

Communication à la IIIème conférence Franco-Japonaise d'Océanographie (SFJO), Nantes, Juillet 1991 (à paraître dans les actes)

## AN INTRODUCTION TO JAPANESE AND FRENCH FISHERIES

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### Abstract

Fisheries and aquaculture in Japan and France are very different in terms of scale and management schemes. Japan, a leading country in the world for fisheries, has developed a unique mixed system of community based coastal management and licensing schemes for off-shore and distant-water fisheries. Increasing demand, changes in consumption and the heavy constraint of access limitation to third countries waters, make Japan more and more depending upon imports. Though few effort and access limitation schemes are locally implemented in France, most of the management rules comply with the Common Fisheries Policy (CFP). The basic lines are the technical measures, the Total Allowable Catches (TACs) allocated into quotas at the regional level and the reduction of the fleet size under the objectives of the Multiannual Guidance Programme. Fleet reduction to increase the productivity and stabilization of the fishermen income are the main objectives for the coming years. Producers Organizations (POs) play an increasing role. Increasing demand and shifts in consumption

### Résumé

Le secteur des pêches et cultures marines au Japon et en France diffèrent tant par leur taille que par les modes de gestion. Le Japon, un des leaders mondiaux en matière de pêche, a développé un système unique basé sur une gestion directe par les communautés de pêcheurs de l'exploitation des ressources côtières et des licences pour les autres pêcheries. L'accroissement de la demande, la modification des modes de consommation et la limitation de l'accès aux eaux des pays tiers rendent le Japon de plus en plus dépendant des importations. Bien qu'il existe des modalités de limitation de l'accès ou de l'effort mis en oeuvre localement, d'une manière générale la gestion des pêches s'effectue dans le cadre de la Politique Commune des Pêches. Les axes principaux en sont des limitations techniques, les captures totales admissibles (TAC) réparties en quotas au niveau régional et la réduction de la flotte selon les objectifs fixé dans les Programmes d'Orientation Pluriannuels (POP). L'amélioration de la productivité des unités de pêche et la stabilisation du revenu des pêcheurs constituent les objectifs principaux. Les Organisations de Producteurs (OP) joueront pour cela un rôle croissant. L'augmentation de la demande et les modifications dans les modes de consommation, soutienne un flux croissant d importations.

## FISHERIES OF JAPAN

### OVERVIEW

Japan consists of four main islands and thousand of smaller islands lying off the eastern coast of the Asian continent stretching 3 800 km from north to south. Rugged mountains account for more than 80% of the total land area and the population concentrates along the coast. The coastlines are washed by warm currents from the south and cold currents from the north. Both coastal and off-shore waters are very productive and blessed with an great diversity of marine life.

These geographical conditions naturally led to the development of fisheries around Japan from its early history. Seafood is an important part of the diet and culture of the Japanese people.

The population of Japan is about 122 million. Its annual per capita consumption of fish is the highest in the world at approximately 70 kg, accounting for about 40% of the Japanese dietary supply of animal protein. Moreover, the variety of marine products is quite large and processed products are extremely varied.

Japan is the world's leading nation in fisheries production and international trade. In 1990 the total catch was about 10.3 million tons, fishery import products volume was about 3.8 million tons and export volume at 1.2 million tons.

### 1) FISHERIES MANAGEMENT

The Fisheries Law and the Fisheries Resource Protection Law are the two basic laws under which all Japanese fisheries are manage. The Ministry of Agriculture, Forestry and Fisheries (MAFF) and the prefectural governments have broad authority under the provision of these laws to establish restrictive measures. Authorized measures include : (1) limiting the number of vessels to be licensed; (2) establishing time and area closures; (3) designating prohibited species; (4) setting catch size limits; (5) limiting the size of vessels; (6) prohibiting the handling and sale of designated species; (7) prohibiting the disposal and discharge of materials injurious to the environment; (8) prohibiting the transplantation of marine life.

#### I-1 Management system

Japanese fisheries are managed under one or two management systems. Coastal and inland-water fisheries are managed under the fishing right system. Off-shore and distant-water fisheries are managed under the fishing licensing system. All Japanese fishing vessels must be registered for the fisheries in which they are used (Fig. 1).

##### a) Fishing Right System

The fishing right management system establishes exclusive rights to operate specific fisheries, including aquaculture, in designated areas. There are three categories of fishing rights : common fishing right; demarcated fishing right; set-net fishing right. These rights are under the management of the local fishermen cooperatives whose members fish within the waters under the jurisdiction of the fishing right management system. All coastal waters are under such rights.

## b) Fisheries Licensing System

The fisheries licensing system is applicable to the off-shore and distant-water fisheries. Each fishing vessel must obtain a license under this system. Licenses for fisheries under federal jurisdiction are issued by the MAFF. Those for fisheries under prefectural jurisdiction are issued by the prefectural governor. The Minister and the prefectural governors are authorized to issue licenses regulating vessel size, target species, prohibited species, fishing seasons and fishing areas. A license is usually valid for 5 years. However, licenses for vessels operating in international fisheries must be renewed annually.

## c) Fishing Vessel Registration System

Japanese fishing vessels must be registered with the prefectural government under the Fishing Vessel Law. The use of a vessel in a fishery other than the fisheries for which the vessel is registered is prohibited. Both the construction and reconstruction of a fishing vessel require a permit from the MAFF or the prefectural governor.

## I-2 Fisheries Cooperatives

Fishermen Cooperative Associations (FCAs) are organized by fishermen to carry out economic activities on behalf of their members. All coastal areas are under the jurisdiction of the FCAs. Their purpose is to ensure stability of the fishermen income and to raise their socio-economic position by managing productivity. They purchase for their members materials like fishing gear, fuel...They run processing, storing and marketing facilities. Cooperatives also handle training, bank and welfare businesses for their members. As stipulated by law, local fishermen cooperatives are given the exclusive right to administer the fisheries within their coastal zone. They play a very important role in the management of coastal fisheries and in maintaining the social structure of fishermen communities.

## II) THE INDUSTRY

Japanese fishing industry had to rebuild its production capacity after World War II. Larger fishing vessels, improved efficiency in fishing vessel operation and technological developments contributed to increase the production. By 1952, Japan regain its maximum pre-war production level of 4.33 million tonnes. Production reached 6 million tonnes in 1960 and 8 million in 1968. Since 1972, production has exceeded 10 million tons annually. However, in 1991 production has fallen at 9.8 million tons. More, Japanese production within foreign 200-mile zones has decreased significantly in recent years while production on the high seas and the Japanese 200-mile zone has increased (Fig. 2). This is a result of restrictions in access to third countries water as well as the high cost of energy.

### II-1 Fishery Classifications

Japanese fisheries and aquaculture are classified into six categories: distant-water fisheries; off-shore fisheries; coastal fisheries; marine aquaculture; inland water fisheries; and inland water aquaculture. The major criteria for this classification is the area of operation and the size of the operation.

#### a) Distant-water fisheries

These fisheries operate on the high seas and within the 200mile zones of various nations around the world using large and highly efficient vessels. Representative

fisheries include trawl fisheries, skipjack pole and line fisheries, tuna longline fisheries and squid jigging and drifnet fisheries. This last one has to be stop by 1993 due to international decisions. The establishment of 200-mile zones by most coastal nations and the reduction of allocations to Japanese fishermen, within the zones of ex-Soviet Union and the United States, forced major changes in the structure of the distant-water fisheries. Mothership trawl operation for surimi had to leave the U.S. zone in 1987, followed by longline operations in 1988 and mothership salmon operation in 1990. Although production in others 200-mile zones has decreased, it has been sustained on the high seas. However, production value has been declining since 1984, with the loss of allocations for higher valuable species within foreign 200-mile zones.

#### b) Off-shore fisheries

These fisheries operate mainly in the waters off Japan 12 miles zone, using powered vessels over 10 gross tons. Medium and small enterprises are dominant in this sector, with large and medium size purse seine and trawl fisheries, squid jigging fisheries, saury stick-held dip net fisheries. Production from off-shore fisheries depends upon resource conditions. Total off-shore fisheries production was about 6 million tonnes in 1990 which was about half total Japanese fisheries production. However, the value of off-shore fisheries has decreased since 1982, because of a high level of production of low value species such as sardine which account for more than 30% of that production.

#### c) Coastal fisheries and marine aquaculture

Coastal fisheries occur mainly within the 12-mile zone waters of Japan using setnets and fishing vessels less than 10 gross tons. Trawl, gillnet, pole and line fisheries, shellfish fisheries and seaweed collection are typical. Production has been stable at around 2 million tons since 1980. Production value increased due to the strong demand for high value species.

Aquaculture facilities are generally located in protected inshore areas with favourable currents. Marine aquaculture has developed with an increasing variety of cultured species in response to the demand for higher grade fish. Aquaculture production accounts for about 11% of total production and 25% of total value. The main species cultivated are sea-bream, scallops, pearls and seaweeds such as kelp, undaria and laver (nori). Production of oysters, pearls and laver is almost 100% dependant upon cultured fisheries. For other species, aquaculture production represents 94% for undaria, 83% for yellowtail, 49% for kuruma shrimp, 66% for sea-bream, 53% for scallops, and 31% for kelp.

#### d) Inland water fisheries and aquaculture

Inland fisheries production has decreased since 1978 due to deterioration of the environment and the habitat for target species. Production is around 100 thousand tonnes. About half of the production value is attributed to sweet fish and corbicula.

Inland aquaculture production has been around 90 thousand tonnes annually. The most important species is eel. The value of eel production is more than half of the total value of inland aquaculture production. Other important species include sweet fish, trout, carp and tilapia.

## II-2 Fishing units and employment

The total number of commercial fishery management units has been declining since the 50's. Coastal fisheries account for 95% of the total number of management units. Approximately 71% of the coastal fishery management units are engaged in

fishing vessel fisheries and another 21% are engaged in aquaculture. The remaining units are engaged in non-fishing vessel fisheries, fixed-net and shore seine fisheries.

Fisheries labour force has also decreased considerably since the mid-50s to about 390,000 in 1990. The decrease has been brought about by urbanization and industrialization resulting in the migration of younger people from the fishing communities to the larger cities and towns. Approximately 80% of the total labour force is employed by coastal fishery management units which employ mainly family members. The other 20% is engaged in off-shore and distant- water fisheries.

Women occupy 17% of the total labour force and are mainly engaged in on-land work, processing and aquaculture. Men are mostly engaged in operation of fishing vessels.

### **III INTERNATIONAL TRADE AND CONSUMPTION**

#### **III-1 Consumption**

Total supply of fishery products was about 13.5 million tons in 1990. Excluding whale meat and seaweed, 64% of total supply was for human consumption (Fig.3). The supply has been increasing due to the high demand for feed for livestock and cultured fish. Demand for direct human consumption has been increasing slightly.

Annual per capita consumption of fish is at 71 kg on a round weight basis. Japan exceptionally high per capita consumption of fishery products differs significantly from that of other developed nations which mainly depend upon livestock products for their protein supply.

#### **III-2 International trade**

Trade in fishery products has undergone changes over the last 20 years. At one time, Japan was the world largest exporter, mainly canned North Pacific salmon, crab and frozen tuna. Nowadays, Japan exports account for about 5% of the world's total trade in fisheries and it became the world largest importing nation. Japan has experienced a high economic growth during the 1960s with a corresponding rise in the nation standard for food products.

Imports exceeded exports in value for the first time in 1971. This trade deficit rapidly widened as imports increased due to the varied demand of the Japanese people and the reduction in distant- water fisheries during the emergence of the 200-mile era. In 1990, Japan imports accounted for 30% of the world's total trade in fisheries and equalled the total fishery exports of the top five leading fishery export nations (Fig. 4).

Shrimp occupy by far the largest volume and value of Japanese imports (Fig. 5). Other major import species include tuna, salmon, crab, squid, octopus, eel and cod. Major exporting nations to Japan are the United States, Korea, Taiwan, China, Indonesia, Canada and Australia.

The downward trend in exports has now been stabilized. However, there has been a major shift in the types of products exported, with a decrease in exports of high grade products such as canned salmon and tuna and an increase in exports of canned sardine, fish meal and oil. Japan fishery major products exports are cultured pearls, fish meal and fish oil, canned fish (sardine and tuna) and scallops. Major importing nations are the United States, Taiwan, Hong-Kong, Switzerland, France and Thailand.

## CONCLUSION

There is a considerable gap between demand and supply for medium and high grade fish. Japanese fisheries can not satisfy this demand. Domestic production is on the way of decrease and concerns more and more non-valuable species. Distant-water fisheries have faced international restrictions.

In that regard, the Government of Japan implements the following policy :

- 1) Maximize the utilization of Japanese coastal fisheries resources by balancing fishing effort with resource conditions and by promoting sea farming and aquaculture.
- 2) Balance the supply of fisheries products with demand and stabilize prices by increasing the supply of quality products and maintaining a suitable direction over fisheries production and importation of sea products.
- 3) Reinforce the economic base of the industry and fisheries communities.
- 4) Contribute to international fisheries cooperation and management of high seas fisheries resources.

## FISHERIES IN FRANCE

### OVERVIEW

The French EEZ is the third in the world and French fisheries are ranked fourth in the EEC for the landings (after Denmark, Spain and U.K.), third for their value (after Spain and Italy) and third for the fleet capacity (kw). France is also one of the main importers of sea products in the EEC.

The last decades are characterised by a slight increase in the production with changes in its structure (decrease of distant water fishing in the North Atlantic, development of shellfish culture and tropical tuna fishing), a rise in capacity and a reduction in the number of fishermen.

Two regions account for more than 60% of the landings and half of the value in France : South Brittany and North/Normandy (table1). But the average landing price is higher in the Bay of Biscay and the Mediterranean due to the proximity of Spanish and Italian markets, the structure of the landings (small quantities of high value species) and importance of direct sales to the wholesalers.

### I) THE FISHERIES MANAGEMENT

The Total Allowable Catches (TAC) are the core of the Fisheries Common Policy (CFP) since it was first agreed among EEC Memberstates in 1983. In 1991, 18 species are subject to TACs. The TACs are decided through a long process of scientific advice and political bargain within the European institutions. Allocation of the national quotas is a two step process. First, a bargaining process takes place at the national level between state and industry representatives to determine the share of each of the regions. Shares of the quotas allocated to each region are then allocated to fishermen belonging to Producer Organizations and other fishermen. Not being individualized, quotas are not transferable. The market stabilization programme, based on product withdrawal and payment of compensation to the fishermen when the market price falls under a certain level, is the other main component of the CFP.

Technical innovation and incentives such as capital grant given by the European Community led to overcapitalization and decreasing productivity in the fisheries in the 80's. Although the allocation of TACs contributed to the conservation of species of major interest to the European fisheries, the bad economic results of the fishing enterprises called for a strong action to reduce the fishing fleet in Europe. Global reduction objectives, based on technical characteristics such as gross tonnage and power, are set for each country in the Multiannual Guidance Programmes (MGP). To meet with these objectives and stabilize the evolution of the fleet capacity (in terms of power), the French government implemented in 1989 a permit system called "Permis de mise en exploitation" and a decommissioning programme. For the first time, a fishing effort reduction scheme was implemented in France at the national level. Almost all the ships are concerned excepted lagoons and estuaries, tropical tuna fishing and aquaculture boats.

The European Community also implements technical regulation such as mesh size, gear specification,... Apart from these regulations, national measures for management are based on financial incentives (loans and subsidies) and licensing schemes for trawlers and lagoon vessels in the Mediterranean and for some specific fisheries in the Atlantic. These licensing schemes, as well as specific technical regulation,

are implemented by the administration but managed by the fishermen organizations at the regional or local level. Subsidies and loans for building and making substantial modifications in ships are given by the government to individual professional fishing boats of more than 16 m for the Channel, the North Sea and the Atlantic and of more than 18 m for ships registered in the Mediterranean. For smaller size boats, the aids are under the regional administration rule. An investment can be subsidized to a maximum of 22% under the national programme, plus the regional grant. Aids in converting and modernizing ships are linked to the MGP objectives. Since April 1991, there is a specific aid programme when fishing vessels used for more than ten years, are finally scrapped (Mellick plan).

Fishermen organizations are basically of three types. The National Interprofessional Committee for Marine Fisheries and Marine Culture and its Regional and Local Committees represent the fishermen and have an advisory role to the Minister for the Marine (reform of the 1945 act enforced in 1992). Other organizations are the cooperatives and the Producers Organizations (PO). The latter are in charge of the management of the quota and withdrawal price systems. In the Mediterranean, especially in lagoons and for small-scale fisheries, the fishermen are represented by the *prud'homies*.

## II) THE INDUSTRY

After 10 years of relative stability between 700 and 760 thousand tonnes, the fisheries and aquaculture production reached 805 000 tonnes in 1990 (table 2). Cultivated shellfish accounted for more than a quarter (table 3).

### II-1. Fisheries

In 1990, inshore and off-shore fleets contributed for more than 60% of the value of landings in France, while distant water trawlers and tropical tuna fleet accounted for 10% and shellfish culture for 25%. The two main fleets in terms of vessels, power and employment are the inshore fleet (less than 12 m) and the small-scale trawlers (16 to 25 m, landing the fish fresh). They employ more than 60% of the fishermen (table 4).

Between 1985 and 1990 (table 4), the French fleet has undergone a reduction of the number of vessels (-33%) and a slight increase of the power (+2.5%), mainly due to changes in the inshore fleet. Within the FCP France has to fulfil an overall reduction in tonnage and total power. The French "plan pêche" (Mellick plan) enforced in 1991, aimed at a further reduction of the number of vessels. By the end of 1991, the total power was reduced to 1,050,000 Kw.

The rapid growth of demand for sea products between 1980 and 1990 (more than 25% in volume and value) has increased the share of imports in the supply to the french market (from 65 to 80% in value). The exports increase faster than the imports and the production in value, but they show a decreasing average price. The french trade gap is due mainly to imports of high price products (salmon, shrimp) and of frozen fish for processing (cod, coalfish, tuna).

### II-2 Aquaculture

The French aquaculture sector has two components. A more than one hundred years old and well developed shellfish industry accounting for 24% of the total value of landings. 144 000 tonnes of oysters and 61 000 tonnes of mussels were produced in 1990 in all coastal regions, mainly by family businesses. The general trend is an increasing size of the units, mainly because of marketing economies of scale. More than 95% of the

oyster production is consumed in France. The high demand for mussels is covered by imports with a good seasonal complementarity with French products.

A strong effort was developed since the early 70's to cultivate new species. Major results are in the intensive culture of sea-bass and sea-bream in the Mediterranean, salmon, clam and, recently, turbot and seaweed culture.

The main constraint to the expansion of aquaculture is site limitation. Competition for space is strong on the French coast, and major conflicts developed between aquaculture and agriculture or tourism.

## Conclusion

At present, the European Commission seems to consider that the fisheries management conducted under the CFP principles has not worked satisfactory at a global level. The TAC/quota system is a very heavy procedure taking into account a small share of the total value of the landings. It is not efficient to manage multispecies fisheries. The pressure to reverse the trend of increasing fishing capacity is very high but still shows a limited success. The set of global objectives is not satisfactory regarding the diversity of the fleet among and within the European countries. Therefore the implementation of such regulatory tools as multiannual and/or multispecies TAC and licensing schemes are envisaged.

After a difficult start, France seems to be able to control the evolution of its fishing fleet. Still the means to ensure economic stability of the fishing units and to control the social impact of fleet reduction have to be designed. The Producers Organization are to play an increasing role in this process in the future.

Increasing demand and shift in consumption toward high added-value products temporarily supports the low productivity. It also nourishes a strong flow of importations that places the industry under sharp competition. This competition will still be more difficult when the Single Market Act will be implemented in 1993.

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Fig. 1 - Fisheries Right and Licensing System in Japan

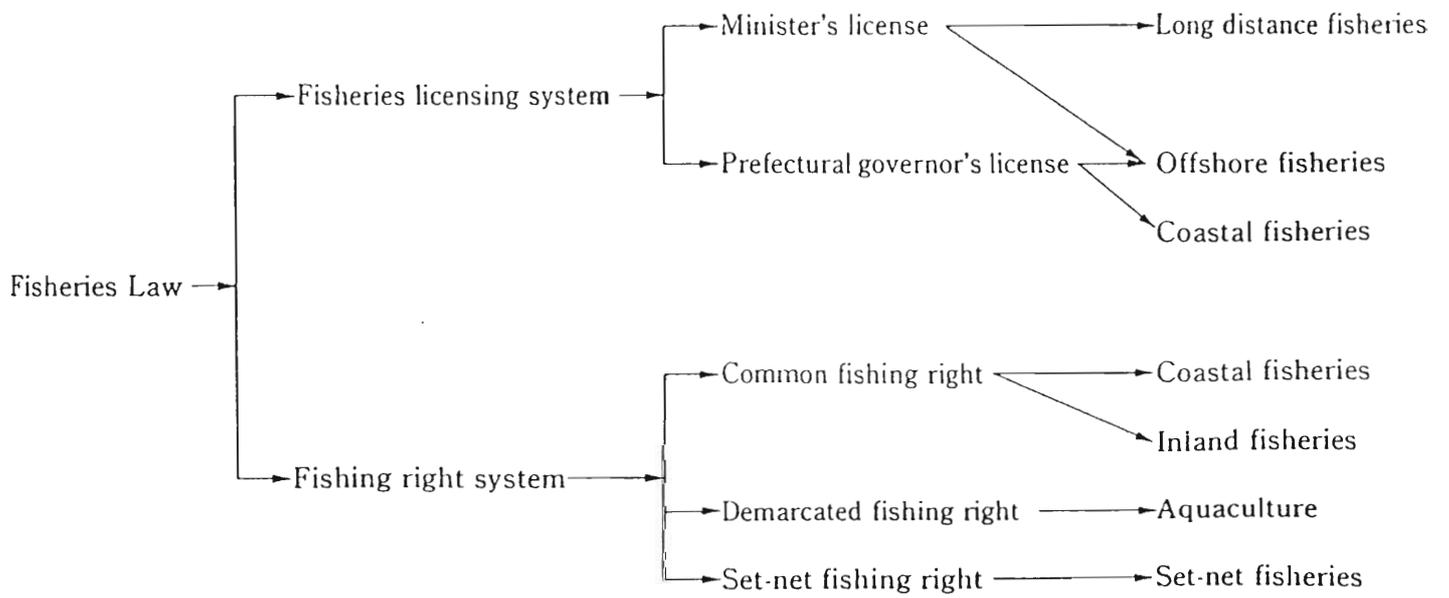
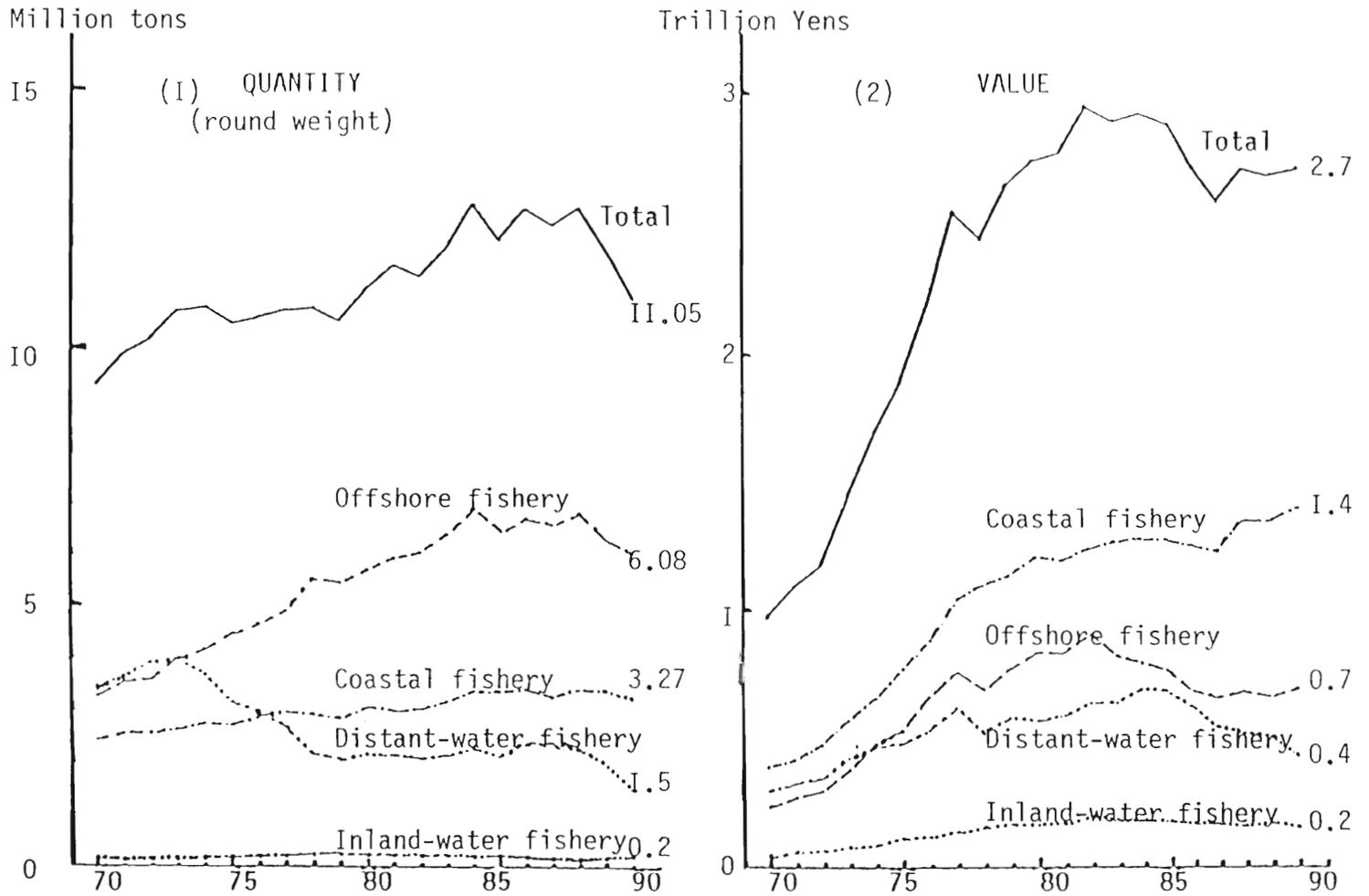
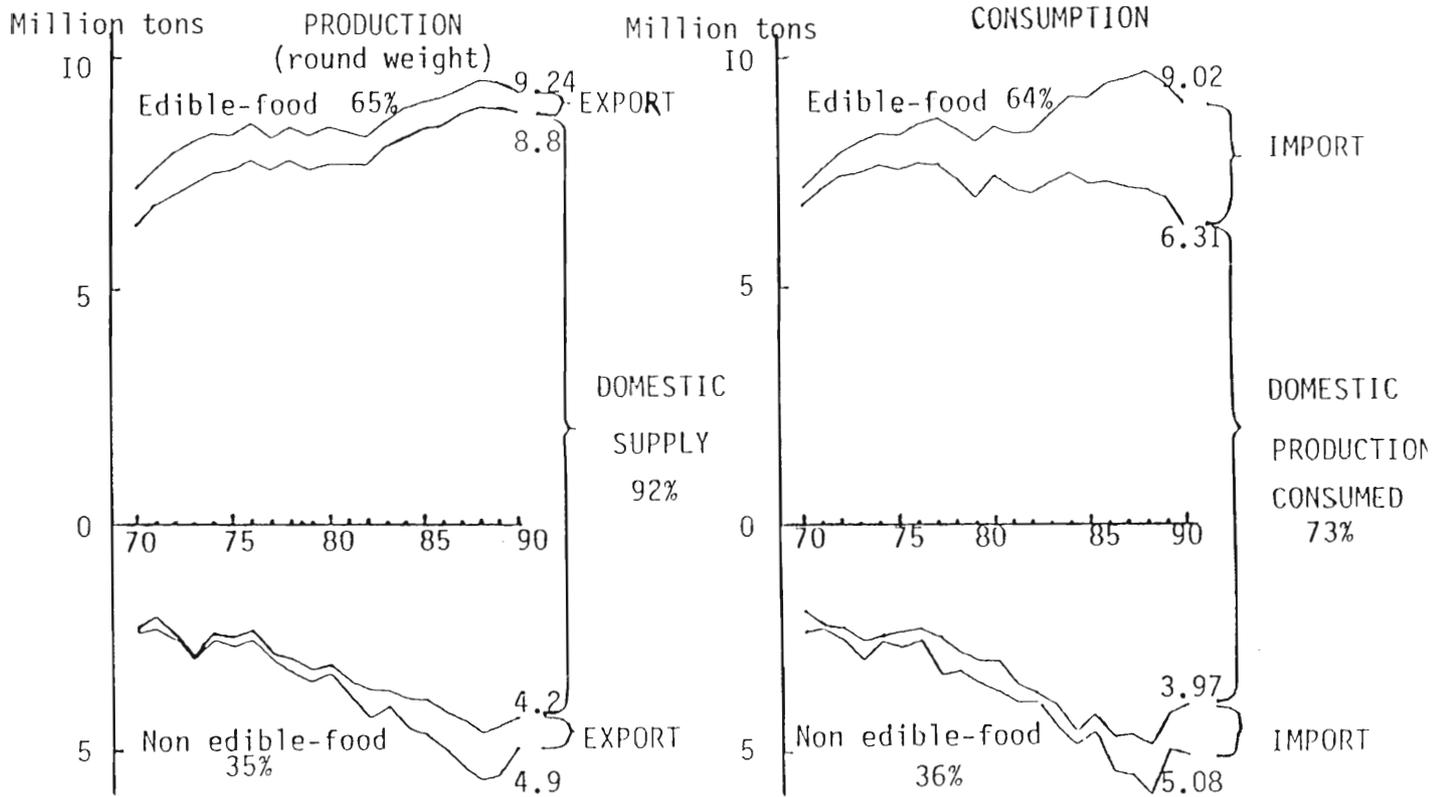


Fig. 2 - Trends in fisheries production in Japan



Source : Ministry of Agriculture, Forestry and Fisheries - Annual Report on Fisheries and Aquaculture - Japan

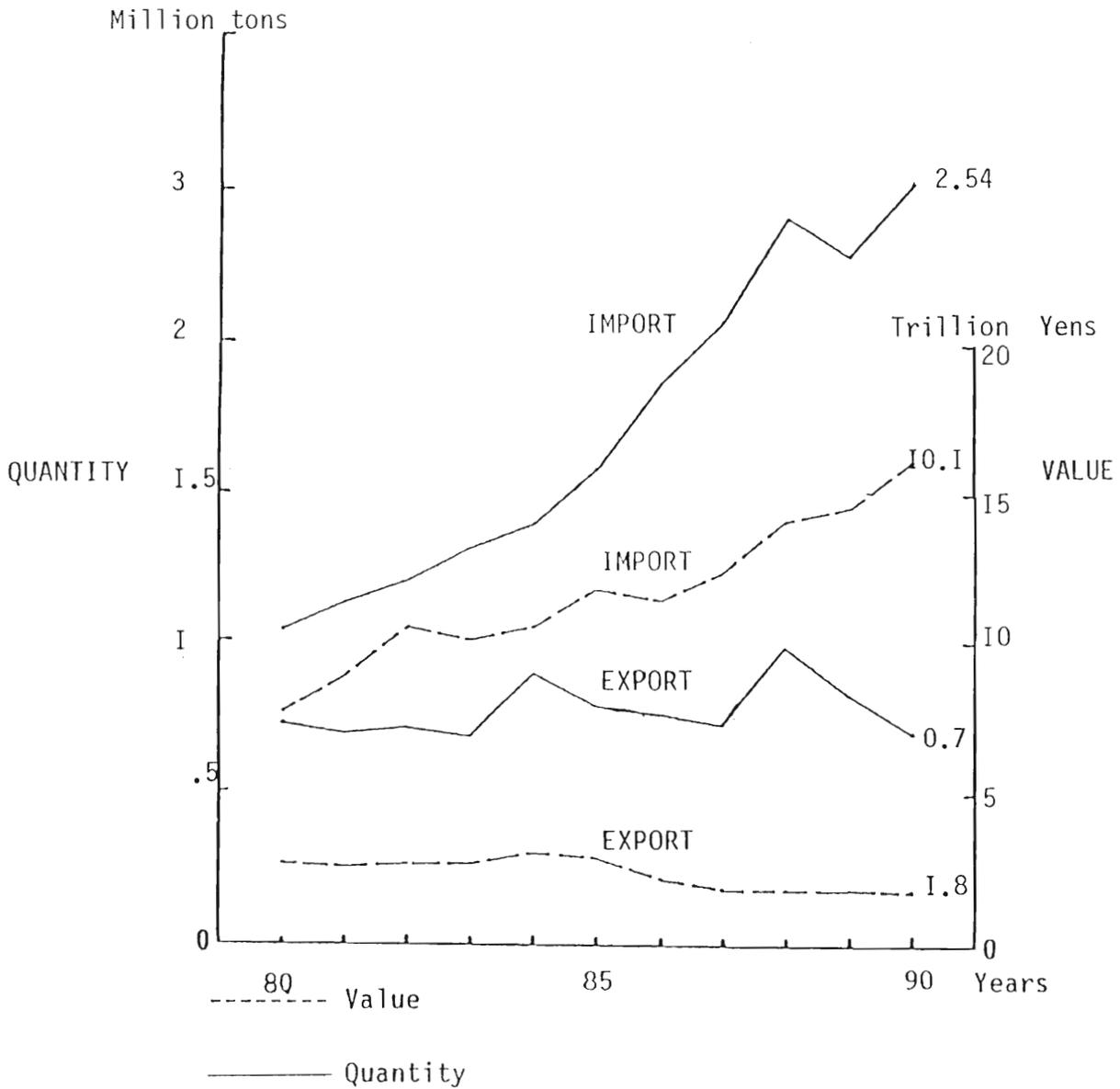
Fig. 3 - Supply and consumption of fishery products in Japan



Storage in 1990 : 1 750 000 tons

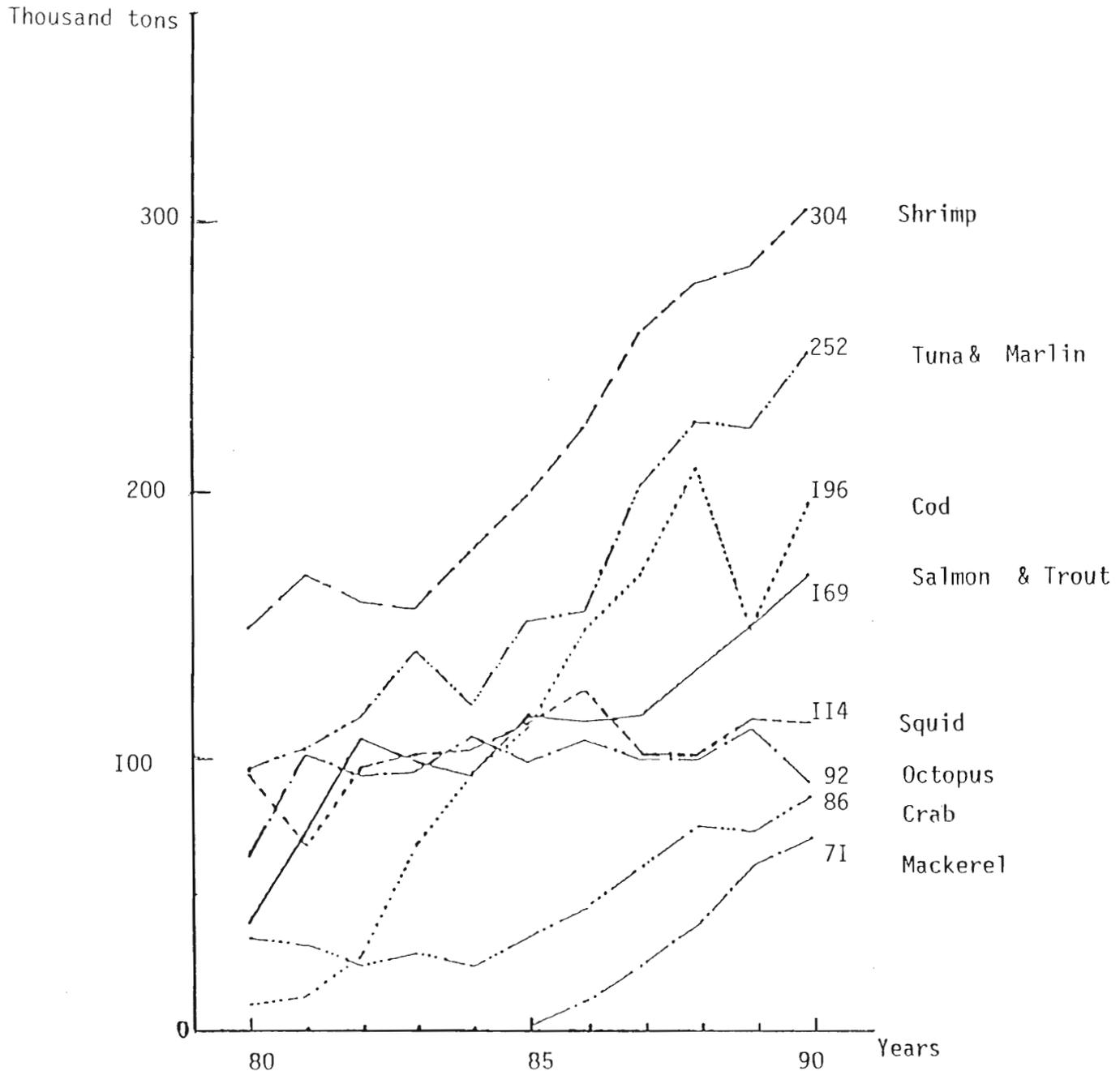
Source : Ministry of Finances - Food Supply and Demand Statistics

Fig. 4 - Trends in Seafood Trade in Japan (1980-1990)



Source : Ministry of Finances - Trade Statistics of Fisheries Products

Fig. 5 - Trends in imports of fishery products (Major species)



Source : Ministry of Finances - Trade Statistics of Fisheries Products

TABLE 1 : LANDING IN THE MAIN REGIONS

REGIONS	1990		
	Quantity (T)	Value (1000F)	Price (F/Kg)
Nord & Normandie	201 777	1 564 903	7.76
Bretagne-Nord	73 900	751 897	10.17
Bretagne-Sud	304 172	3 164 702	10.40
Loire Atlantique-Vendée	63 264	986 277	15.59
Sud-Ouest	94 867	1 247 200	13.15
Méditerranée	66 152	838 600	12.68
<b>TOTAL</b>	<b>804 132</b>	<b>8 553 579</b>	<b>10.64</b>

TABLE 2 : PRODUCTION, IMPORTS, EXPORTS AND APPARENT CONSUMPTION FOR SEA PRODUCTS 1980-1990  
(THOUSAND TONNES AND BILLIONS FRANCS)

Years	DOMESTIC PRODUCTION		IMPORTS - EXPORTS						APPARENT CONSUMPTION	
			Imports		Exports		Balance			
	Quant.	Value	Quant.	Value	Quant.	Value	Quant.	Value	Quant.	Value
1980	708.6	7.7	496.0	9.1	140.9	2.8	-355.1	-6.3	1063.7	14.0
1981	717.0	7.7	518.6	9.6	146.6	3.0	-372.0	-6.6	1089.0	14.3
1982	689.3	7.5	524.5	10.1	161.9	3.0	-362.6	-7.1	1051.9	14.6
1983	711.5	8.1	549.0	10.8	180.2	3.4	-368.8	-7.4	1080.3	15.5
1984	705.1	8.0	552.3	10.9	159.0	3.4	-393.3	-7.5	1098.4	15.5
1985	717.8	7.9	589.8	11.1	203.9	3.9	-385.9	-7.2	1103.7	15.1
1986	722.0	8.4	626.4	12.3	228.4	4.1	-398.0	-8.2	1120.0	16.6
1987	751.0	8.4	700.8	13.7	235.1	4.5	-465.7	-9.2	1216.7	17.6
1988	769.4	8.5	729.2	14.3	257.0	4.7	-472.2	-9.6	1241.6	18.1
1989	733.2	8.2	784.1	14.8	311.3	5.4	-472.8	-9.4	1206.0	17.6
1990	805.4	8.6	863.2	15.4	341.2	5.2	-522.0	-10.2	1327.4	18.8

**Table 3 : PRODUCTION OF THE FRENCH FISHERIES AND AQUACULTURE  
IN 1990**

	Volume (tonnes)	Value (Million FF)
Coastal and off-shore fisheries		
Finfish	356 721	4 421.7
Crustacean	21 795	688.5
Bivalves	38 039	325.5
Seaweed	29 067	335.5
Distant waters fisheries		
Tropical tuna	128 765	663.7
Others	4 603	30.3
Aquaculture		
Oysters	144 197	1 630.4
Mussels	61 760	402.0
Other shellfishes	2 694	29.8
Finfish	1 295	71.2
<b>Total</b>	<b>805 426</b>	<b>8 624.8</b>

**Table 4 : FISHING FLEET AND CREW (31/12/90)**

<b>LENGTH</b>	<b>Number of vessels</b>	<b>Power</b>	<b>Tonnage</b>	<b>Crew</b>
< 12 m	6 556	405 901	31 081	10 498
12 to < 16 m	850	157 013	21 348	3 377
16 to < 25 m	1 022	338 054	59 147	7 115
25 to < 38 m	122	66 546	21 754	1 366
> 38 m	104	182 971	75 244	2 652
<b>Total</b>	<b>8 654</b>	<b>1 150 485</b>	<b>208 574</b>	<b>28 196*</b>

\* Including 3 187 other crewmen working on more than on type of boat