IOTC SAMPLING PROGRAMMES: STATUS REPORT

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SUMMARY

The present paper deals with the data retrieved in the scope of the AFDEC-IOTC sampling program, including the preliminary results obtained during the first year of operation. More than 60,000 tuna and tuna-like specimens have been monitored in this port to date, including valuable information regarding size-size and size-weight distributions of tuna species. The primary objective of this paper is the preliminary estimation of the total catches by fresh-tuna longliners unloading to processing plants in Phuket, which is conducted in the last section. Details about the amount of data retrieved during the programs are given in the next pages.

INTRODUCTION

At the 1999 Commission meeting, held in Kyoto (Japan), the implementation of sampling programmes in different ports of the Indian Ocean was strongly recommended, the primary objective being to monitor the activities of IUU (illegal, unregulated and unreported) longliners operating in the Indian Ocean. Nine Indian Ocean ports were selected as primary targets for the implementation of sampling programmes, namely Benoa, Cilacap and Jakarta (Indonesia), Cape Town and Durban (South Africa), Pinang (Malaysia), Phuket (Thailand), Port Louis (Mauritius) and Singapore.

Missions were scheduled to the ports selected in order to assess the possibilities and objectives of implementation. Trips to Phuket (1999), Pinang (2000) and Sri Lanka (2001) resulted in agreements with the research institutions for the implementation of joint sampling programs. The representatives of the shipping agencies dealing with longliners in those ports were also met in order to inform them on the objectives of the program and facilitate the sampling in the processing plants, a third objective being to assess whether data on the landings were gathered and under which conditions the IOTC would be provided with this information.
Several representatives engaged to cooperate with the IOTC providing information on all or some of the landings of longliners to their processing plants. These data were reviewed in a document presented to the last IOTC WPDCS (WPDCS-00-02) meeting. About 75,000 individual sizes of tunas and tuna-like species have been retrieved from shipping agencies to date.

To finish we would like to stress the importance of these programs in the estimation of the total catches and, furthermore, in the collection of size frequency statistics for longline fleets which are so lacking from the IOTC databases.

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GENERAL INFORMATION COLLECTED UNDER THE SCOPE OF THE IOTC SAMPLING PROGRAM IN PHUKET

Landings: Historical information: All landings from 1994 to 1999 were retrieved by the AFDEC and input to the longliners database. The number of longliners calling to Phuket has been increasing over the time. A new estimation of the catches for years prior to 2000 will be carried out when more information become available regarding the landing sheets completed by the shipping agencies where the weight of every specimen is recorded. Information in this respect has already been collected in Phuket and Penang.

Current records: Landing statistics are being collected from different sources in Phuket, Penang and Sri Lanka. This information is subsequently filtered and aggregated in order to obtain the best estimate possible on the number of landings per port and period.

Samplings: Historical information: Samplings were not conducted in the countries where these fleets were operating before the sampling programs started operating, the only exception being Indonesia where the CSIRO has been monitoring the southern bluefin tuna landings since 1995 in cooperation with the BBPL. An extension of this sampling program, especially to improve the data collection activities on tuna and tuna-like species other than the SBF, is on schedule and will probably lead to the IOTC joining the group. A second source for sampling data are the shipping agencies operating these vessels which have been keeping individual records since these fleets started operating. Some information has already been collected regarding the years 1998 to 2001 and more is expected to come in the following months. Some 80,000 specimens have been input at the IOTC from landing sheets provided by the referred shipping agencies. The Customs authorities in Sri Lanka keep also copies of the records from the shipping agencies which availability is being assessed.

Current records: Samplings are being conducted in Penang (since October 2000) and Phuket (since April 2000) where about 75,000 fish have been monitored. Length-weight and length-length measurements have also been collected in both places. Other related activities refer to the collection of information regarding sharks (including species identification from shark fins) and the collection of otholites. The collection of other information envisaged at the beginning, especially regarding the identification of sexes and maturity stages, has proved unsuccessful due to several factors (e.g. gonads processed at the entry of the processing plants avoiding the samplers to identify the species and size of the specimen concerned).

Year	Month	no Total	kg Total	no BET	kg BET	no YFT	kg YFT	no ALB	kg ALB	no SWO	kg SWO	no BLZ	kg BLZ	no BLM	kg BLM	no MLS	kg MLS	no SFA	kg SFA	no OTH	kg OTH
1998	1	2,851	106,752	1,048	33,727	1,405	53,823			144	6,850	42	3,472	10	721	40	1,543	3	92	159	6,524
1998	2	2,550	89,020	1,176	35,685	1,080	41,646			95	3,831	35	2,409	6	321	25	1,023	3	90	130	4,015
1998	3	2,426	91,037	1,391	49,461	601	21,040	5	95	186	8,052	59	4,144	18	1,318	10	406	6	201	150	6,320
1998	4	2,534	92,356	1,514	53,426	633	22,034			164	6,593	77	4,973	8	303	23	783	7	267	108	3,977
1998	5	3,296	127,827	2,083	83,711	839	25,093	1	23	126	5,087	101	6,369	12	611	23	837	1	47	110	6,049
1998	6	1,102	44,221	624	27,345	317	9,154			39	1,689	48	3,086	12	432	3	102			59	2,413
1998	7	1,205	49,871	901	37,680	203	7,195	6	100	30	1,706	20	1,291	3	89	2	76	1	30	39	1,704
1998	8	532	19,644	283	10,328	175	5,997	1	13	29	1,322	16	1,038	3	115	2	74	1	34	22	723
1998	9	1,212	42,156	824	26,785	255	9,394	5	89	85	3,987	6	407	1	72	2	79			34	1,343
1998	10	1,244	44,268	917	30,904	234	8,360	3	48	49	3,200	12	591	3	183	3	130			23	852
1998	11	722	25,579	538	17,550	155	4,696			13	1,203	3	236			2	101			11	1,793
1998	12	2,707	102,703	1,735	60,471	646	25,238			102	4,939	56	3,834	5	333	21	1,066	3	105	139	6,717
TOTALS		**22,381**	**835,434**	**13,034**	**467,073**	**6,543**	**233,670**	**21**	**368**	**1,062**	**48,459**	**475**	**31,850**	**81**	**4,498**	**156**	**6,220**	**25**	**866**	**984**	**42,430**

Source: Penang Shipping Agencies

Year	Month	no Total	kg Total	no BET	kg BET	no YFT	kg YFT	no ALB	kg ALB	no SWO	kg SWO	no MAR	kg MAR	no BLZ	kg BLZ	no BLM	kg BLM	no MLS	kg MLS	no OTH	kg OTH
1999	1	4,421	180,281	2,728	110,703	1,494	59,422			123	6,103	36	1,992	22	1,188	2	123	12	580	4	170
1999	2	4,509	184,464	2,846	115,776	1,425	56,468			93	4,642	65	3,236	58	3,297	5	335	13	595	4	115
1999	3	1,889	75,497	1,171	46,099	512	19,977			126	5,093	46	2,621	16	915	2	294	9	286	7	212
1999	4	1,903	70,139	1,084	39,100	486	15,999			187	8,886	109	4,482	20	984			3	120	14	568
1999	5	2,031	74,130	1,251	47,782	613	18,774	11	240	55	2,340	3	144	63	3,292	5	362	26	1,016	4	180
1999	6	2,463	97,109	1,724	70,231	624	22,246	5	110	75	3,087	6	182	19	933			5	213	5	107
1999	7	4,101	159,698	2,803	110,752	1,127	40,305	6	137	139	7,059	3	79	20	1,282			2	70	1	14
1999	8	2,598	94,598	1,577	56,213	795	27,194	3	68	189	9,377	6	202	24	1,389			4	155		
1999	9	3,076	107,579	1,800	60,811	959	32,350	13	240	209	8,943	72	4,112	17	998			2	80	4	45
1999	10	3,218	124,787	2,318	89,981	750	27,251			112	5,533	23	1,088	12	810			2	91	1	33
1999	11	2,518	103,602	1,462	59,102	897	35,888			80	4,100	21	999	49	3,124			7	308	2	81
1999	12	1,781	79,070	734	35,099	861	33,264			100	5,350	16	831	59	3,987	2	169	7	309	2	61
TOTALS		**34,508**	**1,350,954**	**21,498**	**841,649**	**10,543**	**389,138**	**38**	**795**	**1,488**	**70,513**	**406**	**19,968**	**379**	**22,199**	**16**	**1,283**	**92**	**3,823**	**48**	**1,586**

Source: Penang and Phuket Shipping Agencies

Year	Month	no Total	kg Total	no BET	kg BET	no YFT	kg YFT	no SWO	kg SWO	no MAR	kg MAR	no BLZ	kg BLZ	no BLM	kg BLM	no MLS	kg MLS	no SFA	kg SFA	no OTH	kg OTH
2000	1	2,604	120,203	1,004	51,447	1,194	47,841	181	7,786	16	855	106	7,421	6	717	11	500	3	118	83	3,518
2000	2	1,284	59,456	480	24,465	505	21,369	139	5,593	19	1,174	57	3,709	1	48	9	432	1	30	73	2,636
2000	3	3,627	150,224	2,004	84,355	1,254	47,806	125	5,019			96	6,670	4	584	6	265	6	260	132	5,265
2000	4	1,613	68,361	966	42,129	409	14,865	60	2,747			54	3,706	3	184	7	283	3	112	111	4,335
2000	5	1,526	57,669	1,032	40,843	301	9,125	62	2,368			29	1,777	4	215	4	177	2	73	92	3,091
2000	6	719	24,725	396	15,086	218	6,153	31	990			11	626			1	43	1	32	61	1,795
2000	7	664	23,546	272	9,755	322	11,114	27	844			8	567							35	1,266
2000	8	373	11,560	120	3,454	131	3,480	51	1,657			8	450							63	2,519
2000	10	1,024	38,425	615	21,520	264	9,032	57	2,293			43	3,733	6	524	4	151			35	1,172
2000	11	1,455	50,464	444	12,397	889	31,737	31	1,108			38	2,849	5	284	5	224	1	33	42	1,832
2000	12	2,217	86,075	411	14,598	1,461	54,101	105	5,036			113	7,346	4	296	11	454			112	4,244
TOTALS		**17,106**	**690,708**	**7,744**	**320,049**	**6,948**	**256,623**	**869**	**35,441**	**35**	**2,029**	**563**	**38,854**	**33**	**2,852**	**58**	**2,529**	**17**	**658**	**839**	**31,673**

Source: Penang and Phuket Shipping Agencies

The previous and following tables show the information collected regarding size frequencies per species both from shipping agencies and from actual samplings. As refers the data that the AFDEC collected at Phuket the table presented only includes actual samplings, that is to say data collected for the samplers at the processing plant during the landings. A lot of information was also collected from companies other than those which data were input at the IOTC headquarters. These data have not been added to the table for they need validation, especially regarding the completeness of the information provided. A more extensive review will be presented at the WPDCS this year. The overall number of fish monitored during this period amounted to some 60,000 specimens and 2,500 tonnes, which represents the 50% of the total landings estimated to have occurred in Phuket during the same period. The coverage is, therefore far higher than expected (a coverage of the 30% of the landings being the initial target).

Vessel Identification and characteristics: Other valuable information that is being collected refers to the names and characteristics of the vessels calling to Phuket during the period 1994-2001. The information presented in this document refers only to the data collected during the last year, which is more complete and therefore easier to filter. The translation of Chinese names into English through Thai has yielded huge lists of vessels with many duplicated records. The fact of obtaining more characteristics from the vessels involved as the National Registration Number, flag or, at a lesser extent, the length overall, GRT or others has facilitated much the filtering of these records.

Year	Month	no BET	kg BET	no YFT	kg YFT	no ALB	kg ALB	no SWO	kg SWO	no MAR	kg MAR	no BLZ	kg BLZ	no BLM	kg BLM	no MLS	kg MLS	no SFA	kg SFA	no OTH	kg OTH
2000	1	157	12,106	239	24,017			49	1,860	48	2,583									130	7,595
2000	2	156	12,182	162	13,371			21	894	26	1,274									99	5,660
2000	3	128	10,267	162	15,929			20	717	17	1,061									149	11,291
2000	4	252	21,970	201	17,688			35	1,518	30	2,037			8	534	10	206	1	35	71	3,556
2000	5	296	24,690	206	12,529	1	5	54	2,300	96	6,644			6	467	11	355			36	967
2000	6	241	17,523	192	14,155	11	173	80	3,134	39	3,013	11	799			39	2,133			21	937
2000	7	154	10,738	161	13,177	5	150	100	4,744			3	151	3	179	29	1,692	8	179	102	4,437
2000	8	110	7,006	120	8,169			66	2,646	18	1,137	1	46	5	308	2	111			35	1,178
2000	9	185	9,649	248	20,810	10	172	129	5,517	34	2,278	11	548	1	31	4	260	1	31	52	1,792
2000	10	243	12,681	488	61,521	5	88	161	6,913	43	2,815	26	1,968	6	360	14	887	13	381	32	552
2000	11	340	23,887	555	71,466	3	60	140	5,962	135	8,880	11	953	10	427	16	1,147	28	1,929	76	2,699
2000	12	394	26,289	858	143,693	26	861	159	6,816	88	5,597	15	1,117	10	476	12	753	24	545	204	11,256
2001	1	440	29,760	828	112,280	30	974	178	7,847	108	6,090	36	2,630	17	699	42	2,985	24	1,693	177	8,839
2001	2	442	39,841	674	97,872	2	44	92	3,914	75	4,449									115	6,461
2001	3	742	67,318	907	109,019	27	636	155	6,258	68	4,025	35	2,241	29	1,548	29	2,076	23	781	84	5,475
2001	4	629	57,359	612	69,731	47	1,608	119	4,341	80	4,535	48	3,564	30	1,336	36	2,387	18	597	328	28,018
2001	5	471	51,244	476	50,707	72	3,449	137	5,713	67	3,607	50	3,247	65	4,414	72	5,410	46	1,248	610	52,565
TOTALS		**5,380**	**434,510**	**7,089**	**856,134**	**239**	**8,220**	**1,695**	**71,094**	**972**	**60,025**	**247**	**17,264**	**190**	**10,779**	**316**	**20,402**	**186**	**7,419**	**2,321**	**153,278**

Source: AFDEC-IOTC Sampling Program; Actual Samplings.

The Table in the next page shows the number of boats which information was collected during the period as well as several characteristics concerning their size, identification and type of gear operated. It is important to note at this stage that vessels flying two different flags have been reported from the different sources consulted, even during the same trips. In these cases priority was given to the flag that was thought most likely to be used (especially in the case of catches estimated on the basis of the flag). I.e. vessels reported under Taiwanese and Indonesian flags or those bearing Indonesian names but reporting Taiwanese NRN were allocated the Indonesian flag for the re-flagging is thought to have occurred in that direction (most of the Taiwanese boats operating in the EEZ of Indonesia have changed their flags to Indonesia in order to stay operating in those waters; the IOTC Secretariat is not aware of flag changes in the opposite direction).

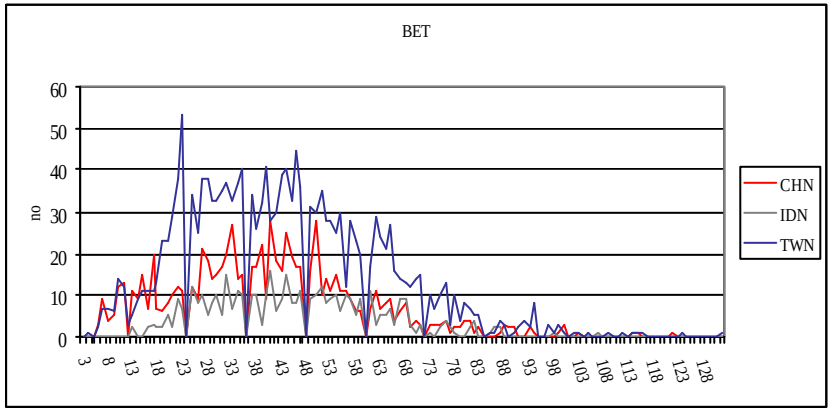
Vessel Characteristics Interviews			Year Built		Engine Power (hp)		GRT		LOA (m)		Fuel Capacity (t)		Fish CC (t)	
Flag	noVessels	no NRN	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
CHN	67	40	1988	1996	231	600	35	160	25	33	12	38	8	110
IDN	22	17	1994	1994	420	420	120				40	40	40	40
IDN/TWN	10	10	1980	1980	350	650	30		28	28	18	20	3	10
TWN	211	178	1918	1998	65	720	19.8	65	24	38	10	50	8	9
TWN/IDN	4	4	1893	1980	270	290	19	19.57	24	25	11	12	5	5

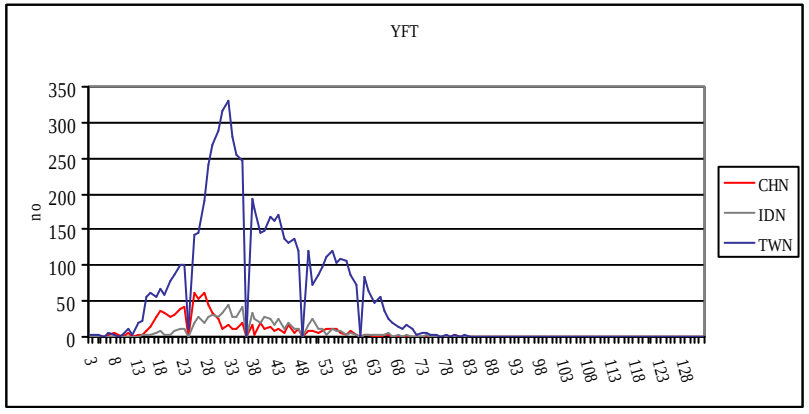
Number of vessels monitored and main characteristics regarding their identification and size

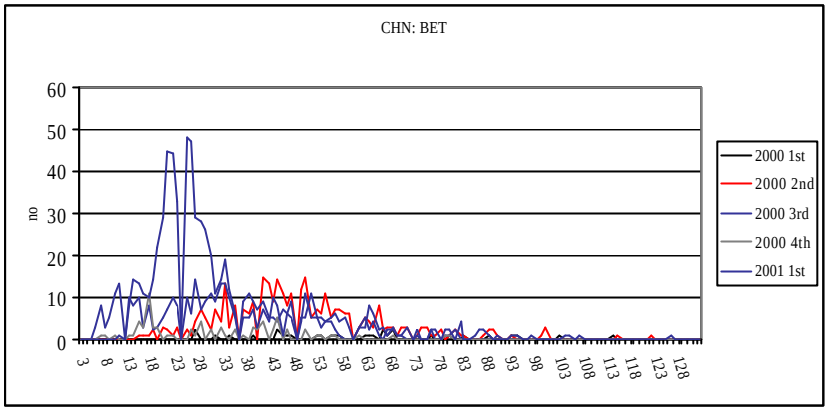
Fishing Activity Interviews			Dist Buoys		No Hooks between Buoys			Total no Hooks			Av. no Radio Buoys
Flag	no LL	no NRN	Min	Max	Avg	Min	Max	Avg	Min	Max	
CHN	63	36	280	455	5.3	4	6	1015	20	1400	8
IDN	21	16	168	168	6	6	6	1200	1200	1200	9
IDN/TWN	9	9			5	5	5	1006	800	1200	6
TWN	188	156	60	120	4.6	4	5	1427	800	1800	10
TWN/IDN	3	3	400	564	4.5	4	5	800	800	800	7

Number of vessels which general data on the characteristics of the gear were retrieved

Size Frequency Distributions: Size frequency distributions per quarter for the period January 2000 March 2001 are shown in the next page for YFT and BET. Round weights, raised either from gill and gutted fish or from headed fish are displayed. The sequential lack of specimens every twelve kilograms can only be assessed if the steelyards that are used in most of the processing plants are taken into account. Weights of probably 12 kilograms are used which would avoid that number and all its multiples to be used.



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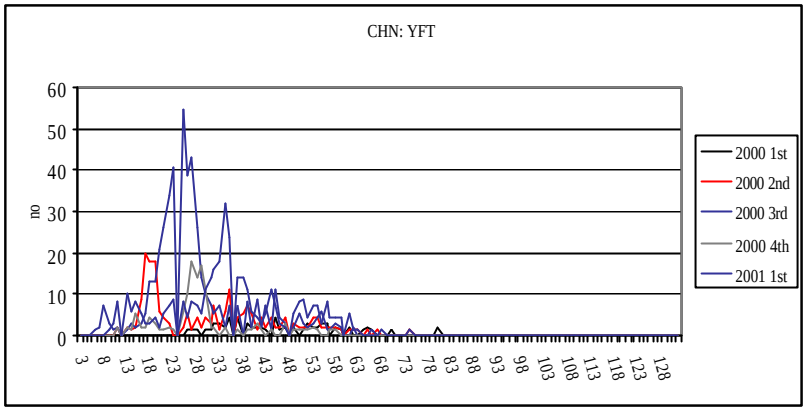
2000 1st
2000 2nd
2000 3rd
2000 4th
2001 1st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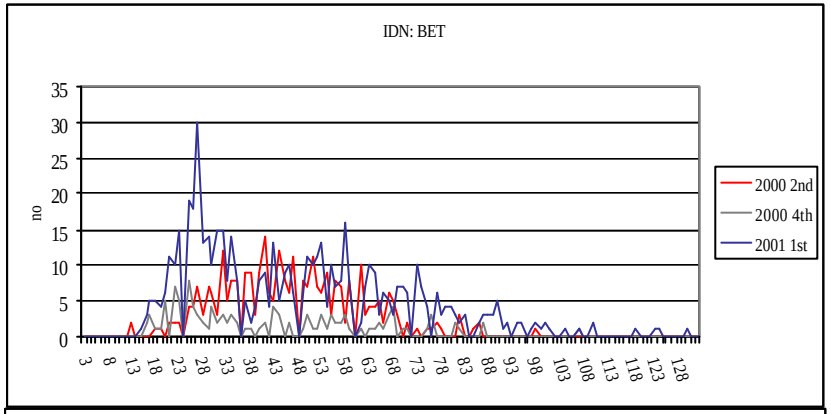
2000 2nd
2000 3rd
2000 4th
2001 1st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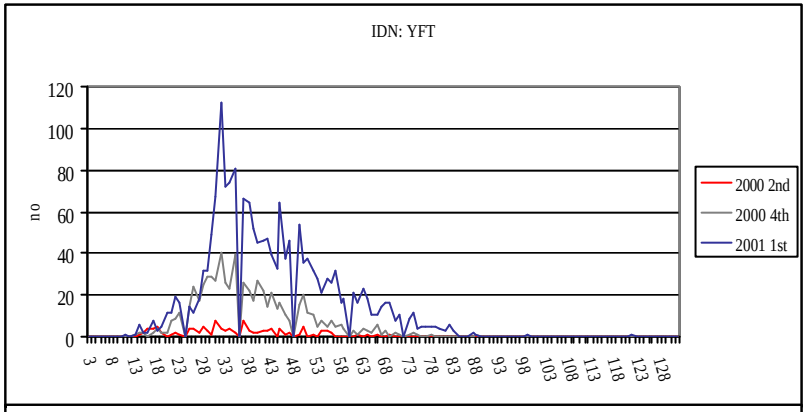
2000 2nd
2000 4th
2001 1st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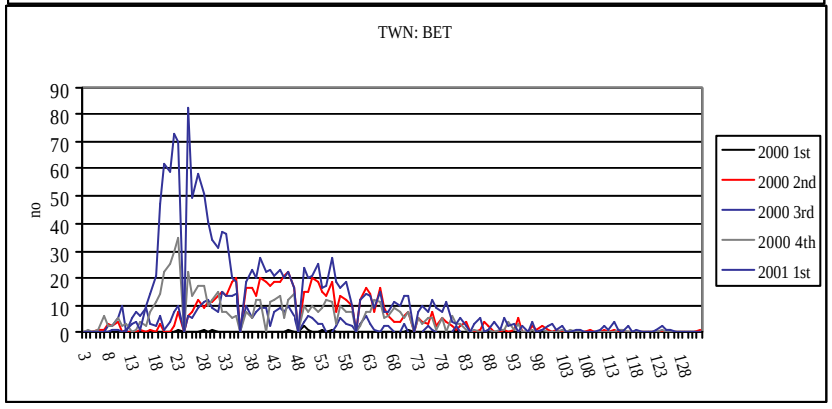
2000 4th
2001 1st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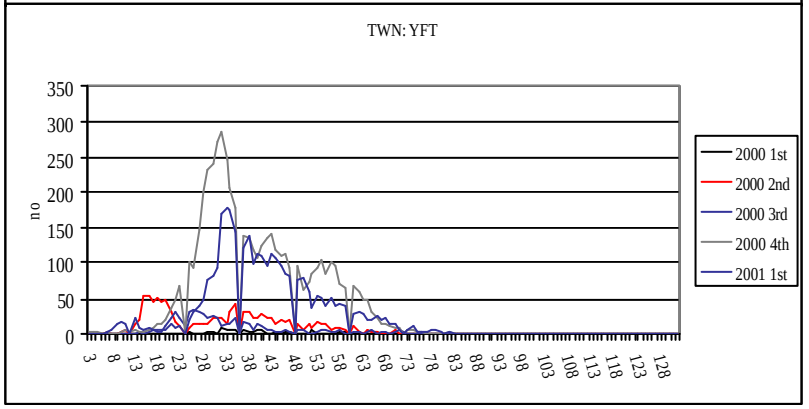
2000 2nd
2000 3rd
2000 4th
2001 1st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no
2000 1st
2000 2nd
2000 3rd
2000 4th
2001 1st

ESTIMATION OF THE TOTAL CATCHES DURING 2000 AND 1ST QUARTER 2001

Step 1: Estimation of the number of landings in Phuket from January 2000 to March 2001: The number of landings per flag retrieved from the Customs in Phuket was used as basis for the calculation of the total catches unloaded in this port. These figures were compared with records provided by other organizations (Fish Marketing Organization) or directly from the shipping agencies consigning the vessels. The overall number obtained once the landings from all sources put together showed much higher than those in the Customs records. Unfortunately, the number of landings per flag could not be assessed from sources other than Customs being the information available quite aggregated.

This led to the calculation of raising factors in order to estimate the total number of landings per flag during the period. It was therefore assumed that the lack of landings in the Customs records was proportional to the flags involved.

Although the total number of landings per month retrieved by the AFDEC was usually higher than the number of landings from the Customs, this was not the case in August and December 2000. This is probably related to vessels putting in to port in the last days of the month: while the Customs usually record the date of arrival, the shipping agencies and market organizations keep record of the days the fish are unloaded. The calculation of raising factor was conducted by quarter to reduce this effect.

Year	Month	Landings from Customs				Actual Landings	Raising Factor
		TWN	CHN	IDN	TOTAL		
2000	1	66	21	2	89	104	
2000	2	61	22	7	90	109	
2000	3	39	32	2	73	96	1.23
2000	4	5	14	1	20	37	
2000	5	1	8	1	10	19	
2000	6	8	18	5	31	31	1.43
2000	7	14	12	1	27	30	
2000	8	12	16		28	25	
2000	9	12	13	1	26	31	1.06
2000	10	12	12	2	26	42	
2000	11	21	13	2	36	54	
2000	12	71	22	10	103	87	1.11
2001	1	69	13	6	88	106	
2001	2	53	9	5	67	82	
2001	3	42	13	3	58	78	1.25

Step 2: Estimation of the average catches unloaded per quarter, vessel and flag: The samples conducted on landings of longliners to processing plants in Phuket during the period were used to carry out this estimation. It is important to note that the sampling is intended to monitor all specimens unloaded through the processing plant where it is being conducted. Thus, the actual amounts of fish landed can be assessed from the samples, the only further processing needed being raising the final weights obtained for each species relying on the processing the specimens underwent. The Table 3 in next page shows the types of processing the species undergo before weighing and the raising factors applied in each case.

The number of samplings and catches monitored during the period are shown in Table 2. Average catches were calculated relying on the flag in a quarterly basis. The low coverage during the first quarter 2000 is due to the fact that the sampling program did not started until April that year. Nevertheless, information from the shipping agencies and training of the samplers was conducted in previous months.

		TWN			CHN			IDN			TOTAL		
Year	Month	noSamp	Catch	AvLand	noSamp	Catch	AvLand	noSamp	Catch	AvLand	noSamp	Catch	AvLand
2000	1	1	4,535								1	4,535	
2000	2				1	5,023					1	5,023	
2000	3			4,535			5,023				0	0	4,779
2000	4	4	25,537		2	7,222		1	5,569		7	38,329	
2000	5	5	20,184		4	6,136		1	11,741		10	38,061	
2000	6	4	26,379	5,546	4	9,810	2,317	1	5,129	7,480	9	41,318	4,527
2000	7	3	16,841		3	11,878					6	28,720	
2000	8	3	14,202		5	8,510					8	22,712	
2000	9	2	8,561	4,951	6	11,862	2,304				8	20,423	3,266
2000	10	6	51,615		3	6,294					9	57,910	
2000	11	6	56,499					2	7,611		8	64,109	
2000	12	13	101,323	8,377			2,098	8	26,785	3,440	21	128,109	6,582
2001	1	11	65,900		1	3,627		5	51,365		17	120,892	
2001	2	6	37,526					1	13,504		7	51,030	
2001	3	12	67,656	5,899	7	27,829	3,932	5	36,396	9,206	24	131,882	6,329

Step 3: Calculation of the total catches per species: The species composition of the catch was also assessed from the samplings. The Tables 4 to 6 shows the species breakdown obtained for Taiwanese, Chinese and Indonesian vessels. Total catches for the period covered can be found in table 7.

Species	Processing	RaisingFactor	Source
ALB	GGT	1.1	IPTP SP (Penang)
ALB	GIL	1	
BET	GGT	1.09	IPTP SP (Penang)
BET	HED	1.43	FAO (St Helena)
BLM	TAL	1.16	IPTP SP (Penang)
BUM	TAL	1.16	IPTP SP (Penang)
MAR	TAL	1.16	IPTP SP (Penang)
MLS	TAL	1.16	IPTP SP (Penang)
MSC	TAL	1.1	IPTP SP (Penang)
MSC	WHO	1	
SFA	TAL	1.16	IPTP SP (Penang)

Species	Processing	RaisingFactor	Source
SKH	PDD	1.55	IPTP SP (Penang)
SKH	TAL	1.55	IPTP SP (Penang)
SKH	WHO	1	
SKJ	WHO	1	
SSP	TAL	1.16	IPTP SP (Penang)
SWO	TAL	1.32	FAO (Portugal)
TUNA	GGT	1.09	IPTP SP (Penang)
TUNA	HED	1.43	FAO (St Helena)
YFT	GGT	1.09	IPTP SP (Penang)
YFT	HED	1.43	FAO (St Helena)

A/ Taiwan,China: The results obtained in Steps 1 and 2 were used for the calculation of the total catches and catches per species. Thus, the numbers in the Customs records were raised by the quarterly factor and subsequently multiplied by the average catches assessed for the period and the percentages of the species involved. Taking into account the scarce information available before the program started, mean catches of the first quarter 2001 were used instead of those obtained from the only sample conducted at that time.

		Landings		Contribution of the different species in the samplings to the total catches (percentage)													
Year	Quarter	no	AvCatch	YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	204	5,899	0.68	0.12	0.00	0.00	0.10	0.06	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
2000	2	20	5,546	0.40	0.37	0.00	0.00	0.00	0.06	0.01	0.01	0.04	0.11	0.00	0.00	0.01	0.00
2000	3	40	4,951	0.40	0.28	0.00	0.00	0.00	0.19	0.01	0.01	0.05	0.01	0.00	0.01	0.02	0.01
2000	4	115	8,377	0.81	0.09	0.00	0.00	0.00	0.03	0.02	0.00	0.01	0.01	0.01	0.00	0.01	0.00
2001	1	205	5,899	0.62	0.27	0.00	0.00	0.01	0.02	0.02	0.01	0.02	0.00	0.01	0.00	0.01	0.00

		Total	Contribution of the different species in the samplings to the total catches (kg)													
Year	Quarter	Catch (kg)	YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	1,200,808	739,380	318,319	5,281	0	9,601	28,073	27,642	13,450	29,726	3,713	12,864	0	8,758	4,001
2000	2	110,742	44,250	41,200	94	0	0	6,926	661	832	3,973	11,854	0	0	733	220
2000	3	199,732	80,803	55,937	166	0	0	37,699	2,826	2,434	9,328	2,714	608	1,264	4,581	1,372
2000	4	966,306	783,815	88,919	3,253	0	0	26,584	16,993	4,250	14,252	8,140	13,953	0	5,173	974
2001	1	1,208,240	743,956	320,289	5,314	0	9,661	28,246	27,813	13,534	29,910	3,736	12,944	0	8,812	4,026

The yellowfin tuna is by far the species most caught by vessels flying the Taiwanese flag.

B/ China: The species composition obtained from the samplings was different than in the previous case, with a higher contribution of the bigeye tuna to the total catches. The first quarter 2000 was estimated on the basis of the same quarter of 2001 due to the same reasons referred above.

		Landings		Contribution of the different species in the samplings to the total catches (percentage)													
Year	Quarter	no	AvCatch	YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	92	3,932	0.62	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	2	57	2,317	0.24	0.57	0.00	0.00	0.00	0.08	0.00	0.00	0.02	0.03	0.00	0.00	0.02	0.04
2000	3	44	2,304	0.36	0.31	0.01	0.00	0.00	0.19	0.01	0.00	0.02	0.03	0.00	0.00	0.01	0.05
2000	4	52	2,098	0.47	0.33	0.01	0.00	0.00	0.13	0.04	0.00	0.00	0.00	0.00	0.01	0.01	0.00
2001	1	44	3,932	0.30	0.55	0.01	0.00	0.00	0.08	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.02

Year	Quarter	Total Catch (kg)	Contribution of the different species in the samplings to the total catches (kg)													
			YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	361,605	109,213	200,206	4,148	0	0	27,526	5,374	0	3,294	0	1,667	1,240	178	8,760
2000	2	132,172	32,292	75,012	428	29	0	10,144	278	0	2,634	3,580	0	0	2,927	4,849
2000	3	100,277	36,237	31,089	945	140	0	19,065	945	368	1,688	2,608	382	112	1,412	5,286
2000	4	109,368	51,535	36,156	1,585	0	0	13,830	4,313	0	0	0	0	726	754	469
2001	1	171,864	51,907	95,154	1,971	0	0	13,083	2,554	0	1,565	0	792	589	85	4,163

C/ Indonesia: The catches unloaded by Indonesian vessels in Phuket per landing were quite changing, especially due to the presence of fishing vessels acting at the same time as fish carriers. The catches unloaded for these vessels are much higher than those unloaded by the regular ones. This would explain the difference in average catches unloaded from landing to landing.

Year	Quarter	Landings		Contribution of the different species in the samplings to the total catches (percentage)												
		no	AvCatch	YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	13	6,708	0.52	0.34	0.01	0.00	0.00	0.07	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00
2000	2	10	7,480	0.18	0.64	0.00	0.00	0.00	0.06	0.02	0.03	0.00	0.08	0.00	0.00	0.00	0.00
2000	3*	2	6,708	0.52	0.34	0.01	0.00	0.00	0.07	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00
2000	4	16	3,440	0.68	0.13	0.01	0.00	0.00	0.13	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00
2001	1	17	9,206	0.71	0.25	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00

Year	Quarter	Total Catch (kg)	Contribution of the different species in the samplings to the total catches (kg)													
			YFT	BET	ALB	SKJ	TUNA	SWO	BLZ	BLM	MLS	MARL	SFA	SSP	SKH	MISC
2000	1*	90,484	47,188	30,643	456	0	142	5,966	939	1,214	424	2,932	282	62	88	148
2000	2	74,674	13,084	47,432	72	0	0	4,178	1,359	2,061	178	6,177	135	0	0	0
2000	3*	14,245	7,429	4,824	72	0	22	939	148	191	67	462	44	10	14	23
2000	4	53,408	36,221	7,007	436	0	252	7,145	425	537	79	448	364	103	149	242
2001	1	160,953	114,457	40,174	963	0	0	1,303	800	417	1,639	981	116	24	20	59

Due to these changes in the catches unloaded over the time average catches and breakdown by species were calculated for the whole period and used when scarce or no information was available. This was the case with the first and third quarters 2000. As it occurred with the Taiwanese vessels, the catches of yellowfin were higher than those of the bigeye. One explanation to this could be that most of Indonesian boats are still commanded by Taiwanese skippers. The same fishing behaviour is therefore inferred.

The Total catches obtained for the period are showed in the Table below.

		Landings		Contribution of the different species in the samplings to the total catches (kg)													
Year	**Quarter**	**no**	**AvCatch**	**YFT**	**BET**	**ALB**	**SKJ**	**TUNA**	**SWO**	**BLZ**	**BLM**	**MLS**	**MARL**	**SFA**	**SSP**	**SKH**	**MISC**
2000	1	309	1,652,896	895,780	549,169	9,884	0	9,744	61,565	33,955	14,664	33,443	6,645	14,813	1,303	9,024	12,908
2000	2	87	317,589	89,626	163,643	594	29	0	21,247	2,298	2,893	6,785	21,610	135	0	3,660	5,069
2000	3	86	314,253	124,469	91,850	1,183	140	22	57,703	3,918	2,993	11,083	5,784	1,035	1,385	6,007	6,681
2000	4	183	1,129,081	871,571	132,082	5,273	0	252	47,559	21,731	4,786	14,332	8,589	14,317	828	6,077	1,685
2001	1	266	1,541,058	910,320	455,618	8,248	0	9,661	42,632	31,167	13,950	33,115	4,717	13,852	613	8,916	8,248
Total		931	4,954,877	2,891,766	1,392,362	25,183	168	19,679	230,706	93,069	39,287	98,757	47,344	44,152	4,130	33,684	34,591