

DEVELOPMENT OF THE JAPANESE TUNA FISHERIES: AFTER THE “REDUCTION IN THE NUMBER OF FISHING VESSELS (GENSEN) IN 1998”

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ABSTRACT

The Japanese tuna fisheries was transformed into an importing industry after the middle of the 1990s because of competition from Chinese Taipei. The Japanese distant water tuna longline fisheries carried out a “20 % reduction in the number of fishing vessels (Gensen) without mutual compensation” in 1998 in order to implement the “International Plan of Action for the Management of Fishing Capacity” (FAO, 1999). Since then, they have almost succeeded to make the FOC-IUU vessels, which are important advantageous factors integrated into fishing operations by Chinese Taipei. The IUU issue is coming to its final stage with the adoption of the negative and positive systems based on the statistics document scheme and establishment of OPRT. While resources management through trade was promoted considering the Japanese monopoly of the sashimi market as decisive condition, the domination of Chinese Taipei, the steady rise of fresh products status and decline of frozen products and increase of farmed tuna in the toro (fatty tuna) market can be pointed out as notable features of the Japanese market. In order to overcome the long-term price inactivation by oversupply, the Federation of Japan Tuna Fisheries Co-operative Associations (Japan Tuna) seeks internationally cooperative reduction of fishing vessels of Chinese Taipei and China and domestic establishment of an “advanced nation type tuna fisheries”, in particular, by conceiving a food system of the frozen sashimi tuna including even distribution and processing process.

Keywords: Reduction of fishing capacity (Gensen), the IUU-FOC issue, ICCAT, OPRT, Japan Tuna, Advanced Nation Type Tuna Fisheries

INTRODUCTION

The Japanese tuna fisheries industry started by providing fish as material for canned food exported to the United States in the 1950s. Then the industry shifted their production to sliced raw fish (sashimi) for the domestic market at the end of the 60s, and developed favorably through the 70s. Although it suffered severely from the second oil crisis and bankruptcy continued through the first half of the 80s, the recovered during the bubble economy. However, after the collapse of the bubble economy in the 90s, the fisheries fell again into a business slump, particularly since the middle of the 90s due to strong competition from Chinese Taipei fisheries. The Japanese distant water tuna longline fisheries reduced 20 % of its fishing vessels (169 vessels) in 1981-82 and carried out a further 20 % reduction without mutual compensation in 1998 (80 companies, 132 vessels) (98-Gensen) and proposed for international restructuring of the tuna fisheries by elimination of flag-of-convenience vessels (FOC vessels).

Illegal, unreported and unregulated fishing (IUU fishing) abuses the freedom of the high seas, and has been the subject of resolutions of the United Nations General Assembly as one of the most serious problems of world fisheries since 1999. FOC vessels can also do fishing operations based on the resource management measures of fishery management organizations. However, even in thin case, if it is not appropriately reported, the catch could deviate from the fishing quota defined by regional fisheries management organizations (RFMOs). FOC vessels are also beyond the jurisdiction of RFMOs unless they are Contracting Parties or, at least, cooperating Non-Contracting Parties or Entities of the organizations. "Monopoly of fishing grounds", which is an indispensable condition for a fishery management organization, and the issue of Non-Contracting Parties in connection with national sovereignty in the case of tuna fisheries operated on the high seas are underlying problem. Although Chinese Taipei is not accepted as a state but treated as a cooperating non-contracting Party or Entity, the FOC-IUU issue – the problem of IUU fishing activities by FOC vessels - is a difficult problem indivisible from the "monopoly of fishing grounds".

The elimination of FOC vessels of Chinese Taipei, in collaboration with FAO and the International Commission for the Conservation of Atlantic Tunas (ICCAT), has been promoted by the Government of Japan and the Japanese tuna

fishery industries (namely the Fisheries Agency of Japan and the Federation of Japan Tuna Fisheries Co-operative Associations (Japan Tuna)) as collaborative efforts in Japanese fishery diplomacy. This policy intends to protect distant water tuna longline fisheries from “uncontrolled” free competition, which does not pay environmental costs, and attempts “orderly competition” based on resource management measures by RFMOs. In order to compete with Chinese Taipei, which has established an international comparative advantage, Japan intends to establish a new “cartel-type-competition” with reduced and controlled production, by including FOC vessels into the fisheries management regimes as part of resources management policies based on its advantageous status in the global tuna market as the only sashimi market in the world.

In the second section, the author will review the use of fishing grounds by the Japanese tuna fisheries and sketch the international management regimes of tunas. While the RFMOs aim at sustainable resources management globally, the fishing capacity of tuna fisheries is excessive. Under such situation, Japan took the lead by carrying out 98-Gensen as a responsible fishing nation, and it responded to “the International Plan of Action for the Management of Fishing Capacity” (formally adopted by the FAO Committee on Fisheries (COFI) in 1999). The FOC-IUU issue is also raised as part of the fishing capacity management issue. In the third section, the author pursues the trend of the elimination of IUU vessels by using ICCAT as the driving force and explain that the Organization for Promotion of Responsible Tuna Fisheries (OPRT) has been established to complete the process. The Japanese tuna market will be analyzed in the fourth section. The domination of Chinese Taipei tuna fisheries both in frozen and fresh tuna market in Japan since the middle of 90s is observed. Elimination of FOC vessels of Chinese Taipei would be a positive step forward to control oversupply and overcapitalization. The author would like to call attention, in this regard, to farmed tunas which are becoming increasingly important in the tuna market. In the fifth section, the author will analyze the business management of the Japanese distant water tuna fisheries in comparison with that of Chinese Taipei and intend to explicate the current situation under which the fisheries are seeking “advanced nation type tuna fisheries” following the leadership of Japan Tuna.

FISHING GROUND OF THE TUNA FISHERIES

The total catch of tuna in 2001, 138,000 tons, was equivalent to 80.9 percent them in 1995, prior to the 20 % reduction of the tuna fishing vessels. The reduction of the catch exactly corresponded with the reduction of the vessels. While tuna fishing grounds are divided roughly into the Pacific Ocean (“seikei” fishing ground), the Indian Ocean and the Atlantic Ocean, we may think that only distant water tuna longline fisheries use all the three oceans.

In the Pacific Ocean, where more than half of catches come from, the ratio of bigeye tuna and southern bluefin tuna has been increasing in terms of species, the ratio of catches from the Southeast, Central Western and Central Eastern Pacific has been increasing in terms of the areas, and the volume of catches has also increased in first three categories, namely bigeye tuna, southern bluefin tuna and the Southeast Pacific Ocean. There is certain fishing grounds “segregation” observed among three types of longline fisheries and far seas purse seine fishery operating in the Pacific Ocean. The coastal longline fishery mainly operates in the Northwest Pacific. The offshore longline fishery and the far seas purse seine fishery mainly operate in the Central Western Pacific. The distant water longline fishery mainly operates in the Eastern Pacific. In the Indian Ocean, the good catches, in particular of yellowfin tuna and southern bluefin tuna, had been maintained from 1991 to 2001. The ratio of catches in the Indian Ocean and the Atlantic Ocean was reversed and the status of the Indian Ocean is still increasing. The Indian Ocean is the main fishing ground of Chinese Taipei, which is the strongest rival of Japan in tuna fisheries and the focus of the FOC-IUU issues. While the Pacific Ocean is recovering and the Indian Ocean continues raising its status, the relative importance of the Atlantic Ocean is remarkably declining. The total catches from the Atlantic Ocean reduced by half from 1995 to 2001. While southern bluefin tuna catch slightly increased and albacore tuna catch doubled, the volume of both catches was not that much. The catches of the main targeted species, bigeye tuna and yellowfin tuna, on the other hand, dropped more than by half.

The Pacific Ocean, the world's largest tuna fishing ground, is near Japan and is the main fishing ground for all types of the Japanese tuna fisheries. It was essentially abundant in the fisheries resources and Japan caught about 75% of its big-eye tuna catches. However, as is common also in the Atlantic Ocean, the rapidly increasing purse seine fishery introduced Fish Aggregating Devices (FADs) and catches incidentally and/or excessively small-size fish. The number of purse seine fishing vessels with higher efficiency has been increasing globally. They target younger fish in the surface water and cause higher fishing pressure on the resources than longline fishing vessels targeting older fish.

However, the longline fishing vessels had been also increasing until the late 90s and were thought to bear primary responsibility for the resources issue.

Catches of bigeye tuna, the main target species, exceeds the Maximum Sustainable Yield (MSY) or the Average Maximum Sustainable Yield (AMSY) not only in the Pacific Ocean, the main fishing ground, but also in the Indian Ocean and the Atlantic Ocean, and the status of the stock is in "a slightly overfished state." The International Plan of Action, which aimed to cut down globally excessive fishing capacity in tuna fisheries, was adopted in FAO, and the 98-Gensen was carried out based on it. The growing number of longline fishing vessels come mainly from FOC vessels, in particular from Chinese Taipei, and which often carry out IUU fishing activities. The FOC vessels issue and the IUU issue were, therefore, inseparably related to each other and was raised as the FOC-IUU issue.

The author would like to touch upon RFMOs for tunas which has a highly migratory nature. The first is the Western Central Pacific Fisheries Commission (WCPFC). In the Western Pacific Ocean, FFA was first organized only among coastal States such as Australia, New Zealand and the South Pacific Island Nations. It claimed that coastal States had the jurisdiction over tunas and skipjack not only within their EEZs but also on the high seas and called international recognition of FFA as the RFMO in the Western Pacific Ocean. FFA is a type of management organizations under the initiative of coastal States and covers the wide range of area from 25° N to 50° S and from 130° E to 150° W. WCPFC, adopted in September 2000, also inclines toward contents advantageous to coastal States and which causes many difficulties for fishing States. The biggest problem exists in the decision making system, particularly of the right to object. While international fisheries management organizations make decisions by majority, in general, they try to keep "outlaws" within and under control of the organizations by using the right to object. This problem is definitely critical for Japan, which is in the minority group of fishing States. WCPFC, however, just entered into force in June 2004 and is expected to function as the only RFMO accepted by all concerned parties in the Central and Western Pacific Ocean. The Northern Committee proposed by Japan is expected to accommodate concerns on the decision making process particularly on conservation and management measures applied for the area north of 20° N.

ICCAT, in general, leads the global tuna resources management, in particular, tries to combat against the FOC-IUU issues. The Inter-American Tropical Tuna Commission (I-ATTC), covering the Eastern Pacific Ocean, is particularly focusing on the incidental catch of dolphin by purse seine tuna fishery and also sets the Commission's Yellowfin Regulatory Area (CYRA) for conservation of yellowfin tuna stock of the Eastern Pacific Ocean (EPO). The Indian Ocean Tuna Commission (IOTC), just established in 1996, has been still in the process of enhancing its management abilities, although it has an organizational difficulty under the auspices of FAO in dealing with participation of Chinese Taipei. The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has only limited competence on the particular species and also a limited number of contracting Parties, among which there has been a long lasting dispute on management and conservation measures. In considering the situation of each RFMO above, ICCAT, with its management skills under the initiative mostly by advanced nations, and its world famous statistical documentation system, must be the leading organization to challenge to establish "monopoly of fishing grounds" by tackling the FOC-IUU issue.

FOC-IUU ISSUE

ICCAT

FOC fishing vessels captured the spotlight in the Eighth Meeting of the Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) held in Kyoto in March, 1992, where Sweden proposed to regulate international trade of the Atlantic Ocean bluefin tuna. The request of CITES, which demanded ICCAT to cut quota of the bluefin tuna and effective measures against Non-Contracting Parties, was carried out as regulatory measures such as the restriction of importing bluefin tuna from FOC fishing vessels. ICCAT, as the driving force, has been tackling the FOC-IUU issue first by introducing the statistical document scheme in 1992, then the Resolution on Large-scale Tuna IUU Longline Vessels in 1998 after the drastic increase of FOC fishing vessels of Chinese Taipei. This trend further linked, in parallel with the 98-Gensen, to establishment of the Organization for Promoting Responsible Tuna Fisheries (OPRT) in 2000 and the Basic Agreement between Japan and Chinese Taipei in 2001.

ICCAT adopted the Plan of Action for Large-Scale IUU Longline Fishing Vessels in 1998. It came to place emphasis, from both aspects of deterioration in tuna resources and the measures against IUU activities, not only on bluefin tuna but also on big-eyed tuna, which is the main targeted species of the IUU fishing vessels, and adopted the resolution calling for "the further actions" in 1999. The resolution demanded the Contracting Parties and cooperating Non-Contracting Parties or Entities the following drastic measures and set the fundamental direction until today:

- A. To ensure that large-scale tuna longline vessels under their registry do not carry out IUU fishing activities in the Convention Area;
- B. To urge their importers, transporters and other concerned business people to refrain from engaging in transaction and transshipment of tunas caught by IUU fishing activities and to urge their manufacturers and other concerned business people to prevent their vessels and equipment/devices from being used for the IUU fishing operations;
- C. To urge their general public not to purchase fish harvested by IUU fishing vessels; and
- D. To support collaborative efforts by Chinese Taipei and Japan for eliminating IUU fishing vessels.

The negative list of 345 IUU fishing vessels was established in 1999 based on data provided by Japan and USA and further elaborated and revised based on additional data from Chinese Taipei to the list of 302 IUU fishing vessels in 2000. According to B. and C. above, the Japanese government as well as the industries and consumers vigorously carried out the boycott of the tuna caught by the IUU fishing vessels. However, in order to escape from the trade restrictions by the negative list and the statistical document scheme, further illegal operations came to be performed. ICCAT then adopted the positive (white) list system in 2002 and the statistical document scheme was integrated into the system. Under this new system, lists of Large-scale Tuna Fishing Vessels (longer than 24 meters) legally permitted to operate have to be registered to ICCAT and Contracting Parties and cooperating Non-Contracting Parties or Entities prohibit possession on board, transshipment and landing of catches by non-listed fishing vessels. This system was decided to be implemented from 1 July 2003.

While, in the negative list system, the management body, namely ICCAT, needs to create a list of IUU fishing vessels, in the positive list system, Contracting Parties bear the responsibility for proving that their vessels are legally permitted and have the capability to follow the resources management measure. In other words, in order not to be eliminated from international trade of tunas, ship owners have duty to exercise the burden of proof.

OPRT

The energetic activities of the government and industries of Japan, the second largest tuna longline fishing nation following to Chinese Taipei, became the strong and conclusive factor to facilitate the elimination of IUU fishing vessels by ICCAT, as the main driving force, in close collaboration with and support by FAO.

The statistical document scheme and the negative and positive lists systems could be the definite management measures based on the smooth implementation of the decision by ICCAT due to the fact that Japan is the only sashimi market in the world.

It is global common recognition that tuna resources are overexploited by the tuna fisheries including the purse seine fishery. Therefore, longline fishing nations such as Chinese Taipei and Republic of Korea were expected to follow the 98-Gensen in Japan and reduce their fishing capacity by international collaborative programs of reducing the number of fishing vessels. The elimination of FOC-IUU fishing vessels was pursued as the premise of the reduction of the fishing capacity. OPRT was launched on 1 December 2000, with distant water tuna longline fishers in Japan and Chinese Taipei, organizations of the Japanese distributors and consumers, and the Overseas Fisheries Cooperation Foundation (OFCF) as founding members. One of advantageous features of OPRT is involvement of distributors and consumers. With this feature it is particularly expected to get involved in a labeling activity to appeal that products distributed under the control of OPRT are caught by fishing vessels properly registered to the organization.

Needless to say, the primary objective of OPRT is "appropriate management of fishing efforts through reduction of fishing capacity" (prospectus). Being backed up by item D of the ICCAT Resolution mentioned above, Kaohsiung City Distant Water Fishing Vessels Association, which is one of the main entities concerned with FOC fishing vessels, and OPRT concluded "the Basic Agreement between Japan and Chinese Taipei" in February 2000. According to the agreement, 62 FOC fishing vessels with the Japanese origin were agreed to be scrapped with the expense of Japan by the end of 2003, 67 FOC fishing vessels built in Taiwan, two of which sunk by accident, were agreed to be formally registered to Chinese Taipei by the end of 2005.

The total number of the FOC fishing vessels was estimated about 240, among which 120 vessels were originally built and registered in Japan and 110 vessels were built in Chinese Taipei (70 before 1998, 40 after 1998). Among those FOC fishing vessels, 40 vessels are in the final process of scrapping (20 in 2001, 8 in 2002, 6 in 2003, other than 4 sunk) and 34-38 are in the final process of formal registration to Chinese Taipei. China also expressed that it cut relationship between its vessels and FOC vessels and it did not have intention to increase its vessels disorderly during the Tuna Consultation between Japan and China in 2002. Furthermore, the Chinese Distant Water Fisheries Association formally joined OPRT in April 2003. The rapid increase of longline vessels up to 100 vessels, which ranks second to the Republic of Korea, by 2002, and positive promotion of a domestic sashimi market in collaboration with the Japanese industry could be the factor to encourage China to affiliate with OPRT earlier than expected.

The affiliation of China ends the process of affiliation to OPRT (Table 1). The Philippines, Indonesia and China were once utilized as flag states of FOC fishing vessels, but now only regulated vessels are registered to OPRT and they cover more than 90 % of large-scale fishing vessels engaged in the tuna fisheries. It might be difficult for OPRT to cover all FOC fishing vessels. However, if the positive list is fully functioned through OPRT, it would eliminate FOC fishing vessels in all areas of oceans, while in the Western Pacific Ocean we should wait for full implementation of WCPFC. Although reduction of over capacity in tuna fisheries still leaves its problem with the purse seine fishery, it can be said that the difficult problem from the aspect of the longline fishery, namely the FOC issue, has been almost solved.

SUPPLY OF TUNA - ANALYSIS OF THE JAPANESE TUNA MARKET -

As well known, the main commodity in the Japanese market is sashimi (sliced raw tuna). However, in the global perspective, the main commodity is canned tuna frequently including skipjack tuna as well. Import of tuna to Japan, which surpassed 200,000 tonnes in the late 80s, further expanded over 300,000 tonnes in the mid-90s, and now certainly exceeds domestic production of tuna. Catch by the distant water tuna longline fishery supplies about one fourth of the total supply.

Chinese Taipei and Republic of Korea have been occupied the first and second positions of exporters of tuna to the Japanese market. Australia and Spain, which mainly produce farmed tuna, rapidly increase their exportation of tuna to the Japanese market. Australia left Indonesia, which had been ranked third for long time, behind in 1999 in terms of values, and Spain is also approaching the top exporters. Five fishing nations, other than Australia and Spain, namely Chinese Taipei, Republic of Korea, Indonesia, China and the Philippines, domestically own long line tuna fishing vessels with super-low-temperature freezing system. In Indonesia, frozen tuna had been increased and reversed the positions between frozen and fresh tuna production. Although the main distribution form is frozen, the status of fresh products including farmed tuna becomes higher and import in a fillet form has been rapidly increasing.

Table 2 shows supply of tuna compiled in all forms of distribution, but by species and by states of origin. Bigeye tuna and yellowfin tuna are the main species in terms of value and volume and widely consumed as sashimi for family use in general. Bigeye tuna which contains fatty-meat (toro) is also distributed to Japanese-style luxury restaurants and sushi restaurants in substitution for bluefin tuna. Yellowfin tuna, on the other hand, is also used as material for "light meat" canned tuna. Bigeye tuna and yellowfin tuna are the main frozen product supplied by distant water tuna longline fisheries including the ones of two leading fishing nations, Chinese Taipei and Republic of Korea.

Yellow fin tuna, in particular, has large difference in prices between fresh and frozen products. Fresh yellow fin tuna products have higher prices than frozen one. In terms of bluefin tuna, fresh products are higher than frozen products not only in terms of value but also volume. Spain is the far and away top supplier and Republic of Korea follows in terms of volume, but the price is too low. In terms of southern bluefin tuna, frozen products are the majority and farmed tuna from Australia dominates the market. All of supply from Chinese Taipei and Republic of Korea is frozen.

Farmed tuna, which is now one of the main sources of supply to fresh tuna market, is mainly imported from Australia (It is available at retailer shops front from Port Lincoln by air just four days after landing.), the Mediterranean countries and Mexico. The volume imported was about 1.5 tonnes in 2000 and became more than 2 tonnes in the following year. It caused "toro revolution" at rotating sushi restaurants and other food service industries and became an essential commodity with stable quality. Farmed tuna transforms its distribution form from fresh (= risky and seasonal commodity) to frozen and annually available. Farming is started with small-size fish (in Australia), adult

fish after spawning (in the Mediterranean) or juveniles (“yokowa” with 200-400 g weight, in Japan). Domestic supply in 2003 was estimated at 2,000-2,500 tonnes. While direct trading between major capital and local contractors is the main stream of business, the full cycle aquaculture of bluefin tuna successfully developed by Kinki University in July, 2002, attracts strong interests for the purposes both of research and industrialization.

Estimation of volume of fresh tuna exported from Chinese Taipei and China through the countries where they transshipped their catches and frozen tuna exported by FOC countries in 2002, when the exportation from the FOC countries reached the peak, indicates that most exportation was directed toward the sashimi market. It also shows that Chinese Taipei, which mainly landed tuna overseas, dominated the market not only of frozen tuna but also of fresh tuna.

Among 568 Chinese Taipei distant water tuna longline fishing vessels in total (as of March, 2002), 216 vessels operated in the Indian Ocean, 92 vessels operated in the Atlantic Ocean and 82 vessels operated in the Pacific Ocean, mainly targeting bigeye tuna and yellowfin tuna. Those vessels were equipped with super-low-temperature freezer. The main fishing ground is the Indian Ocean, then the Atlantic Ocean. They have fishing bases in Cape Town, Singapore and Las Palmas, for repair, maintenance and supply. Fresh tuna is mainly caught by small-scale vessels and the main fishing ground ranges from coastal waters off Chinese Taipei to the Pacific Ocean including the Southeast Asian waters. Exporting by air from ports of call, such as Jakarta, Bali, Singapore, Guam, Penang surpasses landing to their states of origin. Half of exportation of fresh tuna from Indonesia depends on catches by Chinese Taipei vessels. The predominance of Chinese Taipei in the Japanese market, where it provides more than 120,000 tonnes frozen tuna including the one caught by FOC fishing vessels and almost 30,000 tonnes of fresh tuna, is solid. Export from FOC fishing nations had been increasing by 2000. Chinese Taipei fishing vessels were watched as the major FOC fishing vessels and China was also noted as the FOC states in the specific relation with Chinese Taipei by providing Chinese crew and through the overseas Chinese network.

The situations of international trade and production of tuna around year 2000 has been examined. In order to conclude analysis on tuna supply, the broader perspectives on supply of tuna on a little bit longer-term basis including analysis on the customer side are reviewed in the following (Figure 1).

First, the total supply of tuna has decreased to the level less than 500,000 tonnes. The tuna market has shrunk. Family consumption stays stable, but consumption for take out sushi and other food service industries has been drastically declining with fluctuation. The collapse of the bubble economy affected, in particular, the food service industries. Second, while domestic production exceeded importation of tuna until 80s, importation increased in 90s and then exceeded domestic production in 1996 both in fresh and frozen products when the total supply dropped below the 500,000 tonne level being influenced by *E. coli* bacillus O-157. Japan became a sashimi tuna importing country with the self sufficient rate of 50% or less, with only exception in 1997. Third, fresh tuna production has steadily increased due to the initiatives taken by coastal states and, on the other hand, frozen tuna production has decreased. Since mid 90s when the total supply of tuna became stable about 450,000-460,000 tonnes, only frozen tuna production has been decreasing while fresh tuna production has kept its level at 130,000-140,000 tonnes.

TOWARD ADVANCED NATION TYPE TUNA FISHERIES

Contrast with Chinese Taipei

From trends of prices of bluefin tuna representing fatty tuna meat (toro) and frozen bigeye tuna and yellowfin tuna representing red meat (akami), lower stabilize prices in the long-term are observed. In spite of decrease in domestic production, over-supply of tuna still dominates the market. Although the over all inactivation of the general consumption demand by depression in 90s no doubtfully affected the situation, the appearance of many substitutive and/or competitive commodities, such as skipjack tuna (B1 product) and salmon for red meat and fresh cultured tuna for fatty meat, also influenced the over-supplied situation.

The elimination of the FOC fishing vessels could be reworded, in short, to limitation or initiation of limitation, if more accurately, of supply according to the shrunken size of the tuna market. The differences from the cartel in manufacturing industrial production are the following two points: (1) Since fisheries are harvesting industries of natural resources with no prior right of property (*bona vacantia*), acquisition in advance of marine living resources is an indispensable condition; and therefore, (2) Overcapitalization is easily happened and resources management

measures, such as catch limitation or protection of juveniles, must be necessary for avoiding consequent overexploitation. Furthermore, control of IUU fishing by non-member FOC states is very difficult under the framework of regional fisheries management organizations (RFMOs) where tuna fisheries, typical high seas fisheries, are managed mainly under flag states jurisdiction of member States. While the catch limitation (= output control) is the primary tool for resource management, elimination of FOC fishing vessels and control of overcapitalization can be interpreted as another management tool to control input.

Authorized fishing vessels of Chinese Taipei operate under the control of RFMOs such as ICCAT. However, FOC fishing vessels, even if they are not positively engaged in IUU fishing, can operate outside of regulations of those RFMOs. Many of distant water tuna fisheries companies in Chinese Taipei own both authorized vessels and FOC vessels and integrate them into the business oriented to the Japanese tuna market. Table 3 clearly shows why Chinese Taipei keeps its predominance in the Japanese market. While the total sales value of Japan is higher than the one of Chinese Taipei, fisheries profit largely depends on costs, particularly labor cost, the largest cost for Japanese fisheries. The labor cost in Chinese Taipei is surprisingly low and only one tenth of the one in Japan.

In 1992, Chinese Taipei decided to allow its fishing vessels based overseas to recruit Chinese crew up to one third of the total number of crew on board, then further allow to do it up to half of the total crew in the following year. However, in fact, it is said that there may be some cases where two third or 70-80% of crew are Chinese other than 5-6 senior officers such as Captain and Fishing Master on board. Those crew go on board at the sea or other convenient locations such as Singapore, are paid about 30% of Chinese Taipei crew's salary without any extra bonus. They, as foreign labor sharing the same language, contribute a lot to reduce management costs. Depreciation cost is the greatest expenditure item for vessels of Chinese Taipei, where the labor cost is low and such cost structure is making high rate of fishery profit. Japan also pulled ratio of foreign crew on board from 25% in 1990 to 40% in 1995, and the ratio may reach up to 60-70% sometimes. However, Japanese fishing vessels can barely make profit only before deducting depreciation cost. For Japanese tuna industry with less accumulation of internal capital and weak management base, new fishing vessel building seems to be a difficult task.

Management Trend of Distant Water Tuna Longline Fisheries

Table 4 shows income and expenditure of the distant water tuna fisheries in two categories, 200-500 tonne class and over 500 tonne class. It is clearly observed that much effort made in 2001 for cutting expenditure in order to keep balance with reduced income due to dropped fish prices. Larger vessels in the second categories more than 500 tonnes, mostly more than 1,000 tonnes, keep better business status than the relatively smaller vessels in the first category, 200-500 tonnes. The rate of cost reduction is higher than the rate of income reduction in the larger category and fishery profit keeps the same level. The recurrent profit was higher in the both categories in 2001 than in 1996 when the industry suffered from heavy debt interest.

Among labor costs, which occupy 40% of the total costs, food and welfare costs drastically decreased. In both categories, daily wages per person dropped, and the ratio of wages (= allocation of labor costs) was declining. Much expenditure was reduced, particularly expenses for bait, payroll allowance and sales commission were remarkably reduced. As a result, fishery profit and recurrent profit was in black. However, the rate of return (the recurrent profit/fishery income) had been only slightly improved and almost negligible.

The average age of distant water tuna longline vessels as of the end of March 2001 is 11 years and 7 months and beyond 9 years, depreciation terms legally set by the tax law. There is the peak in 10-13 year old in vessel age distribution, and 40% (196 vessels) of the total number of vessels belong to this range of age. Moreover, the number of vessels with 15 years and more is still 103. Capability of building substitutive fishing vessels worth 500 million yen becomes the key which determines continuation of operation, a reduction in the number of fish vessels, or discontinuance of business. However, there is little management entities with the remaining capability of new vessel building. Japan Tuna, under such situation, takes initiative to promote leasing system of fishing vessels built by itself for member fishing entities.

Activities of Japan Tuna

The activities of Japan Tuna since the 98-Gensen are worth for watching. It sought to eliminate FOC fishing vessels internationally and succeeded in establishing OPRT. Domestically it owns fishing vessels as tools of production and also expanded its activities into distribution and processing sectors for seeking price formation driven by producers.

While there is a still problem with Callao in the Pacific Ocean, it established overseas fishing bases in Cape Town in the Indian Ocean, Las Palmas in the Atlantic Ocean and has been reducing running costs. It recently further agreed with China (on 4 April 2003) to establish the forth base in Dalian for repair and maintenance of and supply for fishing vessels. It also seeks to recruit Chinese crew who lost their jobs due to the Chinese vessel reduction policy. The operational costs for one fishing trip have been drastically reduced from 1 million yen in early 90s to 600,000 yen in recent years and further reduction of 100,000 yen is now sought by utilizing the Chinese lower costs of labor and materials. If the operation in Dalian is further developed toward joint venture, overseas expansion and capital export of the Japanese tuna fisheries will be realized.

Japan Tuna seeks an advanced nation type tuna fisheries and tries to transform its production from labor intensive to value added. It plans to process tuna not only by taking guts and gills off (GG form) but also by producing fillet, loin and block forms, which whole sellers have been producing so far. Then it plans to supply such new forms of products directly for large-scale retail shops and consumers' cooperatives. Producers (= upper stream) seeks to take over the role of whole sellers and processors (= middle stream) and further participate in retailing business (= down stream).

The joint sales system of Japan Tuna is not a mere measure for distribution and fish pricing. Participation in the system is also prerequisite for receiving preferable financial assistance from allied financial organizations. The number of fishing vessels participating in the joint sales system had been drastically increased from 66, just after the 20% reduction of the vessels by 98-Gensen, to 185 at the end of fiscal year 2002 and is expected to be more than 200 in near future. Japan Tuna, with such expanding system, seeks to establish advanced nation type tuna fisheries, which cover not only on-board processing but also processing and retailing on land. It plans to establish own food system from upper to lower steam of frozen sashimi tuna distribution as the second structural reform following to the 20% Gensen in 1998 (Figure 2).

While the tuna fisheries in Chinese Taipei accumulates internal capital and establishes their farm management basis under the overseas Chinese capital network, the Japanese distant water tuna fisheries are not necessarily in the same situation. Although it is sure that the fisheries are domestically positioned in the highest category among small and middle-scale capital industries, they are internationally weak with low ration of owned capital, small-scale management and consequently insufficient competitive capability. Japan Tuna, as the industries association, is expected to take an initiative and role to fill the international gap. The activities of Japan Tuna as a part of the Japanese fishery policy, in close collaboration with the Fisheries Agency of Japan, must further increase their importance in the future.

Table1: The number of distant water tuna longline fishing vessels

Years and months	1998	2000	2002.3	2003.3	2003.6	Affiliation to OPRT
Japan	663	529	490	495	495	} 2000.12
Chinese Taipei	569 (380)	565 (370)	562 (390)	599	599	
Republic of Korea	203	197	183	176	176	} 2002.2
Philippines	-	-	6	17	17	
Indonesia	(23)	(28)	-	14	14	2002.5
China	(23)	(60)	(98)	(100)	105	2003.4
Registered vessels to OPRT	-	-	1,241	1,301	1,406	-
Total	1,484	1,359	1,339	1,401	1,406	-

Table3: Comparison in distant water tuna longline fisheries between Chinese Taipei and Japan (1996)

	Chinese Taipei		Japan	
Tonnage of fishing vessels	700 tons class		369	
Price of vessels (1,000yen)	376,000		493,000	
The number of crew	27~29		20.6	
The number of foreign crew	15~16		-	
Catches (tons)	298		-	
Average unit price (yen/kg)	660		-	
Fishery income (1,000yen)	196,920		354,665	
Fishery expenditure (1,000yen)	130,000	100.0	375,516	100.0
Labor costs	22,400	17.2	134,828	35.9
wages	16,000	12.3	102,794	27.3
food cost	4,800	3.7	13,007	3.4
welfare cost	400	0.3	16,008	4.2
insurance cost	1,200	0.9		
Fishing vessels and gears costs	17,400	13.4	39,551	10.5
Bait cost	20,800	16.0	12,847	3.4
Fishing fees	10,000	7.7	-	
Depreciation cost	32,000	24.6	32,292	8.5
Fuel cost	20,000	15.4	34,005	9.0
Fishery profit (before depreciation)	98,720		13,441	
Fishery profit (after depreciation)	66,720		△ 18,851	

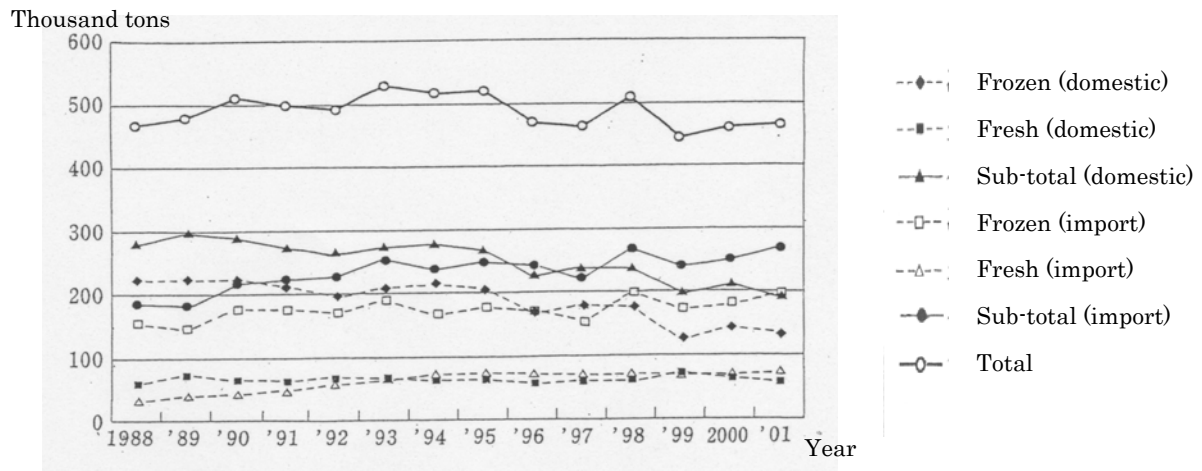


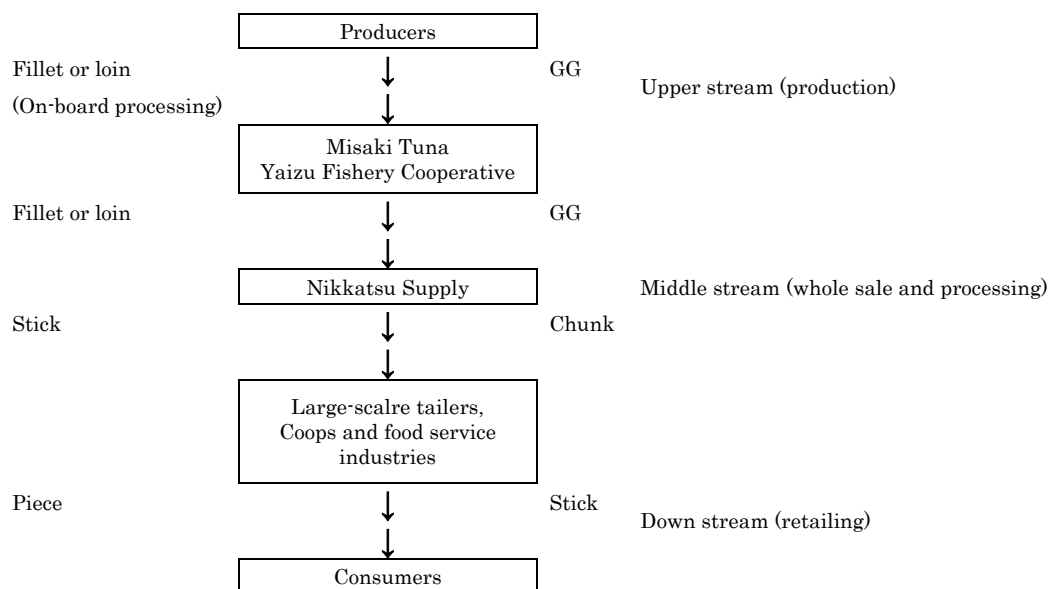
Figure1: Supply of tuna for sashimi

Table2: Supply of tuna – by species in 2001 –

		Bigeye	Yellowfin	Bluefin	Southern bluefin (Fresh· Refrigerate· Frozen)		Albacore	Swoerdfish and marlins	fillet of tunas and marlins	Total
Domestic production (A)	Value (million yens)	70,468	39,758	20,034	13,735	31,118		12,065		192,447
	Share	36.6	20.6	10.4	7.1	16.1		6.2		100
	Volume (tons)	90,079	102,096	10,812	6,210	69,803		21,543		309,409
	Share	29.1	32.9	32.9	2.0	22.5		6.9		100
	Prices (yen/kg)	782	389	389	2,211	445		560		621
Distant water tuna longline (B)	Volume (tons)	69,816	42,375	4,973	6,210	11,896		11,030		149,215
	Share	46.7	28.3	3.3	4.1	7.9		7.3		100
Import total (C)	Value (million yens)	92,178	51,476	24,715	23,326	1,688		9,371	24,014	250,787
	Share	36.7	20.5	9.8	9.3	0.6		3.7	9.5	100
	Volume (tons)	140,877	120,445	9,829	10,903	5,039		19,776	14,833	321,715
	Share	43.7	37.4	3.0	3.3	1.5		6.1	4.6	100
	Prices (yen/kg)	654	427	2,514	2,139	334		473	1,618	779
a breakdown by country (volume (tons))	Chinese Taipei	58,760	42,848	843	1,479	799		9,486	270	114,485
	Republic of Korea	26,567	23,477	988	933	1,443		4,167	4,373	61,946
	Australia	1,312	1,893	51	8,176	47		1,581	9.7	13,072
	Indonesia	11,114	13,829	4	66	41		638	2,018	28,850
	China	10,659	1,841	91	0	35		421	356	356
	Philippines	3,601	3,542	0	0.01	22		372	64	7,619
	Spain	8.5	0	3,011	0	0		70	1,764	4,854
Total supply (D)	Value	162,646	91,234	44,749	37,061	32,806		21,436	24,014	443,234
	Volume	230,956	222,541	20,641	17,113	74,842		41,319	14,833	631,124
A ÷ D (%)	Value	43.3	43.5	44.7	37.0	94.8		56.2	-	43.4
	Volume	39.0	45.8	52.3	36.2	93.2		52.1	-	49.0
B ÷ D (%)	Volume	30.2	19.0	24.0	36.2	15.8		23.6	-	23.6
Import share (volume)	Chinese Taipei	41.7	35.5	8.5	13.5	15.8		47.9	1.8	35.5
	Republic of Korea	18.8	19.4	10.0	8.5	28.6		21.0	29.4	19.2
	Australia	0.9	1.5	0.5	74.9	0.9		7.9	0.06	4.0
	Indonesia	7.8	11.4	0.03	0.6	0.8		3.2	13.6	8.9
	China	7.5	1.5	0.9	0	0.6		2.1	2.4	4.1
	Philippines	2.5	2.9	0	0.0	0.4		1.8	0.4	2.3
	Spain	0.0	0	30.6	0	0		0.3	11.8	1.5

Table4: Business management trend of distant water tuna longline fishery

Tonnage class	200~500 tons		500 tons or more	
Year	1996	2001	1996	2001
The number of vessels	1.3	1.4	3.0	3.0
Total tonnage	341.8	347.8	1,047.5	1,023.9
the largest number of employees	23.9	24.2	49.0	53.7
Fishery income	364,784	317,666	825,575	769,541
Fishery expenditure	348,561	314.2	799,701	742.8
Labor cost	125,642	126,627	313,744	303,295
Wages	95,866	100,854	236,198	236,263
Food cost	13,838	11,820	29,045	25,144
Welfare cost	15,402	10,973	41,307	32,909
Fishing vessels and gears costs	33,637	10,963	89,986	42,333
Bait cost	40,974	34,360	87,849	61,112
Depreciation cost	35,540	20,536	72,955	64,428
Fuel cost	34,121	43,629	76,673	100,363
Leasing and other fees	18,666	13,009	25,845	29,924
Payroll allowance	18,736	21,259	35,373	25,510
Sales commission	10,845	8,058	21,434	18,409
Fishery profit (before depreciation)	51,763	23,987	98,829	91,129
Fishery profit (after depreciation)	16,223	3,451	25,874	26,701
Recurrent profit	6,285	15,654	20,258	26,515
Debt interest	23,817	6,469	57,915	18,568
Wages per person per day	14,300	11,310	16,258	15,074
Rate of labor costs	34.4	33.2	38	36.1
Rate of profit	3.1	1.1	4.4	3.5
Recurrent profit / Fishery income	1.7	4.9	2.4	3.4

**Figure2: Food system of frozen sashimi tuna**