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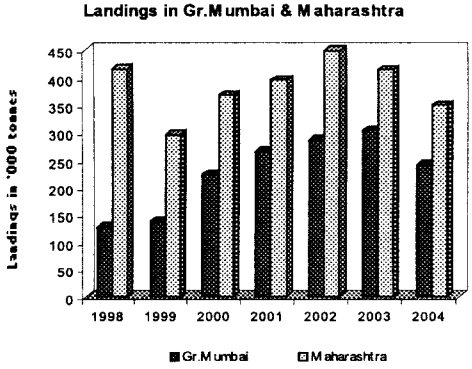
1137 Marine fish landings in Greater Mumbai during 1998-2004

Maharashtra ranks fourth among the maritime states of India. The important single centre zones like Sassoon Dock (SSD), New Ferry Wharf (NFW) and Versova are situated in Greater Mumbai (GRM). The landings per year in GRM was 2,30,000 t, which accounted nearly to 60%of Maharashtra landings. This report depicts the fishery of GRM based on the data for the period 1998 to 2004.

Craft and gears:- As per the rapid census conducted by CMFRI during 1998, there

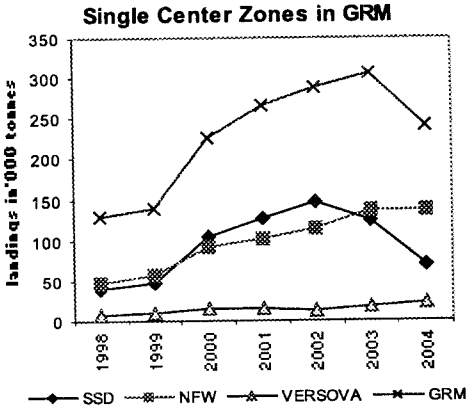


were 6198 crafts comprising 5612 mechanized boats, 8 plank-built boats, 578 dugout canoes in GRM. Out of the mechanized boats, trawlers constituted 71% followed by dolnetters 20%, gillnetters 7% and the rest by purse-seiners and long liners. Among the gears employed, gillnets were 31,615 in number followed by trawl nets 12,000, bagnets 5225 and purse-seines 65. Other gears include 1224 hooks & lines, shore-seines and others. Out of the 4000 trawlers operated in GRM, half of which were operated in SSD and 1000 trawlers were operated at NFW. All the trawlers were of 40' OAL. Similarly more than 60% of the trawlnets were operated at SSD and 3000 trawlnets were operated at NFW. Versova had still lesser number of trawlnets.

Trends in fish production :- The landings in GRM was steadily increasing from 1,29,060 t in 1998 to 3,04,780 t in 2003.Trawl landing also steadily increased up to 2002,but there was a slight decline during 2003 and 2004.The landings at SSD also increased from 39,306 t in 1998 to 1,46,477 t in 2002, but showed a decrease of about 20,000 t during 2003 and further declined in 2004. NFW landings showed a steady increase from 47,958 t in1998 to 1,36,524 t in 2003 and the trend was more or less same during 2004; but Versova showed an increase up to 2001,decreased in 2002 and then showed an increase during 2003 and 2004. The average landing at Versova was about 13,000 t whereas the average landings at NFW and SSD was more than 90,000 t per year. In GRM, the fourth quarter registered highest landings except in 2001 in which year the first quarter became the top. Next higher landing was in first quarter. The second quarter and third quarter remained more or less the same.

SSD is one among the major single center zones in GRM. Major type of gears like trawlnet, gillnet, purse-seine and dolnet were

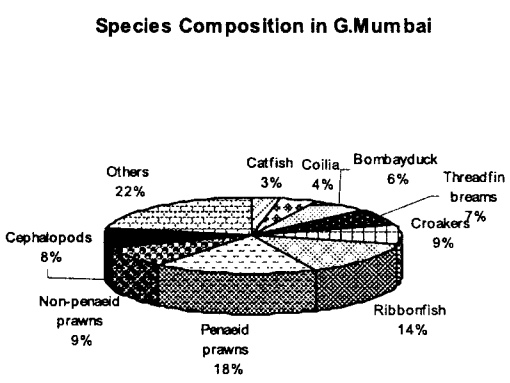
operated at SSD. Each gear made two types of fishing- multi day and single day. Most of the crafts used for multi day were of 100 H.P. Trawlnets landing at SSD(new) unload



prawns and other crustaceans in the morning. The same boats unload fishes at SSD(old) in the morning itself. There used to be no landings at SSD(new) in the afternoon. But other gears like dolnets and gillnets land at SSD(old) in the morning as well as in the afternoon. Hand trawl also operate at SSD. A wide variety of fishes were landed at SSD. The highest fish production of SSD was ribbon fishes which was in an increasing trend from 5,665 t in1998 to 39,891 t in 2001,but reduced in 2002, 2003 and 2004. The next higher contribution was that of penaeid prawns (18%). Cephalopods (12%) and threadfin breams (9%) also contributed highly to SSD landings followed by mackerel (5%), croakers (5%), catfishes (3%), Bombay duck (2%)and non-penaeid prawns (2%). Nearly one fourth of the production of Maharashtra was from SSD.

New ferry wharf is another important single center zone of GRM. Here landings occur in the morning only. The boats coming at night unload the catch in the morning. More than 100 trawlers daily unload their fishes at NFW. Trawlers, gillnetters and purse-seiners unloading their catches belong to mostly multi day fishing crafts. They spend an average of 95 to 110 hours per fishing trip. Most of them were of H.P 90-100. Dolnetters were mostly of the type single day fishing. NFW landing was in an increasing trend in tune with that of GRM landings. Fourth quarter recorded the highest landings except in 2001 in which year the first quarter became the highest (93,967 t). On an average, more than 95% of the landing was contributed by multi day trawl fishing. Jun-August recorded least landings because of southwest monsoon. In 2002, because of ban on fishing, only dolnet operated here in July giving 197 t. After monsoon usually September recorded heavy landings. Here penaeid prawns recorded the highest catch (20%). Next higher catch was that of croakers (13%). Other important resources were ribbon fishes (10%), Bombay duck (9%), cephalopods (7%), non-penaeid prawns (6%) and *Nemipterus* spp(5%).

Versova is another single center zone in Greater Mumbai. Usually third quarter recorded the least landings. There used to be no landings at Versova during July. September to May recorded good landings at an average of 13,104 t. Mechanised trawlers, hand trawl, dolnetters, gillnetters and outboard crafts were usually operated at Versova. Sharks (3%), catfishes (3%), *Coilia* spp. (9%), Bombay duck (8%), croakers (14%), ribbon fishes (4%), shrimps (30%), non-penaeid prawns (10%) and cephalopods



(3%) were the main fishery of Versova. The largest contribution was from penaeid prawns. It increased from 2057 tonnes in 1998 to 5920 tonnes in 2003 and 6713 tonnes during 2004.

Resource-wise landings :- The major fish groups occurring in GRM were penaeid prawns, non-penaeid prawns, ribbonfishes, croakers, cephalopods *Nemipterus* spp, Bombay duck, *Coilia* spp and catfishes.

More than 41,500 t of p.prawns occurred in GRM forming about 18% of the GRM landings. P.prawns catch steadily increased from 21550 t in 1998 to 64540 t in 2003 but reduced to 46,000 t during 2004. Third quarter recorded the peak period of p.prawns except in 1999 and 2002. Soon after the ban period September recorded good landings of p.prawns. Most of the species of p.prawns are available at GRM. *P. stylifera, M .affinis, M. monoceros* and *M.brevicornis* are the important species of p.prawns. More than 60% of p.prawns of GRM was from NFW and about 20% was from SSD. Ribbonfishes contribute 14% of GRM landings. *Trichiurus* was the major species occurring in GRM. It was in an increasing trend from 9000 t of 1998 to 55900 t of 2002 but declined considerably during 2003 and 2004. Highest landings occurred during fourth quarter followed by first quarter. About 90% of the landings were brought by trawlnet. SSD and NFW contributed about 80% of the ribbon fishes of GRM. Non-penaeid prawns contributed 9% to GRM landings. *Acetes, Exhippolysmatus* and *Nematopalaemon tennuipes* were the main species occurring in GRM. There was no trend in its occurrence. It's average landing in GRM was 22,000 t. It's catch fluctuated between 1999 and 2004. Fourth quarter registered peak landings followed by second quarter. The average landings in first and third quarter were more or less the same. More than 80% of n.p.prawns were contributed by mechanized dolnets whereas all other fish groups were contributed by multy day trawlnet (MDTN). NFW contributed more than 50% of the non-penaeid prawns of GRM. Nearly 40% of the zone MH-6 landings was non-penaeid prawns which was caught mainly by dolnets. Cephalopods contributed 8% to GRM landings. The major species occurring here were *L.duvaucelli, S.aculeata, Sepiella inermis* and *Sepia pharaonis*.

An average of 18,000 t of croakers was landed at GRM. They were mostly caught by MDTN. About 99% of its catch was by MDTN. Croakers contributed 9% to GRM landings. It increased from 9,888 t in 1998 to 20,235 t in 2000, with fluctuations between years. High landings occurred during

fourth quarter followed by first quarter. The common species occurring are *Johnius, Otolithes, O. biurates*, and *P. diacanthus*. More than 75% of croakers were contributed by NFW.

Nemipterus was another important species occurring in GRM. About 99% of the landings were brought by MDTN. The landings of *Nemipterus* steadily increased from 3,062 t in 1998 to 25,000 t in 2003 and slightly decreased to 24,500 t in 2004. It came about 7% of the GRM landings. Second quarter registered peak landings of *Nemipterus* followed by fourth quarter. SSD and NFW equally contributed to the threadfin breams landings of GRM.

Another important fishery was Bombay duck which was the main fishery of dolnet. It is very common in Northwest region. This fishery is represented by a single species namely *Harpodon nehereus*. Bombay duck contributed 6% to GRM landings. An average landing of 13,637 t of Bombay duck was recorded in GRM. It declined to 8455 t in1999 from 13,401 t of 1998. From 2000 onwards it was in an increasing trend and reached 20,864 t during 2003,but reduced considerably during 2004.About 70% of Bombay duck in GRM was contributed by New Ferry wharf. SSD contributed about 15% and Versova about 5%. It was mostly caught by multy day trawlnet in GRM although in Maharashtra more than 50% of Bombay duck was contributed by dolnet.

Catfishes and *Coilia* are other important species occurring in GRM. Catfishes came about 3% and *Coilia* came about 4% of the GRM landings. Only 50% of catfishes were caught by trawlnet. Remaining were brought by purse-seine, dolnet and gillnet. More than 80% of catfishes was caught from SSD and NFW. Although 50% of *Coilia* was caught by trawlnet, one third was caught by dolnet. *Coilia* was seen abundantly at Versova and it came to 9% of the total landings of Versova. The contribution of *Coilia* to NFW landings was only 4% and at SSD it was still less(2%).

Gear-wise landings :- Trawlnet, gillnet, purse-seine and dolnet are the important gears operating in GRM. Gillnet, bagnet and shore seine are the major non-mechanised gears. Nearly 78% of the landings were brought by trawlnet. MDTN, MTN and hand trawl are the different types of trawlnet. Nearly 95% of the trawl landings was due to MDTN. Its catch/effort was highest during fourth quarter (2500kg) and it was least during second quarter (2000kg). The catch/effort varied from 1478 kg to 2787kg and the average catch/effort was 2257 kg. The catch/hour also was highest during fourth quarter (48 kg) and it was least during first quarter. The catch/hour varied from 32 kg during 1999 to 42 kg during 2003. An average of 1,85,000 t landings were brought by mechanized trawlnet of which 99% was caught by MDTN. The trawl landings increased continuously from 83,000 t in 1998 to 2,44,000 t in 2003 but declined to 2 lakh t in 2004. About 95% of trawl landings was from multi day trawlnet.

Sharks, catfishes, *Coilia*, Bombay duck, *Nemipterus*, croakers, ribbon fishes, penaeid prawns, non-penaeid prawns and cephalopods were the main fishes occurred in trawlnet. Penaeid prawns contributed the highest landings (18%) followed by ribbon fishes (15%), non-penaeid prawns (10%) cephalopods (9%) and croakers (8%). Although *Nemipterus* contributed only 6%, more than 99% of its catch in GRM was by multi day trawlnet. 99% of cephalopods also were caught by MDTN.

Gillnet :- In addition to mechanized gillnet, outboard gillnet and bottomset gillnet also operated in GRM. The landings by gill net was least during third quarter and it was highest during first quarter. Gillnet contributed only 3% to GRM landings. Gillnet landings was steadily increasing from 1,908 t in 1998 to 9,990 t in 2003 but declined to 7000 t during 2004. The catch/effort was also highest during 2003 (395kg).

Purse-seine :- The purse-seine landings was fluctuating throughout the years. The highest landings was during 2003 (19,400 t) and declined in 2004. For purse-seine the catch/ effort varied from 1872 kg in 1999 to 5922kg during 1998 and it was only 2583 kg during 2004. But during 1998 the purse-seine landing was only 7400 t. Purse-seine usually operate at NFW and SSD(new) in GRM. The contribution by purse-seine to GRM landing was only 4%. Catfishes, sardines, carangids, pomfrets and mackerel were the main catches of purse-seine. Nearly 50% of mackerel and 20% of catfishes of GRM landings were caught by purse-seine. The most productive period of purse-seine was the fourth quarter.

Dolnet :- An average of 24,300 t were landed by dolnet in GRM. Its contribution to GRM landings was 20%. The dolnet landings was in fluctuating trend. The largest landing occurred in 1998 (36,600t.) and the least landing was during 2004(16,250 t.). The landings per boat varied from 176kg to 422kg. Bombay duck, *Coilia*, ribbon fishes, *Pampus argentius*, penaeid prawns, non-penaeid prawns were the main catches of dolnet. About 35% of non-penaeid prawns, 17% of Bombay duck and 13% of *Coilia* of GRM was contributed by dolnet. Good landings by dolnet were recorded during October to May period.

The landings by outboard gears, hooks & lines and non-mechanised gears were very meager and their contribution to total landings were less than 1%. Other important centres in Greater Mumbai are Madh, Yarangal Bhati, and Marve-Manori. At Madh both dolnetters and gillnetters operated. Yarangal bhati and Marve-Manori are important centers for *dol*net fishing. The fish production was high at Madh. At Madh, more than 196 mechanised boats operated where as at Yarangal Bhati and at Manori , the mechanized boats operated were 75 and 105 respectively according to Govt. of Maharastra report . Worli and Cuff Parade were also important centres where more than 150 mechanised boats operated.

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