SEYCHELLES NATIONAL REPORT 2005

Prepared by the Industrial Fisheries Research Section

Seychelles Fishing Authority

1. INTRODUCTION

The Seychelles Fishing Authority (SFA) was incorporated in August 1984, coinciding with the immense expansion of industrial fishing activities in the Western Indian Ocean, to coordinate and manage the development of the fisheries sector. Since it was set up, the SFA has been collecting catch and effort information via a logbook system as a result of licensing requirements agreed under the various fishing agreements with foreign fishing fleets. The fishing activities of purse seiners in the western Indian Ocean are covered 100% whereas the coverage of longliners activities is restricted to the Seychelles EEZ, unless the vessels are registered in Seychelles. Those Distant water longline vessels do not use Port Victoria as their port of transhipment making it difficult to obtain good logbook coverage and to collect size frequency data. Collection of size frequency data for purse seiners are conducted in close collaboration with experts from the Spanish Fishing Agency through Instituto Español de Oceanografia (IEO) and French Scientists from IRD (Institut de Recherche pour le Développement). A fisheries data collection and sampling programme for the semi-industrial longline fishery has also been in place since this fishery started in 1995.

The Seychelles National Report summarizes the past 5 years activities of the industrial purse seine and longline fleet licensed to operate inside the Seychelles EEZ, including the Seychelles registered vessels and activities of the local "semi industrial'' monofilament longline fishery targeting swordfish. Statistics include licences issued, catches, effort and fishing ground exploited. Research conducted during the year is reported in IOTC document **IOTC-2006-SC-INF04.**

2.0 PURSE SEINE FISHERY

2-1. Licences issued and fleet composition

Table 1a shows the number of licences issued and number of individual purse seiners licensed to operate inside of the Seychelles EEZ over the past five years. The main fishing nations involved in purse seining in the WIO are those from European Union member countries (France, Spain) taking over 60 percent of the annual licences. Seychelles registered purse seiners (French and Spanish origin) started to operate in 1997. There are currently 11 Seychelles flagged purse seiners (all Spanish origin) fishing in the Indian Ocean compared to 13 the previous year. Figure 1 shows the trend in the number of purse seiners and their corresponding carrying capacity from 2001 to 2005.

Tables 1b to 1e show the number of purse seiners according to their category (carrying capacity) by fleet. The same information is shown in Figures 2 and 3 for the whole fleet and the Seychelles' fleet respectively. Overall no significant changes have been recorded in the purse seine fleet over the past 5 years.

2-2. Fishing effort

Table 2a shows the carrying capacity and the nominal fishing effort (fishing days) for the whole purse seine fleet and the Seychelles' fleet. This is also illustrated in figure 4 and figure 5. A Slight downward trend in the overall fishing effort was observed between 2001 and 2004 whereas the Seychelles 'fleet recorded an increase in fishing effort from 2002 onwards corresponding with the increase in the fleet's size.

Table 2b shows the number of purse seine sets according to school types. Overall the number of purse seine sets has increased over the past 2 years. An increase in the number of sets on free-swimming schools was recorded since 2002 (figure 6).The Seychelles' fleet recorded increases in the number of sets made on both free-swimming schools and FADs associated schools (figure 7). The overall proportion of positive and null sets have remained relatively constant over the past 5 years (figure 8).

2-3. Catch

Table 3a shows the total yearly catch by species for the entire fleet and for the Seychelles' fleet. A slight drop in total catch was reported in 2004 compared to 2003 (figure 10) However the total catch for 2005 has increased by 8.7% over 2004. The Seychelles fleet has recorded increase in catches throughout the period under study (figure 11).

Figures 12 to 15 illustrate catches by fishing mode for the entire purse seine fleet and for the Seychelles' fleet. A significant increase in yellowfin tuna catches on free-swimming schools was recorded in 2003 and 2004, whereas a drop in skipjack tuna catches was recorded on both free-swimming schools and FADs associated schools. In 2005 skipjack tuna regained position as the dominant species caught by purse Seiners in the WIO.

2-4. Yield

Table 4a shows the different catch rates by species and table 4b and 4c show that same information by fishing mode. A decrease in catch rates on yellowfin tuna was recorded in 2005 (figures 16 and 17).

2-5 Fishing grounds

Maps 1 and 2 show the distribution of catch reported by the whole purse seine fleet and the Seychelles' fleet during 2005. Maps 3 and 4 show mean catches reported from 2001 to 2005.

Table 1a. Number of licenses issued by country to fish inside of the Seychelles EEZ.

Country Year	Spain	France	Seychelles	Others	Total Licenses	Number of vessels
2001	18	19	11	16	64	55
2002	20	20	7	11	58	53
2003	19	16	11	9	55	50
2004	22	15	14	5	56	51
2005	21	17	11	2	51	51

Table 1.b. Spanish purse seiners by category (carrying capacity) licensed to fish inside of the Seychelles EEZ.

Class Year	50 -400	401-600	601-800	801-1200	1201-2002	>2000	Total
2001	0	0	1	6	9	1	**17**
2002	0	0	1	6	10	1	**18**
2003	0	0	1	6	9	2	**18**
2004	0	0	1	4	10	5	**20**
2005	0	0	1	4	10	5	**20**

Table 1.c. French purse seiners by category (carrying capacity) licensed to fish inside of the Seychelles EEZ.

Class Year	50 -400	401-600	601-800	801-1200	1201-2002	>2000	Total
2001	1	1	2	10	5	0	**19**
2002	0	1	2	8	5	0	**16**
2003	0	0	1	8	5	0	**14**
2004	0	0	2	8	5	0	**15**
2005	0	0	2	9	5	0	**16**

Table 1.d. Seychelles purse seiners by category (carrying capacity) licensed to fish inside of the Seychelles EEZ.

Class Year	50 -400	401-600	601-800	801-1200	1201-2000	>2000	Total
2001	0	0	0	2	8	0	**10**
2002	0	0	0	2	5	0	**7**
2003	0	0	0	5	5	1	**11**
2004	0	0	0	5	5	3	**13**
2005	0	0	0	4	4	3	**11**

Table 1.e. NEI purse seiners by category (carrying capacity) licensed to fish inside of the Seychelles EEZ.

Class Year	50 -400	401-600	601-800	801-1200	1201-2000	>2000	Total
2001	0	0	1	6	6	2	**15**
2002	0	0	1	6	2	2	**11**
2003	0	0	1	4	2	2	**9**
2004	0	0	0	2	1	1	**4**
2005	0	0	0	1	1	0	**2**

Table 2a. Purse seine fishing effort (carrying capacity and fishing days) reported on all school type

CARRYING CAPACITY AND FISHING EFFORT (WHOLE FLEET)		
YEAR	**C.CAPACITY**	**FISHING DAYS**
2001	57619	13826
2002	55774	13152
2003	52888	11710
2004	54173	11928
2005	61494	13347
CARRYING CAPACITY AND FISHING EFFORT (SEYCHELLES' FLEET)		
YEAR	**C.CAPACITY**	**FISHING DAYS**
2001	10409	2089
2002	8837	1791
2003	10948	2249
2004	13574	2677
2005	16291	3089

Table 2b. Purse seine fishing effort (number of sets by school type)

SETS BY SCHOOLS TYPE (ALL COUNTRIES)												
	COMBINED			**LOGS**			**FREE SCHOOL**			**UNSPECIFIED**		
YEAR	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**
2001	10641	8074	2567	4995	4693	302	5284	3083	2201	362	298	64
2002	10269	8329	1940	5861	5620	241	4191	2521	1670	217	188	29
2003	10131	7515	2616	4518	4223	295	5317	3022	2295	296	270	26
2004	11042	7642	3400	4467	4177	290	6507	3407	3100	68	58	10
2005	13360	9643	3717	5742	5418	324	7573	4201	3372	45	24	21
SETS SCHOOLS TYPE (SEYCHELLES)												
	COMBINED			**LOGS**			**FREE SCHOOL**			**UNSPECIFIED**		
YEAR	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**	**Total**	**Positives**	**Null**
2001	1352	1070	282	651	611	40	504	273	231	197	186	11
2002	1226	1020	206	655	616	39	449	288	161	122	116	6
2003	1512	1224	288	785	749	36	712	462	250	15	13	2
2004	2212	1695	517	1010	964	46	1202	731	471	0	0	0
2005	2683	2064	619	1323	1260	63	1359	803	556	1	1	0

Table 3a. Purse seine species composition of total catch

TOTAL CATCH BY SPECIES (ALL COUNTRIES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	111,877	165,492	18,132	2,157	299,957
2002	128,206	217,847	25,826	789	378,027
2003	197,782	189,566	19,026	1,583	408,366
2004	201,727	137,103	18,848	242	358,258
2005	176,322	190,053	21,848	145	389,256
TOTAL CATCH BY SPECIES (SEYCHELLES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	11,286	26,921	2,209	829	41,332
2002	15,746	31,583	3,075	102	50,522
2003	33,360	36,822	3,364	174	73,780
2004	48,797	29,960	4,395	59	83,305
2005	36,479	46,038	4,794	18	87,537

Table 3b. Purse seine species composition of catch reported on free-swimming schools

CATCH ON FREE SCHOOLS BY SPECIES (ALL COUNTRIES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	70636	32486	3556	1665	110226
2002	73149	24233	3774	684	105877
2003	128807	32380	7030	1541	169859
2004	155976	19813	3457	232	179483
2005	118968	46050	8444	143	173801
CATCH ON FREE SCHOOL BY SPECIES (SEYCHELLES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	5577	4058	310	596	10540
2002	8194	2865	447	101	11607
2003	20216	7806	1015	174	29255
2004	37693	3355	654	57	41762
2005	23469	10668	1733	18	35910

Table 3c. Purse seine species composition of catch reported on FADs associated schools

CATCH ON FLOATING OBJECTS BY SPECIES (ALL COUNTRIES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	39266	124055	14426	475	178576
2002	53748	185639	21820	104	262636
2003	66324	144087	11805	41	222557
2004	44879	115396	15375	10	175994
2005	57152	143422	13388	2	214649
CATCH ON FLOATING OBJECTS BY SPECIES (SEYCHELLES)					
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	4889	16901	1860	229	23963
2002	6648	22352	2456	1	31474
2003	12909	28628	2335	0	43889
2004	11104	26605	3741	2	41543
2005	13008	35350	3061	0	51605

Table 4a. Purse seine catch rate (MT/fishing day and MT/positive set) by species reported on all school type

	Overall CPUE, MT/fishing day (ALL COUNTRIES)					Overall CPUE, MT/positive set (ALL COUNTRIES)				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	8.09	11.97	1.31	0.16	21.70	13.86	20.50	2.25	0.27	37.15
2002	9.75	16.56	1.96	0.06	28.74	15.39	26.16	3.10	0.09	45.39
2003	16.89	16.19	1.62	0.14	34.87	26.32	25.22	2.53	0.21	54.34
2004	16.91	11.49	1.58	0.02	30.03	26.40	17.94	2.47	0.03	46.88
2005	13.21	14.23	1.64	0.01	29.16	18.28	19.71	2.27	0.02	40.37
	Overall CPUE, MT/fishing day (SEYCHELLES)					**Overall CPUE, MT/positive set (SEYCHELLES)**				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	5.40	12.89	1.06	0.40	19.79	10.55	25.16	2.06	0.77	38.63
2002	8.79	17.64	1.72	0.06	28.21	15.44	30.96	3.01	0.10	49.53
2003	14.83	16.37	1.50	0.08	32.80	27.25	30.08	2.75	0.14	60.28
2004	18.23	11.19	1.64	0.02	31.12	28.79	17.68	2.59	0.03	49.15
2005	11.80	14.89	1.55	0.01	28.32	17.67	22.31	2.32	0.01	42.41

Table 4b. Purse seine catch rate (MT/fishing day and MT/positive set) by species reported on free-swimming schools

	CPUE FREE SCHOOLS, MT/fishing day (ALL COUNTRIES)					CPUE FREE SCHOOLS, MT/positive sets (ALL COUNTRIES)				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	17.52	8.06	0.88	0.41	27.34	22.91	10.54	1.15	0.54	35.75
2002	24.36	8.07	1.26	0.23	35.26	29.02	9.61	1.50	0.27	42.00
2003	38.4	9.65	2.1	0.46	50.64	42.62	10.71	2.33	0.51	56.21
2004	41.45	5.27	0.92	0.06	47.7	45.78	5.82	1.01	0.07	52.68
2005	27.83	10.77	1.98	0.03	40.66	28.32	10.96	2.01	0.03	41.37
	CPUE FREE SCHOOLS, MT/fishing day (SEYCHELLES)					**CPUE FREE SCHOOLS, MT/positive sets (SEYCHELLES)**				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	13.10	9.53	0.73	1.40	24.76	20.43	14.86	1.13	2.18	38.61
2002	25.20	8.81	1.37	0.31	35.69	28.45	9.95	1.55	0.35	40.30
2003	42.21	16.30	2.12	0.36	61.09	43.76	16.90	2.20	0.38	63.32
2004	52.89	4.71	0.92	0.08	58.60	51.56	4.59	0.89	0.08	57.13
2005	29.51	13.41	2.18	0.02	45.15	29.23	13.29	2.16	0.02	44.72

Table 4c. Purse seine catch rate (MT/fishing day and MT/positive set) by species reported on FADs associated schools

	CPUE FADS, MT/fishing day (ALL COUNTRIES)					CPUE FADS, MT/positive sets (ALL COUNTRIES)				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	9.34	29.5	3.43	0.11	42.47	8.37	26.43	3.07	0.10	38.05
2002	11.44	39.53	4.65	0.02	55.92	9.56	33.03	3.88	0.02	46.73
2003	19.4	42.14	3.45	0.01	65.09	15.71	34.12	2.80	0.01	52.70
2004	13.03	33.5	4.46	0	51.08	10.74	27.63	3.68	0.00	42.13
2005	14.11	35.4	3.3	0	52.98	10.55	26.47	2.47	0.00	39.62
	CPUE FADS, MT/fishing day (SEYCHELLES)					**CPUE FADS, MT/positive sets (SEYCHELLES)**				
YEAR	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**	**YFT**	**SKJ**	**BET**	**ALB**	**TOTAL**
2001	8.94	30.9	3.4	0.42	43.82	8.00	27.66	3.04	0.38	39.22
2002	12.55	42.19	4.64	0	59.4	10.79	36.29	3.99	0.00	51.09
2003	21.8	48.34	3.94	0	74.11	17.24	38.22	3.12	0.00	58.60
2004	15.11	36.21	5.09	0	56.55	11.52	27.60	3.88	0.00	43.09
2005	13.77	37.41	3.24	0	54.62	10.32	28.06	2.43	0.00	40.96

Figure 1. Trend in number and carrying capacity of purse seiners licensed to operate inside of the Seychelles EEZ.

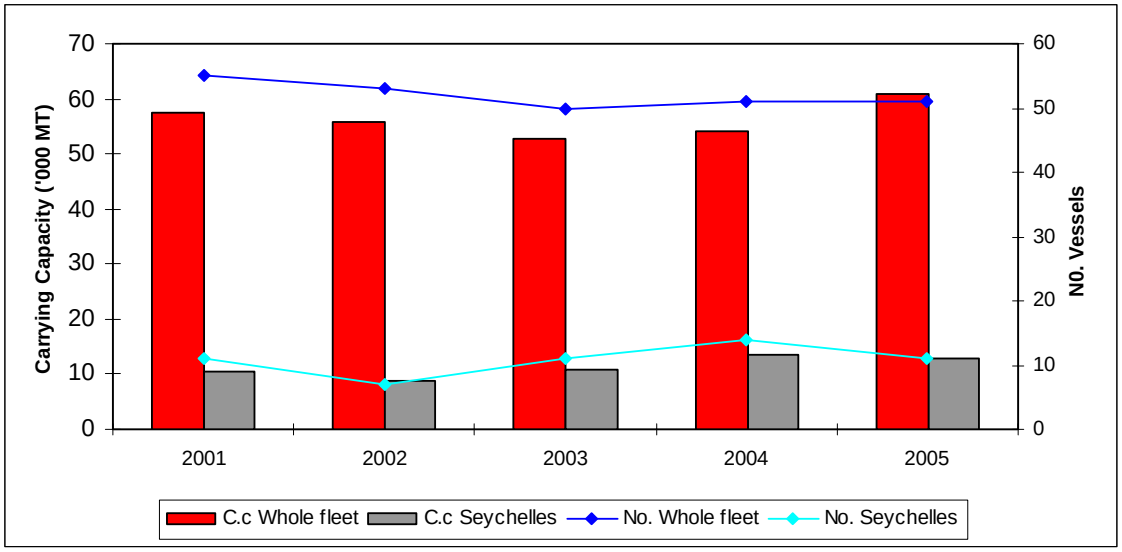


Fig 2. All purse seiners by category (GRT)

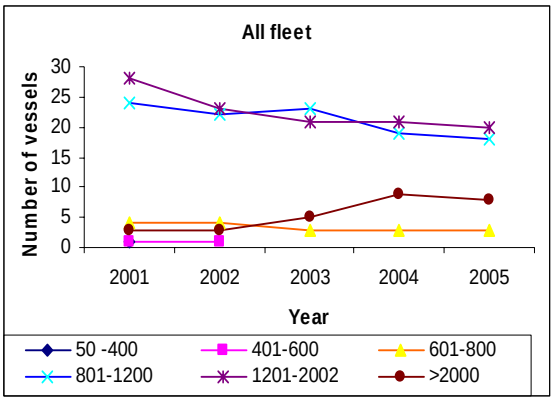


Fig 3. Seychelles purse seiners by category (GRT)

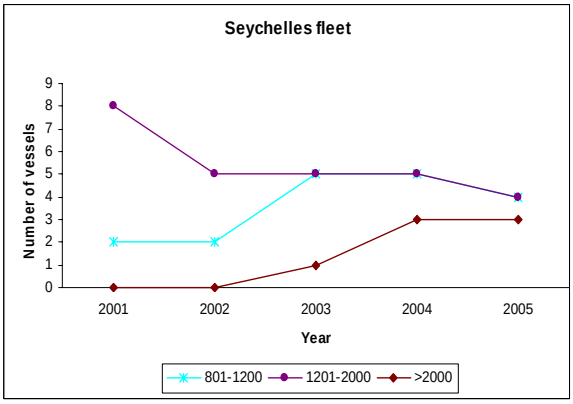


Fig 4. All purse seiners fishing effort and carrying capacity

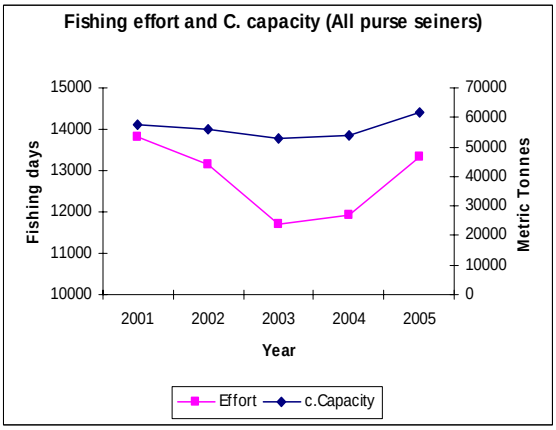


Fig 5. Seychelles purse seiners fishing effort and carrying capacity

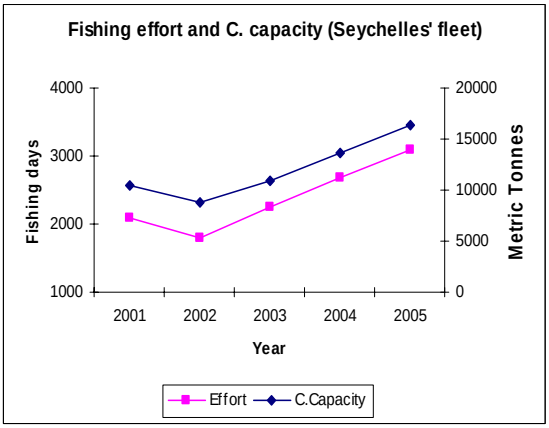


Fig 6. All purse seiners number of sets by fishing mode

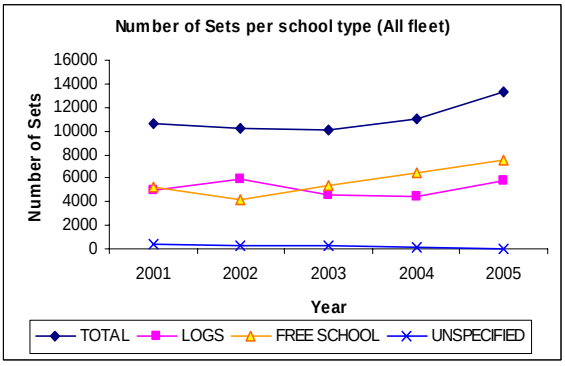


Fig 7. Seychelles purse seiners number of sets by fishing mode

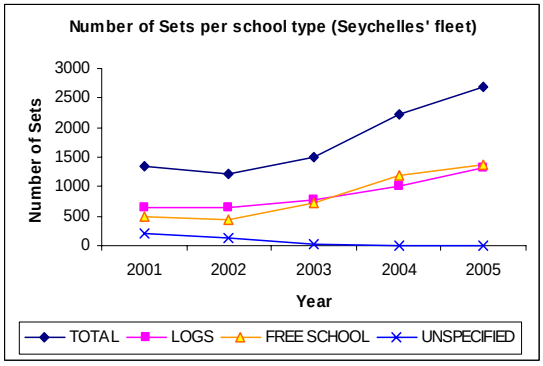


Fig 8. All purse seiners proportion of positive and null sets

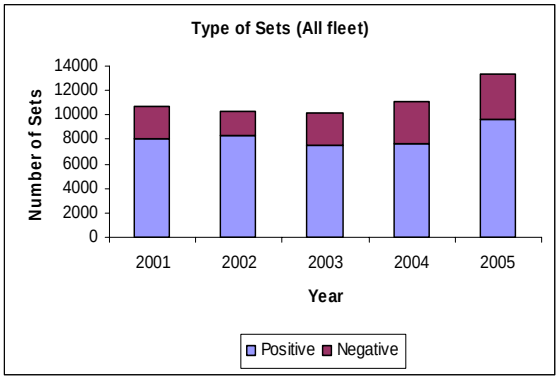


Fig 9. Seychelles purse seiners proportion of positive and null sets

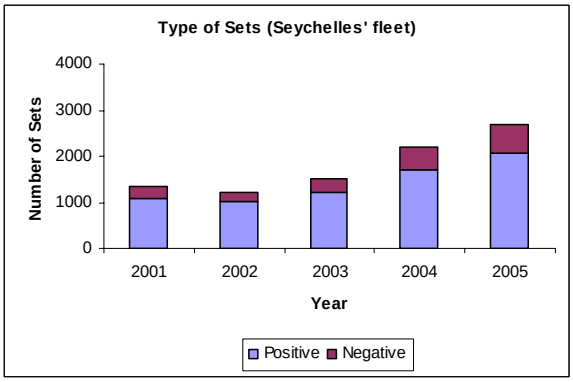


Fig 10. All purse seiners total reported catch by species

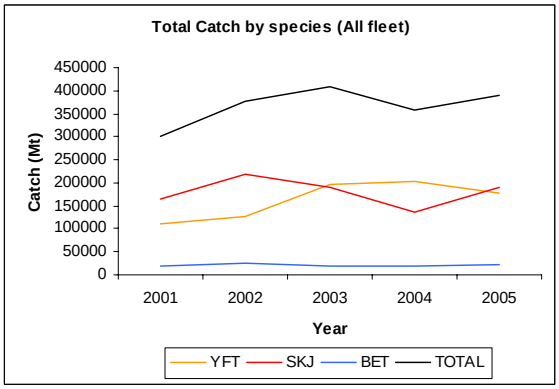


Fig 11. Seychelles purse seiners total reported catch by species

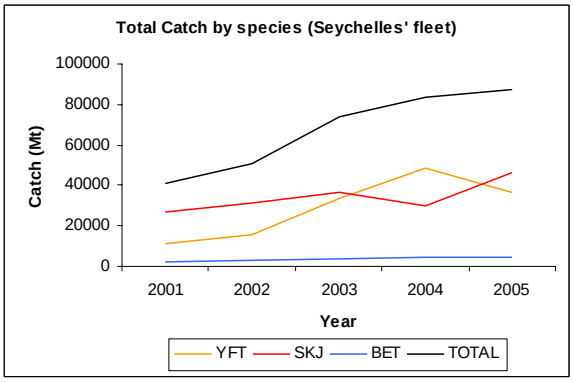


Fig 12. All purse seiners total catch by species reported on free swimming schools

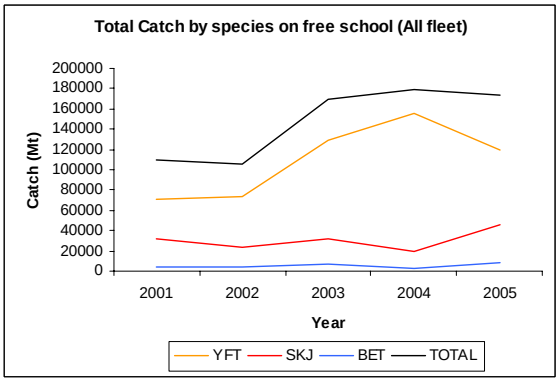


Fig 13. Seychelles purse seiners total catch by species reported on free swimming schools

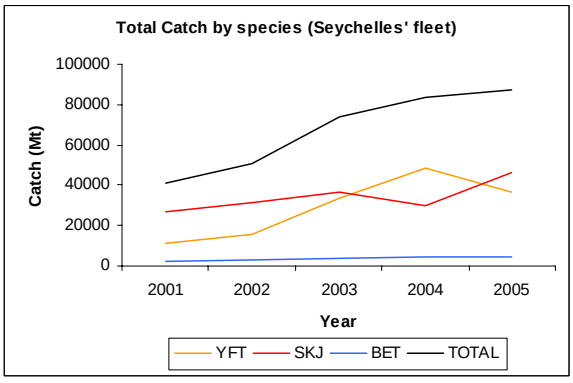


Fig 14. All purse seiners total catch by species reported on FADs associated schools

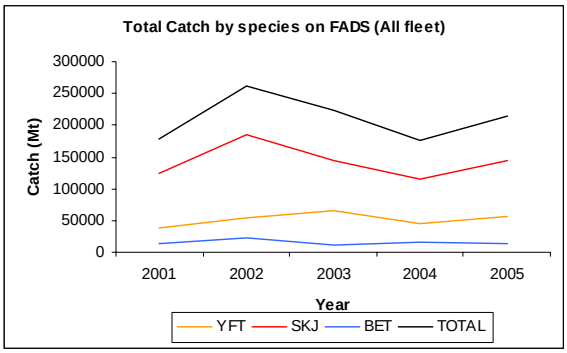


Fig 15. Seychelles purse seiners total catch by species reported on FADs associated schools

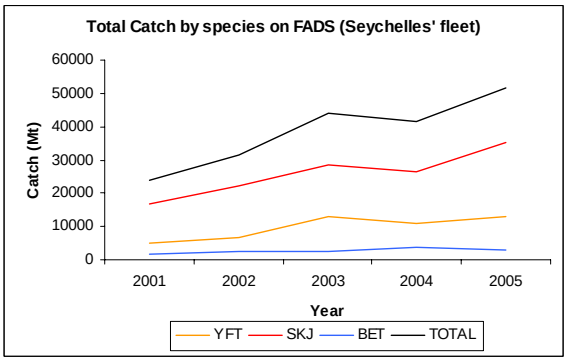


Fig 16. All purse seiners CPUE by species reported on all school types.

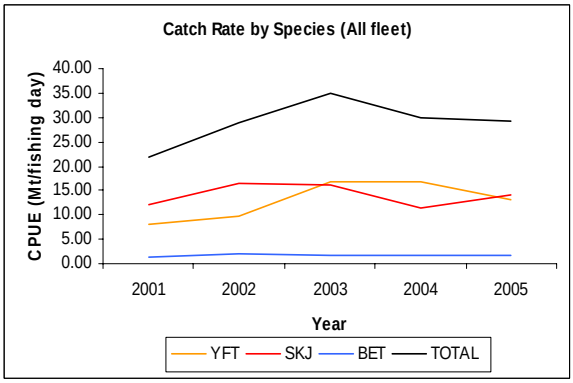
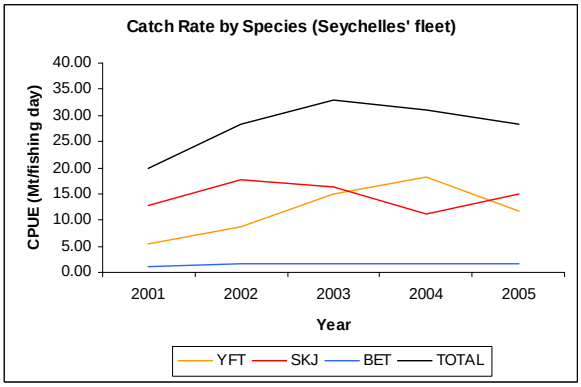
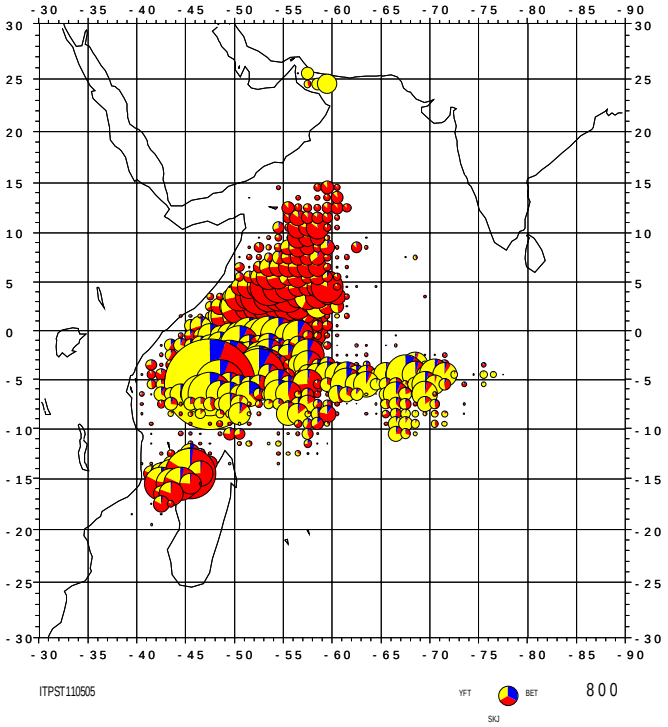


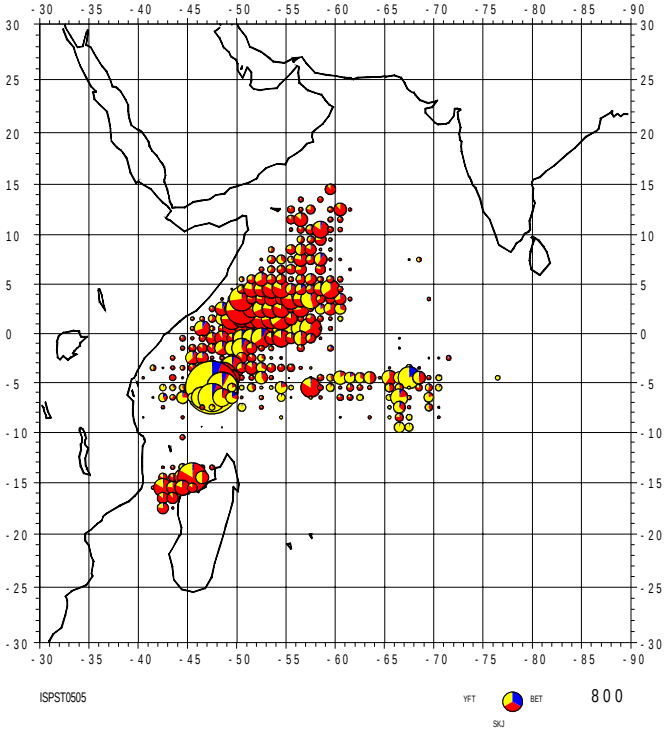
Fig 17. Seychelles purse seiners CPUE by species reported on all school types.



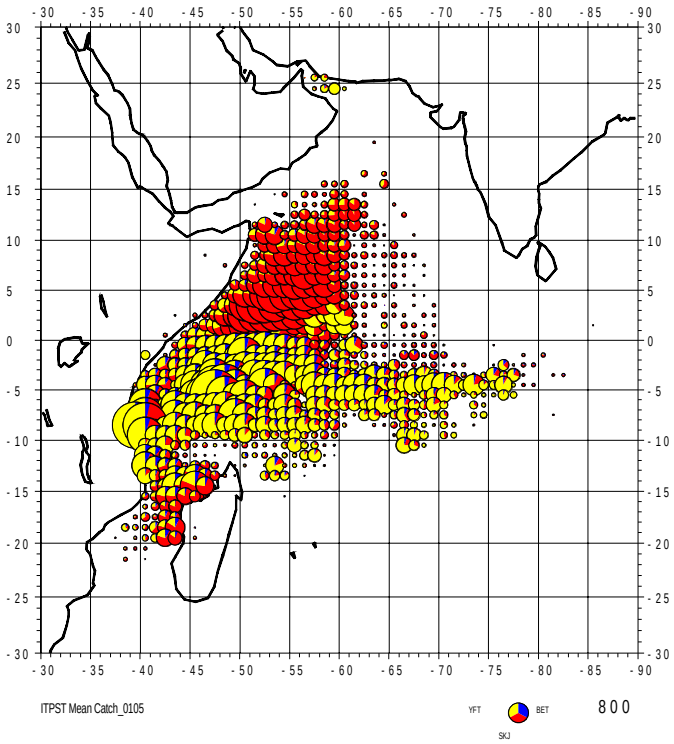
Map 1. Catch by 1° square for the year 2005 reported by the whole purse seine fleet



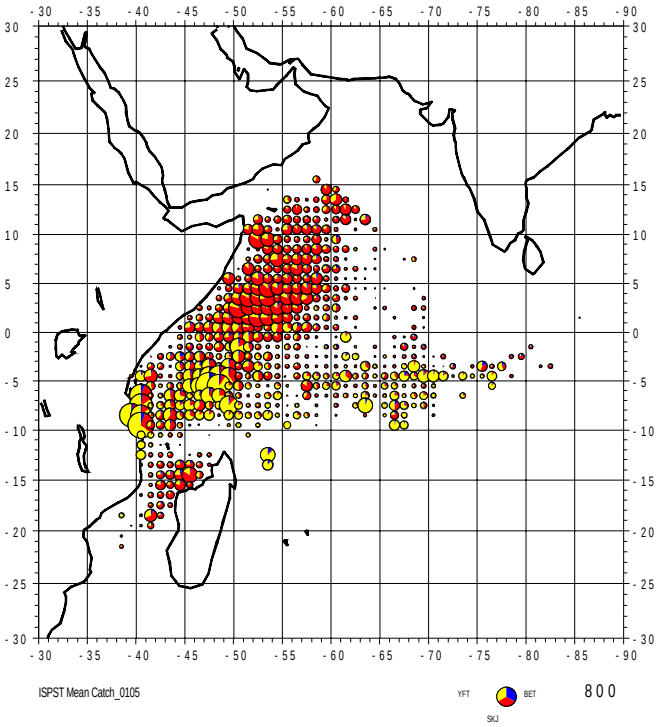
Map 2. Catch by 1° square for the year 2005 reported by the Seychelles' purse seine fleet



Map 3. Mean catch (2001– 2005) by 1° square reported by the whole purse seine fleet.



Map 4. Mean catch (2001 – 2005) by 1° square reported by the Seychelles' purse seine fleet.



3.0 LONGLINE FISHERY

During 2005, an important effort was made to implement FINSS (developed by the IOTC) as the software to manage industrial longline fishery data. All the historical data was transferred into FINSS and steps were taken to identify and correct all suspicious records where possible (data entry errors) and flag all erroneous records that could not be corrected. A paper to this effect (IOTC-2006-WPTT-30) was presented to the IOTC working party on tropical tuna in July 2006.

3-1 Licenses issued and fleet composition

Table 5a and 5b shows the number of licenses issued and the numbers of individual vessel the licenses were issued to by country respectively, including the number of Seychelles registered vessels. A vessel may be registered in Seychelles but may not have a license, as licences are required only if the vessel wishes to operate inside or the Seychelles EEZ.

3-2 Logbook coverage

There has been a remarkable increase in logbooks returns by the Seychelles registered vessels since 2003 (Table 6).

3-3 Fishing effort

The fishing effort shows an increasing trend between 2001 and 2004 by all fleet licensed to operate inside the Seychelles EEZ and by all Seychelles registered vessels. (Table 7 and figure 18).

3-4 Catch

The total catch reported by all fleet has increased steadily from 2001 to 2004 (Table 8 and figure 19). Between 2001 and 2004, bigeye tuna was the dominant species caught by Seychelles registered longliners. In 2005 it was replaced by yellowfin tuna which accounted for 51% of the total catch (Figure 20).

3-5 Yield

A slight increasing trend was observed in catch rate for the Seychelles fleet over the past 5 years (Table 9 and figure 22), whilst the catch rate for all fleets has remained more or less stable (figure 21). The catch rate for yellowfin and bigeye tuna has remained more or less stable for all fleet whilst for the Seychelles fleet, bigeye tuna catch rate was higher than for yellowfin tuna between 2001 and 2004.

3-6 Fishing grounds

Maps 5 and 6 show the distribution of catch reported by the whole purse seine fleet and the Seychelles' fleet during 2005. Maps 7 and 8 show mean catches reported from 2001 to 2005.

Table 5a. Number of licenses issued to longliners to fish inside of the Seychelles EEZ by country

Country Year	CHINA	JAPAN	REPUBLIC OF KOREA	SEYCHELLES	TAIWAN ROC	OTHERS	TOTAL
2001	5	85	4	10	124	15	243
2002	5	59		4	122		190
2003	16	90	43	15	251		415
2004	11	110	29	25	157	1	333
2005	2	165	27	21	165		380

Table 5b. Number of vessels issued with licenses to fish inside of the Seychelles EEZ by country

Country Year	CHINA	JAPAN	REPUBLIC OF KOREA	SEYCHELLES*	TAIWAN ROC	OTHERS	TOTAL VESSELS LICENSED
2001	5	32	4	8 (24)	107	12	168
2002	5	33		4 (28)	101		143
2003	12	44	27	13 (32)	159		255
2004	11	56	27	18 (32)	131	1	244
2005	2	68	20	20 (26)	146		256

*The number in bracket indicates the total number of Seychelles Registered vessels. It must be noted that not all Seychelles registered vessels take licences to fish inside of the Seychelles EEZ

Table 6. Logbooks (%) returned to SFA by country.

Country Year	CHINA	JAPAN	REPUBLIC OF KOREA	SEYCHELLES	TAIWAN ROC	OTHERS	TOTAL
2001	89	53	0	52	46	5	44
2002	31	45	0	41	46	9	43
2003	48	52	65	95	51	0	60
2004	53	36	81	82	60	0	60
2005	0	26	33	91	2	0	21

Table 7. Longline fishing Effort (hooks and fishing days).

TOTAL EFFORT (ALL COUNTRIES)			
YEAR	**HOOKS (Million)**	**FISHING DAYS**	**MEAN HOOKS PER SET**
2001	23	7,566	3,099
2002	27	10,255	2,679
2003	33	11,310	2,960
2004	45	14,364	3,110
2005	26	7,996	3,210
TOTAL EFFORT (SEYCHELLES)			
YEAR	**HOOKS (Million)**	**FISHING DAYS**	**MEAN HOOKS PER SET**
2001	6	1,746	3,193
2002	8	2,703	3,062
2003	9	2,850	3,263
2004	18	5,709	3,089
2005	19	6,051	3,148

Table 8. Longline Species composition of total catch

TOTAL CATCH BY SPECIES (ALL COUNTRIES)						
YEAR	**YFT**	**BET**	**SWO**	**ALB**	**OTH**	**TOTAL**
2001	4,258	3,553	730	906	1,088	10,536
2002	4,097	5,021	1,485	808	1,123	12,535
2003	7,214	6,768	1,328	891	879	17,080
2004	7,918	10,406	1,757	233	1,017	21,331
2005	8,411	6,043	965	158	473	16,051
TOTAL CATCH BY SPECIES (SEYCHELLES)						
YEAR	**YFT**	**BET**	**SWO**	**ALB**	**OTH**	**TOTAL**
2001	342	715	358	666	529	2,610
2002	533	1,598	726	583	480	3,920
2003	871	2,300	725	563	334	4,793
2004	3,033	5,217	1,172	53	523	9,998
2005	6,642	5,061	861	118	366	13,048

Table 9. Longline catch rate (MT/1000 hooks) by species

CPUE (MT/1000 HOOKS) (ALL COUNTRIES)						
YEAR	**YFT**	**BET**	**SWO**	**ALB**	**OTH**	**TOTAL**
2001	0.18	0.15	0.03	0.04	0.05	0.45
2002	0.15	0.18	0.05	0.03	0.04	0.46
2003	0.22	0.20	0.04	0.03	0.03	0.51
2004	0.18	0.23	0.04	0.01	0.02	0.48
2005	0.33	0.24	0.04	0.01	0.02	0.63
CPUE (MT/1000 HOOKS) (SEYCHELLES)						
YEAR	**YFT**	**BET**	**SWO**	**ALB**	**OTH**	**TOTAL**
2001	0.06	0.13	0.06	0.12	0.09	0.47
2002	0.06	0.19	0.09	0.07	0.06	0.47
2003	0.09	0.25	0.08	0.06	0.04	0.52
2004	0.17	0.30	0.07	0.00	0.03	0.57
2005	0.35	0.27	0.05	0.01	0.02	0.68

Figure 18. Longline fishing effort (hooks and fishing days)

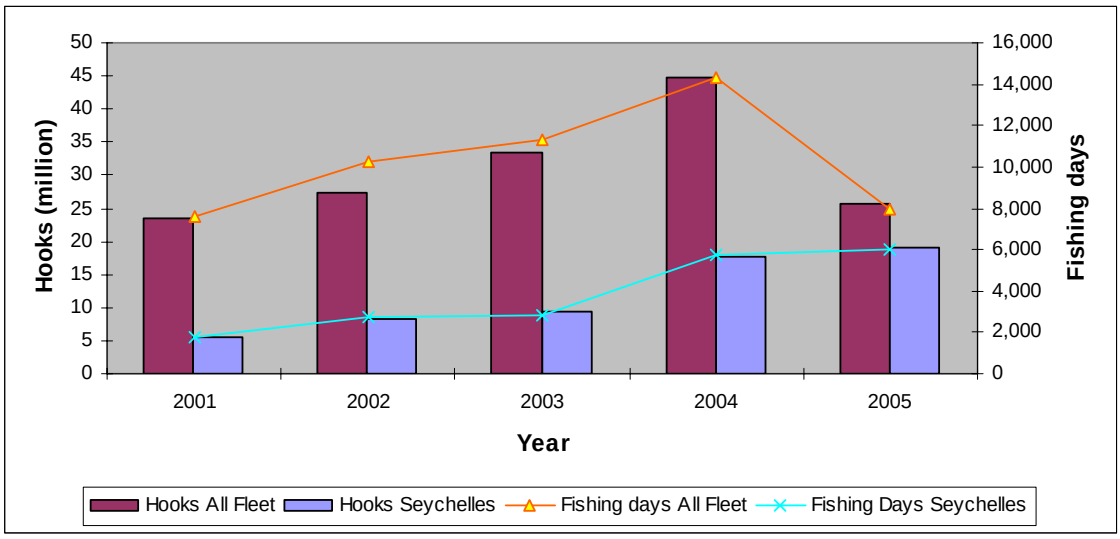


Fig 19. All longliners catch by species.

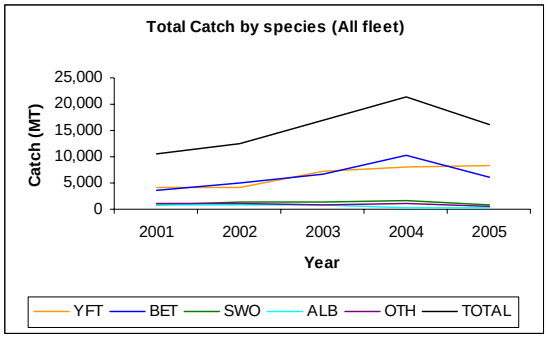


Fig 20. Seychelles longliner catch by species

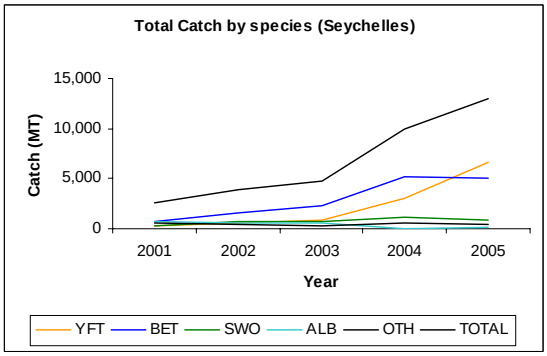


Fig 21. All longliners CPUE by species.

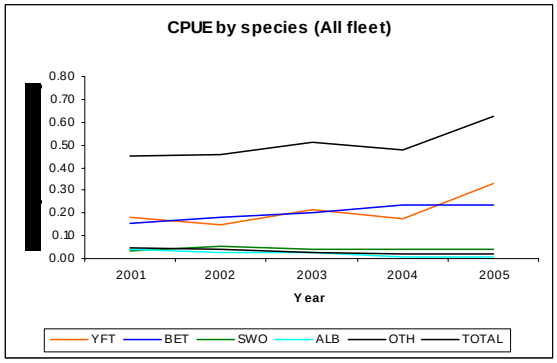
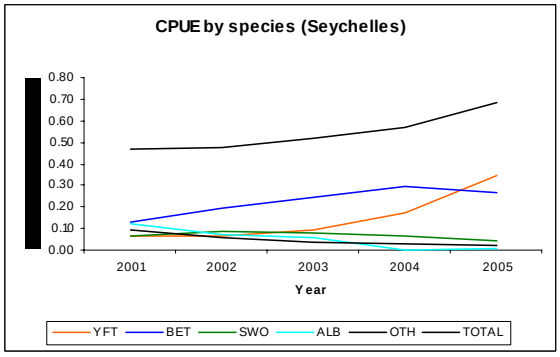
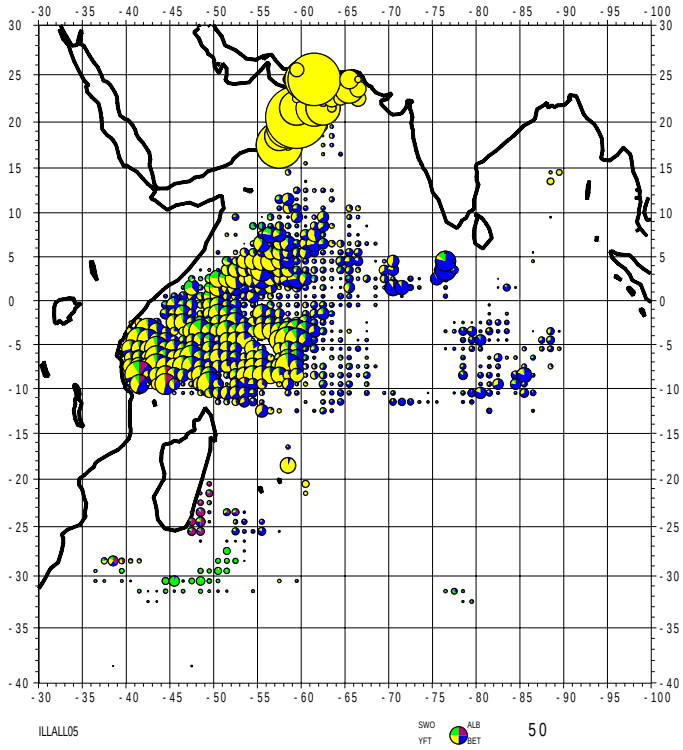


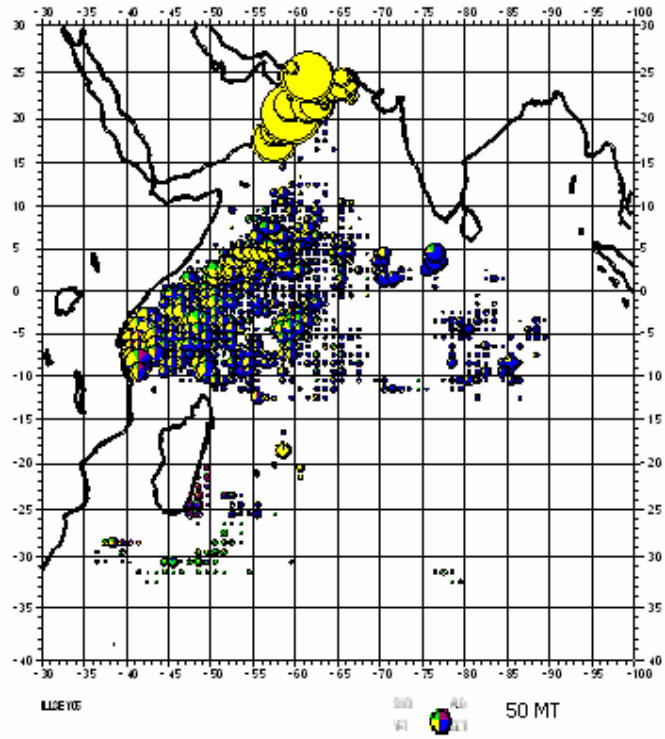
Fig 22. Seychelles longliner CPUE by species



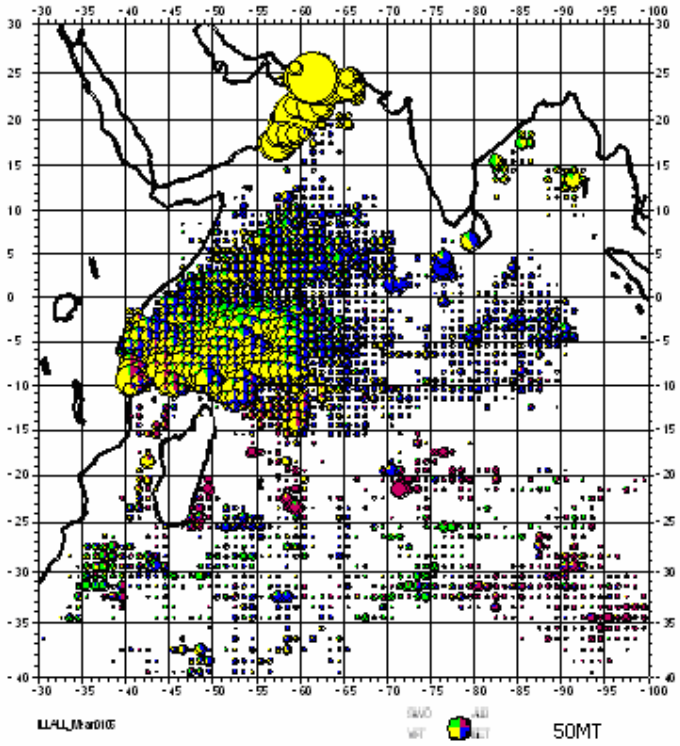
Map 5. Total catch by 1° square reported by all longline fleet.



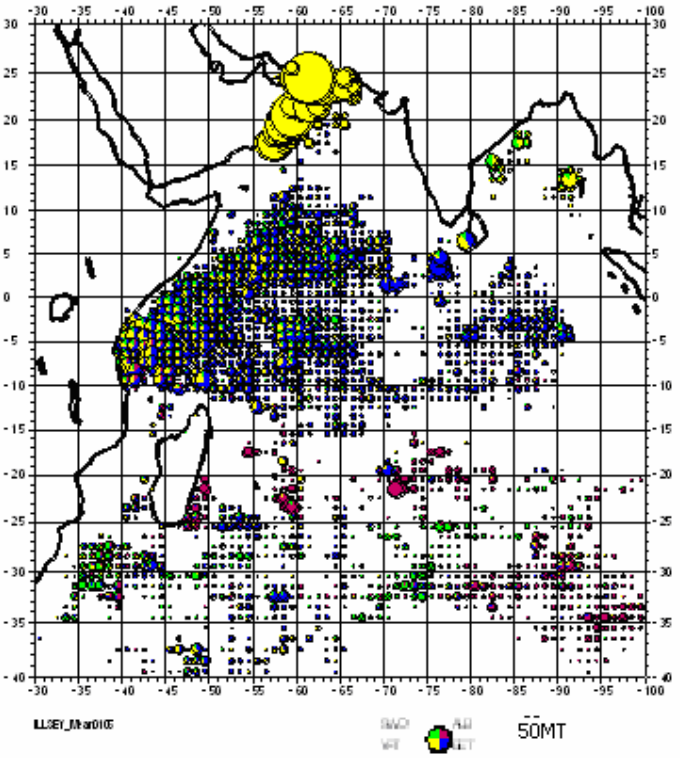
Map 6. Total catch (2005) by 1° square reported by the Seychelles longline fleet.



Map 7. Mean catch (2001– 2005) by 1° square reported by the whole longline fleet.



Map 8. Mean catch (2001– 2005) by 1° square reported by the Seychelles longline fleet.



4.0 SEMI-INDUSTRIAL FISHERY

A significant increase in the activities of the semi-industrial vessels were recorded in 2005, compared to the previous 3 years., Figures presented in this report might differ from previously presented figures. In the current report the data have been raised to take into consideration missing logbooks and missing landings. Furthermore logbooks and landings data have been raised to round weights. A paper to this effect (IOTC-2006-WPB-05) was presented at the working party on billfish in 2006.

4-1 Vessels active and fishing effort

Table 10 summarises the fishing activities of the semi-industrial fleet from 2001 to 2005. During 2005, 5 semi-industrial vessels conducted a total of 43 longline fishing trips (for tuna and swordfish) compared with 22 trips conducted by 4 local vessels during the previous year. This represents an increase of 57% in the number of fishing trips targeting tuna and swordfish.

4-2 Catch

The estimated catch reported by the local semi-industrial fleet for 2005 is estimated at 290.32 MT compared to 90.19 MT reported to have been caught during 2004. This represents a significant increase in catches corresponding to the increase in fishing effort. The resumption of swordfish exportation to the European market is the main reason behind this upsurge in activity during 2005. While swordfish remained the dominant species in the catch (58% in 2005), its share has decreased (80% in 2004) with yellowfin and bigeye tuna being more targeted than previously. There was also an increase in shark by-catches corresponding to the increase in fishing activity (Table 11).

4-3 Yield

The catch rate has increased since 2003 to an estimated 1.48 MT/1000 hooks in 2005, (figure 23). The swordfish CPUE has increased from 0.50 MT/1000 hooks in 2002 to 0.85 MT/1000hooks reported for 2005 (table 12). The tuna catch rate increased to 0.54 MT/1000 hooks in 2005. It should be pointed out that the increase in CPUE may corresponds to the fact that during the past three years only the historically most efficient vessels were doing regular longline fishing trips targeting swordfish and tuna.

4-5 Shark fishing activities.

Although the restriction for export of swordfish on the EU market was lifted in February 2005, most of the local vessels have not returned back to targeting swordfish and tuna as was expected. Some vessels have continued to target sharks while others fish for tuna and swordfish but occasionally target sharks. After the introduction of a shark fishing logbook in late 2003 and after consultations with stakeholders, there has been a great improvement in logbook returned. The sharks meat landed are estimated at around 8% of the total catch, with a significant percentage of catches finned and the meat discarded at sea taking into account the low commercial value of the meat.

In 2005 a total of 10 vessels conducted 83 sharks fishing trips and landed a total of 19.48 MT of shark meat and 17.27 MT of shark fins.

In 2004 the same number of vessels conducted a total of 56 shark-fishing trips and landed a total of 32.9MT of shark meat and 11.4 MT of shark fins. Whereas the amount of shark meat landed has decreased by approximately 41%, the amount of shark fins landed has increased by roughly 6%. This indicates an increase in the level of discard at sea.

Sharks' catches consisted mainly of the blue shark (*Prionace glauca),* oceanic whitetip shark *(Carcharinus longimanus),* silky shark *(Carcharinus falciformis),* hammerhead shark *(Sphyrna spp),* mako shark *(Isurus oxyrinchus),* thresher shark *(Alopisa sp)* and tiger shark (*Galeocerdo cuvier)*.

Table 10. Summary of fishing activities of the semi-industrial fleet.

	2001	2002	2003	2004	2005
Number of vessels active	10	12	6	4	5
Number of Trips	171	101	42	22	43
Number of set	1,074	441	165	139	341
Gross Catch (Mt)	536	230	91	90	290
Effort (1000' Hooks)	511	270	112	87	196
Catch Rate (Mt/1000Hooks)	1.05	0.85	0.81	1.03	1.48

Table 11. Catch (Mt) reported by the semi industrial fishery from 2000 to September 2005.

SPECIES	2001	2002	2003	2004	2005
SWORDFISH	270.15	135.12	65.62	70.97	167.53
YELLOWFIN TUNA	96.28	41.94	13.00	7.65	47.14
BIGEYE TUNA	57.60	24.08	11.50	7.20	55.95
ALBACORE	0.00	0.00	0.00	0.00	2.82
MARLIN	0.07	0.12	0.00	0.05	0.49
BLACK MARLIN	6.23	2.45	0.00	0.00	0.91
BLUE MARLIN	2.01	0.48	0.28	0.33	0.53
STRIPED MARLIN	3.79	0.87	0.00	0.00	0.27
SHARKS	71.29	14.79	0.07	3.05	8.42
SAILFISH	21.42	7.56	0.41	0.76	4.73
OTHER SPECIES	6.75	2.92	0.00	0.19	1.54
GRAND TOTAL	535.60	230.34	90.87	90.19	290.32

Table 12. Catch rate (Mt/1000 hooks) by species reported by the semi industrial fishery from 2001 to 2005.

SPECIES	2001	2002	2003	2004	2005
SWORDFISH	0.53	0.50	0.59	0.81	0.85
TUNA	0.30	0.24	0.22	0.17	0.54
OTHER SPECIES	0.22	0.11	0.01	0.05	0.09
GRAND TOTAL	1.05	0.85	0.81	1.03	1.48

Figure 23. Total catch and catch rates reported since the beginning of the fishery