheries production in 2001 (FAOSTAT). Overall fishery production estimates[3] and their value in Philippine pesos over the past 25 years are shown in Figure 4. Overall production has reached new heights after a plateau in the mid-1990s. As can be seen in Figure 5, this growth is mainly attributed to the 12 per cent average annual increase of aquaculture production since 1998.

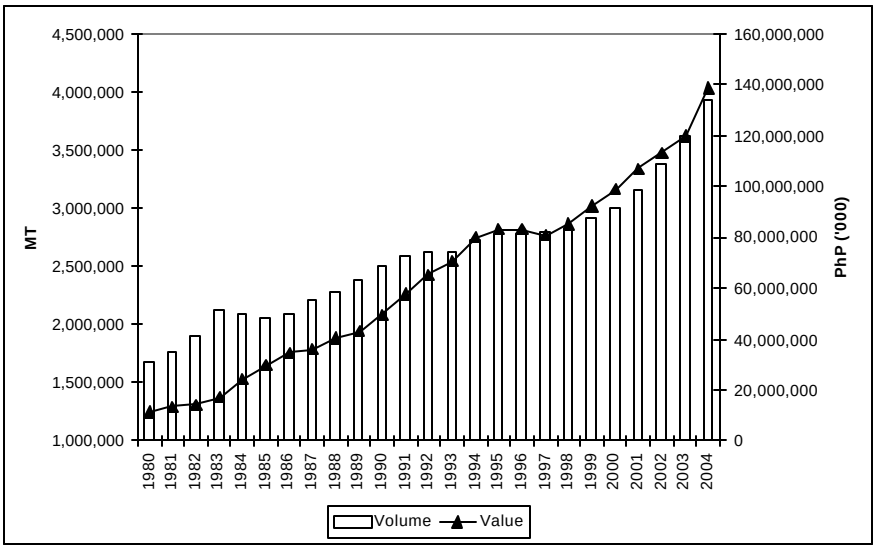
Credit for the increasing production must also be given to the rebound of capture fisheries that has posted a 3 per cent annual production growth rate since 1998, after seven years of decreasing yield. The growth of capture fisheries production has been attributed to the passage of the Fisheries Code in 1998 (see Section II.c.1), which, among other things, has pushed commercial fishing out of the continental shelf and created semi-government bodies to recommend resource management policies at the local and national levels.

Philippine capture fishery can be divided into two sectors: municipal and commercial. Production figures for the two sectors, in terms of volume and value, are shown in Figures 5 and Figure 6, respectively.

The Philippine Fisheries Code defines municipal fishing as fishing within municipal waters using fishing vessels of 3 gross tonnes (GT) or less, or fishing

not requiring the use of fishing vessels. 'Municipal water' is generally defined as the area from the shore to 15 km into the sea. The common gear used are generally classified as passive gear[4], such as simple handlines, gill-nets and traps. The principal species comprising the municipal catch are small pelagics (sardines, mackerels, anchovies, round herring, fusiliers and round scad), large pelagics (milkfish, marlin, swordfish, sailfish, barracuda) and demersals (shrimp and slipmouth).

Figure 4: Overall Philippine Fishery Production (Volume & Value), 1980-2004



Source: Bureau of Agricultural Statistics (BAS)

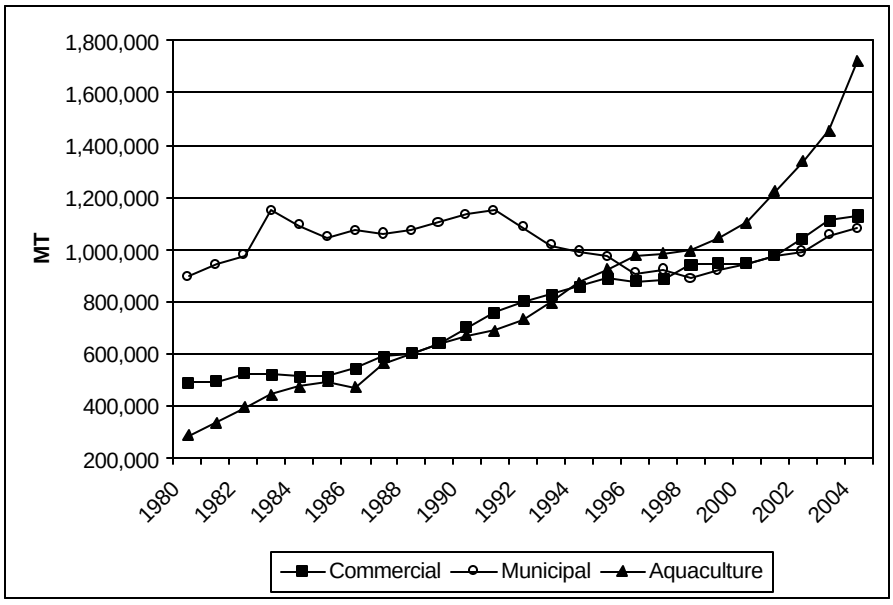
Commercial fishing refers to the taking of fishery species by passive or active[5] gear for trade, business or profit beyond subsistence or sports fishing. The sector is further classified into three classes, namely:

1) small-scale (utilizing passive or active gear and fishing vessels of 3.1-20 GT);
2) medium-scale (utilizing active gear and vessels of 20.1-150 GT); and
3) large-scale (utilizing active gear and vessels of more than 150 GT).

The commercial fishers are usually based near large population centers, where they land the bulk of their catch. They roam wide areas in search of fish. The major fishing gear used are the purse-seine, trawl, ring-net and bag-net. The common fish catch are roundscad and Indian sardines.

The classification of fishing vessels using size and gear is used primarily to determine access inside the municipal waters. Exclusive access, use and expansion of the municipal waters, which intentionally covers the resource-rich continental shelf area of the Philippines, has resulted in conflicts between municipal and commercial fishers. Although small- and medium-scale commercial fishing vessels may be allowed to operate inside municipal waters, they are not allowed to use active fishing gear inside municipal waters. Fishing vessels less than 3 GT using active gear are also not allowed to fish inside municipal waters. However, in terms of accounting for production contributions, the catch of commercial fishing vessels that have auxiliary boats less than 3 GT and who use passive fishing gear are classified as municipal fisheries production. Generally, the primary determinant of classification is the size of the fishing vessel. No other classification has been determined for variances (that is, vessels below 3 GT using active fishing gear, vessels above 20 GT using passive gear).

Figure 5: Fisheries Production per Sector in MT, 1980-2004

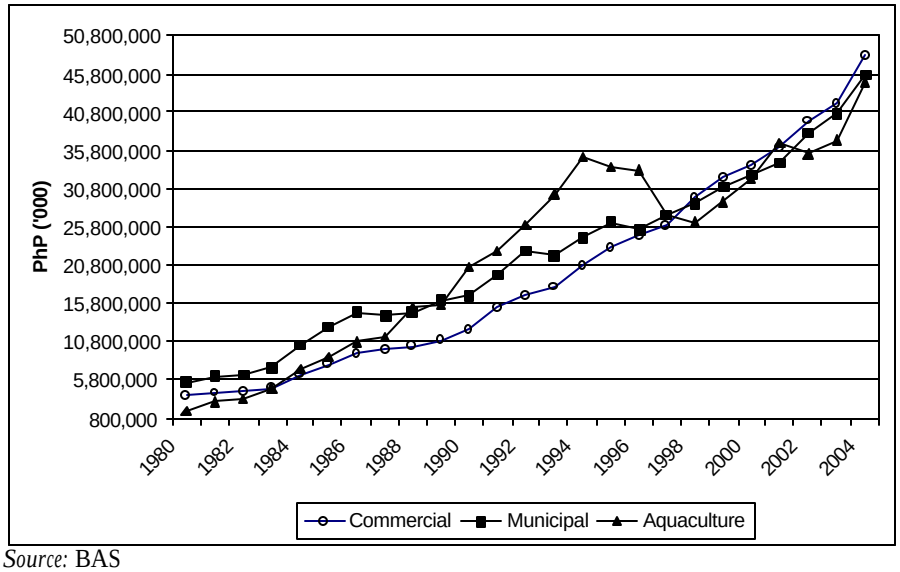


Source: BAS

This confusion in definition can be seen in the most recent census of fisheries. Conducted in 2002, the census revealed that there are 1,781,057 municipal fishers, compared to only 7,849 commercial fishers. To avoid double counting, small-scale fishers who use municipal fishing vessels and who also participate in commercial fishing operations are classified as municipal fisherfolk. Surprisingly, the census revealed several municipal fisherfolk participating in

active fishing gear operations identified with commercial fishing operations (for example, purse-seine, *muro ami*, bag-net, etc.). Also, Table 1 shows the distribution of fishing vessels between municipal and commercial fishers. As can be seen, the census classified several fishing vessels less than 3 GT as commercial instead of municipal vessels because of the fishing gear used. Thus, the census classification is not solely based on the definitions provided by the Fisheries Code.

Figure 6: Fisheries Production per Sector in ₱ ('000), 1980-2004



Source: BAS

Table 1: Distribution of Fishing Vessels

	1980	2002
Municipal	**401,827**	**810,176**
Raft	388,188	777,666
3 or less GT	13,639	32,510
Commercial	**3,411**	**10,860**
3 or less GT	179	1,204
3-5 GT	1,044	3,001
5-9 GT	559	2,211
9-19 GT	728	1,427
19-49 GT	460	1,492
49-99 GT	239	577
99-499 GT	200	516
499 or more GT	2	177
not reported		255

Source: NSO, 1980 and 2002 Census of Fisheries

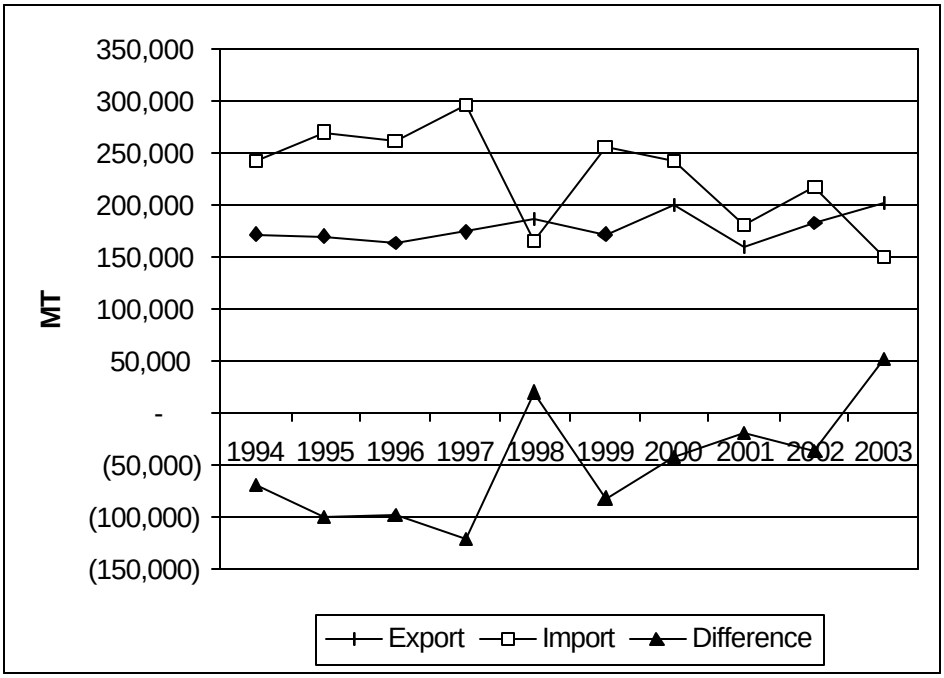
B. INTERNATIONAL TRADE

As shown in Figure 7, since 1994 (except for 1998 and 2003), the Philippines has become a net importer of fishery and aquatic products in terms of volume. Figure 8 reveals that the country consistently had net earnings in the 1990s despite this unfavorable trade imbalance in terms of quantity.

In 2003, the total export volume was 202,016 tonnes, while the total import was 150,533 tonnes. The total trade earning was US$445.5 mn. This was because imports are primarily low-valued inputs to canneries and feeds, while exports are high-valued products destined for developed countries.

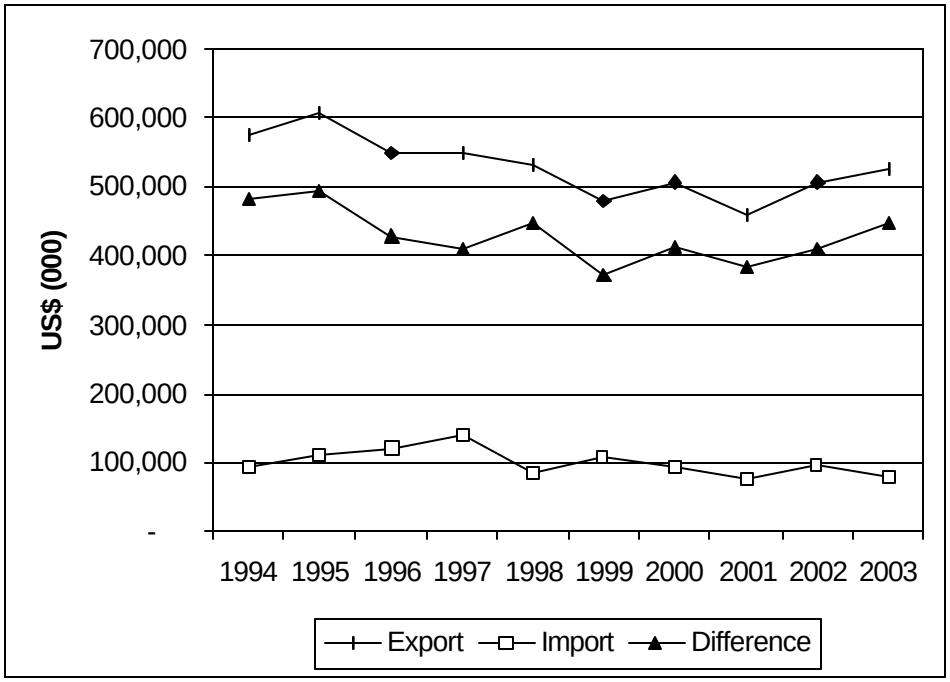
Top import commodities are fishmeal, tuna, sardines and mackerel. Top export products are shrimp/prawns, canned tuna and seaweed. Imported tuna are channeled directly to tuna canneries that target the export market.

Figure 7: Trade Performance in MT, 1994-2003



Source: BAS

Figure 8: Trade Performance in US $ (fob or free on board), 1994-2003



Source: BAS

C. GOVERNANCE

1. POLICIES

Utilization and Management

The national fisheries policy framework of the Philippines is provided by two national laws, namely, the Fisheries Code of 1998, and the Agriculture and Fisheries Modernization Act (AFMA) of 1997. The Fisheries Code provides policies regarding the development, utilization and management of fishery and aquatic resources. These include the following provisions:

- Priority to municipal fisherfolk: As provided by the Constitution, small-scale users (that is, municipal fisherfolk) are provided preferential rights to the use of communal fishing grounds.
- Limitation of access: Commercial fishing vessels are generally prohibited from exploiting municipal waters. Fishing licences and permits are based on the maximum sustainable yield (MSY). Likewise, catch ceiling limitations are based on MSY. As a precautionary measure, a moratorium on the issuance of commercial fishing vessels has been passed.

- Temporal and spatial limitations: Closed seasons and closed areas, such as fish refuges and sanctuaries, are options to limit access.
- User fees/other charges: User fees and other charges are to be based on the resource rent.
- Decentralization: The jurisdiction over municipal waters has been transferred to local government units. Offshore waters (that is, beyond 15 km) are under the jurisdiction of the national agency, Bureau of Fisheries and Aquatic Resource (BFAR).
- Fishing gear regulation: Active gear are prohibited within municipal waters. Fine-mesh nets are regulated. Also, various destructive fishing gear and practices, like dynamite fishing, cyanide fishing, *muro ami*, are prohibited.
- Reconstitution of fisheries governance body: The national fisheries agency, BFAR, was reconstituted from a staff agency to a line agency.
- Creation of a fisherfolk–led recommendatory body: Fisheries and Aquatic Resource Management Councils (FARMCs) were created at both local and national levels in order to provide fishery policy recommendations and support to resource management.

AFMA, on the other hand, is focused on modernizing the fisheries sector (as part of the agricultural sector) so that the local industry can be more competitive in, and resilient to, international trade. AFMA also created the Agriculture Competitiveness Enhancement Fund in order to improve competitiveness of local industries in the context of increasing trade liberalization.

Thus, there is a divergence of objectives between the Fisheries Code and AFMA; the former prioritizes conservation, while the latter encourages increased production. Although the legal framework has been set up, the implementation of policies has been hindered by the lack of implementing rules, information, resources and political will. For example, delineation and delimitation of municipal waters with offshore islands have not yet been done due to a lack of implementing rules that would satisfy both commercial and municipal fisherfolk. Catch ceiling limitations have not been established due to lack of information. Several priority bays and gulfs that are suspect of having been overfished have yet to be closed to commercial fishing activity, even though the precautionary principle has been adopted by the Fisheries Code. User and licence fees for commercial vessels based on a BFAR-

commissioned study on the estimated resource rent are not used due to political pressure from commercial fishers. The full reconstitution of BFAR as a line agency from a staff agency has been hindered by lack of funds.

Several policy gaps have also been noted that jeopardize effective management and development of fishery resources. These include the loose definition of municipal waters, classification of fisherfolk, and the establishment of the FARMCs as recommendatory, rather than policy-making, bodies. Small-scale fisherfolk federations and non-governmental organizations (NGOs) have assailed the ACEF as being inaccessible to municipal fisherfolk.

Trade

Seasonal tariffs on imported fishery products have been implemented. For each commodity, higher tariffs are imposed during the peak season. This is done in order to ensure a constant supply of fishery food products, while protecting local producers from imported products flooding the market during the peak season. This protective measure, however, has been noted to have been ineffective since traders would import during the lean season, keep the products frozen, and then distribute the goods whenever needed (Vera and Vera, 2001).

The participation of the Philippines in the Association of South East Asian Nations (ASEAN) Free Trade Association-Common Effective Preferential Tariff (AFTA-CEPT) paved the way for the liberalization of the fishing industry. Through negotiations of the AFTA-CEPT, 0-5 per cent tariff was achieved by 2002. The Philippines acceded to the World Trade Organization in 1995.

The primary local fisheries trade policy is stated in the Fisheries Code of 1998. Fishery export will only be regulated whenever it affects domestic food security and production. Also, export of live fish will be prohibited, except for those that are hatched or propagated in accredited hatcheries and ponds.

Fish import is primarily intended for fish processors and canneries. Section 61.c. and d. of the Fisheries Code state:

> *"c. Fishery products may be imported only when the importation has been certified as necessary by the Department, in consultation with the FARMC, and all the requirements of this Code, as well as all existing rules and regulations have been complied with: Provided, That fish imports for canning/ processing purposes only may be allowed without the necessary certification, but within the provisions of Section 61 (d) of this Code; and*

d. No person shall import and/or export fishery products of whatever size, stage or form for any purpose without securing a permit from the Department."

2. STRUCTURES

BFAR

BFAR, under the Department of Agriculture (DA), is the main government institution that manages fisheries at the national level. Some of its functions are shared with the Department of Environment and Natural Resources (DENR) and the Department of Interior Local Government. Specific to the tuna industry, the BFAR includes the following responsibilities:

- Issuance of licences for commercial fishing vessels;
- Monitoring and review of international fishing agreements;
- Formulation and implementation of a comprehensive fishery research and development programme;
- Establishment of a comprehensive fishery information system, and a monitoring, control and surveillance (MCS) system;
- Authorization and regulation of Philippine fishing vessels operating in international waters;
- Regulation of transshipment of fishery products from international waters;
- Recommendation of protection and enhancement measures for the fisheries industry; and
- Enforcement of fishery laws and rules except in municipal waters, together with other law-enforcement government agencies.

National FARMC

The Fisheries Code created the National FARMC as an advisory/recommendatory body to the DA that will assist in the formulation of national policies for the protection, sustainable development and management of fishery and aquatic resources, and assist the DA in the preparation of the National Fisheries and Industry Development Plan. As such, the Fisheries Code provides that specific policy decisions by the DA must be consulted first with the National FARMC, including the issuance of a certificate of necessity to import fishery products.

The National FARMC has 15 members, consisting of:

- the Undersecretary of Agriculture, as chairman;
- the Undersecretary of the Interior and Local Government;
- five members representing the fisherfolk and fishworkers;
- five members representing the commercial fishing and aquaculture operators and the processing sectors;
- two members from academia; and
- one representative of NGOs involved in fisheries.

Currently, the National FARMC has just finished its first term, and the transition period is filled with controversy. The appointment of representatives are primarily politically driven and do not necessarily result from a participative and consultative manner. For example, the newly appointed NGO representative was a former Secretary of the DENR who did not receive any endorsement from the community of NGOs involved in fisheries[6]. The endorsement is supposed to be a prerequisite for the appointment under the implementing rules and regulations of the law.

Municipal/City FARMC

At the municipal/city level, the Municipal/City FARMC serves as an advisory/recommendatory body to the Municipal/City Government that has jurisdiction over the municipal waters. The Municipal/City FARMC shall assist in the preparation of the Municipal Fishery Development Plan; recommend the enactment of municipal fishery ordinances to the Municipal/City Council[7]; assist in the enforcement of fishery laws, rules and regulations municipal waters; advise the Municipal/City Council on fishery matters; and perform other functions that may be assigned by the Municipal/City Council. The regular members of the Municipal/City FARMCs shall be:

- Municipal/City Planning Development Officer;
- Chairperson, Agriculture/Fishery Committee of the Municipal/City Council;
- representative of the Municipal/City Development Council;
- representative from an accredited NGO;
- representative from the private sector;
- representative from the Department of Agriculture; and
- at least 11 fisherfolk representatives – seven municipal fisherfolk, one fishworker and three commercial fishers in each municipality/city, including representative from the youth and women sectors.

The Municipal FARMC serves as the primary forum for municipal fisherfolk to raise concerns and recommend issues. In several municipalities with strong fisherfolk organizations and open local chief executives, the FARMC has been effective in influencing municipal governments to draft sound fishery resource management policies. However, there are also cases where FARMCs are inactive, marginalized or politically created, thus, preventing it from influencing or truly representing the fisherfolk.

III. THE PHILIPPINES TUNA INDUSTRY: A BRIEF HISTORY

Tuna fishing is a long-practised livelihood activity among Filipino fishers, especially in the southern Philippines provinces such as Davao, Zamboanga, and Cotabato. Early accounts of tuna and tuna-related fishing activities date back to the 1900s during the start of the American rule (1898-1946) in the country. Due to the simple structure of the fishing vessels during those times and the still abundant supply of tuna resources, fishing activities were mostly for subsistence purposes and were confined only to the nearshore areas.

During the Japanese occupation (1942-1944) during World War II, commercialized tuna fishing slowly started to gain ground. Documented accounts of some old fisherfolk mention the existence of several tuna longline fishing operations in Davao in the 1940s. These were mostly owned by the Japanese, as most Japanese soldiers were concentrated in the province. The catches went to smoking plants. A report of the US Fish and Wildlife also mentioned the existence of five longliners and four pole-and-line catchers operating in the Davao Gulf during the Japanese occupation (Thomas, 1999).

In the 1950s, American fish packers began to explore the possibility of sourcing tuna from the Philippines. The American interest in Philippine tuna resources was spurred by the decline in the catch of the American purse-seiners due to the 200-mile limit being imposed by countries like Venezuela and Colombia. Among the pioneering American packers who explored the possibility of sourcing tuna from the Philippines were Bumble Bee Seafood, Washington Fish and Oyster of California, Starkist Foods, Van Camp and Portland Fish (Thomas, 1999).

Since commercial tuna operations were just in the infancy stage in the 1950s, the few existing fishing firms with limited fleets were not able to come up with regular and substantial volumes of tuna to fill the needs of the American

market. To bridge the gap between supply and demand, there were several attempts by local fishing corporations to venture into tuna fishing to fill up the American demand. Such attempts, however, proved to be unsuccessful. Despite the irregular and oftentimes inadequate supplies of tuna from the Philippines, American canneries continued to make inquiries in the local fishing industry.

Local packers and commercial fishers were thus encouraged to form a network of tuna buying and collecting stations in Mindanao (that is, Basilan, Zamboanga City) and establish partnerships with American packers. Shipping lines with sufficient refrigeration chambers began to dock at the Zamboanga City port, and frozen tuna was exported to the US. These small but regular exports were noted by other American importers, and contracts were signed with Filipino fishing groups. With relatively attractive offers from American importers, the incomes of small-scale fishers grew with the export market and it consequently increased the value of tuna in the domestic market (Thomas, 1999).

As a result of growing orders from American importers, local fishing corporations with substantial capital started to get organized during the 1960s, and financed small fishers using handliners and trolls in southern Mindanao to catch tuna. Fishers from the provinces of central Philippines (Visayas) were contracted to go to deeper waters. The average fishing group consisted of 200 *banca*s (Thomas, 1999).

The proliferation of companies that bought tuna for export to the US continued in Zamboanga City until the early 1970s, increasing the total exports from 841 tonnes in 1969 to 11,376 tonnes in 1970 (Thomas, 1999). But, as shipments to the US grew, so did the volume of rejects. Some US firms alleged that the tuna were 'shore-frozen' instead of frozen or chilled onboard and, consequently, 20-30 per cent of the shipments were rejected by the American packers. The large amount of rejects forced the early shippers, except those with substantial funding, to fold up operations. Thousands of organized fishers were left without buyers. In an attempt to regain the confidence of the foreign market, the Tuna Producers Exporters Association was formed in November 1973. However, the problem of supply of ice persisted for want of funds to properly maintain the few freezing facilities in the country (Thomas, 1999).

As the tuna industry in Zamboanga City experienced a lull in business operations due to the closure of several local shippers in the 1970s, General Santos City was gearing up to replace Zamboanga as the next tuna hub in

southern Philippines. The tuna boom in General Santos was spurred by the arrival, in the mid-1970s, of Japanese traders looking for new supplies of *sashimi*-grade yellowfin tuna. The hefty price commanded by *sashimi*-grade tuna in the Japanese market encouraged investors to finance tuna fishing ventures, which attracted fishers from other neighboring provinces (Thomas, 1999).

Almost simultaneous with the opening of the Japanese *sashimi* market in the 1970s was the introduction and successful use of the fish aggregating device (FAD) locally known as *payao*. Several experts have noted that the use of *payao* heightens the exploitation of juvenile skipjack and yellowfin tuna, and increases the rate of tuna cannibalism, endangering the tuna stock (Aprieto, 1995). However, it still cannot be denied that the *payao* positively transformed the tuna industry, in terms of both volume and size of catch. This FAD technology greatly reduced the time spent for searching and catching voluminous amounts of tuna.

With a large base of organized tuna producers and the successful use of *payaos*, the tuna catch in General Santos rose. This resulted in the establishment of processing and canning corporations as well as post-harvest facilities like ice plants to support the rapidly expanding tuna industry (Tambuyog, 2000). The reputation of General Santos as the country's tuna capital started to gain prominence in the 1970s due to its strategic location. The traditional fishing grounds for tuna are the Mindanao Sea, southern Sulu Sea, Moro Gulf and Celebes Sea, which are all relatively close to General Santos, compared to other provinces in the south. The city is likewise near the major export markets, which translates to cheaper shipment/freight costs for local exporters.

IV. TUNA PRODUCTION

The Philippines has been a major producer of tuna since the 1970s. In 2003, the Philippines ranked fourth in the world, after China, Japan and Indonesia in the production of tuna and tuna-like species. In the Western Central Pacific Region, it ranks a close second to Indonesia in tuna production, accounting for 22 per cent of the total catch in the region (FAOSTAT, 2005).

Tuna resources are distributed throughout the Philippine waters. The major production areas in the Philippines are the Moro Gulf/Celebes Sea, the Sulu Sea, and the South China Sea. Outside the Philippines, tuna fishers are also known to exploit fishing grounds in Indonesia, Papua New Guinea and Solomon Islands.

A. DOMESTIC PRODUCTION

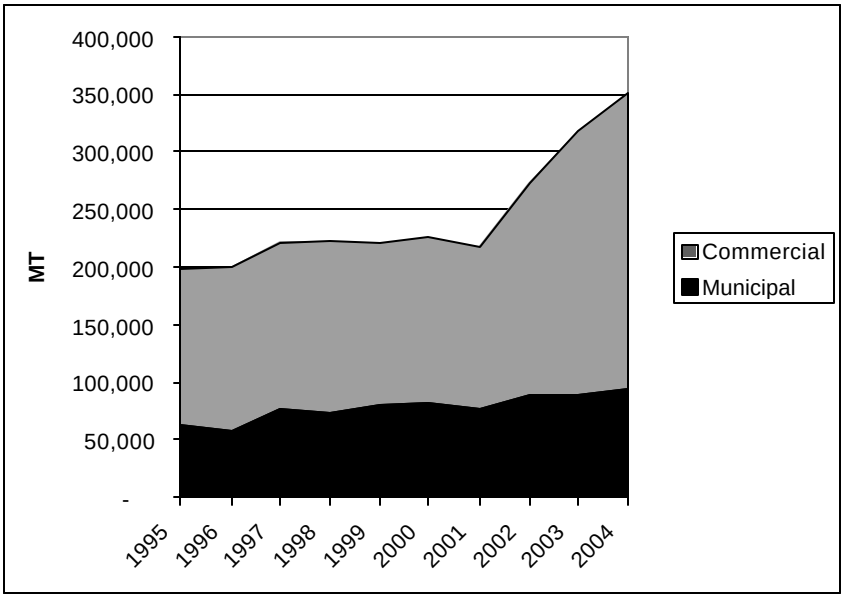
The official estimate of overall tuna production, per sector, is shown in Figure 9. Tuna production accelerated rapidly from 2002, primarily from the output of the commercial fishers. However, it has been estimated that in 2003, only 40 per cent of tuna landings from Region 12, where General Santos City is situated, were being reported for tax purposes (Estabillo, 2005). The more extensive use of the General Santos City Fish Port Complex (GSCFPC) in recent years may, therefore, be the underlying reason behind the sudden surge in commercial tuna production. Also, it is not clear how much of the reported catch was caught outside Philippine waters. For more recent years, however, the discrepancies between official figures and best estimates of various local and international institutions are no longer high (SPC, 2004).

The major tuna species in the Philippines are the skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus Albacores*), and bigeye tuna (*Thunnus obesus*), Eastern little tuna (*Euthynnus affinis*), and frigate tuna (*Auxis thazard thazard*). Production of the major species is shown in Figure 10.

Oceanic tuna (skipjack, yellowfin, bigeye, northern bluefin [*Thunnus thynnus orientalis*], and albacore [*Thunnus alalunga*]) are predominant in deep waters beyond the continental shelf. These are recognized as part of the regional stocks of the Western Central Pacific Ocean (WCPO). Tagging experiments reveal that there is lesser mixing of this stock with adjoining areas, compared to other regions of the WCPO. There appears to be little seasonality of availability. Skipjack, yellowfin and bigeye tuna spawn extensively in Philippine waters, with juvenile tuna making up a high percentage of the standing biomass of all species. Neritic tunas (Eastern little, frigate, bullet [*A. rochei*] and longtail [*Thunnus tonggo*]) are abundant in inshore waters.

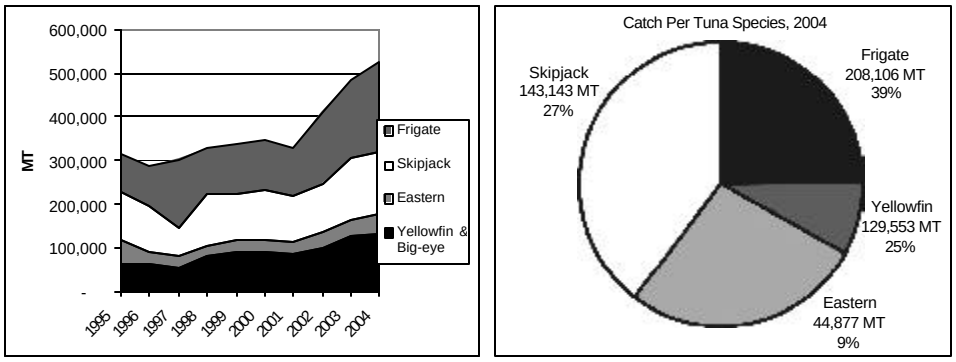
The following sections discuss the production of the four major tuna species by region and sector for a 10-year period. The reader is advised to use the map in Figure 2 and regional and sectoral statistics in Appendices A, B, C and D as references.

Figure 9: Overall Tuna Production by Sector, 1995-2004



Source: BAS

Figure 10: Production per Species: (a) 1995-2004, (b) Share per Species, 2004



Source: BAS

1. SKIPJACK TUNA

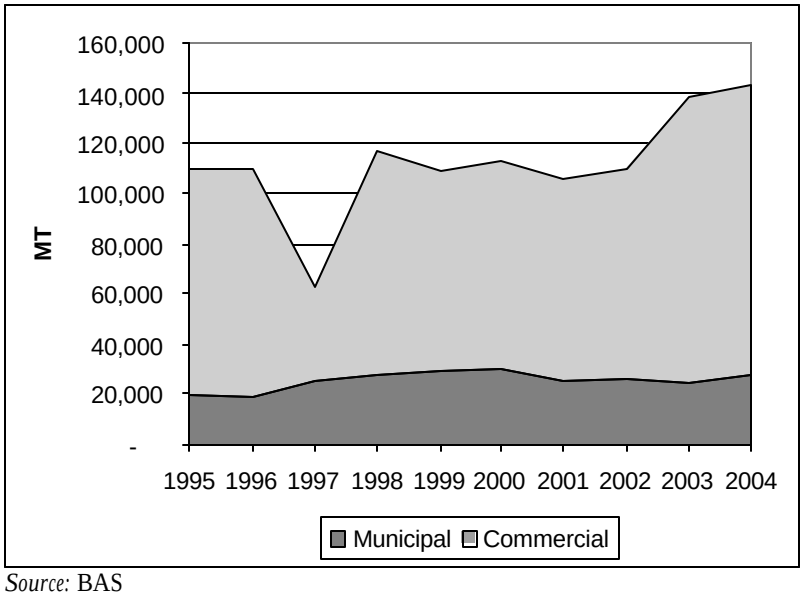
The skipjack tuna inhabits the surface layers of Philippine waters. In 2004, the small skipjack tuna comprised the second largest haul, at 143,143 tonnes. Figure 11 provides the skipjack tuna production per sector. Overall production is rising, owing to growth in the production of commercial fishers. Production by the municipal sector has been relatively steady through the years.

The major municipal producers come from Regions 4 and 9 (see regional map of the Philippines). Production in Region 4 declined from 1999 to 2004, with an average annual growth rate of –9 per cent. Production in Region 5 also declined from 2000 to 2004 by an average annual growth rate of 13 per cent. On the other hand, rapid growth was experienced in Region 9 from 2000-2004, with an average annual growth rate of 29 per cent.

The commercial production of skipjack tuna is on the rise. A sudden drop (-58 per cent) in catch was experienced during the 1997 El Niño, specifically in Regions 2 and 9. Region 9's production was able to bounce back, but Region 2 failed to recover in the succeeding years. Region 12 and Region 9 are the top commercial producers of skipjack tuna, with a production volume of 49,918 tonnes and 42,670 tonnes, respectively.

Production in the National Capital Region (NCR) has been declining through the years 1998-2004 at an annual growth rate of –9 per cent. On the other hand, Region 9 has experienced rapid growth from a mere 316 tonnes in 2001 to 48,716 tonnes in 2004. This shift in production and growth rates may be attributed to (1) the relocation of canneries from NCR to General Santos City in Region 12 and (2) improved catch monitoring from the greater utilization of the government-controlled GSCFPC.

Figure 11: Skipjack Tuna Production per Sector, 1995-2005



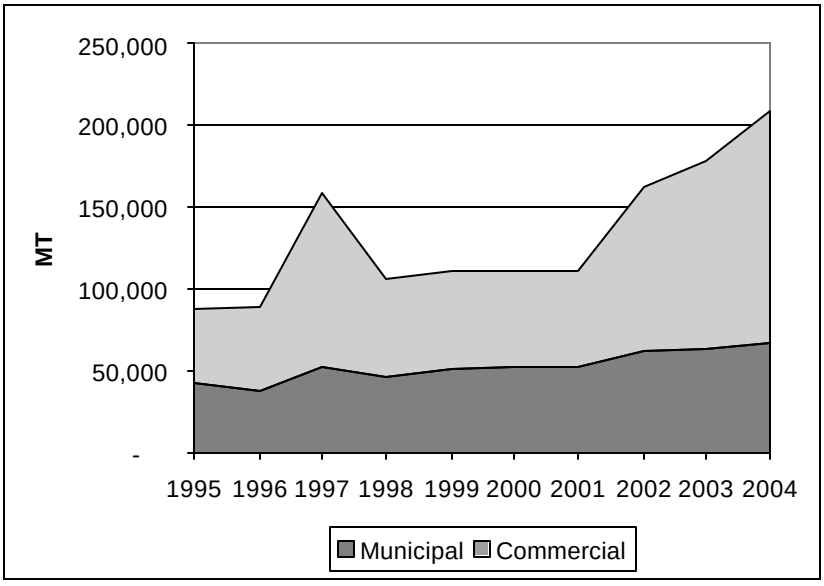
Source: BAS

2. FRIGATE TUNA

Frigate tuna production provided the largest haul in 2004, with 208,106 tonnes, or 39 per cent of total tuna production in the country. Again, the production is attributed to production increases by commercial fishers, as seen in Figure 12. Unlike skipjack tuna, frigate tuna production surged during the 1997 El Niño by 78 per cent. In 2004, the top municipal producers were Regions 3, 4 and CARAGA. CARAGA has experienced 147 per cent annual growth rates since 2001.

A top commercial producer in 2004 is Region 12, cornering 57 per cent of total commercial frigate tuna production. Similar to the production of skipjack tuna, production of frigate tuna jumped from 1,792 tonnes in 2001 to 80,166 tonnes in 2004. Again, this increase can be attributed to the number of tuna canneries located in General Santos as well as enhanced fish monitoring.

Figure 12: Frigate Tuna Production by Sector, 1995-2004



Source: BAS

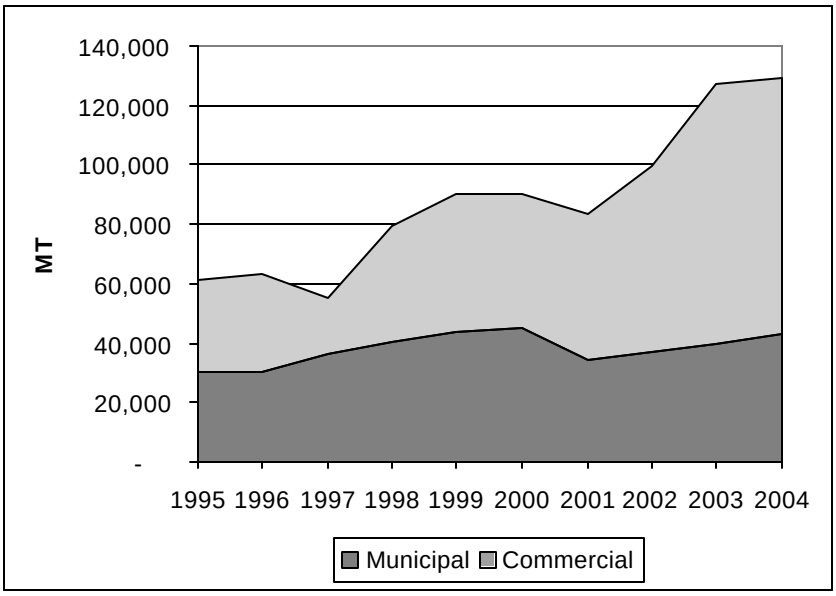
3. YELLOWFIN AND BIGEYE TUNA

Monitoring of yellowfin and bigeye tuna production has been aggregated over the past years. This is because yellowfin and bigeye tuna are rarely separated in the catch. This provides difficulties in estimating available stocks and determining catch limits for managing these species.

Production has increased, with growth coming primarily from the commercial fishing sector. Region 12 is the top commercial producer, cornering 52 per cent (44,883 tonnes) of the total haul in 2004. Again, Region 12's dominance is only recent, given that production in 2001 was a mere 109 tonnes. On the other hand, the prroduction of Region 11 drastically dropped (-90 per cent) simultaneously with the rapid growth of Region 12.

The top municipal producers in 2004 were Regions 4, 9 and 1. Production in Regions 4 and 5 peaked in 1999, declined in 2001, and then steadily grew after 2002.

Figure 13: Yellowfin and Bigeye Tuna Production by Sector, 1995-2004

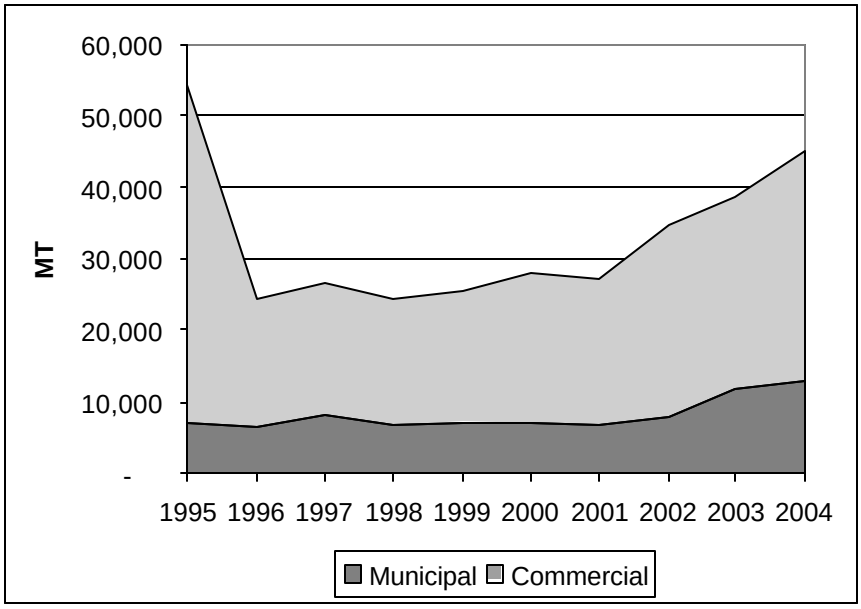


Source: BAS

4. EASTERN LITTLE TUNA

Overall production of Eastern little tuna dropped significantly (-55 per cent) in 1996, owing to the collapse in production of the commercial sector in Region 10. Overall production has since been growing. The top municipal producers are Region 4 (primarily from the island province of Palawan) and Region 6. The dominance of these two regions is relatively recent (2001-2004). It should also be noted that in Region 6, commercial production dropped simultaneous with the increase in municipal production.

Figure 14: Eastern Little Tuna Production by Sector, 1995-2004



Source: BAS

B. PRODUCTION OUTSIDE PHILIPPINE WATERS

1. PURSE-SEINERS

In 2002, a bilateral fishing agreement was reached with the Republic of Indonesia, to last until December 2005. Fifty-four small purse-seiners and 11 super-seiners have been endorsed to fish in Indonesian waters. The agreement did not require catch data reports; thus, no record is available on the level of catch in the Indonesian EEZ. Most of the catch is landed in Philippine ports but a percentage is also unloaded in Philippine-operated tuna canneries in Indonesia.

Philippine representatives sought the extension of the bilateral agreement with Indonesia. A new Memorandum of Understanding was forged on 23 February 2006, which effectively extended the Philippines' access to Indonesian fishing grounds (BFAR, 2006). From the Philippine Fishery Report presented to the WCPFC Scientific Committee Meeting, the production estimates of Philippine and Papua New Guinea (PNG)-based Philippine vessels are shown in Table 2.

Table 2: Production of Philippine and PNG-based Philippine Purse-seine Bilateral Access Vessels in PNG Waters, 2000-2004

Year	No. of vessels	Skipjack (MT)	Yellowfin (MT)	Others (MT)	Total (MT)
Philippine purse-seine vessels					
2000	9	27,677	7,008	768	35,453
2001	10	15,138	9,684	429	25,252
2002	11	18,891	6,966	778	26,723
2003	10	24,339	7,099	487	31,926*
2004	11	27,288*	5,748*	817*	33,853*
PNG-based Philippine purse-seine vessels					
2000	13	28.508	9,125	1,720	39,353
2001	15	29.984	16,846	346	44,176
2002	17	40.461	22,242	422	63,125
2003	18	46.600	19,913	339	64,852*
2004	19	44.455*	13,234*	164*	57,852*

* provisional estimates

Source: Secretariat of the Pacific Community (SPC) Regional Database

2. HANDLINERS

Handliners are not required to report where their catch was caught; thus, no reliable estimates can be made regarding catch outside Philippine waters. It should also be noted that handliners are not covered by the bilateral agreement with Indonesia. However, depleted adjacent waters have pushed handliners to fish outside local waters. It is generally accepted that more than half of the landed catch of large tuna from municipal fishers come outside of Philippine waters (Indonesia, Palau, PNG).

V. PRODUCERS

The major tuna producers in Philippine waters are handliners and purse-seiners. These two are the only producers represented in the National Tuna Industry Council. Handliners are loosely classified as municipal fishers because of the small *banca*s and the passive nature of the fishing gear used, although mother-

boats have been known to reach up to 60 GT. This brings about confusion on whether the handliners should be classified as commercial fishers, based on the mother-boats, or as municipal fishers, based on the auxiliary boats and gear used. On the other hand, purse-seiners are considered commercial fishers.

Scant information is available for the tuna ring-net fleet and longliners. Classification can be ambiguous: several informants have mentioned that some small purse-seiners also utilize ring-nets.

To provide a better picture of the tuna fleet structure, Table 1 shows the different types of vessels, tonnage, estimated number and fishing grounds of tuna fishers of the Philippines. Only estimates are provided for small vessels since many of the municipal fishing vessels are not rigorously documented. Commercial vessels (which include large mother-boats) are required to initially register with government agencies, but, in practice, records are incomplete, and some commercial vessels fail to seek licences or to register due to the high costs of registration. It is common practice for vessel owners to register only the mother-boats and not the smaller boats that form part of the handline fishing fleet. A moratorium on commercial fishing vessels was passed in 2004 in order to abate overfishing.

Table 3: Estimated Tuna Fleet Structure

Type	Tonnage Number	Estimated	Fishing Grounds
Handline *Bancas*	Up to 60 GT	3,000?[8]	Philippines, Indonesia, Palau, High Seas, Papua New Guinea
Purse-seiners			
• Small Purse-seine	Less than 250 GT	110	Philippines, Indonesia
• Large Purse-seine and Super-seiners	Greater than 250GT	54	Papua New Guinea, Indonesia, High Seas
Tuna Ring-net	Less than 100 GT	100	Mostly Philippine waters
Longliners			
• Domestic		14?	Mostly Philippine waters
• Distant-water		25	Pacific, Indian and Atlantic ocean

Source: Barut and Garvilles, 2005

It should be noted that no other foreign flag vessel is allowed to fish within Philippine waters. Yet, foreign vessels have been regularly apprehended for illegally fishing (mostly tuna) in Philippine waters. A 1995 study concluded that as much as 10,000 tonnes of fish, 40 per cent of which is yellowfin tuna, have been caught by longliners engaged in illegal, unreported and unregulated (IUU) (Barut and Garvilles, 2005).

A. HANDLINERS

The primary producer of the high-priced Class A or *sashimi*-grade tuna destined for the international market is the humble handliner. Handliners are the small-scale producers of tuna and can be found in coastal communities all over the archipelago. The adult yellowfin, skipjack, and bigeye tuna are the common catches of handline fishing.

The tuna boom in General Santos has attracted poor fishers from different provinces in southern and central Philippines who come there to seek their fortune in tuna handlining. In General Santos, there are two types of handline fishers, the *palaran*[9] and the *pamariles*[10]. The primary difference between the two lies in their fishing grounds. The *palaran* handliner is confined in the municipal waters, while *pamariles* fishers can venture to distant waters that are even beyond the Philippine EEZ.

There is an estimated 3,000-4,000 boats engaged in tuna fishing, which corresponds to about 30,000-40,000 handline fishers. However, most of these boats are not registered, since ordinary handliners cannot afford the registration fees.

1. MUNICIPAL HANDLINER OR *PALARAN*

Fishing Gear, Vessels and Operations

The most distinct and unifying feature of handline fishers everywhere is the simple hook-and-line gear they used to catch tuna. The hooks are baited on a 1.5 kg nylon handline, strong enough to catch fish weighing 30-100 kg (Tambuyog, 2000). The hook-and-line gear has remained relatively unchanged over the years. Milkfish fingerlings are usually used as bait for tuna.

However, it should be noted that the *palaran* or the municipal handline fisher is not an exclusive tuna fisher. The multi-species nature of Philippine fisheries allows fishers to target a wide range of species and to use an assortment of fishing gear and baits.

The simple handline vessel with outriggers and a small engine is mostly 18-36 feet in length. Its small engine, with 1.5 horsepower (HP), limits the *palaran* to fish only within municipal waters. The *palaran* usually sets out for fishing late in the afternoon and stays at sea until early morning the following day, to coincide with the tuna's meal time, when it surfaces to eat.

On average, a *palaran* fisher hauls in four tunas a week. The aggregate catch, however, of *palaran* fishers in relation to the *pamariles* fishers cannot be accounted for since fish tally in the landing sites are not differentiated between *palaran* and *pamariles*. The small size of the vessel allows only a limited amount of ice to be carried. Unless the tuna is caught early in the morning and brought immediately to the port, the quality of the landed tuna is lowered, making it unsuitable for the export market, The local government unit (LGU) and some manufacturers/canners in General Santos are exploring the possibility of helping the *palaran* fishers to maintain the quality of their catch by providing a service vessel equipped with refrigeration. The vessel will roam the municipal waters and refrigerate the tuna catch of *palaran* fishers at sea, to avoid degradation due to poor icing. The details of this scheme are, however, still being discussed. The LGU and the processors are likewise planning to put up *payaos* in the municipal waters to help the *palaran* fishers.

ISSUES IDENTIFIED

The following are some of the issues identified from the literature and during interviews:

1. **Declining fish catch in municipal waters:** The decline is attributed to several factors, including overharvesting by commercial fishers who illegally encroach into municipal waters; the widespread use of destructive fishing practices (cyanide fishing, dynamite fishing); water pollution from industries; and aquaculture operations; degradation of coastal ecosystems (mangrove forests, corals, seagrasses) caused by various development initiatives (fishpond construction, resort construction).
2. **Pirates**: *Ambakpari* or pirates who 'seajack' fishers have been reported to steal 1.5-16 HP engines. Efforts to stop the seajacking of fishing vessels have been started by the local government of General Santos to help safeguard fishers' lives and livelihoods.
3. **Lack of capital to invest in more efficient gear and/or *payao*s**: Most *palaran* vessels are in need of serious repair and/or upgrading in

order to be more effective and efficient in the fishing ground, but poor finances prevent fishers from improving their vessels. *Payao*s are also capital-intensive, and efforts must come from the local government, processors and canneries to help finance *payao* installation for the use of *palaran* fishers.

Figure 15: Traditional Handline Vessel or *Banca*

2. DISTANT-WATER HANDLINERS OR *PAMARILES*

Gear and Vessels

Unlike the *palaran* who catch a variety of species, the *pamariles* specifically target adult tuna intended, hopefully, for the export market. The fishing vessels of the *pamariles* evolved with time, to cope with the changing fishing patterns. The great demand for tuna and the dwindling supply in nearshore fishing grounds eventually pushed *pamariles* fishers — who started with the traditional *banca*s with outriggers — farther and farther away from the municipal waters. This necessitated increasing the size of the vessels and equipping them with high-powered engines, similar to those used in trucks. With these changes, most handline vessels are now referred to as 'pumpboats' [11] or 'mother-boats'[12]. The large mother-boats carry auxiliary boats or *kawa-kawa* to scout for tuna around *payaos*. A big pumpboat displacing 15 GT can carry up to 10 *kawa-kawa*, as seen in Figure 16. The mother-boats are usually equipped with radio, compass, and a global positioning system. The handline vessels of today's *pamariles* can carry up to 50 to 150 blocks of ice[13].

Depending on vessel size, the cost of brand-new pumpboats can range from US$9,400 to US$28,300, while used ones are sold at US$6,700 to US$13,200

(CASCO, 2005). A fishing vessel has to pass through MARINA, the Philippine Coast Guard, and BFAR to be able to acquire all the necessary registration documents and permits before the boat can operate in commercial waters (that is, Philippine waters beyond municipal waters). The total amount of fees may reach US$190 (CASCO, 2005).

Figure 16: Mother Pumpboat with *Kawa-kawa* (Auxiliary Boats) Carried on the Outrigger

Fishing Grounds

The favourite local fishing grounds of the *pamariles* are around *payaos* in the Moro Gulf, Mindanao Sea, and the waters surrounding Davao and the islands of Tawi-Tawi. It takes one day and one night to travel to these fishing grounds.

The *payaos* are usually owned by purse-seiners. Handliners are sometimes allowed by the purse-seiners to harvest fish in their *payao* as long as they respect the priority user rights of the purse-seiners and do not cut the anchor line. The anchor line of the *payao* serves as both an anchor and a safety line for handliners during rough weather.

Due to the declining catch in the Philippine EEZ, the bigger handline vessels scour the international waters for tuna, amidst the looming threats of apprehension and detention due to poaching. Handliners are not covered by bilateral fishing agreements. Fishers travel as far as Indonesia (specifically within Irian Jaya), Australia, Papua New Guinea and Fiji to catch tuna. Fishing trips to Indonesia may last 20 days back and forth, while trips to farther places like Australia and PNG may last up to a month.

Operations

The start-up capital for a fishing venture varies, depending on the duration, fishing ground and crew capacity of the vessel. But, on average, a fishing expedition in the high seas needs a start-up capital of at least US$1,900. A boatowner usually has a financier if he/she is incapable of financing the fishing trip. A financier can either be an individual or a company.

A small pumpboat can carry up to eight fishers, while vessels of average size are capable of carrying 12-15 fishers. The bigger pumpboat can carry up to 20 crew or fishers. Each pumpboat has an operator who takes the role of captain and is, therefore, in command of the fishing operation. There is also a chief mechanic on board who takes charge of the pumpboat's engine. The rest of the crew is composed of fishers.

Sharing System

There are several players in the *pamariles* fishing operation, namely, fishers, financiers, brokers, boatowners and the pumpboat operator. They all have a share in the earnings of the expedition, and the manner in which they divide the income among themselves is called the benefit sharing system. The most common benefit sharing scheme that is being practiced in *pamarile*s fishing are locally called *lilima* and *sukod.*

Lilima sharing system

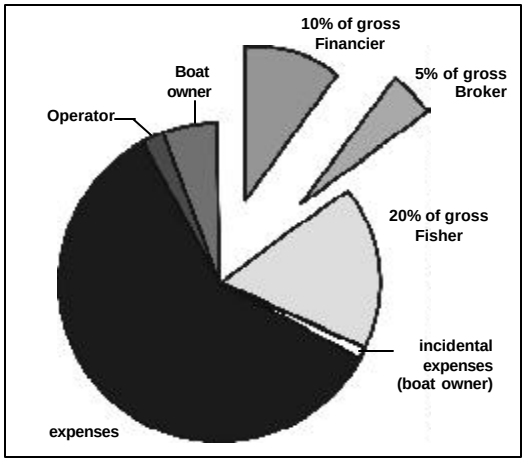
Lilima literally refers to the share of the fisher, which is equivalent to one-fifth or 20 per cent of the actual gross sale of his captured tuna for every fishing expedition. If, for instance, a fisher was able to catch four pieces of tuna with an aggregate gross sale of US$500, the fisher's share is US$100 or 20 per cent of the actual sale. The fishers' share used to be equivalent to 25 per cent of the gross sale (called *inupat* in the local parlance) but the escalating costs of fishing operation forced boatowners to reduce the benefits of the fishers to 20 per cent to cover the expenses of the fishing expedition. At present, a fisher gets to take home US$95-150 a month, on average, under the *lilima* benefit sharing scheme.

The financier usually gets 10 per cent commission from the gross sales of all captured tuna, while the broker or the one who disposes the fish gets 5 per cent. After the financier and broker get their commission, the incidental expenses incurred in the process of selling the fish like labour costs and port fees will then be subtracted from the gross sales and returned to the boatowner since he/she pays for all these fees.

The start-up capital will also be taken from the gross sales and given back to the financier. Once the share of the fishers, commission of financiers and brokers, incidental expenses, and start-up capital are deducted from the gross sales, the leftover money becomes the net sale of the fishing expedition.

This net sale will then be divided between the boatowner and the operator. The operator usually gets 15–25 per cent, depending on the turnout of the expedition, while the rest of the money will go to the boatowner. In cases when a *segunda* operator or chief mechanic is also on board, he gets 5 –15 per cent of the net sales.

Figure 17: *Lilima* (One-fifth) Sharing Scheme



Sukod Sharing System

Some schemes allocate as high as 35-40 per cent of the net sales to the operator. This kind of benefit sharing is called *sukod*, which literally means "of equal footing". In a *sukod* set-up, the operator is considered a partner of the boatowner in terms of benefits and costs. Thus, if the fishing expedition loses money, the operator gets to absorb the losses too, like the boatowners.

There is no fixed date or duration for the boatowner to pay off his/her financial obligation to the financier, since fishing turnover is highly unpredictable. If the boatowner is lucky, he/she can pay his/her debt in a few months' time, while others take a year-and-a-half to recover. There are also cases when a boatowner becomes so nose-deep in debt that he/she has to give up the boat to the financier as a form of repayment.

In cases of losing fishing ventures, the share of the fishers is said to get top priority. The financier usually absorbs the losses until such time that the boatowner has hit a fishing 'jackpot' and recovers from his/her financial setback.

Other Benefits for Fishers

In times of good tuna harvests, some *pamariles* fishers are given incentives like household appliances (television sets, refrigerators, video players, etc.) by some boatowners as a form of bonus. Recognizing the dangers in the high seas, some fishers are provided life insurance by boatowners. During one tuna boom, a boatowner gained popularity by providing hundreds of faithful boat operators opportunities to own pumpboats.

ISSUES IDENTIFIED

The issues identified from the literature and through interviews with handline fishers, operators and owners are as follows:

1. **Safety**: The primary concern of distant-water fishers is safety. Bad weather conditions have been known to kill or leave fishers stranded.
2. **Apprehension**: Since bilateral fishing agreements do not include handliners, they risk being apprehended when they fish outside Philippine waters. 'Arrangements' are usually made by boatowners with Indonesian authorities in order to free the fishers but the catch, gear and vessels remain confiscated.
3. **Rising costs**: Rising operational expenses have cut deep into the profit margins of fishers. Fuel prices, which used to take up half of all expenses in operations, have skyrocketed due to rising world prices. Philippine fishers used to buy cheap fuel in Indonesian ports but the recent removal of oil subsidies by the Indonesian government has made this illegal practice not worth the risk anymore.
4. **Stagnant fish prices:** Fishers said they do not know the exact price commanded by the tuna they have caught since they are not represented in the selling of the catch once the fish have landed at the GSCFPC. As such, they can only trust that their brokers and operators are honest in their dealings and will give them what is rightfully theirs. They note that fish prices have not increased commensurate with the rising costs of operational expenses and everyday goods.

5. **Entry of imported and smuggled tuna products:** Tuna catches from Taiwanese longliners have been allowed entry into the country, and are sold to local wet markets at extremely low prices, especially in Davao City. This has constrained the negotiating powers of producers to market their products at fair levels (see Section VII.B.4).

6. **European Union standards:** The tuna industry and government agencies are working hard to meet EU standards in order to be able to access EU markets. Handliners claim that they are hardest hit by these standards since some provisions are impractical for handline pumpboats. Some claim that these standards are trade barriers to protect EU markets and that fishers from other countries are not subjected to such strict monitoring (see Appendix E).

7. **Absence of representation in the National Tuna Industry Council:** Boatowners of pumpboats are protesting that the official representative of handliners in the National Tuna Industry Council is associated with purse-seining and not handlining (see Section IV.C).

8. **Legal Classification of Handliners:** (see Box)

Box: Re-classification Bill

Handline fishing in the Philippines used to be confined in municipal waters alone, and handliners' simple boats and passive fishing gear were clearly classified as municipal vessels engaged in municipal fishing. However, the dwindling catch of tuna in nearshore areas has prompted fishers to go farther until eventually they reached the high seas. This was made possible by the used of bigger and faster vessels called pumboats.The moment handline fishers started operating in the open waters with pumpboats, they ceased to become municipal fishers since they now fish in the commercial waters and are using vessels that weigh more than 3 GT. As such, the pumpboats were put in the same league with other commercial fishing vessels like purse-seines and longline vessels. This proves to be problematic to pumpboat owners since regulations, policies and fees of commercial vessels are applied to pumboats despite the fact that they are way below the purse-seine/longline vessels in terms of size and capacity. Pumpboat owners thus maintain that their vessels should be treated differently from other commercial vessels in terms of manning[14] complement and safety requirements. Pumpboat owners believe that a licensed captain is not needed to man their vessel since it is relatively small in comparison

(contd...)

(...contd.)

to purse-seine and longline vessels. They also cannot afford to pay a licensed captain and other professional crew who are required to be inside a commercial vessel. As long as commercial handline fishing is put in the same league with purse-seine and longline fishing, the handline industry will be badly affected since it would not be able to meet the requirements to be set forth by the Western and Central Pacific Fisheries Commission (WCPFC) for commercial fishing vessels. To address the dilemma of handline fishers operating in the commercial waters, bills have been filed in the Lower House of Congress and the Senate that will, among others, differentiate "commercial handline fishing" from other types of commercial fishing; seek to promulgate corresponding manning and safety rules and regulations for commercial handline fishing; specify the minimum requirements for the handline fishing boat; and liberalize the requirements for their registration and licensing with respect to manning complement, safety and working conditions for the crew, communications and other equipment.Since handline vessels also ply the international waters, the bill provides that the registration, documentation, inspection and manning of the operation of handline fishing boats as flag boats shall be the responsibility of the Maritime Industry Authority (MARINA). Registration and documentation of these fishing boats shall remain with the BFAR.

When enacted into law, the re-classification of pumpboats from commercial vessels to traditional vessels will undoubtedly put handline fishers and pumboat owners in a better position to comply with the stipulations and requirements of the WCPFC. The WCPFC allows traditional fishing craft and vessels to be exempt from the stringent regulations that apply to sophisticated fishing gear and vessels. Industry stakeholders likewise hope that when commercial handline fishing finally becomes recognized as traditional fishing, the number of illegal, unreported and unregulated (IUU) vessels will significantly be lessened since licences and registration fees will be lowered. The re-classification can likewise help in expanding the fishing grounds of hook-and-line fishers since it proposes to authorize handline fishing boats of Philippine registry to operate in international waters or waters of other countries that allow such operations, as long as they comply with the minimum safety, manning, radio communications and other requirements set by concerned government agencies. It also provides that fish caught by handline fishing boats shall be considered as caught in Philippine waters, and are thus exempt from all import duties and taxes when the same is landed in government fish landing centres and fish ports in the country.

B. PURSE-SEINERS

Canners in General Santos largely depend on purse-seine fishers for their raw supply of tuna, since 60 per cent of the catch of the purse-seine fleet is cannery-grade quality meant for processing, 35 per cent are delivered to the outside domestic markets, and the remaining 5 per cent are consumed locally (CASCO, 2005). It is estimated that the purse-seine sector provides jobs for at least 15,000 people in General Santos.

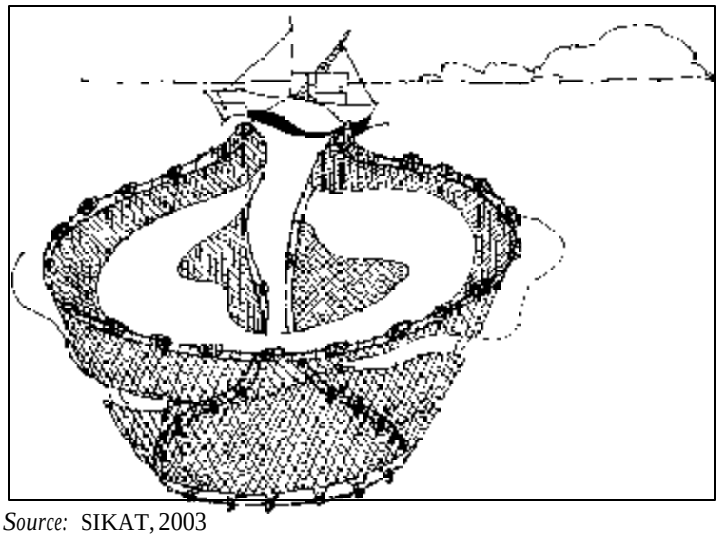
1. GEAR AND VESSELS

Purse-seine operations in General Santos are classifiefd into three, based on vessel size, namely, (1) super-seiners, (2) large seiners, and (3) and medium and baby seiners. Super-seiner vessels have a gross tonnage that range from 489-1,382 GT, large seiners are those weighing more than 250 GT, while vessels weighing less than 250 GT are considered medium and small (baby) seiners.

The 2004 records of BFAR show that there are five super-seiner vessels, 70 large seiners, and 36 medium and small seine fishing companies that are registered and operating in the country. Note that this is below the estimates provided in Table 3.

Fishing is done using a large net with sinkers on one edge and floats on the other, which hangs vertically in the water, and encloses fish when its ends are pulled together or closed like a purse.

Figure 18: Purse-seiner



Source: SIKAT, 2003

2. FISHING OPERATION

A typical purse-seine fishing expedition needs between US$19,000-38,000 in start-up capital. It is a fleet-based operation composed of a mother-boat supported by service and light boats. The mother-boat and the light boats stay in the open sea for six months to one year. The mother-boat is usually stationary, while the light boats roam the fishing grounds to check the *payaos* and direct the mother-boat to the areas where there are better chances of abundant fish catch. The purse-seine vessels frequent the fishing grounds of Indonesia, where a fishing agreement exists between the fleet owner and the local Indonesian authorities.

A service vessel comes regularly to transport the tuna catch from the fishing ground to the fish landing area at the GSCFPC. The purse-seine crew can likewise go home every time a service vessel visits the fishing operation. A minimum expense of US$1,800 is incurred every time a service boat goes to the open sea to transport tuna and crew and to bring in supplies of food and ice to the fleet.

When the cost of fuel was still affordable, purse-seine operators used to send service vessels on a weekly basis to pressure the fishing crew to be more productive. But with the successive fuel hikes and value-added taxes, fleet owners save on fuel costs by sending the service vessels to the fishing ground only if there is an advisory from the purse-seine fleet of a sizeable catch that needs to be transported or in cases when it has to deliver much needed supplies for the fishing expedition.

3. FISHING GROUNDS AND CATCH

Purse-seiners cover a wide range of fishing grounds within Philippine waters and outside the country's EEZ, such as Indonesia, Papua New Guinea and the high seas. *Payaos* of commercial fleets are deployed in these areas. As handliners target adult yellowfin in the deeper column of the water, the purse-seiners (and ring-nets) gather mostly juvenile tuna (mostly yellowfin and skipjack) that aggregate near the surface of the water. Studies show that more than 90 per cent of the catch of commercial fishers in Southern Mindanao is less than 12 months old (Aprieto, 1995). This explains why tuna caught by purse-seine vessels are usually smaller in size and are, therefore, not suited for export as fresh / frozen / chilled product. Those that weigh 300 grams and above go to the tuna canneries, while those weighing less than 300 grams are sold to the domestic market.

4. MARKET

Due to the relatively small size of fish caught by purse-seiners, the catch is sold by bulk or *banyera*. Each *banyera* contains 33 kg of tuna but is sold in the local wet market to a price equivalent to only 30 kg. The remaining 3 kg is considered a free 'allowance' for spoilage or product damage in the course of transporting the tuna from the fish port to the domestic market. This means clear losses on the part of the fish producers. The price per kilo of cannery-grade tuna can range from US$0.57-0.80. The buyers from the local wet market pay for their purchases in cash.

In the case of canneries, however, they pay for the full 33 kg for each *banyera*. This is the primary reason why producers prefer to sell their products to the canneries even if the local wet market offers higher prices for tunas that weigh 300 kg and up. The canneries usually pay after 10-15 days.

Boatowners claim that the increasing popularity of *katsubushi*, tuna shavings popularly used in Japanese recipes, has helped maintain demand, and eventually, the price of the purse-seine catch at a competitive level. Buyers from the local market are forced to offer better prices for the catch lest they be outbidded by the *katsubuhsi* buyers.

ISSUES IDENTIFIED

The issues identified from the literature and during interviews with handline fishers, operators and owners are as follows:

1. **Access to foreign fishing grounds:** Although bilateral fishing agreements have been made, a number of purse-seiners that fish in foreign fishing grounds are still not covered by these agreements due to high fees and constraints that may be imposed on their catch. Again, fishers risk apprehension and confiscation of their catch while poaching.
2. **Rising costs:** Similar to handliners, rising fuel costs affect the feasibility of fishing operations.
3. **Fine-mesh nets:** Purse-seiners are accused by other producers of using fine-mesh nets that contribute to the growth of overfishing.
4. **Overproduction:** In previous years, the World Purse-seine Organization has called for the reduction of production in order to stabilize world tuna prices.

VI. POST-HARVEST FACILITIES

A. GENERAL SANTOS

1. CITY FISH PORT COMPLEX (GSCFPC)

The establishment of the GSCFPC contributed immensely to the development of the Philippine tuna industry and fortified the city's role as the country's tuna hub. Prior to the construction of the GSCFPC, municipal fishers and small-scale commercial fishers unloaded their catch at private wharfs such as the Lion's Beach, Poblacion Landing and the Bula Landing Centre. Large commercial fishing vessels often have their own private ports and landing areas. Without proper post-harvest facilities and appropriate berthing places for fish vessels, the quality of exportable tuna was greatly compromised. Without proper management, fishers claim, the landing areas were also havens for criminals. Despite these conditions, the Philippines held the distinction of being the third largest producer of tuna in Southeast Asia between 1985 and 1989.

The construction of the General Santos airport in 1991 paved the way for the fast and efficient transport of tuna products from General Santos to the international markets. To solidify the country's presence in the international tuna trade, the private sector initiated moves to construct a fish port. The fish port became operational only in 1998. The tuna traders were the first to transfer to the fish port and occupied Harbour Basin # 1. In July of the same year, small- and medium-scale fishers left the Lion's Beach to occupy Harbour Basin # 2. Full operation was realized only in March 1999 when members of the South Cotabato Purse-seiners Association (SOCOPA) started unloading their catch in Harbor Basin # 3. Construction of the GSCFPC was financed through a grant by the Overseas Economic Co-operation Fund (OECF) of Japan, while the land on which it stands was donated by the American government.

The GSCFPC hauls in the most number of yellowfin tuna in the country. It is second only to the Navotas Fish Port Complex (NFPC) in terms of total fish volume, despite starting operations only eight years ago. Once fishing vessels reach the shore, the tuna catches are landed at the GSCFPC, specifically at Market 1, for handline catch, and Market 3, for purse-seine catch. The big fishing companies have a designated area in the landing sites where tuna trading is done.

Physical Facilities

The presence and accessibility of pier landings, market halls, ice plants, cold-

storage facilities, loading areas and a fuel depot within the port contributed to the tuna industry's quest of achieving global competitiveness. The GSCFPC accords fleets a 750-m quay; a 300-m wharf for 2,000 GT reefer carriers; and refrigeration facilities consisting of a 1,500 cold storage capacity, a 60 tonnes/day ice plant, brine, air blast and contact freezers.

In 2001, additional facilities such as a weighbridge station and fish sorter/conveyor became operational. Market 4, on the other hand, was completed in July 2003. It has a meter harbor basin, concrete roadway and apron, loading area, freshwater pumphouse and drainage sewerage system.

Due to the lack of a fish conveyor in the landing sites, the big tunas are carefully carried one by one from the pumpboat to the landing area by a hired labourer contracted by the boatowner. Tunas caught by purse-seiners are, however, transported from the vessel to landing site in Market 3 by containers or *banyera*, each weighing 33 kg. Bruises and cuts in the tuna meat spell the difference between a *sashimi*-grade or class A tuna and a downgraded or class B tuna. Proper and careful handling of tuna is, therefore, a must during fish landing.

Port Expansion Work

Barely four years after it started operation, plans to expand the fish port were already underway to accommodate huge refrigerated boats and other large-scale fishing vessels. China National Constructional and Agricultural Machinery Import and Export Corporation extended a US$25-mn loan to the Philippine government for the improvement and expansion of the fish port's facilities. The Philippine government shelled out US$2.7 mn as counterpart fund, comprising 10 per cent of the total project cost.

The contract cost covers the dredging of the existing wharves, installation of a 1.5 tonne cold-storage facility (equivalent to eight storage rooms), construction of an additional 500 cu m wastewater treatment plant, power substation with standby generator, processing area and installation of four sets of contact freezers.

The Feasibility Study for the fish port expansion was completed in October 2002. The study was made by the DA and a China-based construction and agricultural corporation.

Package A of the expansion plan, which includes site survey, soil investigation and detailed engineering plan, was finished in 2004. At present, Package B of the GSFPC expansion, which is civil works, is under way.

The proposed expansion will provide additional infrastructure facilities for fish landing and marketing. It will enable not only efficient unloading of fishing vessels and carriers but also improve the handling and distribution of fish. Likewise, it will encourage canneries in the area to expand their capacity. The new wastewater treatment plant will accommodate additional volumes of wastewater to be generated from the industries that will be set up inside the fish port complex.

The berthing facilities in Market 4 are now under construction to accommodate international vessels from Marianas, Solomon Islands and other tuna fishing nations, which will be allowed to dock at the GSFPC. The impending entry of international vessels in General Santos is seen by the government as a positive move in ensuring a steady supply of tuna for the local canneries and inspire the growth of more canning corporations, which will generate additional jobs. Some producers, however, are sceptical about the entry of international tuna vessels since they see them as threats or competition to the local fishing sectors.

Institutional Port Services

Besides the physical and post-harvest infrastructure being offered by the GSFPC, policies and programmes are being formulated that affect the quality of the fish being exported to other countries. The fish port management and the major players of the fishing industry are busy training and familiarizing the fish workers and traders on fish quality enhancement programmes like Hazard Analysis Critical Control Point (HACCP), Good Manufacturing Practices (GMP), and the Sanitation Standard Operating Procedures (SSOP). These systems do not only assure the quality of the fish and fish-related products that are unloaded, traded and processed inside the port complex but they also guarantee that the port's products are safe for public consumption.

A GSFPC Fish Quality Enhancement Multi-sectoral Task Force was created to further improve and monitor the implementation of HACCP, GMP and SSOP, which are also considered as post-harvest services.

B. CANNERIES

Fish canneries had been established in the Philippines even before World War II, with two canneries of the National Development Company in Western Visayas and Central Luzon. These canneries eventually folded up due to the stiff competition from imported products. The industry was revived only in

the 1970s, when Sta. Monica Corporation processed sardines and mackerel. An import quota on canned fish was imposed in 1976. This import quota acted as a partial ban on imported canned fish and protected the industry, thus encouraging other canneries to be set up. The increasing tuna catch from purse-seiners led to the establishment of three major tuna canneries. These canneries soon competed with frozen tuna exports. The surge of the canned tuna exports occurred when demand for frozen tuna in the US and Japan became erratic, resulting in fluctuating prices. American fleets registered large tuna catches, thereby reducing the demand for frozen tuna from the Philippines. Moreover, better prices were offered for the processed tuna. The canned tuna export later attracted more investors, and encouraged other canneries to shift to using tuna as a raw material. By 1980, 25 canneries were operational (Thomas, 1999).

Lately, the number of tuna canneries has been reduced due to declining tuna catches, stiff competition with other processed tuna exporting countries (particularly Thailand) and difficulty in accessing new markets. At present, there are 16 canneries operating in southern Philippines, 10 in Zamboanga and six in General Santos.

The Tuna Canners Association of the Philippines (TCAP) reported that the total output in 2003 is 10.5 mn cases, equivalent to 250,000 tonnes of raw products (mostly oceanic tuna). Over 90 per cent of this output is destined for the export market. Favourable trade arrangements are pushing tuna canneries to develop new product lines (like pouch packs).

Outside the Philippines, there are two canneries in Bitung (Indonesia) and one in Madang (Papua New Guinea) that are Filipino-owned. The canneries in Indonesia are processing an estimated 20,000 tonnes per year, while the canneries in PNG are processing 30,000 tonnes annually. A second cannery in PNG is being constructed (Barut and Garvilles, 2005). Canning firms, in general, are facing tough times at present, since the rising fuel costs are making it difficult for them to cope with increased operational expenses.

1. ZAMBOANGA CITY

The last quarter of 2005 saw the impeding closure of five of the 10 canning firms in Zamboanga City, adversely affecting an estimated 6,000 workers. The timely intervention, however, of the Quick Response Team (QRT) of the Department of Labour and Employment (DOLE) was able to successfully convince the canneries to put aside plans to shut down temporarily. The QRT

is a special body formed by the DOLE in the regions to monitor industry closures and retrenchment due to the negative effects of globalization and the economic crisis.

The government promised to allot at least P3 bn (US$55 mn) to help local fishing and canning factories offset the impact of high operating costs and to upgrade their facilities. The DOLE has also set aside some US$9,400 to help workers who may lose their jobs as canneries trim down their operations

The active participation of the city government of Zamboanga has played a significant role in preventing the shutdown of the canneries. Instead of complete shutdowns, a few firms will just temporarily stop operations during the lean seasons. Of the 10 canneries in Zamboanga, two are tuna-canning firms. The rest are canned sardine processors.

2. General Santos City

There are six tuna canneries in General Santos, namely, Philbest, Ocean, Seatrade, Century, Alliance, and Celebes Canning Corporation, with a combined capacity of 134.2 tonnes. The biggest canner is Century, with a capacity of 200 tonnes, followed by Alliance, with 180 tonnes, Philbest, with 150 tonnes, and Ocean and Seatrade, each with a capacity of 100 tonnes. The smallest canner is Celebes, with a registered capacity of 75 tonnes.

Canneries in General Santos are relatively more stable than those in Zamboanga since the average utilization of the six canning plants is estimated at 83.8 per cent of their total capacity, as presented in the table below.

Table 4: Tuna Canneries in General Santos City and Estimated Capacity and Utilization

Canning Corporation	Capacity (MT)	Utilization (per cent)
Philbest	150	93
Ocean	100	100
Seatrade	100	50
Century	200	90
Alliance	180	90
Celebes	75	80
Average	134.2	83.8

Source: CASCO, 2005

Cannery Workers

Close to 8,000 people are working in the tuna-canning industry of General Santos and it is noted as the biggest private-sector employer of the city. Most cannery workers are hired by canning firms through co-operatives like Maverick Employees Co-operative (MAVEMCO). The terms of employment are based on contracts that are continuously renewed on the basis of performance and the labour needs of the canning corporations.

Workers in canneries are usually high-school graduates who are between the ages of 26 and 30. Though most workers are from the southern Philippines, a good number are also migrants from the Visayan region. Workers consider the canning plants as the best employer in the city in terms of job tenure and remuneration. Besides the basic pay, employees are also given State-mandated benefits like health insurance through Philhealth and Social Security System (SSS) premiums. Some even earn more than the minimum wage because their work is not paid by the hour but by volume of production; thus, bigger production output means higher pay.

Despite these, however, the turnover rate of employees is considerably high due to resignations, especially in the production department, where tuna is cleaned and loined. Work in the production line requires employees, who are mostly women, to stand for 12 hours (the extra four hours are considered overtime work) while cleaning and preparing the tuna for canning. Those who cannot endure the long hours of standing resign a few weeks after being hired. Most of those who resign are young single women who can afford to forego a job opportunity. The married and older ones prefer to stay for lack of other work options.

Workers express concern over the future of the canning industry in the light of the non-renewal of the Philippine-Indonesia fishing accord, the transshipment of tuna in the Davao market, and the rising cost of production. In the event that canning plants are forced to close due to the above factors, more than 8,000 people will be left jobless, with very little chance of finding jobs in other sectors of the industry.

ISSUES IDENTIFIED

Some of the issues that were identified by the stakeholders in the canning industry and from published literature are the following:

1. **High price of raw materials:** The almost 50 per cent decline in the purse-seine catch has triggered the increase in the price of cannery-grade tuna. The expanded taxes have likewise taken a toll on the cost of other materials like tin needed to process canned tuna.
2. **Tariffs**: Canners have to contend against tariffs and non-tariff trade barriers of the major export markets for canned tuna such as the EU and the US (see Section VII.B.4).
3. **Branding:** The non-descript packaging of canned tuna from the Philippines cannot compete with the already established brand names of canned tuna coming from Thailand, Chicken of the Sea. This puts a dent in the industry's bid to expand the market for canned tuna.

C. FRESH / FROZEN / CHILLED TUNA PROCESSORS

Fresh tuna is the highest-grade tuna, which is used as *sashimi*-meat and exported whole. Frozen tuna are tuna that are cut up according to the specifications of its market destination. It could be processed as prime fillet for institutional buyers like restaurants and supermarkets. If not fit to become prime fillet, it is processed as prime steaks. The frozen tuna that are cut into cubes, patties or crazy cuts are those that do no qualify as either fillet or steak. Tuna that are processed in canneries are the small-sized ones that do not qualify as frozen and cannot be exported in the international market as fresh.

1. Processing Technology and Infrastructure

Many traders in General Santos prefer to export *sashimi*-grade tuna in a chilled instead of frozen state. Chilling is usually done using large containers filled with ice. For frozen products, the big processors use the blast and brine freezing technology to process the tuna. This is an expensive technology that usually takes three to four hours to finish. The small processors / exporters who cannot afford blast and brine, resort to ethanol and dry ice to freeze their products. When dry ice melts with ethanol, it reaches a temperature of -40 degrees Celsius, enough to freeze tuna. This method is widely used by the traders since it is cheaper, takes only minutes to finish, and does not dehydrate the tuna (Tambuyog, 1997).

Processing plants are generally expensive to construct and maintain; thus, most processors just rent the readily available and strategically located fish port complex facilities, instead of constructing their own infrastructure that can cost up to P100 mn.

VII. FINANCING AND MARKETING

A. FINANCING

Financing plays a big part in the production of tuna since commercial fishing is a capital-intensive venture and most pumpboat owners have no money to finance their own fishing expeditions. As such, tuna buyers usually provide financing services to corner the catch of tuna producers (Vera, 2002).

Financiers can either be individuals or corporations that stand to profit from the fishing venture through (1) interest of the loaned amount, (2) commission from the gross sales of the catch, and (3) commission as trader if he also disposes of the catch. In cases of losing ventures, the boatowners are not obligated to pay off the financier at once but he is bound by his debt to sell his catch to the financier even at a price that is way below the prevailing market rates.

However, the escalating costs of fuel and the implementation of the expanded value added tax (EVAT)[15] have made fishing an even more chancy business shunning away financiers and discouraging vessel owners to make more fishing trips. The EVAT raised the costs of boat engines and other materials used to assemble or to maintain a pumpboat and the larger vessels used by the purse-seine fishers. It has likewise increased the costs of the food and other miscellaneous supplies needed by fishers for long-haul fishing trips. Thus, the implementation of the EVAT considerably raised the capital expenses for both commercial and municipal fishing, without any assurance of return on investments owing to the dwindling number of tuna in the ocean, and the stagnant price that tuna commands in the market.

For small-scale distant-water fishermen who would be away from their homes for weeks or months, loans are still sought, even though fishing operating expenses (including food) are covered by the financier of the boatowner. Fishers' wives look for financing sources in order to ensure that there is enough cash to meet the daily needs of the family left behind by the fisherman. Sometimes, the catch is small, and the income will not be able to cover the loaned amount. Therefore, the women are the ones who are left indebted to the financier-buyers (Vera, 2002).

B. MARKETING

1. WEIGHING AND CLASSIFYING

The marketing of big tuna starts with weighing and classifying the catch. The export-quality tuna should weigh at least 35 kg. The average weight of tuna

landed in Market 1 is between 40-50 kg, while the bigger ones can reach up to 80 kg. However, size alone does not guarantee tuna meat quality. Thus, fish classification plays a vital role in tuna marketing. The classifiers meticulously check the tuna for outside bruises and cuts before extracting the meat from the fish using a metal tube designed to be long enough to reach the different cross sections of the tuna. The extracted meat is examined for its texture, colour, smell and taste.

Tuna classification is a critical juncture in the tuna trade since it is very prone to human error. Cases of intentional misclassifications due to dubious agreements between classifier and buyer or classifier and broker are not unheard of in the tuna industry; hence, both buyers and sellers hire their respective classifiers to ensure the integrity of the classification process (Tambuyog, 1997). In hiring or contracting a classifier, expertise is not only the prime consideration of the employer but loyalty and honesty, as well.

The export-quality fish is classified as Grades A and B. Grade A tuna is exclusively sold to the international market and is usually exported whole or with heads and entrails taken out. Grade B tuna is also of export quality, but only its prime meats are exported. Some of it also goes to the high-end buyers in the domestic market like restaurants and hotels. Tuna classified as Grade C are those that go to the local market for public consumption, while some are bought by canneries and processing plants. As a standing practice, however, canneries buy their tuna raw material in Market 3 of the GSCFPC, where purse-seiners land their catch.

2. PRICING

The price of tuna is determined by factors like classification, size, season, fluctuations in supply and demand, and the operating costs. Prior to landing the fish catch, boatowners and traders are already monitoring the market price of tuna both in the local and the international markets. Such information is used as leverage in the haggle for price between buyer and seller.

The price of *sashimi*-grade tuna prevailing at the time of this study ranged from US$3.75 to US$4.70 per kg, while cooking-grade tuna is priced at only US$ 0.75 per kg or more, depending on weight classification, namely, <10 kg; 10-15 kg; 15-19 kg; 20-25 kg; etc. Traders generally dictate the going prices of tuna to the disadvantage of the producers, who feel that the pricing scheme is cartelized since traders often follow the same pricing cap for tuna products, thereby abolishing competition that could have resulted in higher prices for tuna.

3. SELLING

The brokers and the *jamboleros* are the primary actors in the selling of the tuna harvest. They act as the mediator or middleperson between the trader and the producers. Brokers mediate for the commercial handline fishers, while *jamboleros* usually sell the catch of the *palaran* or municipal fishers.

Since traders, most of the time, follow the same pricing scheme, brokers and *jamboleros* cannot always choose based on the highest bid. Thus, some sellers rely on the *suki* or 'preferred client' system in selling the tuna harvest. Preferred clients or *suki* are chosen by brokers based on their capacity to pay outright cash; most traders pay only after a 10-15-day waiting period.

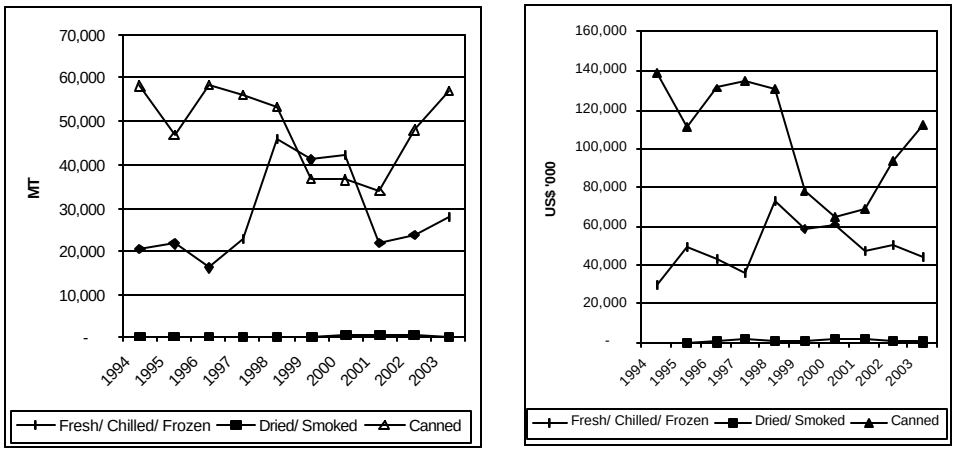
There are, however, instances when boat owners have no choice of traders or buyers since their catches are automatically sold to the financiers, who also act as traders, to whom they are indebted. By financing the cost of the fishing operations, the traders are assured of a steady supply of tuna at a price that they can dictate. Within the industry this is referred to as 'cornered catch'. It is claimed that financier-traders gain more profit from trading the produce than from financing the fishing operations. As such, financiers are relatively lax in collecting payments from loans in order to enhance social capital or relationships built on loyalty and trust with the fish producers (Vera, 2002).

4. INTERNATIONAL TUNA TRADE

Export

The Philippine tuna industry contributes significantly to the international trade of the country, both as an export and import commodity. Tuna export can be classified into three forms, namely, (1) fresh/chilled/frozen, (2) dried/smoked, and (3) canned. Figure 19 (a) and (b) reveal the export volume and value of tuna commodities. Total export earnings reached almost US$157 mn in 2003.

Figure 19: Tuna Exports (a) Volume in Tonnes and (b) Value in US$ (000), 1994-2003



Source: BAS

The top export tuna commodity is canned tuna, with earnings of US$111.8 mn in 2003. The canned tuna industry is rebounding from the slump experienced from 1999-2001. Fresh/chilled and frozen commodities reached US$44.7 mn in 2003. Production peaked in 1998-2000 before dropping in 2001. Export volume grew thereafter but US$ free-on-board (fob) earnings continued its downward trend.

For the fresh, frozen and chilled tuna products, the US market is preferred by local exporters over Japan because of more stable prices and less strict standards. Exporters allege that such arrangements are possible since the Americans do not have a large tuna fleet to protect, unlike Japan. Exporters enter the Japanese market usually during holidays since tuna consumption during these times is predictably high. Exporters are sure to get a high price, and rejects are kept at a minimum.

The major issue affecting the processing sector at present is the saturated US market. Because of the EU ban on smoked frozen products from Asian countries, the US market suddenly became flooded with processed imports from the Philippines, Indonesia, Thailand and Vietnam, triggering a drop in prices. This significantly reduced the market share of the Philippines, and depressed the earnings of processors.

The European and Japanese ban on the Philippine smoked tuna was supposedly triggered when substances like dioxin and furan, believed to be carcinogenic, were found in the products from other countries. The ban persisted even though

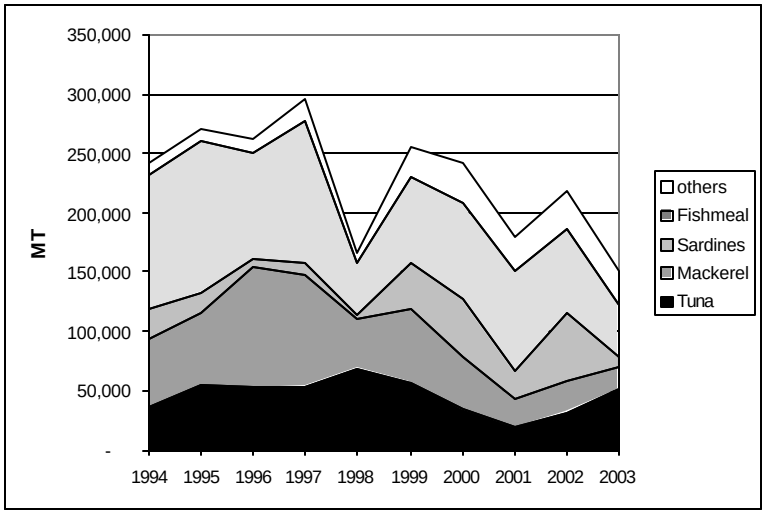
the US Food and Drug Administration declared that smoked tuna do not pose any threat to health, and are thus accepted for importation into the US. Local manufacturers opined that the allegations against smoked tuna are just another form of non-tariff barrier against Philippine products. The government is now negotiating with the EU and Japan for the possible re-entry of smoked tuna in their markets.

Canned tuna, mainly from Thailand and the Philippines, used to face a crippling 24 per cent tariff in the EU, compared to 0 per cent tariff for products coming from Andean countries. Through a long negotiation process, the EU offered a compromise of a 12 per cent tariff on a quota of 25,000 tonnes, to be shared by Southeast Asian countries in 2003. This allowed the tuna canneries to recover and increase operations.

Import

In terms of importation, fresh/chilled/frozen tuna is amongst the top three fishery product imports of the country. In fact, it became the top fishery import product in 2003, with almost 52,000 tonnes. As mentioned earlier, imported tuna is primarily intended for the tuna canneries. Local producers have long protested the entry of imported tuna. However, the strong export demand for canned tuna, the relatively low price of imported tuna and the need for a stable supply to keep the canneries operational at profitable levels led to the continued importation of tuna.

Figure 20: Fishery Product Imports, 1994, 2003



Source: BAS

Another issue related to trade is the entry of smuggled tuna to the wet market through transshipment points, particularly in Davao City. The local government of Davao City defended the entry of the tuna and wanted it to be imported legally and sold to local markets at lower prices, so as to ensure food security in the locality. Local producers claim that there is no shortage of tuna and that those caught by Taiwanese fishing vessels are dumped and sold at prices less than those caught by local producers. The BFAR eventually allowed the sale of a limited amount of imported tuna, to the dismay of local producers and traders. The volume of tuna unloading by Taiwanese longliners in the Davao Fish port is shown in Table 5. Decline in unloading is attributed to the growing preference to unload in Indonesian ports.

Table 5: Unloading Volume by Foreign Longline Vessels in Davao Fish Port, 2000-2004

Year	Volume (T)	Transshipped (T)	Retained (T)
2000	897	3,399	760
2001	932	5,318	2,244
2002	786	5,146	2,910
2003	643	5,065	3,183
2004	621	4,210	1,460

Source: Philippine Fisheries Development Authority

VIII. TUNA MANAGEMENT

The continuous growth of tuna landings, based on official figures, suggests that tuna stocks are still being harvested below the MSY. However, the validity of the figures has been questioned by fishery experts. Despite improvement in recent monitoring, production trends across time are difficult to ascertain. 2003 stock assessment reports of the Scientific Co-ordinating Group of the Preparatory Conference of the WCPFC revealed that tuna stocks in the WCPO have not been fully exploited. Skipjack is not being overfished and the stock is not in an overfished state. Yellowfin tuna are not being overfished but the stock is nearing full exploitation, especially in the equatorial region. Bigeye tuna findings are inconsistent with previous studies, but the conclusion is that overfishing is occurring but the stock is not yet overfished (Reid, 2005).

Several fishery experts have predicted the imminent collapse of Philippine tuna fisheries, owing to several factors. The widespread use of *payao* has facilitated the rapid removal of juveniles from the stock, and altered feeding and migration patterns of tuna (Zaragoza et al, 2004). Several stakeholders

point to the popular use of fine-mesh nets of purse-seiners as the culprit in catching large volumes of juvenile tuna, but the very use of purse-seines near *payaos* actually target juvenile fish near the surface.

Despite the ongoing debate on the status of tuna stocks, the massive commercial demand for tuna would inarguably requires the management of the resource. The highly migratory nature of tuna necessitates international co-operation in its management.

A. ORGANIZED INDUSTRY

The many problems and complexities inherent to a multibillion peso industry that operates in both domestic and international markets soon caught up with the various stakeholders of the tuna industry. Issues like tuna resource management, tariff and non-tariff trade barriers, and increasing costs of operation need to be addressed by the industry through unified moves. Such moves are, however, difficult to make since prior to 1999, the industry was poorly organized, with only a handful of existing organizations. Thus, the industry only has limited contact with government, and no real policy agenda that can help set the future direction of the local tuna trade (Swerdloff, 2004).

The creation, however, of the South Cotabato, Sultan Kudarat, Sarangani, and General Santos (SOCSKSARGEN) Federation of Fishing Associations and Allied Industries (SFFAAI) in August 1999 took the industry a step closer to unification as it aimed to:

- unite the diverse subsectors of the tuna industry;
- serve as a forum to discuss problems and how to resolve them; and
- represent the tuna industry in lobbying for policy reforms and other concerns that affect it.

The SFFAAI brought together the major stakeholders of the tuna industry, namely, (1) large purse-seiners, (2) small medium purse-seiners, (3) handline fishers, (4) tuna canners, and (5) frozen *sashimi* processors.

Inspired by the success of their regional federation, SFFAAI brought organizational expansion to the national level, resulting in the creation of the Confederation of Philippine Tuna Industry. It brought together almost all tuna fishing and processing players in the country. The highly organized nature of the country's tuna industry greatly helped in further developing the tuna trade, as the federation and confederation gave stakeholders a legitimate and effective avenue for expressing their opinions on regional, national and international issues.

B. NATIONAL TUNA INDUSTRY COUNCIL

The National Tuna Industry Council was created specifically for tuna through DA Special Order 659 in 2000, to formulate a strategic Action Plan for the industry; review and recommend policies affecting bilateral and multilateral fishing agreements, and trade relations; recommend projects and programmes for the benefit of the industry; co-ordinate with private and public entities affected by the action plan; and establish an integrative and intersectoral mechanism for collaboration. The number and representation of the Council are as follows:

- one representative of the Department of Agriculture;
- one representative of the BFAR;
- one representative of the Philippine Fisheries Development Authority;
- five representatives from the fishing or producing sector (four from purse-seining and one from handline operations); and
- five representatives from the processing sector (four from canneries and one from fresh/frozen processing sectors).

The SFFAAI is represented in the council. However, it should be noted that the lone representative for handline operations is personally more associated with purse-seiners and not handliners. This has caused uproar amongst handline pumpboat owners.

The National Tuna Industry Council was instrumental in the development of the Philippine National Tuna Management Plan in 2004, which is expected to be implemented in 2006. The draft aims to:

1. maintain tuna catches at a sustainable level by adopting management measures; match fishing effort to TACs by limiting fishing capacity;
2. assure equitable use of the tuna resources by appropriating allowable catches to specific user groups;
3. ensure meaningful scientific data by acquiring timely and accurate catch effort and biological data; and
4. eliminate IUU fishing of tuna stocks through rational MCS systems.

The plan provides for several options to manage the tuna resources, and reduce friction/conflict between resource users. For managing tuna resources, the plan recommends the following:

- control of fishing capacity to equate fishing effort to MSY by limiting the total annual number of fishing vessels and/or fleet purse-seine sets;
- control of fishing effort (that is, total annual number of fishing days or fleet purse-seine sets);
- control of fishing seasons (that is, closure of fleet operations during specific times of the year);
- control of fishing areas (that is, designating areas where tuna catching is prohibited);
- control of total annual catch (that is, terminating fishing operations after TAC is reached);
- control of catch of immature fish through (1) regulating minimum net mesh size; (2) prohibition of sale of immature fish; and/or (3) regulation of maximum depth of net of round scad purse-seine and ring-net fisheries.

To reduce conflict between stakeholders, the plan proposes the following:

- allocation of TAC to specific user groups (purse-seine fleet, handline fleet, municipal fishers);
- designation of exclusive fishing zones that can be allocated for specific user groups;
- limitation on FADs by putting a ceiling on the number of FADS that can be set by each purse-seine catcher vessel.

Based on catch estimates and the National Tuna Management Plan, the proposed MSY and TAC for different species are shown in Table 6.

Table 6: MSY, TAC and 2004 Catch Estimates of Select Tuna

Species/ Sector	MSY (MT)	TAC (MT)	2002 Estimates Used	Comments	2004 Catch[a] (MT)
Skipjack	154,000	**150,000**	132,000	Proportional MSY based on distributed catch at MSY level; higher than potential yield because of assumed higher productivity in Phils	143,143
Commercial		115,000			115,738
Handline		2,000			
Municipal		33,000			27,405[b]
Yellowfin (YF)	114,000 (YF)	**110,000**	110,000 (YF)	YF – As above; much higher than potential yield in this case; yield demonstrably higher in Indonesia and Phils.	129,553[c]
Bigeye (BE)		**7,500**			
Commercial (YF)		75,000			87,094[c]
Commercial (BE)	9,000 (BE)	3,000	9,000 (BE)		
Handline (YF)		20,000		BE –Current Catch above this, and regional catch above F at MSY; may decrease when recruitment reduces	42,459[bc]
Municipal (YF)		5,000			
Handline (BE)		4,500			
Municipal (BE)		0			
Bluefin	Not available Not available	0	Unknown	TAC set at zero because bluefin occur only during spawning in a small area of the northern Phils	
Albacore		0	Unknown	TAC set at zero because catch is estimated at less than 1 MT	

Source: Philippine National Tuna Management Plan, BAS (2005)

[a] – The MSY and TAC were determined prior to the release of official 2004 catch data

[b] – Catch of handline fishers are classified by BAS under municipal fishers

[c]- Yellowfin and bigeye tuna production estimates were aggregated.

Based on official catch figures in 2004, skipjack tuna resources have not yet reached the proposed MSY and TAC. However, commercial production has already breached the TAC. This implies no further increase if commercial fishing effort. The remaining allocation for increased production is for handline and municipal fishers. It should be noted that the determination of the MSY and TAC and the comments were done based on 2002 catch estimates since this was the most recent data available. The tuna management plan was not informed by the 2004 catch estimates.

The failure to disaggregate yellowfin and bigeye tuna landing creates complications in using the species-specific TAC measures. However, the combined landing of both species in 2004 has already surpassed both the MSY and TAC.

In addition to setting the TAC, the plan also provides the following:

- limitation of participation in tuna industry to Filipinos, except for corporations with at least 60 per cent Filipino ownership;
- delineation of fishing boundaries wherein,
  - 0-10 km from the shore is exclusive for municipal fishing (*palaran*);
  - 10.1-15 km from the shore can be exploited by commercial handline fishing (*pamariles*);
  - special zones 15-20 km from shore in the Celebes Sea and Moro Gulf may be restricted to commercial handline fishing only; and
  - 20.1 km to the limits of the EEZ are open to all legal forms of tuna fishing;
- fleet capacity is regulated and restricted from expanding, based on figures as of 31 October 2004;
- limitation on fishing gear specifications (mesh size limit, no active gear in municipal waters, limitation of purse-seines and ring-nets used to catch round scads limited to 80 m);
- limitation on the size of tuna caught and sold;
- limitation on the number and location of FADs; and
- fishing vessel monitoring.

C. NATIONAL AND LOCAL RESOURCE MANAGEMENT POLICIES

As earlier mentioned, the national framework in fisheries management is enshrined in the Fisheries Code of 1998. In 2004, the BFAR issued the Tuna Productivity Project in Davao Gulf (Region 11) in order to assist small- and medium-scale commercial fishers and revive the viability of local fishing grounds. The project, in partnership with the local government, set up a network of *payao*s in the gulf. Fishers issued permits to fish in these areas are allowed to use only handlines.

D. INTERNATIONAL CO-OPERATION

In terms of international co-operation, the Philippines is a signatory to the United Nations Fish Stocks Agreement (UNFSA). It is also a member of the Indian Ocean Tuna Commission (IOTC) and the International Commission for the Conservation of Atlantic Tuna (ICCAT). As such, the Philippines complies with requirements set forth by these commissions, which include special licences and registry, observance of catch quotas, vessel markings and catch reports.

More importantly and recently, the Philippines played a major role in establishing the Commission for the Conservation of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC). The Philippines became a member of WCPFC in July 2005. With this recent development, efforts are currently being made to harmonize local and national policies to conform to the provisions of the international convention. More specifically, a national tuna management plan has been drafted, in consultation with the National Tuna Industry Council.

The recent MOU with Indonesia not only covered joint co-operation in tuna production, but also included management initiatives, such as coastal resource management, marine fisheries conservation, and combating IUU fishing.

IX. DISCUSSION

The sustainability of tuna production continues to be a heated debate, due to the lack of reliable time series data for tuna production. With enhanced fish-landing facilities and infrastructures in major tuna hubs in the country, it is just a matter of time before such data can be used effectively for managing tuna resources within the country. This, of course, would still be limited by accuracy of data available from nations fishing in the Western and Central Pacific Ocean. With the creation of the WCPFC, improvements in monitoring are also expected. Until such a time, we would have to rely on anecdotal accounts of fishers.

Previously, interviews with fishers pointed towards declining catch and the need to engage in distant-water fishing to harvest the desired volume. It is notable for the research team to hear producers claiming sizeable harvests in nearshore or not-so-distant waters. The ability to access newer or foreign fishing grounds (legally or illegally), and decreased exploitation of nearshore resources have improved production. Improved management of nearshore municipal waters may have also slowed down the rate of decline in fish catch.

The pressing issue now for both small-scale and commercial fishers is the rapidly increasing operational cost of tuna fishing. Soaring fuel prices and the EVAT have pushed expenses up, while revenues have failed to increase proportionally. This is further aggravated by the current strong Philippine currency, which eventually depresses the value of US$ revenues. With profit margins diminishing, it is becoming clear that recovery from expeditions with low catches cannot be simply addressed by hitting a 'jackpot' haul. Boatowners now contemplate on stopping fishing operations to "stop the bleeding".

Fuel subsidies have been suggested, but they have been criticized as a solution that will just further aggravate the problem. The Philippine government is not about to heed to this request, given the fiscal crisis, the newly imposed EVAT on fuel, recent stabilization of world fuel prices, and the strong showing of the Philippine peso against other foreign currencies.

A. MANAGEMENT PLAN

Although the Fisheries Code of 1998 has pushed the Philippine fisheries into the realm of MSY-based resource management measures (for example, application of catch quotas), the lack of reliable data and the half-hearted push from government agencies to determine bioeconomic indicators have placed such regulatory measures in the freezer. Several fisheries experts have already questioned the applicability of using the MSY-based management measures in multi-species and multi-gear fisheries. Conservationists have pushed for the application of the precautionary approach, which is also enshrined in the Fisheries Code, but the government still seems to lack the political will to implement such policies. Furthermore, the numerous landing sites[16] make it difficult to monitor reliable catch data and enforce catch quotas. BFAR does not even charge licence fees to commercial fishers, based on the resource rent, even if the Fisheries Code mandates them to do so. Long ago BFAR commissioned a study to determine the resource rent to rationalize commercial fishing licences, but it has not been used because of the strong lobby of commercial fishing federations.

The failure to disaggregate yellowfin and bigeye tuna scratches only the surface of problems related to monitoring fish stocks, a vital component in ensuring appropriateness of MSY management measures. Enumerators make judgement calls in the field on whether to classify landings of *pamariles* under commercial or municipal. The monitoring system is susceptible to under-reporting, with the presence and wide use of private ports by commercial fishing vessels. With under-reporting already verified as being done to reduce taxes, it will certainly be an option for commercial vessels to ensure continuity of their production in a TAC regime.

The entry of the Philippines into the WCPFC implies that the country will be subjected to international pressure to implement resource management measures. The National Tuna Management Plan provides management measures in a positive direction, but a more dynamic and consultative plan and process must be developed in order to adapt to the fast-changing and

complex status of fishery resources. Also, the plan will test the political will of the government to allot substantial resources into MCS, research and enforcement. It would also challenge the government to practise its mandate to provide preferential rights to small-scale fishers in exploiting resources.

Several details of the tuna management plan have not been determined or disclosed. Thus, it is still too early to evaluate whether the plan will be equitable to all concerned sectors.

B. MARKET ACCESS

Large tuna players are bent on accessing the growing EU market. The tuna federation, SFFAAI, will play a critical role in negotiating for applicable standards to achieve the food safety requirements of the EU. The recent success in lowering EU tariffs for canned tuna was met with jubilation by industry, as canneries increase their level of operations. However, it should be noted that the application of the proposed TAC on commercial fishing vessels would translate to no increase in the harvest of tuna. Opening up the canned tuna market in the EU would mean expansion of canneries without the corresponding increase in supply from local commercial fishers (unless purse-seiners resort to large-scale IUU fishing). This would mean that the expansion would have to be generated by attracting foreign fishing vessels to land their catch in the Philippines. This is currently being done by the expansion work in Market Hall 4 in the GSCFPC.

As canneries may be prepared to absorb the catch of foreign vessels, such may not be the case for local purse-seiners, handliners and other fish producers. Studies have shown that cheap imported/smuggled fish that are intended for canneries have found their way to the local wet markets. This has disrupted the buying patterns and preferences of consumers, depressed prices of local produce, and lengthened the selling time of fisherwomen (Vera and Vera, 2001). In Mindanao, such dynamics have been manifested in General Santos, with the transshipment of tuna by Taiwanese longliners in Davao City fish port. Thus, as established industries gear up for the opening of new markets, the small-scale fisherfolk and local ambulant vendors may feel the punch indirectly.

Boatowners, operators and fishers of handliners have expressed alarm over the standards being imposed on them by the EU. They claim that they are hardest hit by these standards because of the high cost needed for their pumpboats and crew to comply with them (see Appendix E for pertinent EU

standards for pumpboats). However, it is not clearly established whether the EU is a growing market for the fresh/frozen/chilled tuna commodities associated with handliners. A quick scan of top destinations of such export commodities reveals no EU country. The demand for such high-valued products has not been clearly established, and trading patterns and rules have not been fully studied. If opened, it can absorb the oversupply in the US market, and can push prices up for the producers.

C. FOOD SECURITY

In terms of food security, the tuna industry contributes positively because of the economic benefits associated with international trade and employment created from the production, processing and marketing sectors of the industry. The high value placed on the catch provides monetary compensation opportunities that are usually beyond the average income of municipal fisherfolk. Downstream industries, specifically canneries, provide employment that pay minimum-wage compensation to thousand of workers[17]. Such minimum wages are difficult to secure in most rural-based industries and in the agriculture and fisheries sector. These incomes fuel the economy of tuna hubs in the country.

In addition, the infusion of foreign currencies into the country contributes to building up the dollar reserve. This aids in the stabilization of the Philippine peso, a critical factor in keeping inflation rates down. In terms of availability of affordable food, frigate tuna continues to be one of the cheapest fishery commodities available to the Filipino people. Sustainability of production is difficult to assess because of difficulties in attaining reliable time series data. In the mid-1990s, experts hypothesized that the frigate tuna is undergoing a cyclical fluctuation in stock abundance. However, the surge in production attributed to enhanced monitoring efforts with the full operation of the GSCFPC showed that a large percentage of the catch had not been reported. Production has surged to 208,106 tonnes, which is way past the previous high of 158,494 tonnes during the 1997 El Niño. Being neritic, frigate tuna is not part of the three tuna species that will be managed under a TAC-regime. Thus, sustainability of the resources is questionable.

The large volume of importation of tuna for canneries does not translate to enhanced food security due to the availability of more affordable food. This is because more than 90 per cent of the production of the canneries is re-exported. Instead, the export of tuna products may have a more significant detrimental role in terms of availability of food.

D. FINAL NOTE

The immense volume of tuna landing and international trading in General Santos has highlighted the significance of the tuna industry of the city for the country. However, it may also have shifted attention away from other tuna fishers, specifically the municipal fishers scattered along the long coastline of the Philippines. Because of the multi-species and multi-geared nature of Philippine fisheries, the municipal fisher cannot be identified with a specific species of fish. Thus, in crafting tuna-specific policies, the needs of the municipal fisherfolk can easily be brushed aside and aggregated with other fishery policies.

However, tuna policies being drafted and agreements being entered into by the State are not neutral to the municipal fisherfolk. Though they may not reach foreign waters or sell their produce in international markets, they may both benefit or be harmed by these policies. Municipal fisherfolk may benefit from the potential sustainability of the stock, but they may also be excluded from reaping benefits from such measures. Registration, licence costs and other fees may also prove to be beyond the reach of poor fisherfolk. Conflicts may arise over who gets priority to catch fish in common fishing grounds, not only between commercial fishers and municipal fishers, but also amongst municipal fishers. As such, it is essential that small-scale fisherfolk (municipal fisherfolk, commercial handline fishers) must be well informed, consulted and well represented in the national policy-making bodies for tuna resource development and management. Only then can a movement be made to push genuine participation and representation from small-scale fishers in international bodies such as WCFPC.

With rising costs and inflation, livelihoods are generally placed at risk. Who does the government provide support to? It is much easier for government to support organized industries as in the case of tuna canneries in Zamboanga City. Can small fisherfolk co-operatives avail of such opportunities since they too are affected by the economic crisis gripping the nation? The minimal use by small-scale producers of the ACEF, the fund appropriated by the Agriculture and Fisheries Modernization Act, shows that such support may be inaccessible for them.

By accessing new markets and promoting an export-oriented industry, the municipal fisherfolk can benefit from the associated economic growth. However, they can also be caught at the tail end, with the expansion of fishing activities in terms of volume and space. The municipal fishers are the most

vulnerable to the brunt of overfishing because of their inability to shift fishing grounds, to explore distant waters and to access vital marketing information to increase value to their limited catch.

At the very least, small-scale producers must be consulted in the making of policies. Representation of handliners in the National Tuna Industry Council would not be enough to represent other municipal fisherfolk. National FARMC members may serve as representatives for municipal fisherfolk but they too would have the responsibility to inform and consult their own constituency.

Endnotes

[1] 17,460 km

[2] Area with depth of 200 m or below.

[3] Catch estimates are based on regular probability sample surveys of main landing centres and are augmented by non-probability surveys of other centres. Considerable uncertainties recognized, especially for tuna resources; because of catches by Philippine-flag vessels in other countries, commercial catches may be significantly under-reported, and constraints in funding for monitoring.

[4] Based on the Fisheries Code, passive fishing gear is characterized by the absence of gear and/or the pursuit of the target species; such as, but not limited to, hook-and-line, fishpots, traps and gill-nets across the path of the fish.

[5] Active fishing gear is legally defined as "a fishing device characterized by gear movement, and/or the pursuit of the target species by towing, lifting, and pushing the gear, surrounding, covering, dredging, pumping and scaring the target species to impoundments; such as, but not limited to, trawl, purse-seines, Danish seines, bag-nets, *paaling*, drift gill-net and tuna longline."

[6] No endorsement was given to the appointee because of her revocation of a Department Order of the DENR, which involves the delineation and delimitation of municipal waters. As such, municipalities with offshore islands have yet to delimit and delineate their municipal waters.

[7] Municipal/city council is the legislative arm of the municipal/city government composed of elected officials.

[8] Estimate of handline boats, including mother-boats.

[9] Literally pertains to a catcher of flatfishes.

[10] Literally pertains to a catcher of albacore tuna.

[11] A pumpboat is an outrigger canoe powered by a small gasoline or diesel engine. Smaller pumpboats might be powered by the sort of small single-cylinder engine that might be used to drive a water pump. Larger ones are often powered by recycled automobile engines.

[12] Referred to as mother-boat because it serves as the primary or 'parent' vessel for a fleet of smaller auxiliary boats.

[13] A single block is equivalent to 120 kg.

[14] The required crew for a commercial vessel, for example, licensed captain, chief machinist, radio operator, etc.

[15] The Expanded Value Added Tax (EVAT) removed the exemption of sensitive products and services from the 10 per cent Value Added Tax (VAT), including fuel. The EVAT also increased the rate from 10 per cent to 12 per cent, starting February 2006.

[16] BAS estimates more than 8,000 landing sites.

[17] Current minimum wage in Region XII is Pesos 200 or US$3.92 per day.

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3. Raul Gonzales, Handine Boatowner and Financier, November 2005
4. Eby Bustamante, Production Manager, Citra Mina, November 2005
5. Bayani B. Fredeluces, Technical Assistant, SFFAII, November 2005
6. Co-operative Members of MAVEMCO, November 2005
7. Sandra Arcamo, Secretariat, National Tuna Council, October 2005

Appendix A: Skipjack Tuna Production

Municipal Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995		4		373	2,198	1,825	1,535	376	628	2,712	516	5,927	102	1,229	1,965	19,390
1996		41		256	2,056	1,938	1,436	388	601	2,213	479	6,487	105	1,353	1,717	19,070
1997		104	11	479	11,303	4,339	699	68	572	2,692	44	1,962	793	726	946	24,738
1998		100	13	257	14,443	5,570	590	56	579	2,129	43	1,861	785	837	724	27,987
1999		110	18	299	15,558	5,457	640	58	610	2,051	36	1,816	906	808	977	29,344
2000		109	19	332	14,878	6,139	553	60	622	2,256	39	1,907	933	800	988	29,635
2001		80	10	603	8,816	4,374	403	35	464	2,956	693	1,463	720	2,223	1,878	24,718
2002		1,539	37	441	8,919	2,840	905	2,303	387	2,812	383	1,483	725	3,041	777	26,592
2003		2,399	39	481	6,150	2,359	872	1,356	523	3,713	477	1,248	1,165	2,640	820	24,242
2004		2,651	38	465	6,889	2,906	1,065	1,332	542	4,976	491	1,305	1,199	2,734	812	27,405

Commercial Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	25,713	193		1,612	2,820	18	257	356	273	32,402		26,078	200		161	90,083
1996	13,177	268		1,638	2,918	19	253	388	283	33,018		38,704	182		123	90,971
1997	26,023		89	2,940	2,287	23	326	669	208	3,450		1,609	266	200	20	38,110
1998	26,446		108	3,350	7,544	21	856	5,474	495	41,347		2,492	270	260	23	88,686
1999	20,094		163	3,533	9,238	20	935	5,483	529	35,465		3,361	288	302	23	79,434
2000	17,924		179	4,957	8,321	2,250	885	5,675	550	39,721		2,291	302	297	24	83,376
2001	12,923		181	5,685	7,924	3,374	828	5,432	612	40,670		2,350	316	447	24	80,766
2002	9,982	2	205	3,220	6,004	1,413	1,770	2,010	561	36,111	100	174	18,761	2,935	137	83,385
2003	10,344	299	162	2,517	7,095	916	1,613	1,208	571	46,347	391	149	39,287	3,096	82	114,077
2004	11,595	241	165	2,366	7,187	884	1,532	1,141	608	37,694	259	138	48,719	3,111	98	115,738

Total Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	25,713	197	-	1,985	5,018	1,843	1,792	732	901	35,114	516	32,005	302	1,229	2,126	109,473
1996	13,177	309	-	1,894	4,974	1,957	1,689	776	884	35,231	479	45,191	287	1,353	1,840	110,041
1997	26,023	104	100	3,419	13,590	4,362	1,025	737	780	6,142	44	3,571	1,059	926	966	62,848
1998	26,446	100	121	3,607	21,987	5,591	1,446	5,530	1,074	43,476	43	4,353	1,055	1,097	747	116,673
1999	20,094	110	181	3,832	24,796	5,477	1,575	5,541	1,139	37,516	36	5,177	1,194	1,110	1,000	108,778
2000	17,924	109	198	5,289	23,199	8,389	1,438	5,735	1,172	41,977	39	4,198	1,235	1,097	1,012	113,011
2001	12,923	80	191	6,288	16,740	7,748	1,231	5,467	1,076	43,626	693	3,813	1,036	2,670	1,902	105,484
2002	9,982	1,541	242	3,661	14,923	4,253	2,675	4,313	948	38,923	483	1,657	19,486	5,976	914	109,977
2003	10,344	2,698	201	2,998	13,245	3,275	2,485	2,564	1,094	50,060	868	1,397	40,452	5,736	902	138,319
2004	11,595	2,892	203	2,831	14,076	3,790	2,597	2,473	1,150	42,670	750	1,443	49,918	5,845	910	143,143

Appendix B: Eastern Little Tuna Production

Municipal Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995		15	2	538	20	161	3,563	67	72	435	199	22	14	869	876	6,853
1996		141	2	370	19	171	3,334	69	69	355	185	24	14	957	766	6,476
1997		131		3	544	10	1,670	112	13	944	232	651	1	874	2,971	8,156
1998		141		2	497	11	1,160	105	12	683	229	616	1	1,033	2,023	6,513
1999		152		2	609	15	1,305	105	13	511	190	468	1	1,238	2,469	7,078
2000		157		2	615	15	1,160	116	13	518	202	365	1	1,163	2,617	6,944
2001		114	2	15	360	35	755	115	13	334	487	424	204	891	2,897	6,646
2002		249	15	14	232	653	3,061	203	169	207	881	402	102	612	1,070	7,870
2003		133	7	25	2,731	555	3,701	955	169	469	1,007	50	69	671	1,097	11,639
2004		33	7	19	4,722	617	3,002	930	219	567	965	47	67	686	1,083	12,964

Commercial Fiheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	187	3		84	5	498	2,276		1	1,134	43,252	2	33	157	1	47,633
1996	654	4		85	5	532	2,245		1	1,156	13,156	3	30	125		17,996
1997	1,961				97	16	10,529	9	37	449	5,231			84	94	18,507
1998	1,993				105	15	9,738	9	36	460	5,340			109	106	17,911
1999	1,514				129	14	10,642	9	38	395	5,353			127	107	18,328
2000	1,351				68	3	12,478	48	43	333	6,438			146	111	21,019
2001	449				65	5	11,678	46	48	341	7,672			220	110	20,634
2002	56	11	6		4		6,161	267	223	803	10,349		1,112	7,810	9	26,811
2003	82	14	3	2	17		6,934	203	231	1,322	7,499	7	2,553	8,163	6	27,036
2004	131	11	6	11	70	16	6,953	205	254	1,322	8,448	16	6,119	8,345	6	31,913

Total Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	187	18	2	622	25	659	5,839	67	73	1,569	43,451	24	47	1,026	877	54,486
1996	654	145	2	455	24	703	5,579	69	70	1,511	13,341	27	44	1,082	766	24,472
1997	1,961	131	-	3	641	26	12,199	121	50	1,393	5,463	651	1	958	3,065	26,663
1998	1,993	141	-	2	602	26	10,898	114	48	1,143	5,569	616	1	1,142	2,129	24,424
1999	1,514	152	-	2	738	29	11,947	114	51	906	5,543	468	1	1,365	2,576	25,406
2000	1,351	157	-	2	683	18	13,638	164	56	851	6,640	365	1	1,309	2,728	27,963
2001	449	114	2	15	425	40	12,433	161	61	675	8,159	424	204	1,111	3,007	27,280
2002	56	260	21	14	236	653	9,222	470	392	1,010	11,230	402	1,214	8,422	1,079	34,681
2003	82	147	10	27	2,748	555	10,635	1,158	400	1,791	8,506	57	2,622	8,834	1,103	38,675
2004	131	44	13	30	4,792	633	9,955	1,135	473	1,889	9,413	63	6,186	9,031	1,089	44,877

Appendix C : Yellowfin Tuna Production

Municipal Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995		138	106	854	6,861	441	2,925	795	1,250	8,228	1,911	3,457	139	1,399	1,799	30,303
1996		1,261	112	587	6,417	468	2,737	1,820	1,197	6,714	1,772	3,784	143	1,541	1,572	30,125
1997		1,359	2,748	807	13,537	3,613	1,676	1,457	389	5,719	811	483	400	1,186	2,202	36,387
1998		1,931	3,199	433	15,991	4,279	777	1,133	393	6,542	642	438	396	1,512	2,519	40,185
1999		2,011	4,274	503	16,696	5,261	809	1,316	411	6,083	524	553	457	1,830	3,269	43,997
2000		2,112	4,787	553	16,267	5,656	813	1,342	427	6,570	529	572	475	1,852	3,302	45,257
2001		1,570	2,811	867	9,732	3,962	482	713	830	5,512	909	1,686	1,420	1,556	2,455	34,505
2002		3,499	268	730	11,787	2,661	2,165	3,162	843	4,768	696	1,736	1,138	1,569	1,721	36,743
2003		4,075	613	1,188	11,820	2,792	2,164	2,152	2,467	5,857	565	1,452	777	1,510	2,335	39,767
2004		4,202	557	1,152	13,225	3,549	2,270	2,035	2,710	5,868	575	1,473	816	1,635	2,392	42,459

Commercial Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	2,647	57		420	2,466	26	557	408	77	15,461	338	7,423	710	107	171	30,868
1996	1,656	79		427	2,552	28	549	445	80	15,754	102	10,754	648	85	131	33,290
1997	1,205		31	811	3,118	92	2,061	354	105	6,473	504	3,483	92	276	156	18,761
1998	1,225		38	893	3,368	1,602	1,906	365	102	6,632	515	21,755	93	359	177	39,030
1999	931		57	942	4,124	1,500	2,083	366	109	5,688	516	29,345	99	417	179	46,356
2000	830		63	1,055	3,851	1,612	2,222		113	5,859	526	28,245	104	410	181	45,071
2001	2,618		64	1,210	3,667	2,417	2,080	368	126	5,999	627	28,974	109	617	179	49,055
2002	2,591	389	86	730	7,747	1,038	3,123	327	463	10,703	679	2,769	25,039	7,194	173	63,051
2003	1,141	668	196	760	7,549	574	3,463	479	2,383	12,839	941	5,669	43,116	7,460	235	87,473
2004	1,194	570	259	814	8,463	517	3,710	483	2,790	10,751	1,072	3,604	44,883	7,730	254	87,094

Total Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	2,647	195	106	1,274	9,327	467	3,482	1,203	1,327	23,689	2,249	10,880	849	1,506	1,970	61,171
1996	1,656	1,340	112	1,014	8,969	496	3,286	2,265	1,277	22,468	1,874	14,538	791	1,626	1,703	63,415
1997	1,205	1,359	2,779	1,618	16,655	3,705	3,737	1,811	494	12,192	1,315	3,966	492	1,462	2,358	55,148
1998	1,225	1,931	3,237	1,326	19,359	5,881	2,683	1,498	495	13,174	1,157	22,193	489	1,871	2,696	79,215
1999	931	2,011	4,331	1,445	20,820	6,761	2,892	1,682	520	11,771	1,040	29,898	556	2,247	3,448	90,353
2000	830	2,112	4,850	1,608	20,118	7,268	3,035	1,342	540	12,429	1,055	28,817	579	2,262	3,483	90,328
2001	2,618	1,570	2,875	2,077	13,399	6,379	2,562	1,081	956	11,511	1,536	30,660	1,529	2,173	2,634	83,560
2002	2,591	3,888	354	1,460	19,534	3,699	5,288	3,489	1,306	15,471	1,375	4,505	26,177	8,763	1,894	99,794
2003	1,141	4,743	809	1,948	19,369	3,366	5,627	2,631	4,850	18,696	1,506	7,121	43,893	8,970	2,570	127,240
2004	1,194	4,772	816	1,966	21,688	4,066	5,980	2,518	5,500	16,619	1,647	5,077	45,699	9,365	2,646	129,553

Appendix D ; Frigate Tuna Production

Municipal Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995		274	382	1	11,178	1,711	1,015	2,053	496	16,700	545	2,402	380	2,185	3,037	42,359
1996		251	404	1	10,455	1,817	950	2,118	475	13,627	505	2,629	389	2,406	2,654	38,681
1997		33	116	16	11,644	853	3,211	1,588	2,490	18,968	1,228	3,267	756	4,780	2,949	51,899
1998		57	135	9	6,394	1,811	2,787	1,267	2,357	19,167	1,290	3,033	810	5,871	1,132	46,120
1999		55	182	11	10,297	2,103	3,663	1,432	2,399	16,573	1,407	3,485	875	6,704	1,413	50,599
2000		58	200	12	9,856	2,366	3,668	1,590	2,375	18,230	1,449	3,683	910	6,650	1,443	52,490
2001		90	404	217	7,338	2,584	2,170	3,190	2,233	17,861	2,164	1,876	3,706	6,161	1,693	51,687
2002		518	685	270	8,715	3,848	577	6,071	1,900	17,406	2,451	1,896	4,064	5,574	8,199	62,174
2003		663	623	432	9,442	4,737	773	4,774	2,807	18,969	2,595	1,512	3,974	5,903	7,122	64,326
2004		659	642	419	10,805	5,155	803	4,554	3,003	17,161	2,671	1,549	4,078	6,138	9,149	66,786

Commercial Fisheries Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	13,837	19	1,766		4,566	1,093	889	4,556	3,619	10,685	2,264	1,342	527	32	872	46,067
1996	16,528	26	2,393		4,725	1,168	877	4,967	3,747	10,888	1,853	1,944	481	25	666	50,288
1997	14,033		715	54	14,213	3,372	5,972	8,777	2,857	38,143	1,562	10,439	1,506	4,774	178	106,595
1998	14,261		869	59	4,551	1,616	5,524	9,045	2,786	7,318	1,595	4,757	1,527	6,204	201	60,313
1999	10,836		1,306	62	5,573	1,513	6,037	9,060	2,976	6,277	1,599	6,417	1,630	7,213	203	60,702
2000	9,666		1,439	69	5,074	1,702	5,908	9,785	3,065	6,779	1,471	5,751	1,712	7,112	204	59,737
2001	5,524		1,456	79	4,832	2,552	5,529	9,366	3,411	6,941	1,753	5,899	1,792	10,696	202	60,032
2002	8,762	2	1,868	42	11,341	2,704	2,777	5,285	2,084	10,362	2,197	349	44,613	8,377	195	100,958
2003	11,224	4	1,557	43	13,015	2,684	2,827	5,268	2,365	9,971	3,289	322	53,558	8,394	239	114,760
2004	11,281	11	1,639	56	13,206	2,621	2,446	5,003	2,502	9,290	3,759	332	80,166	8,624	384	141,320

Total Production

	NCR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	ARMM	CARAGA	Total
1995	13,837	293	2,148	1	15,744	2,804	1,904	6,609	4,115	27,385	2,809	3,744	907	2,217	3,909	88,426
1996	16,528	277	2,797	1	15,180	2,985	1,827	7,085	4,222	24,515	2,358	4,573	870	2,431	3,320	88,969
1997	14,033	33	831	70	25,857	4,225	9,183	10,365	5,347	57,111	2,790	13,706	2,262	9,554	3,127	158,494
1998	14,261	57	1,004	68	10,945	3,427	8,311	10,312	5,143	26,485	2,885	7,790	2,337	12,075	1,333	106,433
1999	10,836	55	1,488	73	15,870	3,616	9,700	10,492	5,375	22,850	3,006	9,902	2,505	13,917	1,616	111,301
2000	9,666	58	1,639	81	14,930	4,068	9,576	11,375	5,440	25,009	2,920	9,434	2,622	13,762	1,647	112,227
2001	5,524	90	1,860	296	12,170	5,136	7,699	12,556	5,644	24,802	3,917	7,775	5,498	16,857	1,895	111,719
2002	8,762	520	2,553	312	20,056	6,552	3,354	11,356	3,984	27,768	4,648	2,245	48,677	13,951	8,394	163,132
2003	11,224	667	2,180	475	22,457	7,421	3,600	10,042	5,172	28,940	5,884	1,834	57,532	14,297	7,361	179,086
2004	11,281	670	2,281	475	24,011	7,776	3,249	9,557	5,505	26,451	6,430	1,881	84,244	14,762	9,533	208,106

Appendix E: Council Directive of 16 June 1992 (92/48/EEC) Passed 16 June

Laying down the minimum hygiene rules applicable to fishery products caught on board certain vessels in accordance with Article 3 (1) (a) (i) of Directive 91/493/EEC

92/48/EEC

(OJ L 187, 07.07.92, p.41)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to Council Directive 91/493/EEC of 22 July 1991 laying down the health conditions for the production and the placing on the market of fishery products, and in particular Article 3 (1) (a) (i) thereof,

Having regard to the proposal from the Commission,

Whereas in accordance with Article 3 (1) (a) (i) of Directive 91/493/EEC it is essential that hygiene rules be laid down for fishery products caught and where appropriate handled for bleeding, heading, gutting and the removal of fins, chilled or frozen, on board certain vessels;

Whereas general hygiene conditions applicable to fishing vessels should be laid down;

Whereas it is important to lay down additional hygiene conditions applicable to fishing vessels on board which catches are kept for more than twenty-four hours;

Whereas provisions should be made for the possibility of taking into consideration certain specific characteristics of certain fishing vessels;

Whereas it is appropriate to point out that the inspections and controls carried out pursuant to Directive 91/493/EEC apply equally to the vessels referred to in this Directive,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. The general hygiene conditions laid down in Annex I shall apply to fishery products handled on board fishing vessels.

2. The additional hygiene conditions laid down in Annex II shall apply to fishing vessels designed and equipped to preserve fishery products on board under satisfactory conditions for more than twenty-four hours, other than those equipped for keeping fish, shellfish and molluscs alive without other means of conservation on board.

3. If necessary, and in accordance with the procedure laid down in Article 2, derogations from or conditions additional to the provisions of Annex I may be laid down in order to take account of the specific characteristics, if any, of certain fishing vessels.

Article 2
The Annexes to this Directive may be amended in accordance with the procedure laid down in Article 15 of Directive 91/493/EEC.

Article 3
Member States may, provided that the products coming from fishing vessels expressly comply with the hygiene standards set by Directive 91/493/EEC, grant a further period to fishing vessels, expiring on 31 December 1995, within which to comply with the said requirements laid down in points 8 (b) and (e) of Annex II.

Such derogations may only be obtained by fishing vessels which, carrying out fishing activities on 30 June 1992, have submitted to the competent national authorities, before 31 December 1992, a duly justified application to that effect. This application must set out details of the periods within which the fishing vessels can comply with the said requirements. In the event that financial aid is solicited from the Community, only those projects that comply with the requirements of this Directive may be accepted.

Article 4
The Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before 1 January 1993. They shall inform the Commission thereof. When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such a reference shall be laid down by the Member States.

Article 5
This Directive is addressed to the Member States. Done at Luxembourg, 16 June 1992.

ANNEX I
General hygiene conditions applicable to fishery products on board fishing vessels

1. The sections of vessels or the containers reserved for the storage of fishery products must not contain objects or products liable to transmit harmful properties or abnormal characteristics to the foodstuffs. These sections or containers must be so designed as to allow them to be cleaned easily and to ensure that melt water cannot remain in contact with fishery products.

2. When used, the sections of vessels or the containers reserved for the storage of fishery products must be completely clean and, in particular, must not be capable of being contaminated by the fuel used for the propulsion of the vessel or by bilge water.

3. As soon as they are taken on board, the fishery products must be protected from contamination and from the effects of the sun or any other source of heat. When they are washed, the water used must be either fresh water complying with the parameters set out in Annexes D and E of Directive 80/778/EEC or clean seawater, so as not to impair their quality or wholesomeness.

4. The fishery products shall be handled and stored in such a way as to prevent bruising. The use of spiked instruments shall be tolerated for the moving of large fish or fish which might injure the handler, provided the flesh of these products is not damaged.

5. Fishery products other than those kept alive must undergo cold treatment as soon as possible after loading. However, in the case of fishing vessels where cooling is not possible from a

practicable point of view, the fishery products must not be kept on board for more than eight hours

6. Ice used for the chilling of products must be made from drinking water or clean seawater. Before use, it must be stored under conditions which prevent its contamination.

7. After the fishery products have been unloaded, the containers, equipment and sections of vessels which are directly in contact with the fishery products must be cleaned with drinking water or clean seawater.

8. Where fish is headed and / or gutted on board, such operations must be carried out hygienically and the products must be washed immediately and thoroughly with drinking water or clean seawater. The viscera and parts which may pose a threat to public health must be removed and set apart from products intended for human consumption. Livers and roes intended for human consumption must be refrigerated of frozen.

9. Equipment used for gutting, heading and the removal of fins, and containers and equipment in contact with the fishery products, must be made of or coated with a material which is waterproof, resistant to decay, smooth and easy to clean and disinfect. When used they must be completely clean.

10. Staff assigned to the handling of fishery products shall be required to maintain a high standard of cleanliness for themselves and their clothes.

ANNEX II
Additional hygiene conditions applicable to the fishing vessels referred to in Article 1(2)

1. Fishing vessels must be equipped with holds, tanks or containers for the storage of refrigerated or frozen fishery products at the temperature laid down by Directive 91 / 493 / EEC. These holds shall be separated from the machinery space and the quarters reserved for the crew by partitions which are sufficiently impervious to prevent any contamination of the stored fishery products.

2. The inside surfaces of the holds, tanks or containers shall be waterproof and easy to wash and disinfect. It shall consist of a smooth material or, failing that, smooth paint maintained in good condition, not being capable of transmitting to the fishery products substances harmful to human health.

3. The holds shall be designed to ensure that melt water cannot remain in contact with the fishery products.

4. Containers used for the storage of products must ensure their preservation under satisfactory conditions of hygiene and, in particular, allow drainage of melt water. When used they must be completely clean.

5. The working decks, the equipment and the holds, tanks and containers shall be cleaned each time they are used. Drinking water or clean seawater shall be used for this purpose. Disinfection, the removal of insects or rat extermination shall be carried out whenever necessary.

6. Cleaning products, disinfectants, insecticides and all potentially toxic substances shall be stored in locked premises or cupboards. Their use must not present any risk of contamination of the fishery products.

7. If fishery products are frozen on board, this operation must be carried out in accordance with the conditions laid down in Chapter IV (II) (1) and (3) of the Annex to Directive 91/493/EEC. Where freezing in brine is used, the brine shall not be a source of contamination for the fish.

8. Vessels equipped for chilling of fishery products in cooled seawater, either chilled by ice (CSW) or refrigerated by mechanical means (RSW), shall comply with the following requirements:

(a) tanks must be equipped with adequate seawater filling and drainage installations and must incorporate devices for achieving uniform temperature throughout the task

(b) tanks must have a means of recording temperature connected to a temperature sensor positioned in the section of the tank where the temperatures are highest

(c) the operation of the tank or container system must secure a chilling rate which ensures the mix of fish and seawater reaches 3°C at the most six hours after loading and 0°C at the most after sixteen hours

(d) after each unloading the tanks, circulation systems and containers must be completely emptied and thoroughly cleaned using drinking water or clean seawater. They should only be filled with clean seawater.

(e) the date and the number of the tank must be clearly indicated on the temperature recordings which must be kept available for the control authorities.

9. The competent authority shall keep up to date for control purposes a list of the vessels equipped in accordance with points 7 or 8 with the exception however of vessels equipped with removable containers which without prejudice to point 5, second sentence of Annex I, are not engaged regularly in preserving fish in chilled seawater.

10. Shipowners or their representatives shall take all the measures necessary to prevent persons liable to contaminate fishery products from working on or handling them, until there is evidence that such persons can do so without risk. The routine medical monitoring of such persons shall be governed by the national laws in force in the Member State concerned.

SAMUDRA Monograph

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SAMUDRA Monograph

The Philippines Tuna Industry: A Profile

This study deals with the tuna industry in the Philippines, which is among the world's largest producers of tuna and tuna-like species. Centred around General Santos City, the "tuna capital of the Philippines", the tuna boom was spurred by the arrival, in the mid-1970s, of Japanese traders looking for new supplies of *sashimi*-grade yellowfin tuna.

Interestingly, the primary producers of this high-priced, export-grade tuna are the humble handliners, small-scale fishers found in coastal communities all over the Philippines archipelago, who use passive handline gear to catch yellowfin, skipjack and bigeye tuna. Also, the use of the fish-aggregating device locally known as *payao* has greatly reduced the time spent for searching and catching tuna.

The study also analyzes the primary post-harvest facilities and processing industries as well as the interlinked financing and marketing sectors in the Philippines tuna industry. The discussion covers grade classification of the catch, pricing, selling operations, and international trade of tuna products. The study concludes with an overview of current initiatives to manage and develop the Philippines tuna industry.

ICSF is an international NGO working on issues that concern fishworkers the world over. It is in status with the Economic and Social Council of the UN and is on ILO's Special List of Non-Governmental International Organizations. It also has Liaison Status with FAO. Registered in Geneva, ICSF has offices in Chennai, India, and Brussels, Belgium. As a global network of community organizers, teachers, technicians, researchers and scientists, ICSF's activities encompass monitoring and research, exchange and training, campaigns and action, as well as communications.

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