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ANNUAL REPORT TO THE COMMISSION
PART 1: INFORMATION ON FISHERIES, RESEARCH, AND STATISTICS

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SENEGAL

REPUBLIQUE DU SENEGAL
Un Peuple- Un But -Une Foi
DPM/SN

MINISTERE DE l'ECONOMIE MARITIME
DE LA PECHE ET DES TRANSPORTS MARITIMES,

DIRECTION DES PECHES MARITIMES

ANNUAL REPORT SENEGAL

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Part1(Informationaboutfisheries,researchandstatistics)

Chapter1: Informations on the annual fisheries

Senegal has a coastline of 718 km (from St. Louis to Cape Skiring), an exclusive economic zone of 200 nautical miles with a wide continental shelf of 23,800 km2 with a concentration of major species exploited by artisanal fisheries and industrial and industrial fisheries. Tunas are among the species exploited by fisheries in Senegal. The Senegalese coast attracts a production that seems to be particularly linked to the hydro climatic fluctuation. In fact, the cold-water masses are very rich in nutrients and provide a significant increase in plant and animal biomass. The cyclical nature of productivity of water is the cause of the importance of fisheries in Senegal.

1.1 Industrial fishing

The main species fished in Senegal are: yellowfin tuna Thunnus albacares (YFT), skipjack Katsuwonus pelamis (SKJ) and bigeye tuna Thunnus obesus (BET). In addition, small coastal tuna (tuna, frigate, mackerel, skipjack and bonito) and billfish (swordfish, marlin and sailfish) are also caught by tuna fishing. It should be noted that the exploitation of these small tuna and related species is dominated by the artisanal fisheries and to a lesser extent for recreational fishing.

Landings of tuna fishing in the port of Dakar in 2008, were mainly provided by a fleet of 07 hook line vessels and a fleet consisting in 03 longline vessels targeting swordfish. It should be noted that Senegal has acquired in 2003, his first longliner which has been active in the Indian Ocean in 2003 and during 2004. This vessel has targeted swordfish . In 2006, two other longliners are added to the first ever to target swordfish. A total of two vessels fishing in the Pacific, one between 2005 and 2007 and the other between 2006 and 2007. From 2008, these three longliners are active in the Atlantic .

In terms of weight, the landing in 2008 are estimated at 6983 tonnes, of which 816 tonnes of yellowfin, skipjack 2278 tonnes, 804 tonnes of bigeye and 3085 tonnes of tuna mixed species representing 12%, 33%, 12% and 43% of the total weight (Figure 1). Table 1 shows the catch by species, effort and catch per unit effort (CPUE) baitboat Senegal from 1992 to 2008. The general trend is downwards Figure 2 illustrates the seasonal variation in catches of vessels of Senegal in 2008.

As for the longline fishery in the Indian Ocean Table 2 shows the results of fishing and the Pacific, Table 3 shows the results. It should be noted that this information has been sent to the IOTC and the WCPFC in the details .

As for the longline fishery in the Atlantic, the three long identified, only two were operational in 2008.

Table 4 shows the monthly catches by species in 2008,with the highest catch recorded during the period August to December. Figure 3 shows the total catch by species. A total of 324 839 kg was landed with 135 858 kg for swordfish (SWO). Sharks are also well represented in catches with 69 028 kg for the blue shark Prionace glauca (BSH).

1.2Artisanal Fisheries

Artisanal fisheries operate in general in line (or hand troll) to the small purse seine tuna: tuna (Euthynnus alleteratus) - MAL; mackerel bonito (Scomberomus tritor) MAW; Spanish mackerel (Scomber japonicus miraculatus) -- SSM; palometa (Orcipsis unicolor) - BOP and bonito (Sarda sarda) - GOOD; wahoo (Acanthoncybium solandri)-WAH; frigate (Auxis thazard) - FRI, and incidentally the billfish (swordfish (Xiphias Glade) -SWO; marlin (Makaira nigricans) and BUM-yacht (Istiophorus albicans)-SAI ..

Following the restructuring of the database CRODT, a revised set of catch data was produced .. To complete this series, one from 2004 to 2006 was prepared and used as value for 2008.(table 5). The total catch of small tuna species all fell between 1991 and 2000 they increased from 9 575 tonnes in 6073. But since 2000 there is an increase in catches. It should be noted that the value for 2004 is the highest in the entire series.

Sharks are also caught by this fishery with nets and line. Table 6 presents statistics of landings of sharks by fishing craft from 1991 to 2008.

The catch of billfish by the artisanal fisheries were followed at the ports of landing. Table 7 illustrates the effort and catch by the size of billfishes by the artisanal fisheries from 2004 to 2008.

Table 8 presents the evolution of the effort of the artisanal fisheries from 1990 to 2006. The motorized canoes lines and nets are by far the most active. But their efforts since 2004 have gradually fallen. However, the efforts of other gear shows a certain stability.

- Evolution of the artisanal fleet

The number of artisanal fleet of Senegal is one of the largest in the region. Figure 4 shows the evolution of annual number of units identified during the period 1982 to 2006. This number increases linearly during this period. It increased from 4 968 in 1982 to 12,619 units in 2006. Table 9 shows the distribution of the number of fishing units in terms of maritime zones. The overall rate of car ownership is around 75%. This rate is 100% for purse seine canoes. The table shows the distribution of artisanal fleet depending on the level of motorization.

1.3 Recreational fishing

In Senegal, the sport fisheries are monitored in two major fishing Dakar and Mbour. Sport Fishing the target swordfish marlin and sailfish season fishing located from May to December. (-SWO-swordfish Xiphias gladius, marlin-BUM-Makaira nigricans, sailboat-SAI-Istiophorus albicans) This fishery also target dorado, tuna and other species.
Table 10 presents the effort, catch and average catch of sailfish and marlin from 1996 to 2004 in Dakar. The evolution of the catch shows a decrease in catches.
In 2008, the catch numbers are estimated at 3316 and 477 sailfish marlin, equivalent respectively in terms of weight 120 Kg and 846 Kg 79 666 Table 11.

Chapter 2 Research and statistics

Regular scientific monitoring of fishing activities is still provided by the Center for Oceanographic Research of Dakar Thiaroye (CRODT). This work consists in collecting statistics of catch and fishing effort. The system of collecting statistics based on a detailed daily tuna with patrons at each landing,

supported by actual catches from various sources (factories, armaments, Department of Marine Fisheries, etc.). Indeed, the CRODT has the fishing port of Dakar office of statistics. The work of data collection is conducted by 4 technicians in charge of three surveys and for data entry. All data is entered, coded and implemented centralized computer then after checking and correction. Data management is done in partnership with the Institut de Recherche pour le Développement (IRD) and the Spanish Institute of Oceanography (IEO). Our activities are financed by the IEO, IRD and the EU.

For artisanal fisheries, data are collected at different landing sites by the investigators. The implementation of the Japanese project for improving data collection (JDIP) allowed better monitoring and updating of earlier data bycatch of billfish by artisanal fisheries. Indeed the available information gave no information to quantify catch. Samples are measured so that the quantities depending on the size of species..

The data taken for recreational fishing are collected annually from fishing centers. The project Japan has resolved the difficulties associated with data acquisition to improve their quality and coverage .Samples are also being made during the landings at the port of Dakar.

Marks are also recovered from the owners and collected to be stored in a database each year sent to the ICCAT Secretariat. But no marks have been recovered during the past four years

Part II (Misse out of management)

Chapter 3: Implementation of measures for the conservation and management.

Conservation measures and management have been followed and inspection scheme was set up at the port of Dakar

Senegal participates in the activities of the structures and organizations for cooperation in fisheries. This participation has, among other purposes, the application of measures on the following questions:

- Cooperation in fisheries matters, including joint management of stocks;
- The harmonization and coordination of system management and resource management;
- Determining the conditions of access to fishery resources;
- The adoption of coordinated measures for surveillance and control activities of fishing vessels.

The management of fisheries resources is a prerogative of the State. The state defines this policy to protect, conserve resources and provide for their sustainable exploitation in order to preserve the marine ecosystem. The provisions made by the State are contained in Law 98-32 on Sea Fishing Code and its implementing decree No. 98 -498 for implementing the Law on Fishing Code .

In order to ensure the rational and sustainable management of fisheries resources, Senegal has established a monitoring, control and monitoring of all fishing activities, inspections are carried out at the port and the identification of any vessel engaged in illegal fishing.

Chapter 4 Inspection Scheme

The device for positioning and location allows to cope effectively with the whole issue of surveillance issues based on the necessary planning policy for the sustainable exploitation of living marine resources.

The installation in all vessels authorized to fish with a tag attached to a positioning system and positioning using satellite communications allows the transmission frequency to the data of receipt of Toulouse, its position, the variable of road and corresponding speed. The technical aspects related to the use of tags such as their configuration and fraudulent interventions in the system are managed in partnership with the representation of system suppliers.

All national and foreign landings are monitored and inspected through the inspection device in place at the port of Dakar.

Tableau 1 Prises par espèces, efforts et prises par unité d'effort (PUE) des canneurs sénégalais de 1992 à 2008.

Année	*Prises (t) canneurs*				*Effort*	*PUE (t/j)*			
	YFT	*SKJ*	*BET*	**Total**	*(jpec)*	*YFT*	*SKJ*	*BET*	**Total**
1992	79	309	10	399	73	1,08	4,24	0,14	5,45
1993	-	-	-	-	-	-	-	-	0,00
1994	13	42	5	60	27	0,46	1,56	0,20	2,22
1995	6	59	11	76	40	0,16	1,49	0,27	1,90
1996	20	18	60	98	74	0,27	0,24	0,81	1,31
1997	41	163	84	288	91	0,45	1,79	0,92	3,16
1998	208	455	204	867	176	1,18	2,59	1,16	4,93
1999	251	1679	676	2606	511	0,49	3,29	1,32	5,10
2000	834	1479	1473	3786	572	1,46	2,59	2,58	6,62
2001	252	1506	1131	2889	697	0,36	2,16	1,62	4,14
2002	295	1271	1308	2874	512	0,58	2,48	2,55	5,61
2003	447	1053	565	2065	395	1,13	2,67	1,43	5,23
2004	279	733	474	1486	370	0,75	1,98	1,28	4,02
2005	668	1323	561	2552	691	0,97	1,91	0,81	3,69
2006	1301	4874	721	6896	1236	1,05	3,94	0,58	5,57
2007	1262	3534	1267	6063	1326	0,95	2,66	0,95	4,76
2008	816	2278	804	3898	1206	0,68	1,89	0,67	3,24

Tableau 2 .Captures réalisées dans l'océan indien en 2003 et 2004

	Quantités en tonnes				**Efforts de pêche**			
	An 2003		**An 2004**					
	1ère camapgne	2ème camapgne	1ère camapgne	2ème camapagne	Jours de pêche	Heure de pêche		
					2003	**2004**	**2003**	**2004**
Sword fish	83,833	132,562	43,95	82,592	260	280	3120	3360
Shortfinfin mako	17,271	9,979	4,45	11,21				
Yellowfin tuna	1,081	0,13	1,29	0,486				
Gulper shark	27,33	27,509	66,392	44,348				
Carcharhunis maou	5,66		0	6,767				
Blue marlin	1,04	1,73	2,435	1,003				
Atlantic sailfish	0,065			0,359				
Gempylidae	2,46		1,02	3,233				
Sparidae	0,01							
	138,75	**171,91**	**119,537**	**149,998**	**260**	**280**	**3120**	**3360**

Tableau 3 . Captures réalisées dans la zone de la WCPFC.

CATCH OF ROBALEIRA IN 2005

CATCH VIEIRASA 5 IN 2007

Noms Espéces		Total (kg)
Sword Fish	Xiphias gladius	144 955
Blue Shark	Prionace glauca	28 072
Oilfish	Rivetus pretiosus	7 639
Yellowfin	Thunnus albacares	6 471
Sailfish	Isthiophorus Platypterus	468
Mako Shark	Isurus oxyrinchus	27 994
Spearfish	Makaira indica	11 024
Tresure Shark	Carcharhinus spp	540
Barracuda	Sphyreana	24
Total en kilogramme		**227 187**

IN 2006

Noms Espèces		Total (kg)
Bigeye	Megalops	3 293,00
Yellowfin	Albacares	230
Tesures Shark	Carcharhinus spp	1 831,00
Blue marlin	Makaira nigricans	1 556,00
Marlin	Makaira spp	65,00
Swordfish	Xiphias gladius	77 469,00
Skip jack	Pelamis	8 928,00
		93 372,00

IN 2007

Noms Espèces		Total (kg)
Sword fish	Xiphias gladius	45 615
Mako Shark	Isurus oxyrinchus	18 937
Bigeye tunnus	Tunnus obesus	1 755
Requin peau Bleue	Prionace glauca	25 368
Merlin	Makaira spp	4 821
Ailleron		2 227
Escolier Espaniol	Revettus pretiosus	5 759
Lampris	Lampris guttatus	914
Coryphène	Corypheana hippurus	193
Requin peau	Carcharhinus spp	192
Requin marteau	Spyrna spp	87
		105 868

Noms Espèces		Total (kg)
Yellowfin	Tunnus albacares	2514
Blue shark	Prionace glauca	167 982
Shark	Carcharhinus spp	26 972
Fins		4192
Blue marlin	Makaira nigricans	106
Sword fish	Xiphias gladius	51 625
Oilfish	Ruvettus pretiosus	7156
Total en kilogramme		**260 547**

IN 2007

Noms Espèces		Total (kg)
Sword Fish	Xiphias gladius	59 317
Mako Shark	Isurus oxyrinchus	23 851
Blue shark	Prionace glauca	48 555
Spear fish	Makaira spp	368
Oil fish	Revettus pretiosus	6 880
Fins		3 096
Mahi mahi	Corypheana hipurus	585
Barracuda	Sphyraena spp	
Opah	Lampris guttatus	2 652
Yellowfin	Albacares	3 814
		149 118

Tableau 4 Prises mensuelle d'espèces apparentées, de thonidés et requins par la flottille Palangrière en 2008

Espèces	mai	Juin	Juillet	août	septembre	Octobre	Novembre	décembre	Total
Aileron	225	450	687	3283	3595	3694	1213	1123	14270
Albacore	1375	353	1026	342	2701	1549	292	1637	9275
Bonite à dos rayé	-	-	-	-	-	-	-	27	27
Divers	180	289	1165	1459	2151	3605	-	-	8849
Escolier espagnol	849	165	295	25	1641	1046	15	836	4872
Espadon	13239	2414	15706	24096	30218	28325	3670	18190	135858
Listao	-	-	-	-	-	-	-	52	52
Makaire	585	-	-	-	-	-	143	1592	2320
Palomette	-	-	-	-	-	-	-	8	8
Patudo	-	-	-	-	-	-	-	519	519
Requin	-	-	5	7948	13936	2231	168	228	24516
Requin marteau	-	-	275	16009	3971	2035	1272	741	24303
Requin peau bleue	2135	4477	6507	8080	6640	2061	21054	18074	69028
Requin taupe	217	1108	1227	5625	2172	14394	1487	2856	29086
Voilier	-	-	-	-	-	-	-	1856	1856
Total	18805	9256	26893	66867	67025	58940	29314	47739	324839

Tableau 5 Prises (en tonne) des petits thonidés, d'istiophoridés et xiphiidés par la pêche artisanale de 1991 à 2008

Espèces	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Scomber japonicus	2 489	967	1 849	1 340	1 297	2 417	1 692	2 234	1 931	1 348	2 772	1 936	8 869	14 173	3 941	5 781	3428	4383
Orcynopsis unicolor	16	20	41	29	16	63	60	5	18	24	14	28	6	7	67	85	29	60
Scomberomorus tritor	1 220	520	1 225	1 019	939	1 614	1 318	837	522	491	778	408	584	532	288	489	196	324
Acanthocybium solandri		0	2	64	0	0	1	0	1	5	0	0		7	0	0	1	0
Euthunnus alletératus	4 184	2 955	3 137	3 913	4 238	3 560	1 972	2 734	3 372	1 398	3 336	4 969	2 659	4 394	4 160	2 166	3826	3384
Sarda sarda	525	597	345	171	814	732	1 012	1 289	2 213	2 558	286	545	621	195	197	486	2304	996
Katsuwonus pelamis	5	288	2	0	0	2	1	2	6	4	7	6	287	45	154	341	90	195
Thunnus obesus		3		9	1	0	0		2	2	0	0	3	5	4	4	1	3
Auxis thazard	94	4	0	33	10	0	0	0	0	7	0	4	0	13	285	159	83	176
Thunnus albacares	2	20	23	8	1	1	1	0	1	0	3	0	25	3	10	43	63	39
Istiophorus platyptarus	1 040	466	860	462	162	167	240	555	257	234	782	953	240	673	291	250	256	266
Makaira nigricans	1	4	8		9		2	5	0	0		11	24	32	8	0	5	4
Xiphias gladius	0	6	5	0	1	1	0	0	4	2	242	2	17	2	4	7	7	6
Total	9 575	5 850	7 498	7 049	7 487	8 557	6 298	7 661	8 327	6 073	8 220	8 862	13 335	20 081	9 408	9 811	10289	9836

Tableau 6 Prises (en tonne) de requins par la pêche artisanale de 1991 à 2008

Espèces	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2088
Carcharhinus spp	388	368	1 034	1 016	1 689	950	1 571	235	805	968	1 713	10736	1 042	1 387	1 651	5 247	1035	1343
Sphyrna spp	0	0	0	0	0	128	188	126	92	96	57	686	36	54	168	311	173	217
Sphyrnidae divers	140	149	151	131	182	1	2	0	2	21	0	778	0	17	0	7	0	2
Mustelus mustelus	398	462	386	437	690	378	596	158	100	155	255	4 015	77	143	109	91	121	9
Rhizoprionod. Acutus	52	9	7	12	5	5	12	0	5	10	20	138	11	23	1	11	16	51
Carcharhinidae divers	1	7	0	0	11	5	15	4	22	4	1	70	3	0	0	154	0	37
Centrophorus spp	44	8	5	11	2	13	1	0	1	3	2	92	7	0	65	33	12	3
Squalidae	3	2	0	0	0	0	0	0	1	1	0	8	0	0	0	5		
Pleurotremes divers	0	0	3	2	25	15	8	1	20	0	0	74	13	64	4	3	2	3
Total	1026	1500	1586	1609	2604	1495	2393	524	1048	1258	2048	16597	1189	1688	1998	5862	1359	1773

Tableau 7 Effort (nombre de sortie), prises par classe de taille (en kg) d'istiophoridés par la pêche artisanale

Années	**Nombre de sorties / an**	**Classe /taille en cm**	**Poids en Kg**
2004	1369	< 140 [140 - 150[[150 - 160[[160 - 170[[170 - 180[[180 - 190[[190 - 200[> 200 **Poids total** **Nombre d'individus**	6 125 610 639 94 31 33 43 **1580** **87**
2005	758	[160 - 170[[170 - 180[[180 - 190[[190 - 200[**Poids total** **Nombre d'individus**	5 277 249 99 **629** **24**
2006	4914	[140 - 150[[150 - 160[[160 - 170[[170 - 180[**Poids total** **Nombre d'individus**	12 18 19 286 **892** **175**
2007	2204	[160 - 170[[170 - 180[[180 - 190[[190 - 200[**Poids total** **Nombre d'individus**	18 88 162 31 **299** **95**
2008	6685	< 120 [120 - 130[[160 - 170[[170 - 180[[180 - 190[[190 - 200[> 200 **Poids total** **Nombre d'individus**	13 16 139 176 459 768 130 **1701** **172**

Tableau -8 Effort de pêche artisanale de 1990 à 2006

Engins	1 990	1 991	1 992	1 993	1 994	1 995	1 996	1 997	1 998
PVL	27 879	29 788	29 412	13 868	25 783	35 872	41 305	63 417	57 616
PML	358 812	355 948	366 253	354 586	391 526	402 017	393 617	458 765	530 144
FD	180 581	164 072	173 036	199 537	212 265	287 644	343 881	331 951	303 997
PGL	11 857	15 450	15 959	19 353	17 496	20 576	24 044	24 521	25 192
ST	55 533	54 779	60 553	62 470	56 955	53 494	51 133	51 200	55 439
FME	22 283	18 547	22 671	18 197	13 645	15 697	27 434	35 953	22 401
SP	6 554	7 709	7 576	6 389	8 783	16 475	15 708	9 523	9 644

Engins	1 999	2 000	2 001	2 002	2 003	2 004	2 005	2 006
PVL	48 086	53 449	39 805	33 900	51 919	62 294	66 996	50 809
PML	562 303	473 781	419 210	529 636	599 169	627 483	548 259	420 910
FD	301 980	459 537	336 518	355 756	292 013	477 005	460 060	301 980
PGL	23 340	22 999	26 095	24 970	22 757	24 933	22 937	21 795
ST	54 644	61 567	64 783	65 225	72 595	67 230	64 299	53 315
FME	22 040	20 618	24 418	19 543	22 091	18 204	23 784	22 988
SP	10 803	10 804	6 273	4 392	3 828	19 071	14 317	11 993

PVL=Pirogue voile ligne ; PML= Pirogue motorisé ligne ; FD= Filet dormant ; PGL= Pirogue glacier ligne ; ST= Senne tournante ; FME= Filet maillant encerclant ; SP= Senne de plage

Tableau 9 Répartition du nombre d'unités opérationnelles en fonction des zones de pêche maritimes

Zones maritimes	Nombre d'unités	Pourcentage
Grande Côte	3106	22
Cap-Vert	3138	23
Petite Côte	2870	21
Saloum	2460	18
Casamance	2327	17

Tableau 10. Effort (en nombre de sortie), captures (en nombre) et captures moyennes (en kg) des voiliers et marlins par la pêche sportive de 1996 à 2004 à Dakar (le poids moyens des marlins est de 130 kg et celui des voiliers de 23 kg).

		Voiliers			Marlins	
Année	Mois	Effort (en nombre de sorties)	Captures (en nombre)	Captures moyennes (en kg))	Captures (en nombre)	Captures moyennes (en kg)
1996	Juin	111	29	667		
	Juillet	247	487	11201		
	Août	158	405	9315		
	Septembre	17	16	368		
	Octobre	12	11	253		
	TOTAL	**545**	**948**	**21804**	**0**	**0**
1997	Mai	10	0	0	9	1170
	Juin	81	105	2415	17	2210
	Juillet	88	206	4738	0	0
	Août	43	73	1679	5	650
	Septembre	20	22	506	6	780
	Octobre	2	48	1104	3	390
	TOTAL	**244**	**454**	**10442**	**40**	**5200**
1998	Mai	50	26	598	25	3250
	Juin	107	220	5060	34	4420
	Juillet	235	444	10212	0	0
	Août	256	452	10396	0	0
	Septembre	118	191	4393	3	390
	Octobre	103	122	2806	0	0
	Novembre	25	16	368	0	0
	TOTAL	**894**	**1471**	**33833**	**62**	**8060**
1999	Juillet	264	516	11868	0	0
	Août	178	274	6302	1	130
	Septembre	120	288	6624	2	260
	Octobre	141	193	4439	2	260
	Novembre	35	52	1196	0	0
	TOTAL	**738**	**1323**	**30429**	**5**	**650**
2000	Mai	33	7	161	15	1950
	Juin	190	244	5612	86	11180
	Juillet	212	475	10925	11	1430
	Août	238	414	9522	2	260
	Septembre	171	278	6394	14	1820
	Octobre	263	288	6624	19	2470
	Novembre	24	47	1081	5	650
	TOTAL	**1131**	**1753**	40319	**152**	**19760**
2001			151	3473	18	2340
2002	de mai à décembre		90	2070	11	1430
2003			210	4830	12	1560
2004			108	2480	15	1950

Tableau 11. Prises de marlins, de voiliers et de thons en 2008 de mai et décembre à Dakar et Mbour (Saly) par la pêche sportive

Localités	Espèces	Prises	Poids moyen (kg)	Poids total (kg)	Longueur moyenne (m)
Dakar	Marlin	398	167	66467	2,95
	Voilier	1971	28	55188	1,97
	Thon	493	18	8874	0,87
Mbour (Saly)	Marlin	79	167	13193	2,95
	Voilier	2345	28	65660	1,97

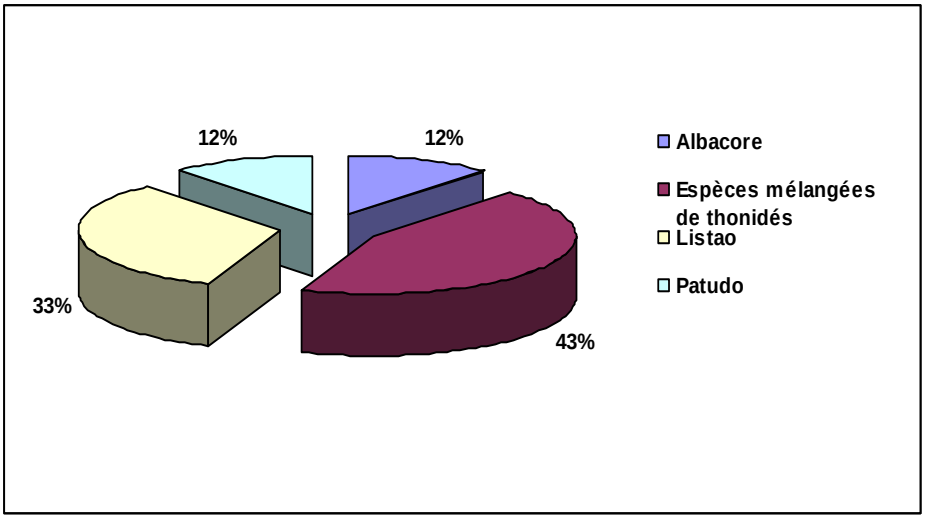

Figure 1 Statistiques des débarquements des canneurs sénégalais pour l'année 2007

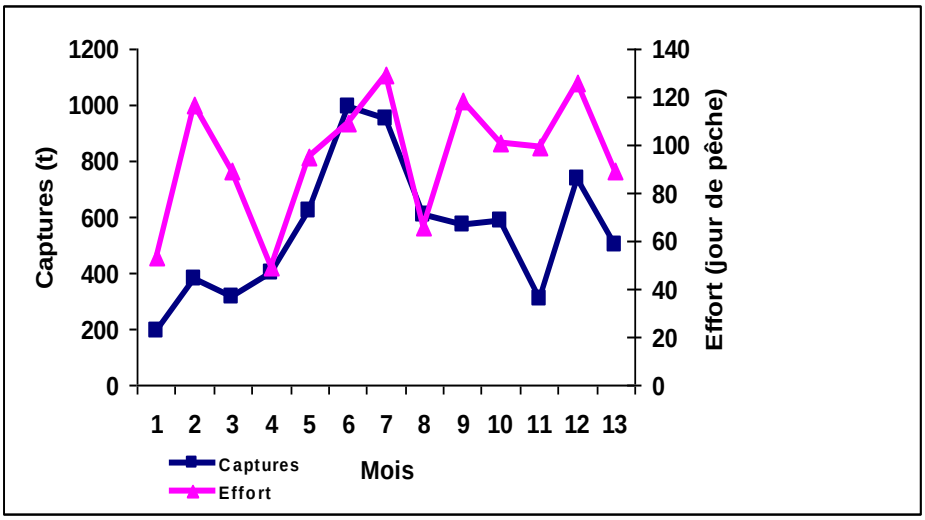

Figure 2 Variation saisonnière des captures en fonction de l'effort de pêche des canneurs sénégalais

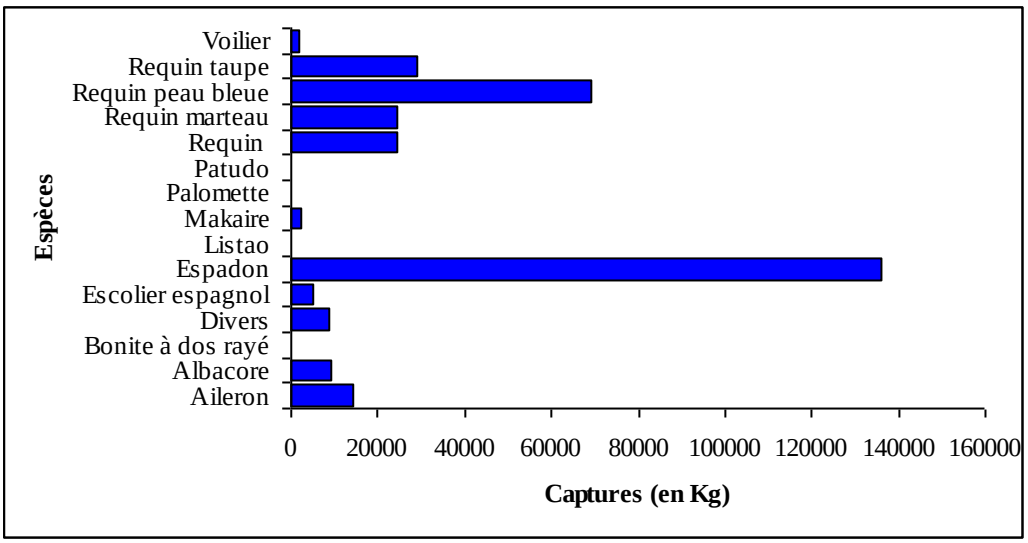

Figure 3 Prises totales par espèce da la flottille palangrière en 2008