

Advantages and Disadvantages of the Fisheries Trade

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The spirit of trade is mutual benefits among all participants. However, current international trade is just like a zero-sum solution with winners and losers and developing a feeling of distrust among participants. Responsible international fisheries trade is an important tool to promote economic growth of many countries and the World Trade Organization (WTO) has been encouraging free trade as a part of globalization. Although free trade is ideal when the world is fair and equitable, current international trade in favor of capital has diverse effects and has both positive and negative aspects, but is not fair and equitable between participants in both producing and consuming countries. Profit-seeking capital behavior is different from community behavior requiring sustainability and the role of government is to balance these two extremes, continually maintaining vital communities. However, many governments including official development assistance (ODA) have been in favor of capital too much to sustain rural fishing communities and developing countries have been repeating the same problems as developed countries have experienced. This paper reviews cases of the most important fisheries trade commodities: shrimp, tuna and salmon. All cases indicate the existence of negative aspects of the fisheries trade. Governments as trustees of people are expected to remove or reduce these negative aspects of international trade and to think of the importance of the community.

KEYWORDS fisheries trade; shrimp trade; tuna trade; salmon trade; Japan's fish trade

1. Introduction

With development of the 3rd United Nations Law of the Sea Conference together with US dollar devaluation, increase in oil prices, and free trade movement in the 1970s, many

coastal countries took fisheries expansion policies for exports emphasizing foreign exchange earnings, increases of employment opportunities, improvement of sanitation/food safety/transparency of management/fishers' income and living standard (Matsuda 1984, 1987, 1992, 1995).

These policies were also supported by developed countries and further facilitated by the Plaza Agreement in 1985 which promoted a drastic appreciation of the yen. In many coastal countries, fishing fee incomes and fisheries joint-ventures were increased. This resulted in increases in conflicts between traditional coastal fisheries and new fisheries. At the same time, distant-water fishing suffered from it due to increases in cost associated with labor and fuel in particular. In the 1980s, environmental problems became obvious due to economic growth policies in many coastal countries. These fisheries production policies also faced over-investment, over-fishing and resource depletion problems (FAO 1992). Legal frameworks of international regulations were strengthened in the 1990s, and now fisheries are in transition (Willman 2006). FAO's Code of Conduct for Responsible Fisheries concerns all aspects in fisheries management, fishing operation, aquaculture, integration of fisheries into coastal area management, post-harvest practices, trade and fisheries research. Although the Code is voluntary and global in scope, certain parts of it are based on relevant rules of international law, including the UNCLOS and contains provisions that may be or have already been given binding effect by means of other obligatory legal instruments amongst the parties such as the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993 (FAO 1995).

In 2005, world fisheries imports accounted for US\$ 81,529 million while exports accounted for US\$ 78,419 million. The fisheries trade is very important for developing countries in terms of exports while it accounts for a considerable proportion of imports in developed countries. The top 15 exporting countries include China (US\$ 7,519 million), followed by Norway, Thailand, the USA, Denmark, Canada, Chile, the Netherlands, Vietnam, Spain, Russian Federation,

the UK, Indonesia, Iceland and Taiwan. On the other hand, the top 15 importing countries include Japan with import values of US\$ 14,436 million, followed by the USA, Spain, France, Italy, China, Germany, the UK, Denmark, South Korea, the Netherlands, Hong Kong, Canada, Belgium and Sweden. The shares of these top 15 countries in total fish trade values in the world are US\$ 48,567 million or 61.9% for exports against US\$ 65,007 million or 79.7% for imports (FAO 2007). Thus, exports are more diversified as compared to imports concentrated on Japan, the USA and EU countries. China has become a new market for fisheries commodities. Traditional fish trades within a region have also been accelerated by free trade agreements (FTA) (Yamao 2006). Shrimp, tuna and salmon are still the major species in the fisheries trade. This paper focuses on these species.

Joint-venture is an ideal form of capital-intensive fisheries development in developing countries where the developed countries provide the capital and technology at the beginning while the developing countries provide the working environment and labor (Martin *et al.* 1981). These fisheries joint-ventures have increased rapidly since the 1970s. However, many failed within 10 to 20 years. This is because of distrust among partners in terms of joint-venture business management, difficulty in technology transfer pertaining to preparation, education, production, processing, marketing and manageability as well as hastened nationalization. These create joint-ventures high risk low return businesses (Matsuda and Ouchi 1984).

International trade has affected both fishing and aquaculture. In particular, capital intensive activities have been promoted by many countries. As a result, fisheries management and environmental and/or community problems have become serious. Regional tuna fisheries management organizations such as ICCAT suffer from false reporting and data collection problems from unreported

fishermen catching tuna (ICCAT 1996). FAO has tried to promote responsible fisheries worldwide since 1995 (FAO 1995). On the other hand, the Organization for the Promotion of Responsible Tuna Fisheries, an NGO, was established in 2000 and promoted the removal of IUU (Illegal, Unregulated and Unreported) vessels, capacity reduction of over-fishing vessels, promotion of responsible tuna aquaculture and reduction of by-catches and/or incidental catches. IUU/FOC (Flag of Convenience) vessels are pirate fishing vessels that operate and overexploit tuna resources, disregarding international rules for the conservation and management of the resources. With the introduction of the Positive List system, international trading of tuna caught by IUU/FOC vessels has been prohibited since November 2003 (OPRT 2008). The Marine Stewardship Council (MSC), established in 1997 (MSC 2008), is another international NGO which promotes responsible fisheries. The MSC recognizes, via a certificate program, well-managed fisheries and harmless consumer preference for seafood products bearing the MSC label of approval. Characteristics of these NGOs are strong concerns about whole situations from production to processing, marketing and consumption, rather than a part such as production.

2. Shrimp

Shrimp exports have been particularly important as a source of foreign exchange earnings, income generation and employment in developing countries such as Vietnam, Indonesia, India, Thailand, China, Burma, the Philippines, Bangladesh, Columbia, Ecuador, Honduras, Nicaragua and Mexico. World shrimp production in 2005 was 6,230,000 tonnes consisting of 3,650,000 tonnes from capture fisheries and 2,680,000 tonnes from aquaculture. Major shrimp exporting countries include Thailand with US\$ 1.2 trillion in 2001, followed by Indo-

nesia, India, Vietnam, Mexico, Argentine, Ecuador, China and Bangladesh while major importing countries include the USA with US\$ 3 trillion in 2001, followed by Japan, Spain, France Canada, Italy, the UK, the Netherlands, Belgium and Thailand (FAO 2007). Thailand imports shrimp for processing, then exports the final products to developed countries. Thus, shrimp has been a typical trade item produced in the south and exported to the north with the assistance from developed countries resulting in capital and technology transfer (FAO 2007).

The major investment for shrimp capture fisheries is the requirement for capital intensive shrimp trawl vessels. Since the 1970s, many coastal countries have promoted such industrial fisheries in ways of joint-venture, state enterprise, private enterprise or foreign fishing with fishing fee. This policy in developing countries attracted official development assistance (ODA) as well as private development assistance from developed countries. These arrangements contributed to coastal developing countries in terms of foreign exchange earnings, technology transfer, increases in employment opportunities for local people, income generation for people concerned and fostering domestic shrimp fisheries (FAO Regional Office for Asia and Pacific 2008).

However, this industry also created problems such as over-fishing and resource depletion, increasing by-catches, incidental mortality of sensitive species such as turtle, illegal fishing, encroachment of coastal fisheries resulting in conflicts with coastal fisheries, development of income disparity among fishermen and high risk. Thai trawl fisheries depleted most of the shrimp resources in the Gulf of Thailand during the 1960s. In Indonesia, trawl fisheries were banned at the beginning of 1980 except for improved trawl nets such as turtle excluding devices (Indonesian Gov. 1980). This is attributable to increasing by-catches, resource depletion and conflicts with local fishermen.

However, these improved gears were not practical. In the Philippines, the conflicts between shrimp trawlers and coastal fishers have continued. The situation is complicated. Coastal fishermen in San Miguel Bay have suffered from resource depletion due to the encroachment of industrial shrimp trawlers into the coastal fishing grounds. However, shrimp trawl vessel owners are often bosses in the villages and the young sons of coastal fishermen are employed by such industrial fisheries. Although fisheries officers recognize the problem, they never help small-scale coastal fishermen because they are afraid of their bosses (Lim *et al.* 1995).

Aquaculture is another way to meet demands for shrimp. Artificial propagation technology of *Penaeus japonicus*, a temperate species of Kuruma shrimp, was developed by Gensaku Fijinaga in Japan in 1964 and this technology was successfully applied by a Taiwanese scientist to *Penaeus monodon*, a tropical species of the Kuruma shrimp, in 1968. This was a breakthrough of shrimp culture in the world. In the 1970s, shrimp culture was paid much attention by many developing countries such as Ecuador, Indonesia, India, Vietnam and Taiwan. In the Philippines, the Southeast Asian Fisheries Development Center Aquaculture Department was established and emphasized shrimp production technology. This was a preparation period for the shrimp culture industry in the world. Shrimp culture for export purposes has grown rapidly since the 1980s.

Current shrimp culture includes more than 17 species, but are dominated by two major species: *Penaeus monodon* (Giant Tiger Prawn) in the Eastern hemisphere and *Penaeus vannamei* (Whiteleg shrimp) in the Western hemisphere. By 2000, cultured shrimp production exceeded 1.1 million tonnes as compared to 2.7 million tonnes in 2005. World production has been increased, but rise and fall fluctuations of this industry have been well documented due to the outbreak of disease problems caused by virus

diseases including the so-called white spot disease. Production dropped in Taiwan from 16,715 tonnes in 1985 to 2,459 tonnes in 2001 due to the outbreak of *Monodon Baculovirus* (MBV) in 1988; in the Philippines from 88,850 tonnes in 1995 to 36,859 tonnes in 1998; and in Ecuador from 129,600 tonnes in 1998 to 50,110 tonnes in 2000 due to the Taura Syndrome virus (TSV) in 1998. More than 20 virus diseases have been identified by now and caused high risk for the industry. Indonesia, Thailand, India, Vietnam and Mexico are also suffering (Fukano 2004). Thus, capital-intensive shrimp culture is a typical high-risk high-return farming, though shrimp culture in Vietnam and China has recently been growing rapidly.

The disease problem is also associated with problems of mangrove destruction, drug use and water pollution. During 1980 through 2005, 3.6 million hectares of mangrove were destroyed in the world. This is equivalent to 20% of the mangrove areas in 1980, though the speed of this destruction has slowed down from 185,000 hectares per year in the 1980s to 105,000 hectares per year after 2000 (Worldwatch Institute 2006). Some of these mangroves were destroyed for the development of shrimp culture ponds though a large portion of mangrove destruction is related to logging and charcoal production, local self-consumption as well as the Vietnam war before 1980. Due to the disease problem, 150,000 hectares of shrimp ponds converted from mangrove were abandoned in Asia from 1985 to 1995. Some of these abandoned ponds are currently used for extensive or semi-intensive polyculture of shrimp with milkfish, tilapia, rabbit fish, mud crabs, seaweeds and mangroves, as well as for mangrove rehabilitation projects in various countries such as Ecuador, Thailand, Indonesia, and the Philippines.

Apart from the disease problem, capital-intensive export-oriented shrimp culture has been criticized in many ways (Taya 2003). These include the following:

- 1) Government-supported industrial capital-intensive shrimp culture has worked at a cost to the local community. These include mangrove destruction resulting in land acquisition with extremely low prices for local residents, no trespassing, depletion of fisheries resources, flooding, increases of natural hazards such as damages from storms, high tide and earthquakes, and destruction of self-sufficiency;
- 2) Water and soil pollution due to heavy feeding, disease and drug use, resulting in abandonment of those ponds in Taiwan, the Philippines, Indonesia, Thailand, Ecuador;
- 3) Little contribution to the local economy since the industry's interest is in her own profits and not the benefits of the community;
- 4) Irreversible conversion of rice paddies to brackish water shrimp ponds in Vietnam and China in particular;
- 5) Hike of domestic shrimp prices. Shrimps used to be a common seafood for local people at reasonable prices. However, the price for exports has been set much higher than the domestic one. As a result, the availability of shrimps domestically has decreased and the price has increased.

Some of the abandoned shrimp ponds have been used by local residents for extensive or semi-intensive polyculture in the Philippines. However, people are very interested in shrimp culture because the average price is seven times higher than milkfish, though mortality rates are more than 90% due to the disease problem. The current marketing system is unable to separate healthy shrimps from those contaminated by virus and others.

In Vietnam, shrimp culture is a very diverse industry. Small-scale farms occupy 90% with an extensive production of 200 kg/ha as compared to an intensive production of 10–15 tonnes/ha and there are 439 process-

ing plants of which 300 are accredited by the HACCP for export. However, they have the following problems (Muroya 2006):

- 1) Difficulty of collecting both brooders and exportable shrimp: Availability of hatchery technology is limited and most farmers are small-scale so that each purchase is a small lot of several kilograms. Further, traceability is very difficult due to a mixture of shrimp from many farmers including all categories of farming such as extensive, semi-intensive and intensive culture;
- 2) Insufficiency of feed and drug management even among capital-intensive farms;
- 3) Insufficiency of understanding about water management, food safety and sanitation;
- 4) Lack of appropriate infrastructures such as electricity and roads;
- 5) Low investment capability;
- 6) Lack of technology and information concerned.

Lobster is an important export item in Nicaragua. Accordingly, diving fisheries for lobster are popular among natives (Masito). However, fishing grounds have been changing to deeper zones from 30 feet in 1988 to 120 feet in 1998. As a result, the occurrence of decompression sickness increased among divers. Some became physically handicapped and some lost their lives. To prevent such cases, there are many laws, rules and regulations, but there is no enforcement. The government is in favor of the industry but appears to have less concern about local residents (Acosta 2005).

3. Tuna

In the 1970s, many coastal countries introduced fisheries expansion policies to increase foreign exchange earnings (Matsuda, 1986, 1987). Although tuna had been regarded as a highly migratory species in the UNCLOS III, many coastal countries, in

particular South Pacific island countries, declared that those within their Exclusive Economic Zone (EEZ) belonged to the coastal countries. The Forum Fishery Agency established in 1979, took a leading role in regional fisheries management in the South Pacific, based on the Nauru Agreement in 1982. This was materialized after a multilateral agreement between the USA and 16 Pacific island countries in 1987 (Matsuda 1992, 1995). Their management concept is regarded as enforcement without force (Moore 1987). Most tuna caught in the waters were shipped to the tuna markets in Japan, the USA and EU, since local people did not customarily eat large tuna except small skipjack tuna.

Many countries developed tuna fisheries joint-ventures for export purposes in vein mainly due to distrust in business management between partners and hasty nationalization, and some resulted in ethnic violence such as in Solomon Islands in 1998. Solomon Taiyo in the Solomon Islands was regarded as a successful tuna fisheries joint-venture between the government of the Solomon Islands and the Taiyo Gyogyo Company in Japan, lasting from 1971 to 2000. The company was involved in fishing, processing and marketing. By 1984, the company exported Solomon\$ 29 million, 97% of the total fisheries export value in the Solomon Islands and equivalent to one-third of foreign exchange earnings, and employed about 1,000 people which is about 5% of total employment in the country (Matsuda 1986). Solomon Taiyo grew 1999, when it had an annual turnover of around US\$ 100 million, employed close to 3,000 Solomon Islanders on its fleet of more than 20 fishing boats, and had a large shore base with a canning factory. Barclay describes the neutral evaluation of Solomon Taiyo (Barclay 2007).

There are two extremes in the concept of fisheries management. One is complete government control, popular in Western countries (Rigg *et al.* 2003), and the other is

comanagement between government and fishermen, popular in Japan (Matsuda 2002, 2005) which has adopted by Organization for the Promotion of Responsible Tuna Fisheries (OPRT) and Marine Stewardship Council (MSC). Comanagement could also be facilitated by decentralization policies (Fernandes *et al.* 2000; Satria and Matsuda 2004; Kooiman *et al.* 2005; McClannahan and Castilla 2007). Under government control, fishermen are regarded as persons under surveillance while they are regarded as partners with the government under the comanagement approach. Assuming uncertainty in fisheries, monitoring, control and surveillance (MCS) costs without the understanding of the fishermen will be very high. Activities are limited by budgets or by the amount of benefits from the fisheries. The MCS cost could be reduced drastically under the comanagement approach.

Narita International Airport in Japan is also known as Narita fishing port which receives both fresh, frozen and processed fish. However, all cultured tuna are from a limited number of countries such as Australia, Spain, Malta, Turkey, Croatia, Italy, Tunisia, Cyprus, Greece and Libya. These fish used to be fresh for Sashimi market through fish wholesale markets in Japan, but nearly half of them are not handled through fish wholesale markets today (Yamamoto 2006). On the other hand, the National Federation of Tuna and Skipjack Fisheries Cooperative (NIKKATSUREN), the most active tuna fisheries cooperative federation in Japan, was forced to close in 2004 due to financial problems. A positive list system was introduced in the bluefin tuna trade by ICCAT in 2004. This is because production of tuna aquaculture in the Mediterranean Sea increased from 14,000 tonnes in 1994 to 21,000 tonnes in 2003. Under-sized juvenile fish are also used for this aquaculture and competition between capture fisheries and aquaculture has increased.

4. Salmon

Both natural and cultured salmon production has been increasing since 1975. In particular, capital-intensive cultured salmon produced by agri-businesses in the world increased rapidly from 17,000 tonnes in 1980 to 200,000 tonnes in 1990. This is attributable to increased production in Norway. During this period, demands for salmon changed from salted salmon to frozen salmon in Japan and canned salmon to frozen salmon in the United States and EU markets. Major producing countries are the United States, Japan, Russia, Canada for natural salmon: Pink salmon (*Oncorlynchus gorbuscha*), Sockeye salmon (*Oncorlynchus nelka*), Chum salmon (*Oncorlynchus keta*), Silver salmon (*Oncorlynchus kisutch*), and Chinook salmon (*Oncorlynchus tshawytscha*), while Norway, Chile, the UK, Canada, Feroe Islands, Finland, Ireland, the USA, Japan, Australia, Denmark, Sweden, New Zealand and Iceland produce cultured salmon: Atlantic salmon, trout, silver salmon, Chinook salmon. Since 1997, cultured salmon production has exceeded that of natural salmon. These cultured salmon are basically for export and not for domestic consumption (Sano 2003).

Alaska in the United States, Norway and Chile are the major salmon exporters in the world although Alaska is based on natural salmon production while Norway and Chile dominate cultured salmon production. Alaska is the major natural salmon producing area in the United States. The salmon industry provides one-sixth of all employment opportunities there. Major species are Sockeye salmon and Pink salmon in Bristol Bay and southwest Alaska caught by seine (Silver salmon), gillnet in Bristol Bay and purse seine in southwest Alaska. The market is Japan. They face a very short fishing season, marketing problems, resource management problems, low prices and over-investment.

In Norway, fisheries products are an important export item, second to oil and occupy 7% of foreign exchange earnings of the country. Most of them are exported to EU countries. The salmon culture industry contributes 3% of its exported value to the Fish Export Council and salmon export is regarded as a national interest and the government fully supports the industry. In 1979, the government enacted an aquaculture law and started a cooperative experiment with the Nichiro Gyogyo Company of Japan. In 1989, the government liberalized aquaculture capital. In 1991, it adopted an individual transferable licensing system and targeted a production system with a feed conversion ratio of 1.3:1, concentration on export up to 98% and introduction of a new technological system including breeding, prevention of epidemics with vaccine, feed quota system, computer-based management, waste treatment, fresh product production for EU countries, HACCP (Hazard Analysis Critical Control Point), mechanization, year-round marketing, and agri-business oriented management. In 2004, they produced 1 million tonnes of cultured salmon. Weaknesses of Norwegian salmon culture are as follows (Sano 2003; WWF 2004):

- 1) Oligopoly: More than 800 management units in 1992 were reduced to 270 in 1999 and the top six groups produce three-quarters of the total production, resulting in price-war situations;
- 2) No domestic market for cultured salmon, resulting in high risk;
- 3) Rising of the license price due to limited numbers of licenses;
- 4) Increasing international competition, lowering profit margins;
- 5) High-risk high-return to high-risk low-return industry;
- 6) Escaped farmed salmon resulting in a creation of genetic disturbance;
- 7) Depletion of wild Atlantic salmon by 80% between 1970 to the end of the 20th century in the North Atlantic Ocean. A

reason for this is suspected to be attributable to the salmon culture.

In Chile, there are many suitable places for salmon culture and high availability of low price feeds. With Japan's cooperation, a salmon culture experiment was started in 1980. At the same time, they introduced aquaculture technology from Norway. After trial and error, they adopted the capital-intensive Norwegian aquaculture method. The license is issued by the military government. A distance between two adjacent farms is restricted to more than 1.5 km. Enlargement of farm size is promoted and optimization of the production scale from 800 to 18,000 tonnes per year. As a result, the top ten companies produced half of the total cultured salmon in 1998. Further, a value addition for market differentiation was promoted for Atlantic salmon to the EU market and Silver salmon and trout for Japan. In 2004, they produced 440,000 tonnes of cultured salmon.

Although Chilean salmon culture learned a lot from its Norwegian counterpart, several problems have been identified (Sakuma 2007; Takahashi 2007; Hayashi 2007):

- 1) Use of wild caught fish for fish-feed with a low feed conversion ratio: 8.6 kg of wild caught sardine, anchovy, and horse mackerel are used as feeds to produce 1kg of cultured salmon;
- 2) Pollution: Coastal capture fisheries have become non-existence in 10 provinces where salmon culture is very popular;
- 3) Use of pesticides and antibiotics: There is no inspection on this matter;
- 4) Defective legal system resulting in victimization of health and the lives of laborers;
- 5) Weak enforcement capability;
- 6) Widening of income disparity;
- 7) Increasing abnormal cultured salmon due to feeding of heads and bones of cultured salmon.

5. Issues in Imported Countries: A Case of Japan

Japan experienced a rise and fall in fisheries after WWII. It used to be an exporting country of fisheries commodities. However, the situation changed in 1975 and it became an importing country, resulting in it becoming the top importer in the 1980s. In 1997, Japan imported 1.9 billion yen (3.4 million mt), next to oil imports of about 5 billion yen. This is the result of dollar devaluation beginning with the Nixon shock in 1971, GATT Tokyo round 1973–1979 reducing tariffs and treating fisheries commodities as non-agricultural commodities, just like automobiles and televisions, the development of the Third Law of the Sea Conference, export expansion policy for textile, automobile and electric commodities, and life-style changes. As a result, her self-sufficiency rate of fisheries commodities decreased from 100% in 1975 to 57% in 2005, even though her comparative advantages as a maritime country with 35,000 km of coastline, long history and experiences in fisheries, the sixth largest exclusive economic zone of 4.47 million km² including one of the three richest fishing grounds in the world, and both hard and soft fisheries infrastructures (Matsuda, 2006).

Fisheries production decreased from 12.8 million tonnes at its peak in 1984 to 5.8 million tonnes in 2005 in volume with a drop in value from 2.98 billion yen in 1982 to 1.60 billion in 2004. The number of fishermen decreased from 1,990,453 in 1952 at independence to 231,000 in 2004 and the number of fishing vessel construction licenses decreased from 1,521 in 1963 to 26 in 2005. As a result, expected contributions of fisheries and fishing villages to society, such as renewable resources utilization, environmental protection, protection of lives and the assets of people (like rescue, surveillance and environmental monitoring), places for marine recreation and education, succession of

culture such as festivities and economic and employment opportunities in remote areas have been reducing. Japanese fisheries face the unprecedented crisis.

On the other hand, people have been urbanized, life styles have changed from slow food to fast food and the installation of home refrigerators since the 1960s. There has been technological developments in the handling of food in cold storages with temperatures of up to -65°C . Supermarkets became popular and frozen fish transactions outside central fish wholesale markets increased. Convenience stores and fast food sushi restaurants became popular in the 1980s and sushi became one of the children's favorites, just like carry and rice, noodles, hamburgers and Kentucky Fried Chicken. These supermarkets and fast food sushi restaurants use imported frozen fish because of stability in quality, volume and price. Consumers have preferred ready-to-cook or ready-to-eat fish to fresh wholesome fish. The restaurant business grew to 29.1 billion yen by 1997 at its peak, then decreased to 25.6 billion yen in 2002. Sushi shares about 5% in restaurants (Torii 2006). Westernization of food has resulted in malnutrition problems. Together with BSE (mad cow disease), bird influenza, swine cholera, poisoned imported food and camouflage of labels, these have encouraged people to change their eating habits toward domestic food consumption and to become more conscious about the quality of food, food safety and reliable food.

6. Conclusion

Free trade is desirable in the long term, but too early to practice without market failures. The spirit of trade is for the mutual benefit of participants which creates mutual trust. These participants today are all related parties in the trade including not only sellers and buyers but also people concerned in production, processing, marketing and communities. However, issues raised here are com-

mon rather than specific and current trade supported by governments in fact is in favor of profit-seeking capital and not in a sustainability seeking community. As a result, winners are created for capital and losers for the community in the name of competition. This is a market failure with high risks for a country, resulting in high social costs and not a responsible trade at all. Thus, the role of governments is the reallocation of capital-biased benefit to mutual benefit in optimal ways, though not losing incentives. However, this government role is not functioning in many countries. Developing countries have also been repeating the same problems as developed countries experienced in the past and missing the opportunity to take advantage of starting late.

Advantages for fish exporting countries include foreign exchange earnings, employment opportunities, education in sanitation/food safety/transparency of management, higher fishermen's incomes, resulting in an increase in living standards of fishers, though levels of achievement are biased towards foreign exchange earnings and business profits. Those of fish importing countries include an increase in availability of cheaper primary species, benefiting consumers and related processing and marketing people and companies such as supermarkets; and an expansion of export opportunities for exporting industries of other commodities such as cars and electrical goods.

Disadvantages for exporting countries include the creation of a dual structure in fisheries, taking over land at low prices by the government for industrial development, environmental destruction such as the destruction of mangrove resulting in resource depletion, increases of natural hazards and destruction of self-sufficiency; water and land pollution; no contribution to the village communities concerned; high risk of industrial fisheries development, transfer of rice paddies to irreversible shrimp ponds; disease and drug use problems, and rise of domestic

prices of related species. Those of importing countries include the destruction of fresh-fish marketing and consumption, promoting an energy-intensive mass consumption society just seeking convenience and the destruction of rural fishing communities which

make critical contributions to society.

Governments as trustees of people are expected to remove or reduce these negative aspects of international trade and to think of the importance of communities.

References

- Acosta ML. Nicaragua-Legal instruments ineffective, *In: Kooiman J, Bavinck M, Jentoff S, Pullin R (eds). Fish for Life: Interactive Governance for Fisheries*, Amsterdam University Press. 2005; 188–189.
- Barclay K. *Fishing, Western, Japanese and Islander Perceptions of Ecology and Modernization in the Pacific*. Japan Focus. 2007; 1–25.
- FAO. *The State of Food and Agriculture 1992: Marine Fisheries and the Law of the Sea. A Decade of Change*. FAO Agriculture Series 25. Rome. 1992.
- FAO. Code of Conduct for Responsible Fisheries. 1995.
- FAO. FishStat. 2007.
- FAO Regional Office for Asia and Pacific. The history of industrial fisheries in Southeast Asia: Trawling. 2008. [Online] <http://www.fao.org/docrep/010/ag122e/AG122E05.htm>
- Fernandez PR Jr, Matsuda Y, Subade RF. Coastal Area Governance System in the Philippines. *J. Environ. Develop.* 2000; 9(4): 341–369.
- Fukano N. A trend analysis of world shrimp aquaculture. *J. Int. Fish.* 2004; 6(1/2): 43–54 (in Japanese).
- Hayashi K. Interview on 2 July 2007.
- ICCAT. Proceedings of the ICCAT Tuna Symposium, Ponta Delgada, June 10–18, 1996.
- Indonesian Government. Presidential Decree No. 39. 1980.
- Indonesian Government. Presidential Instruction No. 11. 1982.
- Kooiman J, Bavinck M, Jentoff S, Pullin R (eds). *Fish for Life*. Amsterdam University Press. 2005; 427 pp.
- Lim C, Matsuda Y, Shigemi Y. Problems and constraints in marine fisheries: The case of San Migurel Bay, Camarines Sur. *Environmental Management* 1995; 7: 835–852.
- Marten G, Matsuda Y, Bardach J, Comitini S, Hardjolutukito S. A Strategic Goal Analysis of Options for Tuna Longline Joint-Ventures in Southeast Asia: Indonesia–Japan Case Study. East-West Environment and Policy Institute Research Report No. 3. 1981; 74 pp.
- Matsuda Y. Tuna and skipjack fisheries in the Pacific Islands waters: Issues and the role of Japan. *In: Japan International Fisheries Research Society (ed). Study on International Fisheries*. Kouseisha Koseikaku: 1986; 107–152 (in Japanese).
- Matsuda Y. Postwar development and expansion of Japan's tuna fishery. *In: Doullman DJ (ed). Tuna Issues and Perspectives in the Pacific Islands Region*. East-West Center, (Publication Place). 1987; 71–91.
- Matsuda Y. Changes in tuna fisheries negotiations between Japan and the Pacific Islands nations. *In: Marsh JB. Resources and Environment in Asia's Marine Sector*. Taylor & Francis, New York. 1992; 41–57.
- Matsuda Y. 1995. The international perspective on tuna fisheries management in Western Central Pacific under the UNCLOS III framework, Proceedings of the 7th IIFET Biennial Conference, Taipei, 18–21 July, 1994; 204–222.
- Matsuda Y. APEC's contribution to sustainable fisheries in the region, Seoul Ocean Seminar of the 1st APEC Ocean-related Ministerial Meeting: Towards the Sustainability of Marine and Coastal Resources, Korea Maritime Institute and Ministry of Maritime Affairs and Fisheries. 2002; 57–71.
- Matsuda Y. Toward the establishment of Basic Maritime Law with Responsible Fisheries: From the Japanese international contribution point of view, *Cakushikai Kaiho* 2006; No. 856: 44–50 (in Japanese).
- Matsuda Y, Ouchi K. Legal, political and economic constraints on Japanese strategies for distant-water tuna and skipjack fisheries in Southeast Asian Seas and the Western Central Pacific. *Mem. Kagoshima Univ. Res. Center S. Pacific* 1984; 5(2): 151–233.
- McClanahan T, Castilla JC. *Fisheries Management Progress toward Sustainability*. 2007; 344 pp.
- Moore G. Enforcement without force: New concepts in compliance control for foreign fishing operation. *In: Essays in Memory of Jean Carroz Law of the Sea*. FAO. 1987; 159–169.

- MSC. MSC Website: <http://www.msc.org/> [Accessed August 2008].
- Muroya, Arihiro. Development mechanism of Fisheries in Viet Nam: Development process of export-oriented fisheries focusing on shrimp culture. *Noirin Kinyu*, 2006; (8): 16–27 (in Japanese).
- OPRT. OPRT Website: <http://www.oprt.or.jp/eng/index.html> [Accessed August 2008].
- Rigg K, Parmentier R, Currie D. *Halting IUU Fishing: Enforcing International Fisheries Agreements*. Oceana. 2003; 32 pp.
- Sakuma T. Survey report on salmon and trout aquaculture in Southern Chile. Asia–Pacific Resource Material Center Resource Material. 2007; 25 pp (in Japanese).
- Sano M. *World Markets of Salmon: Agri-Business-Oriented Aquaculture*. Seizando Shoten, Tokyo. 2003; 1–259 (in Japanese).
- Satria A, Matsuda Y. Impact of decentralization policy on community based management: a lesson from the case of west Lombok, IIFET 2004 Japan. 2004.
- Takahashi N. Export leading economic growth and its income allocation issue: A case of Chile from the late 1980s to the early 2000s. *Latin American Report 2007*; **23**(1): 34–43 (in Japanese).
- Taya K (ed). *Shrimp Aquaculture in Asia and Trade*. Seizando-Shoten, Tokyo. 2003; 202 pp (in Japanese).
- Torii K. Tuna handling at Kaiten sushi business. *Journal of Regional Fisheries* 2006; **46**(3): 187–200 (in Japanese).
- Willman R. *A Review of Past Rent Studies in Fisheries. A note prepared for the project Estimating Global Rent Loss in Fisheries*. FAO, Rome. 2006.
- Worldwatch Institute. *Vital Signs 2006*. 2006; 128–131 (Japanese translation 2007).
- WWF. Tuna farming in the Mediterranean: the bluefin tuna stock at stake. 2004. [Online] <http://www.wwf.or.jp/activity/marine/lib/index.htm> [Accessed August 2008].
- Yamamoto N. Marketing sector's behavior along with changes in tuna supply, demand and market: Import tuna and domestic marketing business. *Journal of Regional Fisheries* 2006; **46**(3): 171–185 (in Japanese).
- Yamao M. Rapid growth of fish consumption market in East Asia: Globalization and regionalization of fisheries trade. *Jap. J. Fisheries Economics* 2006; **51**(2): 15–42 (in Japanese).