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PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

I. Introduction of Vietnam fisheries:

Viet Nam's coastline is 3,260 km with 112 estuaries. Every land area of 100 km² there is 1 km coastline on average or about every 30 km coastline there is one estuary. Viet Nam sea area is situated in the sphere of Western and Central Pacific. Its fisheries resources are abundant and diversified and they are considered as one of the fishing grounds in the international sea zones which has high stock. Among marine fish stock, there are over 2,000 fish species, of which species with high economic value are about 130 fish species, 225 shrimp species, 663 seaweed species and other valuable species such as abalone, pearl oyster, galunlar ark and red coral.

Long time ago, Viet Nam's people have had a strong attachment to the sea. Fisheries with long tradition have been close with not only inhabitants living in the coastal area but also with people living in inland area where there are many rivers, channels, natural and man-made reservoirs, system of ponds and low fields favourable for freshwater aquaculture. It could be said that, natural characteristics of marine resources, abundant in forms of waterface in both the sea and inland make good conditions to develop fisheries in various area such as marine capture, aquaculture, seafood processing, fisheries trade, fisheries logistics and services.

In term of marine capture management, Viet Nam sea area is divided into 5 major zones as follows :

- Gulf of Tonkin : is located in the North of Viet Nam. Its boundary to the East is a line which was defined in the Agreement of Delimitation of the Tonkin Gulf between Viet Nam and China. Its boundary to the South is a latitude line of 17°00'N.
- Central sea zone : is rather long and narrow. It is bounded by a latitude of 11°30'N and a latitude of 17°00'N and on the East by longitude of 110°00'E.
- Seazone of the South-Eastern : is bounded by latitudes of 6°00'N and 11°30'N, and by longitudes of 105°00'E and 110°00'E.
- Seazone of the South-Western : is bounded by latitudes of 6°30'N and 10°30'N, and by longitudes of 103°00'E - 105°00'E.
- East Sea : is the offshore sea area of Viet Nam. Its boundary to the East is a longitude of 110°00'N.

Table 1. Statistics of Viet Nam's fisheries in the period of 2000 - 2007

Year	Total fisheries production (million ton)	Marine and inland catch (million ton)	Aquaculture production (million ton)	Export value (USD billion)
2000	2.00	1.28	0.72	1.48
2001	2.23	1.35	0.88	1.78
2002	2.41	1.43	0.98	2.01
2003	2.54	1.43	1.11	2.20
2004	3.07	1.92	1.15	2.40
2005	3.43	1.99	1.44	2.74

2006	3.69	2.00	1.69	3.36
2007	4.15	2.05	2.10	3.76
2008	4.20	1.85	2.35	4.50

Source: Annual report of former MoFI and MARD

II. Oceanic Tuna Fisheries:

1. Background

Oceanic tuna fisheries, mainly tuna longline in Viet Nam, started to develop in early of 1990's with technology transfer in catching oceanic tuna done by fishing companies such as Ha Long Fisheries Cooperation, Bien Dong Marine Fisheries Cooperation and Viet Tan Co. Ltd and by some fishermen who used to go on catch flying fish by gillnet in the Central.

After the policy on development of offshore fishing and stability of proper marine capture in coastal area released in 1997, many fishers improved their boats or built new boat with higher engine power to operate in offshore area. They also tried to learn experiences in tuna fishing and applied new techniques in order to develop their fishing. Therefore, tuna longlines showed a rapid growth in both scale of production and techniques of fishing. This fishery developed well in the central region, especially in three provinces of Binh Dinh, Phu Yen and Khanh Hoa. Because of lack of statistical data, the annual catch of tuna were not available. But it was evaluated by over 10,000 tons per years. Target species of oceanic tuna fisheries are Yellow fin tuna, Big eye tuna and Skipjack tuna. The catches from oceanic tuna fisheries have high quality which can meet a demand of export. Thus, oceanic tuna fisheries is considered as the main way to develop offshore fishing in the future.

Tuna longline show its domination in oceanic tuna fisheries in Viet Nam. Apart from this, purse seine and gillnet have been used by fishers but mainly to catch small tuna species such as frigate tuna, bullet tuna, etc.

2. Fishing ground, resources and fishing season

Target species of tuna longline are oceanic tuna (e.g. Yellow fin tuna, Big eye tuna). Research into tuna stock in Viet Nam' sea area showed that it were evaluated about 44,853 tons with TAC of around 17,000 (Dao Manh Son, 2004).

Oceanic tunas are the high migratory species and they live or move seasonally around the islands, in the deep seawater. In Viet Nam's sea waters, oceanic tuna species concentrated mainly in the sea areas of the central provinces of Binh Dinh, Phu Yen, Khanh Hoa and open sea fishing ground of Ba Ria – Vung Tau province. Fishing season is around the year and is divided into two seasons. Main fishing season (local name is North season) starts in November and finishes in March of the following year. Oceanic tuna species are found in the East Sea, North East of the Paracel Islands and North of Spratly archipelago where are located in the distance of about 60 to 100 miles from the shore. Fishing ground is bounded between latitudes of 6°N to 14°N and longitude of 109.3°E – 114°E. The South season start in April to October. During this season, tuna species are found in the central area and the sea water of the Spratly archipelago.

3. Fishing boats, gear type and fishing techniques

- **Fishing boats** : Up to now, in Viet Nam only longline is used to catch oceanic tuna. In early 2008, there are 2,005 tuna longline boats, of which 1,902 boats have engine power of over 20 hp. A number of fishing boats with over 90 hp engine power was 889, occupying 44.34 % of total longliners (Table 4). Three provinces in the central area dominated a number of tuna longliners. Binh Dinh had 704 boats. Phu Yen had 410 boats. This figure in Khanh Hoa was 420 boats, of which there were 104 boats with engine power of over 90hp (Nguyen Van Dau, Report at the Stakeholder Consultation in Nha Trang, 9/2008)

Table 2. Tuna longline-boats by a group of engine power

Engine power	The central	South East	No of boats	Rate (%)
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< 20 hp	103	-	103	5.14
20 – < 50 hp	190	104	294	14.66
50 - < 90 hp	648	71	719	35.86
90 – < 150 hp	671	29	700	34.91
150 - < 250 hp	66	40	106	5.29
250 - < 400 hp	35	21	56	2.79
Over 400 hp	1	26	27	1.35
Total	1,714	291	2,005	100.00

- Gear type :

A structure of longline consists of a main line, bridle line, hooks, buoys and other devices. A size of longline depends on a size of longline boat and fishing facilities equipped

For the large boats owned by companies, a length of longline is from 60 - 120 km corresponding to about 1,800 - 2,500 hooks. For the small boats owned by fishers or family, a length of longline is shorter from 15 - 60 km corresponding to around 800 - 1,600 hooks. Distance between hooks is 50 m. Bridle line has a length of 25 - 40 m. A length of buoy line is 10 - 25 m. There are two type of buoy used in tuna longline. An one is a spherical buoy with diameter of 200 - 360 mm and the other is cylindrical buoy with height of 310 - 360 mm and a diameter of 110 - 120 mm.

- Technique of fishing tuna :

It consists of preparation step (gear, related facilities, baits), shooting longline, soaking hooks and hauling longline. Due to difference between various structures of longline and locals, there is a little difference in fishing techniques between provinces.

For the large boats, fishing depth is often from 50 - 150 m, while small boats fish at a depth of 30 - 70 m. Fishing depth is adjusted by a length of buoy line or distance between two buoys. The large boats use a buoy line with a length of 17 - 25 m and distance between two buoys is 3 - 7 hooks. For small boats, a length of buoy line is 10 - 15 m and distance between two buoys is 1 - 3 hooks.

Baits used for fish tuna mainly is flying fish, small indian mackerel and oceanic squid. A large boat often uses frozen bait, while fishers use fresh bait caught by gillnet or bought from other who do squid jigging.

A trip length is around 20 - 30 days with 1 - 2 shoots per day. Soaking time is 3 - 5 hrs.

Table 3. Export of tuna and tuna products of Viet Nam during a period of 2000 – 2008

Year	Volume (ton)	Value (US\$ million)	A rate compared to the total export of the year (%)	
			Volume	Value
2000	5,912	22,98	2.03	1.55
2001	14,476	58,59	3.86	3.30
2002	20,735	77,46	4.52	3.83
2003	17,362	47,72	3.60	2.17
2004	20,784	55,05	3.91	2.29
2005	30,208	82,24	4.76	3.00
2006	44,822	117,13	5.45	3.49
2007	52,584	150,36	5.58	4.00
2008	52,818	188,60	4.40	4.19

Source :1. FICen (former MOFI) and CIS (MARD),
Viet Nam's Customs Department

2. The volume of exported tuna included imported/re - exported tuna