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Estimated marine fish landings (in tonnes) in India during 2002 and 2003

- ❖ The estimated total marine fish landings during 2003 was 2.58 million tonnes compared to 2.59 million tonnes in 2002.
- ❖ Sixty eight percentage of the total landings was by mechanized sector, 25% by motorized sector and 7%-by artisanal sector during the year 2002 and it was 66%, 27% and 7% respectively during 2003.
- ❖ Trawl net (mechanized) and gill net (motorized) are the important gears operating throughout the Indian coast.
- ❖ During the year 2002, 35% of the total landings was from northwest region, 33% from southwest region, 23% from southeast region and 9% from northeast region.
- ❖ Thirty five percentage of the total landings was from southwest region, 33% from northwest, 22% from southeast and 10% from northeast during the year 2003.
- ❖ Of the four regions, contribution from northeast was the least during the two years.
- ❖ Oil sardine contributed 13.3% and 15.7%, Bombayduck 4.8% and 4.9%, lesser sardine 3.9% each, threadfin breams 4.3% and 4.1%, croakers 4.8% and 4.7%, ribbon fish 7.6% and 5.7%, Indian mackerel 3.6% and 4.3%, penaeid prawns 7.9% and 8.3%, non-penaeid prawns 5.3% each and cephalopods 4% and 4.6% respectively during the years 2002 and 2003.
- ❖ Trawl landings from northwest, southwest, southeast and northeast were 21%, 13%, 10% and 2.8% respectively during 2002, while during 2003 the corresponding regionwise contributions were 21%, 12%, 9% and 3.4% of the total catch (all India).
- ❖ Ring seine and purse seine are two important gears operating in southwest region in addition to trawl net and gill net. Twenty eight percentage of the region's catch was by ring seine during 2002 and it was 30% during 2003. Purse seine landings were 12% and 13.7% respectively.
- ❖ Dol net is an important gear in northwest region. Its contribution was 22% each during 2002 and 2003 of the total landings of the region.
- ❖ On all India basis 4th quarter is the most productive period contributing 37% and 34% respectively during 2002 and 2003 and 26% each during the 1st quarter. Contribution during 3rd quarter is 21% and 22% each. Second quarter is the least productive season.

Table 1. All India marine fish landings (x 000 tonnes) during 2002 and 2003

Sector	Catch/Effort	2002	2003
Mechanised	Landings (x 000 tonnes)	1768	1695
	Units (x '000)	2823	2543
	AFH (x '000)	50059	46796
Motorised	Landings (x 000 tonnes)	647	702
	Units (x '000)	5605	5971
	AFH (x '000)	25495	26818

Artisanal	Landings (x 000tonnes)	175	182
	Units (x '000)	3605	4218
	AFH (x '000)	14250	16959
Total	Landings (x 000 tonnes)	2590	2579
	Units (x '000)	12233	12732
	AFH (x '000)	89804	90573

AFH - Actual Fishing Hours Units -- Number of unit operations or boat - days

Table 2. Estimated quarterwise marine fish landings (in tonnes)

Name of fish	2002					2003 (provisional)				
	IQR	II QR	III QR	IV QR	TOTAL	IQR	II QR	IIIQR	IV QR	TOTAL
Sharks	10508	5435	9680	11254	36877	8555	6085	5350	9039	29029
Skates	1124	508	341	606	2579	671	502	482	888	2543
Rays	5511	3481	5320	5204	19516	8729	3915	6569	5810	25023
Eels	3912	1005	1159	3174	9250	2018	1282	3179	3834	10313
Catfishes	14007	13646	7556	22402	57611	13492	7603	11328	19997	52420
Wolf herring	4315	1654	3978	6601	16548	4612	2113	2933	4727	14385
Oil sardine	56392	59589	90357	137765	344103	102082	80192	77521	144157	403952
Other sardines	27230	12216	15075	45172	99693	34402	11803	12517	40480	99202
Hilsa shad	1375	3115	12809	6459	23758	3219	5256	26126	3296	37897
Other shads	2001	305	350	1649	4305	2117	838	275	1370	4600
<i>Coilia</i>	11397	6123	3588	18602	39710	13544	6060	4266	11683	35553
<i>Setipinna</i>	954	206	767	4629	6556	2329	158	1093	1791	5371
<i>Stolephorus</i>	5661	8374	9007	19683	42725	10915	11975	3911	13726	40527
<i>Thryssa</i>	10046	6542	5662	8788	31038	9418	4217	4922	8146	26703
Other clupeids	12815	6928	9449	14416	43608	10819	5460	7806	13677	37762
Bombayduck	19016	18756	11394	73863	123029	24938	20930	18573	62967	127408
Lizard fishes	6400	5111	7057	7922	26490	6881	7558	7254	8170	29863
Halfbeaks & Full beaks	1354	915	582	2648	5499	1406	583	596	2641	5226
Flying fishes	90	5005	950	159	6204	345	3997	324	183	4849
Rock cods	8473	2932	8029	6105	25539	3034	3717	3741	6398	16890
Snappers	2054	1238	582	1092	4966	1998	1072	1073	1857	6000
Pig-face breams	4138	2148	3733	1376	11395	4447	2200	1917	1973	10537
Threadfin breams	37028	16968	21214	35178	110388	26218	26578	23816	28313	104925
Other perches	18382	8156	10452	11150	48140	9157	7123	11075	10610	37965
Goatfishes	3052	1789	3467	3699	12007	2867	1705	3311	4576	12459
Threadfins	2679	2322	1361	3109	9471	2892	1647	1326	3391	9256
Croakers	38078	19908	19052	46104	123142	34998	16660	25880	44153	121691

Ribbon fishes	49536	15250	37513	94334	196633	38694	11414	30099	67706	147913
Horse Mackerel	4468	6351	4383	6028	21230	5878	5614	9616	9819	30927
Scads	6724	6086	17462	8353	38625	6224	7589	5578	9102	28493
Leather-jackets	1490	976	1224	2548	6238	3001	1174	1802	4547	10524
Other carangids	15179	9710	19278	14526	58693	13796	10407	13871	19498	57572
Silverbellies	16615	11415	14930	16486	59446	11023	7947	13644	14520	47134
Big-jawed jumper	1083	370	1056	1476	3985	1032	506	504	1080	3122
Black pomfret	4106	1344	2511	4401	12362	2652	1924	5013	6025	15614
Silver pomfret	4772	2505	10701	7052	25030	3804	2515	8600	6515	21434
Chinese pomfret	384	142	341	1175	2042	549	163	629	647	1988
Mackerels	28481	15319	23211	27022	94033	19676	21330	29772	41107	111885
<i>S. commersoni</i>	7382	3017	8225	17291	35915	7397	5652	9913	10835	33797
<i>S. guttatus</i>	2637	1041	6470	5795	15943	2989	1997	5488	4409	14883
<i>S. lineolatus</i>	0	0	14	0	14	0	0	0	0	0
<i>Acanthocybium</i> spp.	7	3	1	13	24	15	0	1	8	24
<i>E. affinis</i>	4694	3190	5540	7732	21156	5165	4316	3769	5591	18841
<i>Auxis</i> . spp	2196	3705	2360	1990	10251	2312	6147	1790	2148	12397
<i>K. pelamis</i>	250	117	1242	324	1933	717	304	287	137	1445
<i>T. tonggol</i>	524	994	684	3094	5296	600	208	1188	1366	3362
Other tunnies	928	199	997	1689	3813	1627	972	3098	2939	8636
Billfishes	1137	673	1231	710	3751	1932	980	734	610	4256
Barracudas	4707	3125	4264	4716	16812	3785	2927	2651	4706	14069
Mulletts	1393	719	1791	1573	5476	1176	572	1156	1091	3995
Unicon cod	214	447	98	132	891	157	470	68	205	900
Halibut	229	186	434	322	1171	315	250	295	307	1167
Flounders	24	25	58	41	148	12	9	19	10	50
Soles	13557	5082	5840	15949	40428	14709	6112	7975	15796	44592
Penaeid prawns	59679	38364	53760	51998	203801	54009	37991	67547	54458	214005
Non-penaeid prawns	30781	29156	12036	65741	137714	27512	33167	16759	59791	137229
Lobsters	378	150	252	552	1332	356	182	243	467	1248
Crabs	10397	7102	8369	10181	36049	10820	8782	8345	14066	42013
Stomatopods	27217	9571	809	10956	48553	22989	7971	1133	5248	37341
Bivalves	179	21	96	2846	3142	46	92	135	50	323
Gastropods	254	549	598	216	1617	415	376	395	225	1411
Cephalopods	24443	12929	25890	40717	103979	28041	25175	27347	36715	117278
Miscellaneous	33290	12406	12925	29351	87972	23568	9729	14479	29149	76925
Total	667327	416614	549565	956139	2589645	663096	466193	561107	888746	2579142
Effort(AFH)	25279734	16059872	19973998	28495408		25376724	19160136	19711015	26329640	

(* excluding Island territories)

Regionwise landings

Northeast

- ❖ This region comprises of the states of West Bengal and Orissa consisting 100 landing centers of which most of them are seasonal. Paradeep Fishing Harbour is the major harbour in the region.
- ❖ During the year 2002, the estimated landings of this region was 2.27 lakh tonnes out of which a lion's share was from the West Bengal coast. In 2003, the landings touched 2.63 lakh tonnes registering a 16% increase from this region.
- ❖ Fishing season starts from July and ends with February. Most productive season was the fourth quarter and the lean season was the second quarter. In 2002, the fourth quarter landings crossed 1.2 lakh tonnes while in 2003, the contribution was less than one lakh tonnes recording a reduction of about 17%. The other two quarters recorded increase in the landings during 2003.
- ❖ Important resources from this region were Bombay duck, prawns, *Hilsa* spp. croakers, cat fishes, ribbonfishes, pomfrets, white baits and carangids. More than 50% of the pomfrets landed were silver pomfrets. *Arius dussumieri* and *A. tenuispinis* were the major cat fishes available here. Except ribbon fishes and pomfrets, all the other resources showed an improvement in their landings during 2003.
- ❖ In the mechanized sector, trawl net, gill net, bag net and hooks and Unes were the major gears operating in this region. Trawlers and gill netters conducted multiday fishing. Gill net, bag net and hooks & lines were the important gears in the motorized sector. Shore seine operations were also reported from this region. All the gears showed marginal improvement in 2003 landings.
- ❖ The bag net landings from the mechanized boats have doubled during 2003 and the same gear in the motorized sector, experienced a reduction of nearly 4000 tonnes. Contribution from the artisanal sector remained more or less equal with 7%. Mechanized sector showed a 5% increase in 2003 whereas motorised sector declined by about the equal percentage.
- ❖ Bombay duck and non-penaeid prawns were caught in bag nets. White baits, croakers, ribbon fishes and penaeid prawns, are abundant in trawl nets. *Hilsa shad*, seer fishes and pomfrets are the main catches of gill nets. Cat fishes are caught by trawl net, gill net and hooks & lines.
- ❖ During 2003 catch per unit effort increased in the case of all gears except motorized bag net. Catch per hour has slightly decreased in the case of trawl nets.
- ❖ Among the clupoeids, *Hilsa* spp. was the major component of the landings followed by golden anchovy and *Setipinna* spp.

Table 3. Estimated quarter wise marine fish landings (in tonnes) in the northeast region

Name of fish	2002					2003				
	IQR	II QR	III QR	IV QR	TOTAL	IQR	II QR	IIIQR	IV QR	TOTAL
Sharks	526	201	1170	643	2540	617	259	1437	758	3071
Skates	58	2	16	2	78	49	0	14	1	64
Rays	256	111	362	916	1645	464	63	356	338	1221
Eels	932	100	349	469	1850	375	71	472	1061	1979
Catfishes	3979	1002	2692	5539	13212	4279	927	5519	4577	15302
Wolf herring	479	125	856	1672	3132	696	205	997	658	2556
Oil sardine	0	3	63	70	136	22	279	0	13	314
Other sardines	1169	481	646	2377	4673	1509	154	418	2676	4757
Hilsa shad	1088	3039	12010	5688	21825	961	1939	25676	3189	31765
Other shads	1	0	1	20	22	4	0	0	6	10
<i>Coilia</i>	1443	127	739	2562	4871	3063	111	1003	2729	6906

<i>Setipinna</i>	932	191	767	4582	6472	2256	141	1052	1623	5072
<i>Stolephorus</i>	927	85	12	256	1280	323	74	108	166	671
<i>Thryssa</i>	755	55	574	2014	3398	932	194	223	335	1684
Other clupeids	1600	352	2195	4860	9007	2544	560	2377	3243	8724
Bombayduck	4215	767	3637	18669	27288	13019	976	9322	19281	42598
Lizard fishes	140	114	44	767	1065	208	35	202	181	626
Halfbeaks & Full beaks	3	0	0	4	7	27	0	0	6	33
Flying fishes	5	0	0	0	5	0	0	0	0	0
Rock cods	34	7	0	0	41	36	0	0	1	37
Snappers	8	7	3	11	29	13	10	14	0	37
Pig-face breams	0	0	0	0	0	3	0	0	0	3
Threadfin breams	194	39	211	914	1358	994	66	829	63	1952
Other perches	369	104	399	771	1643	596	104	1057	986	2743
Goat fishes	182	32	474	1101	1789	904	60	306	497	1767
Threadfins	144	26	455	340	965	252	112	277	166	807
Croakers	4793	665	3576	15126	24160	7850	1059	6075	10501	25485
Ribbon fishes	3478	485	2180	9346	15489	4207	853	2335	6613	14008
Horse mackerel	357	120	894	1690	3061	653	176	790	1628	3247
Scads	244	17	98	163	522	666	6	109	141	922
Leather-jackets	178	182	417	689	1466	246	148	363	714	1471
Other carangids	606	108	601	624	1939	337	301	585	682	1905
Silverbellies	746	160	137	1413	2456	572	162	315	595	1644
Big jawed jumper	104	23	16	56	199	97	24	20	128	269
Black pomfret	976	184	471	1469	3100	881	110	551	2295	3837
Silver pomfret	921	662	3027	2400	7010	949	774	3134	2036	6893
Chinese pomfret	144	64	248	908	1364	249	33	393	364	1039
Mackerels	1389	21	541	2084	4035	2161	303	640	3586	6690
<i>S. commersoni</i>	135	25	195	959	1314	136	17	273	580	1006
<i>S. guttatus</i>	484	164	1409	781	2838	369	348	1067	999	2783
<i>E. affinis</i>	48	6	36	45	135	33	4	9	110	156
<i>Auxis</i> spp.	0	0	34	37	71	29	9	61	0	99
<i>K. pelamis</i>	0	0	0	5	5	0	0	0	0	0
Other tunnies	0	0	0	0	0	16	0	0	0	16
Bill fishes	0	8	0	25	33	30	0	1	0	31
Barracudas	56	6	415	1	478	15	0	4	15	34
Mulletts	23	62	78	88	251	227	82	124	76	509
Soles	240	135	131	436	942	484	104	207	433	1228
Penaeid prawns	4409	665	2241	7066	14381	5618	844	4248	7636	18346
Non-penaeid prawns	5072	29	426	13189	18716	9869	17	698	11698	22282
Lobsters	17	0	4	8	29	0	7	12	2	21
Crabs	895	163	456	1360	2874	1139	89	1017	1678	3923
Stomatopods	147	26	11	234	418	185	31	33	109	358
Cephalopods	171	10	86	603	870	624	36	762	601	2023
Miscellaneous	1878	503	1127	6968	10476	2119	661	2636	2160	7576
Total	46950	11463	46530	122020	226963	73907	12538	78121	97934	262500
Effort(AFH)	1496388	533757	3435841	3299972		2169129	931776	3301477	2256170	

Table 4. Estimated gearwise total landing and catch rates in northeast region

Sector	Major gears	2002					2003				
		Total (x000 tonnes)	Effort (x000)		CPUE (kg/unit)	CPH (kg/hour)	Total (x000 tonnes)	Effort(x000)		CPUE (kg/unit)	CPH (kg/hour)
			Units	AFH				Units	AFH		
Mechanised											
	Trawl net	72	42	1753	1713	41	86	37	2306	2308	38
	Gillnet	48	92	3671	527	13	53	97	2864	550	19
	Bagnet	14	24	255	610	57	27	37	409	738	66
	Others	.3	2	15	-	-	.6	2	95	-	-
Motorised											
	Gillnet	22	279	1011	80	22	24	254	854	94	28
	Bagnet	50	120	745	419	67	46	138	753	335	61
	Others	4	55	320	-	-	7	50	288	-	-
Artisanal		16	374	995	42	16	18	382	1089	46	16

CPUE : Catch per unit effort CPH : Catch per hour AFH : Actual fishing hours

Units : Number of unit operations or boat-days

Southeast

- ❖ Tamil Nadu, Andhrapradesh and Pondicherry constitute the southeast region. Its contribution to all India landings was nearly 6 lakh tonnes.
- ❖ The landings declined in 2003 as compared to 2002 and decrease was about 20,900 tonnes.
- ❖ Oil sardine, other sardines, ribbonfishes, mackerel, penaeid prawns and cephalopods were the major exploited resources in this region.
- ❖ The mechanized sector contributed 48% and 45% to the total landings during the years 2002 & 2003 respectively. The major gears operating in the mechanized sector were trawl net, gillnet and hooks & line. In rare cases, bagnet and dolnet were also operated in some centres. Trawl net contributed 90% of the total landings in the mechanized sector.
- ❖ Motorised sector contributed 33% and 34% respectively during the years 2002 & 2003. Outboard gillnet contributed 85% of the total catch in motorized sector. Other gears in operation were hooks & line, trawl net, ring seine, boat seine and bagnet.
- ❖ Artisanal sector contributed 19% and 21% respectively during the years 2002 & 2003. It includes trawl net, gillnet, hooks & line, shore seine, boat seine.
- ❖ In the southeast region, the maximum landing was registered in the third quarter and the least landings was recorded in the second quarter. The first and fourth quarter landings were almost the same.
- ❖ From 2001 onwards, the Governments of Andhrapradesh and Tamilnadu imposed fishing ban for a period of 45 days from April 16th to May 31.

Table 5. Estimated quarter wise marine fish landings (in tonnes) in the southeast region

Name of fish	2002					2003				
	IQR	II QR	III QR	IV QR	TOTAL	IQR	II QR	IIIQR	IV QR	TOTAL
Sharks	2351	2062	1636	538	6587	2205	1168	1158	873	5404
Skates	440	85	244	62	831	130	138	198	109	575
Rays	3960	2525	4369	2631	13485	7096	3069	5408	3805	19378
Eels	467	235	541	480	1723	565	485	809	648	2507
Catfishes	1998	891	1609	1278	5776	1879	1096	1819	1380	6174
Wolf herring	1041	341	892	1790	4064	1354	531	781	2014	4680
Oil sardine	7752	18166	4098	3186	33202	4272	21488	18135	9706	53601
Other sardines	23675	10039	13089	34467	81270	28292	9655	11655	20984	70586
Hilsa shad	97	26	3	76	202	2215	3185	431	90	5921
Other shads	876	230	229	1088	2423	931	455	89	850	2325
<i>Coilia</i>	146	138	107	136	527	323	11	87	84	505
<i>Setipinna</i>	22	15	0	47	84	73	17	41	168	299
<i>Stolephorus</i>	2486	3117	2060	6016	13679	4602	2493	1485	3864	12444
<i>Thryssa</i>	4022	3461	2909	3288	13680	4398	1349	2358	2745	10850
Other clupeids	7292	4144	3981	4097	19514	4446	2549	2888	4594	14477
Bombayduck	101	229	431	993	1754	301	21	44	335	701
Lizard fishes	1127	2040	3429	1386	7982	974	953	2639	1708	6274
Half beaks & Full beaks	716	673	450	1442	3281	593	328	358	989	2268
Flying fishes	49	5005	950	52	6056	344	3997	312	173	4826
Rock cods	888	306	1067	139	2400	1047	1977	545	399	3968
Snappers	459	523	359	266	1607	1444	812	962	468	3686
Pig-face breams	3861	2005	3615	1182	10663	4276	2169	1905	1553	9903
Threadfin breams	1617	2112	3555	1657	8941	1548	1434	3158	1718	7858
Other perches	3495	2352	5271	3520	14638	3777	2835	6415	4145	17172
Goat fishes	2413	1642	2830	2032	8917	1761	1535	2982	3176	9454
Thread fins	196	260	342	471	1269	188	110	370	305	973
Croakers	3716	2646	4713	4737	15812	6242	2258	4159	5268	17927
Ribbon fishes	1730	1287	10357	10478	23852	7100	441	5926	7367	20834
Horse Mackerel	1240	211	144	323	1918	484	447	597	631	2159
Scads	1054	1099	3094	1332	6579	2826	1222	1997	974	7019
Leather-jackets	732	397	236	353	1718	1733	527	343	719	3322
Other carangids	8390	5415	6591	5312	25708	5943	5123	6386	6607	24059
Silverbellies	12343	8066	11939	11607	43955	7373	5384	8644	9798	31199
Big-jawed jumper	101	60	527	246	934	76	46	155	179	456
Black pomfret	955	509	971	524	2959	942	1303	1140	960	4345
Silver pomfret	962	474	2012	1434	4882	1049	262	1499	1241	4051
Chinese pomfret	22	33	62	81	198	48	20	122	107	297
Mackerels	12849	7464	10159	7032	37504	9747	7376	7432	10139	34694
<i>S. commersoni</i>	3528	2112	3850	2514	12004	1972	3342	2292	2153	9759

<i>S. guttatus</i>	826	141	1106	733	2806	804	389	1115	1259	3567
<i>Acanthocybium</i> spp.	5	3	1	4	13	2	0	1	7	10
<i>E. affinis</i>	2084	1094	918	1270	5366	499	862	1554	382	3297
<i>Auxis</i> spp.	270	622	243	542	1677	120	323	375	59	877
<i>K. pelamis</i>	62	51	540	172	825	373	64	217	31	685
<i>T. tonggol</i>	46	911	191	40	1188	74	18	456	251	799
Other tunnies	159	19	252	127	557	714	465	615	413	2207
Bill fishes	659	334	237	220	1450	598	331	574	44	1547
Barracudas	1872	1870	2747	3062	9551	1893	1237	1511	1762	6403
Mullets	557	141	1062	519	2279	388	245	729	448	1810
Halibut	69	139	355	221	784	237	163	239	133	772
Flounders	21	23	43	31	118	11	7	18	10	46
Soles	565	500	1289	931	3285	744	897	1382	805	3828
Penaeid prawns	7802	8566	13498	8444	38310	8219	5586	11345	8556	33706
Non-penaeid prawns	1541	1147	3036	800	6524	591	1398	2615	1781	6385
Lobsters	50	28	77	56	211	56	46	58	55	215
Crabs	2901	3213	7120	6310	19544	3598	3344	5519	8244	20705
Stomatopods	226	168	564	563	1521	289	463	808	755	2315
Bivalves	179	21	96	2615	2911	46	92	135	34	307
Gastropods	120	249	509	139	1017	326	202	208	178	914
Cephalopods	1733	3060	7599	3285	15677	2415	2026	9227	3251	16919
Miscellaneous	6203	5344	8345	4952	24844	4960	2621	6118	4195	17894
Total	147119	120039	162549	153329	583036	151526	112390	152543	145679	562138
Effort(AFH)	8469160	7032144	10039634	9259967		9318325	7741839	9747595	9673987	

Table 6. Estimated gearwise total landings and catch rates in southeast region

Sector	Major gears	2002					2003				
		Catch (x 000 tonnes)	Effort (*000)		CPUE (in kgs)	CPH (in Kgs)	Catch (x 000 tonnes)	Effort (*000)		CPUE (in kgs)	CPH (in Kgs)
			Units	AFH				Units	AFH		
Mechanised											
	Trawl-net	269	550	9973	489	27	234	467	8680	502	27
	Gillnet	7	37	270	199	27	7	55	391	124	18
	Hooks & lines	2	13	88	160	23	7	15	393	457	17
	Others	1	1	2	-	-	6	3	18	-	-
Motorised											
	Gillnet	163	2930	11711	56	14	151	2839	11227	53	13
	Hooks & lines	14	229	1175	61	12	19	353	1751	54	11
	Others	14	79	378	-	-	17	78	515	-	-
Artisanal		112	2488	11204	45	10	120	2980	13506	40	9

CPUE : Catch per unit effort CPH : Catch per hour AFH : Actual fishing hours

Units : Number of unit operations or boat-days

Southwest

- ❖ Southwest region of India comprises the maritime states of Kerala, Karnataka and Goa and contributes significantly to the marine fish production. The estimated marine fish landings were 8,62,000 tonnes and 9,03,000 tonnes for 2002 and 2003 respectively.
- ❖ Oil sardine formed the bulk of marine fish landings during the year 2002 and 2003. Heavy landings of this resource occurred in the last quarter. Motorised ring seines contributed about 57% of the landings. There was an increase in oil sardine landings during 2003 compared to 2002.
- ❖ Other commercially important resources were penaeid prawns, mackerel, threadfin breams, cephalopods, soles, ribbon fishes, stomatopods, carangids and white baits.
- ❖ During the year 2002 there were heavy landings in the 4th quarter followed by 3rd, 1st and 2nd quarters. During the year 2003 the 4th quarter ranks first followed by 1st, 3rd and 2nd quarters.
- ❖ Ring seine operations are carried out both by the mechanized and motorized sector. The CPUE and CPH in the mechanized sector is more than double to that of the motorized sector.
- ❖ The CPUE and CPH of purse-seines showed an increase in 2003, whereas for trawlnets it declined for 2003 when compared to that of 2002.

Table 7. Estimated quarter wise marine fish landings (in tonnes) in the southwest region

Name of fish	2002					2003				
	IQR	II QR	III QR	IV QR	TOTAL	IQR	II QR	IIIQR	IV QR	TOTAL
Sharks	661	458	747	1754	3620	1218	1629	495	1097	4439
Skates	106	206	12	47	371	56	58	22	151	287
Rays	565	505	368	774	2212	652	282	384	691	2009
Eels	176	132	34	41	383	52	75	43	118	288
Catfishes	51	53	431	399	934	256	54	212	184	706
Wolf herring	405	115	110	800	1430	444	72	49	532	1097
Oil sardine	40498	41142	86016	130302	297958	95546	57515	59277	132403	344741
Other sardines	782	954	1272	5638	8646	3787	1245	290	14985	20307
Hilsa shad	34	19	60	4	117	40	101	17	0	158
Other shads	9	2	0	7	18	69	142	14	37	262
<i>Coilia</i>	0	0	1	0	1	33	0	0	0	33
<i>Stolephorus</i>	2245	4996	6930	13366	27537	5847	9406	2312	9694	27259
<i>Thryssa</i>	3295	2231	1821	1806	9153	3269	1986	1456	2653	9364
Other clupeids	587	1085	2554	1922	6148	1558	1004	1375	3263	7200
Lizard Fishes	2743	2052	3069	1106	8970	4046	5560	3264	1827	14697
Half beaks & Full beaks	282	197	97	1097	1673	687	187	165	1526	2565
Flying fishes	36	0	0	107	143	1	0	0	1	2
Rock cods	5319	1764	6735	3916	17734	1264	1104	2333	1918	6619
Snappers	813	677	141	317	1948	382	60	8	537	987
Pig-face breams	209	133	91	72	505	77	11	0	22	110
Threadfin breams	19294	7579	15118	5829	47820	14201	12390	13795	4030	44416
Other perches	11033	4499	4174	4224	23930	3498	3610	3106	2986	13200

Goatfishes	148	22	42	3	215	2	1	0	0	3
Threadfins	2	0	16	49	67	80	21	0	93	194
Croakers	3792	2842	2921	2363	11918	2776	2385	5231	1880	12272
Ribbon fishes	4871	4201	13506	15799	38377	1867	2538	4407	18054	26866
Horse Mackerel	1332	589	1300	2323	5544	1770	2523	4791	3555	12639
Scads	3475	4917	14260	5726	28378	2104	6181	3165	6175	17625
Leather-jackets	42	163	228	204	637	276	31	255	235	797
Other carangids	4246	3398	11266	6811	25721	6244	3981	4426	7983	22634
Silverbellies	3192	3141	2845	2970	12148	2683	2203	4651	3696	13233
Big-jawed jumper	662	170	322	546	1700	287	243	286	465	1281
Black pomfret	357	350	268	657	1632	167	108	1662	825	2762
Silver pomfret	373	22	115	461	971	62	43	108	245	458
Chinese pomfret	3	15	9	2	29	0	0	0	42	42
Mackerels	12099	6858	11924	10684	41565	5691	10704	20645	23654	60694
<i>S. commersoni</i>	974	299	2312	7970	11555	3740	1518	3894	4512	13664
<i>S. guttatus</i>	25	66	158	742	991	33	69	162	147	411
<i>S. lineolatus</i>	0	0	14	0	14	0	0	0	0	0
<i>Acanthocybium</i> spp.	2	0	0	9	11	13	0	0	1	14
<i>E. affinis</i>	1545	1760	3748	4663	11716	3864	3051	1621	3413	11949
<i>Auxis</i> spp.	1896	3075	1781	1199	7951	2131	5803	1149	2069	11152
<i>K. pelamis</i>	153	50	702	147	1052	306	188	64	71	629
<i>T. tonggol</i>	84	49	179	122	434	161	34	74	779	1048
Other tunnies	276	95	702	631	1704	522	123	2343	951	3939
Bill fishes	248	301	885	295	1729	846	606	91	137	1680
Barracudas	2052	970	940	969	4931	1476	1320	807	2039	5642
Mulletts	17	29	241	67	354	5	31	33	102	171
Halibut	26	4	26	9	65	47	47	1	0	95
Flounders	3	2	15	10	30	1	2	1	0	4
Soles	10541	3515	3609	12145	29810	12195	4318	5529	13040	35082
Penaeid prawns	20148	11873	21090	9435	62546	19453	14025	17072	7391	57941
Non-penaeid prawns	4816	1221	1166	2860	10063	1675	155	5489	3185	10504
Lobsters	152	52	56	213	473	179	44	95	124	442
Crabs	4881	2347	252	579	8059	3560	3241	660	758	8219
Stomatopods	21586	7076	45	8143	36850	15295	5332	100	3525	24252
Bivalves	0	0	0	231	231	0	0	0	16	16
Gastropods	130	300	89	77	596	89	174	187	47	497
Cephalopods	8847	4429	15087	6689	35052	7047	10303	11935	11115	40400
Miscellaneous	2847	774	601	1201	5423	1102	747	521	891	3261
TOTAL	204986	133774	242501	280532	861793	234732	178584	190072	299870	903258
Effort(AFH)	5256691	3230804	2908611	4673868		5566073	4296771	2558479	4371402	

Table 8. Estimated gearwise total landings and catch rates in southwest region

	Major Gears	2002					2003				
		Landings (x000 tonnes)	Effort (in '000)		CPUE (Kg./Unit)	CPH (Kg./Hr)	Landings (x000 tonnes)	Effort (in '000)		CPUE (Kg./Unit)	CPH (Kg./Hr)
			Units	A.FH				Units	A.FH		
Mechanised											
	Trawl net	345	576	7375	598	46	313	614	7821	509	40
	Purse-seine	105	77	293	1362	357	124	79	317	1555	391
	Ring seine	19	6	13	3008	1430	27	10	25	2612	1076
	Others	11	37	566			8	8	452		
Motorised											
	Ring seine	220	217	435	1013	506	246	234	458	1048	536
	Gillnet	66	773	3550	85	18	87	782	3913	111	22
	Others	51	596	2287			55	528	1963		
Artisanal	44	625	1546	69	28	42	737	1840	57	22	

A.F.H. -Actual Fishing Hours CPUE - Catch Per Unit Effort CPH - Catch Per Hour

Units - Number of unit operations or boat-days

Northwest

- ❖ Maharashtra and Gujarat together constitute northwest region.
- ❖ Its contribution to all India landings was about 9 lakh tonnes.
- ❖ The landings declined in the year 2003 compared to 2002 and the decrease was about 65,000 tonnes.
- ❖ The fourth quarter registered the highest landings (40%) followed by first quarter (27%) and the least landings of about 10% was registered by third quarter.
- ❖ Sharks, cat fishes, *Coilia* spp., Bombay duck, threadfin breams, croakers, ribbonfishes, pomfrets, mackerel and seer fishes are the major exploited resources in this region.
- ❖ The major gears in operation were trawl net, purse seine, dol net and gill net.
- ❖ About 60% of the total catch was contributed by mechanized trawl net.
- ❖ Dol net contributed 22% and gill net contributed 6% to the total catch.
- ❖ The landings by trawl net, gill net, purse seine and dol net registered declining trend whereas hooks & lines and motorized units registered improvements in the landings.
- ❖ The CPUE of trawl net showed increase whereas catch/hour for both years were more or less the same.
- ❖ The CPUE of purse seine showed an increase but catch/hour declined.
- ❖ For dol net CPUE decreased and catch/hour remained the same.

Table 9. Estimated quarter wise marine fish landings (in tonnes) in the northwest region

Name of fish	2002					2003 (provisional)				
	IQR	II QR	III QR	IV QR	TOTAL	IQR	II QR	IIIQR	IV QR	TOTAL
Sharks	6970	2714	6127	8319	24130	4515	3029	2260	6311	16115
Skates	520	215	69	495	1299	436	306	248	627	1617
Rays	730	340	221	883	2174	517	501	421	976	2415

Eels	2337	538	235	2184	5294	1026	651	1855	2007	5539
Catfishes	7979	11700	2824	15186	37689	7078	5526	3778	13856	30238
Wolf herring	2390	1073	2120	2339	7922	2118	1305	1106	1523	6052
Oil sardine	8142	278	180	4207	12807	2242	910	109	2035	5296
Other sardines	1604	742	68	2690	5104	814	749	154	1835	3552
Hilsa shad	156	31	736	691	1614	3	31	2	17	53
Other shads	1115	73	120	534	1842	1113	241	172	477	2003
<i>Coilia</i>	9808	5858	2741	15904	34311	10125	5938	3176	8870	28109
<i>Stolephorus</i>	3	176	5	45	229	143	2	6	2	153
<i>Thryssa</i>	1974	795	358	1680	4807	819	688	885	2413	4805
Other clupeids	3336	1347	719	3537	8939	2271	1347	1166	2577	7361
Bombayduck	14700	17760	7326	54201	93987	11618	19933	9207	43351	84109
Lizard fishes	2390	905	515	4663	8473	1653	1010	1149	4454	8266
Half beaks & Full beaks	353	45	35	105	538	99	68	73	120	360
Flying fishes	0	0	0	0	0	0	0	12	9	21
Rock cods	2232	855	227	2050	5364	687	636	863	4080	6266
Snappers	774	31	79	498	1382	159	190	89	852	1290
Pig-face breams	68	10	27	122	227	91	20	12	398	521
Threadfin breams	15923	7238	2330	26778	52269	9475	12688	6034	22502	50699
Other perches	3485	1201	608	2635	7929	1286	574	497	2493	4850
Goatfishes	309	93	121	563	1086	200	109	23	903	1235
Threadfins	2337	2036	548	2249	7170	2372	1404	679	2827	7282
Croakers	25777	13755	7842	23878	71252	18130	10958	10415	26504	66007
Ribbon fishes	39457	9277	11470	58711	118915	25520	7582	17431	35672	86205
Horse Mackerel	1539	5431	2045	1692	10707	2971	2468	3438	4005	12882
Scads	1951	53	10	1132	3146	628	180	307	1812	2927
Leather-jackets	538	234	343	1302	2417	746	468	841	2879	4934
Other carangids	1937	789	820	1779	5325	1272	1002	2474	4226	8974
Silverbellies	334	48	9	496	887	395	198	34	431	1058
Big-jawed jumper	216	117	191	628	1152	572	193	43	308	1116
Black pomfret	1818	301	801	1751	4671	662	403	1660	1945	4670
Silver pomfret	2516	1347	5547	2757	12167	1744	1436	3859	2993	10032
Chinese pomfret	215	30	22	184	451	252	110	114	134	610
Mackerels	2144	976	587	7222	10929	2077	2947	1055	3728	9807
<i>S. commersoni</i>	2745	581	1868	5848	11042	1549	775	3454	3590	9368
<i>S. guttatus</i>	1302	670	3797	3539	9308	1783	1191	3144	2004	8122
<i>E. affinis</i>	1017	330	838	1754	3939	769	399	585	1686	3439
<i>Auxis</i> spp.	30	8	302	212	552	32	12	205	20	269
<i>K. pelamis</i>	35	16	0	0	51	38	52	6	35	131
<i>T. tonggol</i>	394	34	314	2932	3674	365	156	658	336	1515
Other tunnies	493	85	43	931	1552	375	384	140	1575	2474
Bill fishes	230	30	109	170	539	458	43	68	429	998

Barracudas	727	279	162	684	1852	401	370	329	890	1990
Mulletts	796	487	410	899	2592	556	214	270	465	1505
Unicorn cod	214	447	98	132	891	157	470	68	205	900
Halibut	134	43	53	92	322	31	40	55	174	300
Soles	2211	932	811	2437	6391	1286	793	857	1518	4454
Penaeid prawns	27320	17260	16931	27053	88564	20719	17536	34882	30875	104012
Non-penaeid prawns	19352	26759	7408	48892	102411	15377	31597	7957	43127	98058
Lobsters	159	70	115	275	619	121	85	78	286	570
Crabs	1720	1379	541	1932	5572	2523	2108	1149	3386	9166
Stomatopods	5258	2301	189	2016	9764	7220	2145	192	859	10416
Gastropods	4	0	0	0	4	0	0	0	0	0
Cephalopods	13692	5430	3118	30140	52380	17955	12810	5423	21748	57936
Miscellaneous	22362	5785	2852	16230	47229	15387	5700	5204	21903	48194
TOTAL	268272	151338	97985	400258	917853	202931	162681	140371	345263	851246
Effort (AFH)	10057495	5263167	3589912	11261601		8323197	6189750	4103464	10028081	

Table 10. Estimated gearwise total landings and catch rates in northwest region

Sector	Major gears	2002					2003				
		Catch (x000 tonnes)	Effort (x000)		CPUE (kg/unit)	CPH (kg/hr)	Catch (x000 tonnes)	Effort (x000)		CPUE (kg/unit)	CPH (kg/hr)
			Units	AFH				Units	AFH		
Mechanised											
	Trawl-net	547	423	14501	1293	38	535	335	13715	1598	39
	Purse-seine	33	17	68	1953	488	27	10	95	2673	281
	Dolnet	203	445	5064	456	40	188	498	4862	377	39
	Gillnet	75	359	5607	209	13	44	230	4021	191	11
	Hooks & lines	6	16	176	352	32	6	26	230	243	28
	Others	9	106	369	-	-	1	20	102	-	-
Motorised											
	Gillnet	39	486	3685	81	11	40	636	4532	63	9
	Others	3	41	198	-	-	8	79	564	-	-
Artisanal		3	118	505	27	6	3	119	524	22	5

CPUE : Catch per unit effort CPH : Catch per hour AFH : Actual fishing hours

Units : Number of unit operations or boat-days

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