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### RESEARCH ARTICLE

## OBSERVATIONS ON THE FISH SPECIES LANDED IN PFZ AND NON-PFZ REALM OFF RATNAGIRI COAST, MAHARASHTRA STATE, INDIA.

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### Abstract

The PFZ maps contain certain information on major landing centres in each sector, bathymetry, latitude and longitude in addition to identified features of individual PFZ viz. latitude, longitude, depth, direction and distances from each landing centre. These integrated PFZ advisories are prepared in English, Hindi and other local languages. This information is elaborately explained and transformed to regional language while disseminating to the users. The total number of users as on today is approximately around 500 which are about 5% of boat owners off Ratnagiri coast. All the messages were systematically disseminated and explained to the fishermen in their villages and sometimes at fish landing centers during PFZ awareness campaigning programmes. It may be noted that the fishermen appreciated the very usefulness of PFZ advisories and exploited their benefit out of it. The main aim of PFZ Mission is to encourage to maximum use of PFZ advisory by the entire fishing community those are interested in receiving PFZ data under the PFZ services which is providing an authentic lowdown on fish abundance. The further intention is to meet the demands and needs of the fishermen population to their satisfaction level. This service has guaranteed to increase their income to subsist bread and butter and standard of living in a better way.

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### Introduction:-

In Ratnagiri fishing is the most important direct and indirect employment generating activity in the entire coastal zone of 167km. The fishing fleet consists of 2464 mechanized fishing boats and 1563 non-mechanized boats (Anon, 2003). Over 25, 000 fishermen are engaged in fishing activities. The fisheries sector occupies a very important place in the socio-economic development along Ratnagiri Coast. The Potential Fishing Zone Advisory dissemination is becoming popular among the fisher community. The PFZ data acquired from IRS-P4 Satellite are processed by INCOIS to retrieve chlorophyll and sea surface temperature imageries. During the monsoon season PFZ advisories are not provided due to the cloud cover and since that season correspond to the breeding season. Fishing is seasonal generally may last from September to May. In general three major fishing gears such as purse-seine, trawl and by gill nets have been operated for harvesting marine resources of Ratnagiri Coast.

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## Materials and Methods:-

Observations were conducted on the fish landings catch at major fish landing centers such as Harnai, Mirkarwada and Sakhri-Natye in Ratnagiri district during the study period 2006 to 2012. Originating from fishing units which operated at PFZ and Non-PFZ Zones. Fish samples were identified upto species level (Talwar and Kacker, 1984; Smith and Heemstra, 1986; Froese and Pauly, 2010). Length statistics of selected finfishes originating from PFZ and Non-PFZ areas were collected and tabulated.

## Result:-

Purse-seiners, trawlers and gill netters landed their catch at Mirkarwada during the period of observation. The length of purse-seine ranged from 500 to 1200 m, vertical depth from 15 to 40 m, and mesh size ranged from 20 to 30mm. Purse-seines were operated mechanized vessels with a crew complement of 15 to 25 persons. The trawl nets of codend mesh size 15-20mm were operated from wooden vessels of 30 to 50 LoA fitted with 60 hp engines, using 50-60 kg otter boards. The gill nets were operated inshore waters and the nets had a length of about 500m, vertical depth 3-6m and mesh size ranged from 80 to 160mm. The purse-seining is a seasonal activity generally ranging from September to May. The purse-seine fishery has been the most productive fishery and proved to be beneficial by applying PFZ advisory at Mirkarwada than trawl fishery. Seventy species of finfishes, belonging to 11 orders and 35 families were identified in the catch landed by trawlers, purse-seiners and gill netters along the coast of Ratnagiri district (Table 1).

## Harnai :-

The Harnai 17° 48.386N and 73° 05.374E North to Ratnagiri district has crop up one of the major marine fish landing center. In Ratnagiri district has crop up major fish landing center during past two decade and topical one in respect of trawl net fishery aspect. Though an existing amenities at the landing center is not so good, the fishing boats are kept away and by the help of skiff fish catch are carried. Conventionally the fisher used to do fishing by gill net as well seasonal 'dol net'. The fishing gears are operated at Harnai i.e. trawl, gill and seasonally dol net too. By convention the fisher at Harnai used to practice an application of the 'Dol net'. Inception of trawling in Ratnagiri district began in early 1960 (Ranade and Wankar 1965), it was began at Harnai in 1990. Trawl net is the main important fishing gear. Bottom trawling is an important fishing method for capturing bottom dwelling fishes. However trawling is emerged as an enhanced growth rates in fishes by increased availability of food (DeVeen, 1976). Now a day's total mechanized fishing boats about 143 having different engine horse power varying from 50 to 100HP. Besides, from the neighboring village around 100 trawlers were used to plying from the port. Trawlers were 9.5-13m OAL with wooden hull fitted with 65 BHP engines and power winches. The trawl net operated were 20-25m long with 15m footrope, 50-70 kg otter boards. Also cod end mesh size about 1520mm. One within and outside PFZ fishing boats were selected for biochemical analysis of pomfrets fish catch upon validation of PFZ advisory. Many boats are also operated from this landing center, these trawler boats are 9-13m OAL along with wooden hull fitted with varying 30-60 BHP engines and with power winch. In general fishing is done where they got large number of fish catch upon validating PFZ advisory within and non-validated in outside PFZ which took 1 -3 hours for each hauling. The net is operated at a different depth ranging from 10-22m with varying cod end mesh size from 10-20mm. The trawl net is 22-26m long and with 70kg plates for dragging net safely. During the day time it took 2-3 hauls and while at night 1-2 hauls.

## Mirkarwada-Ratnagiri:-

The major fish landing center Mirkarwada is situated 17° 00.046N and 73° 16. 695E in Ratnagiri district. In case of purse-seine net operation fishing cease for approximately 05 days during each month when the moon is full. The purse-seine net varied from 500 to 1200m encirclement around fish shoals and depth ranged from 15 to 40m. The nets are operated by the help of mechanized fishing boats. The purseseine boats are six cylinder and varying engine horse power 40-120HP. The crew members on a fishing boats about 15 to 25 persons. The purse-seine fishing is seasonal generally from September to May. Fishing has been suspended along Ratnagiri coast from 10 June to 15 August. At the beginning of each season, fishing operation is undertaken relatively close to the landing site at Mirkarwada. Crews on a boat also play an important role in the efficiency of the vessels. The searching time measure the amount of time spent when the vessel is moving, actively searching for signs of fish shoals. The purse-seine fishery is the most productive and proved to be beneficial by applying PFZ advisory at Mirkarwada than trawl net fishery. About 184 mechanized fishing boats were operated from the major fish landing center Mirkarwada (Ratnagiri). Out of that 163 were of six cylinder with different 40-120HP. The trawl net varying from 30-50 OAL with wooden hull fitted with 60 HP engines and power winches. The trawl net is often operated from 15 to 25m long

with 20m foot rope, and 50-70kg otter boards and 10-20mm cod end mesh size. About 19 boats were of 02 cylinders with varying 15-40HP. In Ratnagiri district fishing is the most important direct and indirect employment generating activity in the entire coastal zone of 167 km. fishing area is allocated about 66002 km. At present the number of fishing boats are 4027, out of these mechanized boats are 2464 and non-mechanized have been 1563 and over 25,286 an active fishermen are engaged in fishing activities. Fishing villages are in total 104 and fish landing centers are 48. The fisheries sector occupies a very important place in the socio-economic development along Ratnagiri coast.

#### Sakhri-Natye:-

The major fish landing center followed by Mirkarwada located to South Ratnagiri is Sakhri-Natye for 16° 37.022N and 73° 19.915E. Recently the purse-seine boats were 50 and trawl fishing boats were 150 in general fishing is carried out at a depth of maximum 10-70m. Non-mechanized boats are also 150 in numbers. In total there were 350 fishing boats have been operating for exploitation of living resources from pelagic and demersal realm. Each boat is earning per annum as firsthand income source around 5-10 to 20-25 lakh economical turnover. Turnover from halieutic activity from this region is annually 70-80 crore. Amongst 8,000 villagers out of whom only 1,000 active efficient fisher do fishing throughout the fishing season. For preparing nets, boats and other day by day work as usual earn Rs. 300 income in a day. At Sakhri-Natye 149 mechanized fishing boats were operated which is of six cylinders. The trawl net also varied from 40-50 OAL with wooden hull fitted with 40 -60HP engines and power winches. Mostly trawl net are operated at a depth of 30-50m, and 20m long with 15m footrope, having 40-60kg otter boards and 15mm cod end mesh size. The valuable fish catch has been exported to different countries like Chin, Japan and Korea. Many of the women about 500 are engaged by hand collecting oyster (*Crassostrea cuttuckensis*), crab (*Portunus sanguinolentus*), perna indicus, many other bivalves such as, *Katelysia opima*, *paphia textiles*, *P. latrisulca*, *Meretrix meretrix*, *M. casta*, for their livelihood during exchange of water level from estuary to sea and vice-versa.

**Table 1:-**Commercial finfish species landed at Ratnagiri Coast.

	Finfishes	Fishing Method
Order	Rajiformes	
Family	Myliobatidae	
1	<i>Rhinoptera javanica</i> (Muller & Henle, 1841)	Trawling
Order	Carcharhiniformes	
Family	Carcharhinidae	
2	<i>Scoliodon laticaudus</i> (Muller & Henle, 1838)	Trawling
Order	Anguilliformes	
Family	Congridae	
3	<i>Conger cinereus</i> (Ruppell, 1830)	Trawling
Family	Anguillidae	
4	<i>Anguilla bicolor</i> (Mc Clelland, 1844)	Trawling
Order	Clupeiformes	
Family	Clupeidae	
5	<i>Sardinella gibbosa</i> (Bleeker, 1849)	Purse-seining
6	<i>Sardinella longiceps</i> (Valenciennes, 1847)	Purse-seining
7	<i>Tenualosa ilisha</i> (Hamilton, 1822)	Trawling
Family	Engraulidae	
8	<i>Anchoviella commersonni</i> (Lacepede 1803)	Trawling and Purse-seining
9	<i>Coilia dussumieri</i> (Valenciennes, 1848)	Trawling
Order	Siluriformes	
Family	Ariidae	
10	<i>Arius maculatus</i> (Thunberg, 1792)	Trawling
11	<i>Netuma thalassina</i> (Ruppell, 1837)	Trawling and Purse-seining
Order	Aulopiformes	
Family	Synodontidae	
12	<i>Harpadon nehereus</i> (Hamilton, 1822)	Trawling
13	<i>Saurida undosquamis</i> (Richardson, 1848)	Trawling
Order	Perciformes	

Family	Teraponidae	
14	<i>Terapon jarbua</i> (Forsskal, 1775)	Trawling
Family	Serranidae	
15	<i>Epinephelus areolatus</i> (Forsskal, 1775)	Trawling
16	<i>Epinephelus malabaricus</i> (Bloch &Schneider, 1801)	Trawling
17	<i>Epinephelus bleekeri</i> (Vaillant, 1878)	Trawling
Family	Haemulidae	
18	<i>Pomadasys argenteus</i> (Forsskal, 1775)	Trawling
Family	Lutjanidae	
19	<i>Lutjanus russellii</i> (Bleeker, 1849)	Trawling
20	<i>Lutjanus sanguineus</i> (Cuvier, 1828)	Trawling
21	<i>Lutjanus sebae</i> (Cuvier, 1816)	Trawling
22	<i>Lutjanus fulvivflamma</i> (Forsskal, 1775)	Trawling
Family	Nemipteridae	
23	<i>Nemipterus japonicus</i> (Bloch, 1791)	Trawling
Family	Gerreidae	
24	<i>Gerres filamentosus</i> (Cuvier, 1829)	Trawling
25	<i>Gerres erythrourus</i> (Bloch, 1791)	Trawling
Family	Sillaginidae	
26	<i>Sillago sihama</i> (Forsskal, 1775)	Trawling
Family	Lactariidae	
27	<i>Lactarius lactarius</i> (Bloch &Schneider, 1801)	Trawling
Family	Sciaenidae	
28	<i>Atrobuca nibe</i> (Jordan &Thompson, 1911)	Trawling
29	<i>Johnius dussumieri</i> (Cuvier, 1830)	Trawling
30	<i>Johnius amblycephalus</i> (Bleeker, 1855)	Trawling
31	<i>Johnius bomeensis</i> (Bleeker, 1851)	Trawling
32	<i>Nibea maculata</i> (Bloch &Schneider, 1801)	Trawling
33	<i>Otolithes ruber</i> (Bloch &Schneider, 1801)	Trawling
34	<i>Protonibea diacanthus</i> (Lacepede, 1802)	Trawling
Family	Leiognathidae	
35	<i>Leognathus equulus</i> (Forsskal, 1775)	Trawling
Family	Carangidae	
36	<i>Alepes mate</i> (Cuvier, 1833)	Trawling
37	<i>Carangoides malabaricus</i> (Bloch &Schneider, 1801)	Trawling
38	<i>Megalaspis cordyla</i> (Linnaeus, 1758)	Purse-seine
39	<i>Parastromateus niger</i> (Bloch, 1795)	Trawling and gill netting
40	<i>Scomberoides lysan</i> (Forsskal, 1775)	Trawling
41	<i>Seriolina nigrofasciata</i> (Ruppell, 1829)	Trawling
Family	Polynemidae	
42	<i>Leptomelanosoma indicum</i> (Shaw, 1804)	Trawling

Family	Trichiuridae	
43	<i>Lepturacanthus savala</i> (Cuvier, 1829)	Trawling
44	<i>Trichiurus lepturus</i> (Linnaeus, 1758)	Trawling
Family	Stromatidae	
45	<i>Pampus argenteus</i> (Euphrasen, 1788)	Trawling &gill netting
46	<i>Pampus chinensis</i> (Euphrasen, 1788)	Trawling &gill netting
Family	Rachycentridae	
47	<i>Rachycentron canadum</i> (Linnaeus, 1766)	Trawling
Family	Latidae	
48	<i>Lates calcarifer</i> (Bloch, 1790)	Trawling
Family	Ephippidae	
49	<i>Ephippus orbis</i> (Bloch, 1787)	Trawling

Family	Sparidae	
50	<i>Argyrops spinifer</i> (Forsskal, 1775)	Trawling
Family	Menidae	
51	<i>Mene maculate</i> (Bloch &Schneider, 1801)	Trawling
Family	Scombridae	
52	<i>Euthynnus affinis</i> (Cantor, 1849)	Purse-seining &gill netting
53	<i>Katsuwonus pelamis</i> (Linnaeus, 1758)	Gill netting &Trawling
54	<i>Rastrelliger kanagurta</i> (Cuvier, 1816)	Purse-seining
55	<i>Sarda orientalis</i> (Temminck &Schlegel, (1844)	Trawling
56	<i>Scomberomorus commersson</i> (Lacepede, 1800)	Gill netting and Trawling
57	<i>Scomberomorus guttatus</i> (Bloch &Schneider, 1801)	Gill netting
58	<i>Scomberomorus lineolatus</i> (Cuvier, 1829)	Gill netting and Trawling
59	<i>Thunnus albacares</i> (Bonnaterre, 1788)	Gill netting and Trawling
60	<i>Thunnus obesus</i> (Lowe, 1839)	Gill netting
Family	Drepaneidae	
61	<i>Drepane punctata</i> (Linnaeus, 1758)	Trawling
Family	Sphyraenidae	
62	<i>Sphyraena obtusata</i> (Cuvier, 1829)	Trawling
63	<i>Sphyraena jello</i> (Cuvier, 1829)	Trawling
Order	Beloniformes	
Family	Belonidae	
64	<i>Strongylura strongylura</i> (Van-Hassett, 1823)	Purse-seine and Trawling
Order	Mugiliformes	
Family	Mugilidae	
65	<i>Mugil cephalus</i> (Linnaeus, 1758)	Trawling
66	<i>Valamugil seheli</i> (Forsskal, 1775)	Trawling
Order	Gonorynchiformes	
Family	Chanidae	
67	<i>Chanos chanos</i> (Forsskal, 1775)	Trawling
Order	Pleuronectiformes	
Family	Psettodae	
68	<i>Psettodes erumei</i> (Bloch &Schneider, 1801)	Trawling
Family	Cynoglossidae	
69	<i>Cyanoglossus macrolepidotus</i> (Bleeker, 1851)	Trawling
70	<i>Paraplagusia bilineata</i> (Bloch, 1787)	Trawling

Variations in the availability of finfishes and their length ranges in the Non-PFZ and PFZ as reflected in the landings are represented in Table 2.

**Table 2:-**Variations in availability of finfishes and their length ranges from Non-PFZ and PFZ, landed during 2008-2009, at Mirkarwada, Ratnagiri Coast.

Finfishes	Non- PFZ (Length in cm)	PFZ (Length incm)
<i>Arius maculatus</i>	11.5 to 28.5	14 to 35
<i>Atrobucca nibae</i>	16 to 23	19 to 27
<i>Carangoides malabaricus</i>	14.5 to 37.8	11.5 to 52
<i>Drepane punctata</i>	13 to 18	15 to 19.6
<i>Epinephelus malabaricus</i>	13.5 to 35.7	17 to 45.7
<i>Euthynnus affinis</i>	20 to 35	29-46
<i>Gerre filamentosus</i>	12 to 16	14 to 18
<i>Johnius amblycephalus</i>	13 to 23.7	7.5 to 26
<i>Johnius dussumieri</i>	13.3 to 34.6	15 to 40
<i>Lactarius lactarius</i>	12 to 22.5	14 to 29.7
<i>Lates calcarifer</i>	10 to 16	10.5 to 20
<i>Lutjanus russellii</i>	12.5 to 16	19.4 to 31
<i>Lutjanus sebae</i>	29 to 38.5	17.9 to 33
<i>Megalaspis cordyla</i>	12.4 to 38	18.5 to 45.5

<i>Mugil cephalus</i>	17 to 39	20 to 45
<i>Nemipterus japonicus</i>	12.5 to 16	14.5 to 18.5
<i>Netuma thalassina</i>	36.5 to 69	35 to 75
<i>Pampus argenteus</i>	16 to 24	18..5 to 27.5
<i>Pampus chinensis</i>	28 to 32	28 to 43
<i>Parastromateus niger</i>	15.8 to 67	27 to 53
<i>Rastrelliger kanagurta</i>	13 to 26	11.7 to 31
<i>Sardinella gibossa</i>	16 to 21	15-23
<i>Saurida undosquamis</i>	18-25	20 to 30
<i>Scomberomorus lineolatus</i>	35-90	31-102
<i>Scomberomorus commerson</i>	30 to 40	47.5 to 68
<i>Scomberomorus guttatus</i>	25 to 35	29.4 to 50
<i>Sillago sihama</i>	11.5 to 28.5	16.9 to 25.3
<i>Sphyræna jello</i>	20 to 25	24.3 to 48.5
<i>Sphyræna obtusata</i>	33.5 to 69	37 to 45
<i>Tenualosa ilisha</i>	20 to 25	27.2 to 41.5
<i>Terapon jarbua</i>	8.5 to 32	14 to 32
<i>Thunnus obesus</i>	39 to 40	35 to 70

### Discussion:-

During the awareness programme the fishermen were explained generation of PFZ advisories, PFZ maps and text and also they were given training on use of PFZ maps, texts GPS. During the mission PFZ advisories were also distributed to various fishermen groups/ fishery societies, Govt. Offices, Port Offices and associations via mobile, internet and personally holding discussion. Species such as *Lates calcarifer*, *Rastrelliger kanagurta*, *Drepane punctata*, *Pampus argenteus*, *Atrobucca nibae*, *Sphyræna jello*, *Tenulosa ilisha*, *Scomberomorus guttatus*, *Euthynnus affinis*,

*Scomberomorus lineolatus* and *Scomberomorus commerson* were present in the landings from within PFZ area, while they are also present from outside-PFZ area during the period of observations. At the same time, species such as *Gerres filamentosus*, *Epinephelus bleekeri*, *Epinephelus malabaricus*, *Johnius dussumieri*, *Mugil cephalus*, *Nemipterus japonicus* *Netuma thalassina*, *Sardinella gibossa* and *Saurida undosquamis* were represented in the landings from PFZ area. Species such as *Sillago sihama*, *Arius maculatus*, *Megalaspis cordyla*, *Lutjanus russelii*, *Johnius amblycephalus*, *Lactarius lactarius*, *Carangoides malabaricus*, *Parastromateus niger*, *Pampus chinensis*, *Lutjanus sebae*, *Sphyræna obtusata* and *Terapon jarbua* were represented in both within PFZ and outside-PFZ areas. Relatively Larger length classes of *Lutjanus russelii*, *Arius maculatus* *Pampus chinensis* *Megalaspis cordyla* *Carangoides malabaricus* were present within PFZ area while in the case species such as *Sillago sihama*, *Johnius amblycephalus*, *Lactarius lactarius*, *Lutjanus sebae*, *Sphyræna obtusata* and *Parastromateus niger* larger length classes were available more or less same in length from outside-PFZ areas.

### Conclusion:-

Results indicate differences in the availability and differences in the size groups of finfish species within PFZ and outside-PFZ areas. Information on such differences will be commercial significance and need to be further studied in greater detail and integrated with information on quantitative variation in abundance between within PFZ and outside-PFZ areas. All the fish species were landed at Harnai, Mirkarwada and Sakhri-Natye Ratnagiri district. In particular different fish species mostly were occurred in trawl net fishing gear than purse-seine and gill net fishing operations. In addition following bumper fish species contribute in Purse-seine fishing operation such as *Rastrelliger kanagurta*, *Sardinella longiceps*, *Sardinella gibossa*, *Megalaspis cordyla*, sometimes *Euthynnus affinis*, *Katsuwonus pelamis*, *Sphyræne jello*, *Terapon Jarbua*, *Johnius amblycephalus*, *Johnius Dussumieri*, *Mugil cephalus*, *Arius maculatus*, *Arius thalassinus*, *Thunnus albacares*, *Thunnus obesus*,

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### References:-

1. Anon (2003) Fishing Report Census 2003, Sate Fisheries Department, Ratnagiri, Maharashtra
2. Froese, R. And Pauly, D. (Eds.) (2010) Fish Base, World Wide Web electronic publication, [www.fishbase.org](http://www.fishbase.org), Version (05/2010)
3. Smith, M.M. and Heemstra, P.C. (1986) (Eds) Smith's Sea Fishes. Springer Verlag, Berlin: 1047p.
4. Talwar, P.K and Kacker, R.k. (1984) Commercial Sea Fishes of India, Zoological Survey of India, Calcutta: 997p.

### Discussion:-

The Potential Fishing Zone Advisory dissemination is becoming popular among the fisher community along the coast of Ratnagiri district. During the monsoon season PFZ advisories are not provided due to the cloud cover and since that season correspond to the breeding season.

Fishing is seasonal generally may last from September to May. In general, three major fishing gears such as purse seine trawl and gill nets are being operated for harvesting marine resources, off Ratnagiri coast. The traditional fishermen apply their sense at intensive fishing methods

throughout the fishing seasons, however receiving PFZ advisory in time. But upon validation of PFZ advisory in both within and outside PFZ showed better fish catch and enhancement in percent success, reduction in searching time. Moreover, biodiversity is important for the future

sustainability of marine natural resources that comprise commercial fisheries. The PFZ validation was performed mainly from the purse-seine and trawl net mechanized fishing boats, however a few gill net boats also validated the PFZ advisories. Many purse-seine and trawl fishing boats

have been up-graded and fishermen are getting benefits from the advisories and digital display boards. The purse-seine net with mesh size 15-25 mm, varied from 500 to 1200 m encirclement around fish shoals and depth ranged from 15 to 40m. The nets are operated by the help of mechanized fishing boats. The purse-seine fishery is the most productive and proved to

be beneficial by applying PFZ advisory at Mirkarwada than trawl net fishery. The trawl net with mesh size 10-25mm, varying from 30 to 50 OAL with wooden hull fitted with 30-60 HP engines and power winches. The trawl net is often operated from 15 to 25 m long with 20 m foot rope,

50-60 kg otter boards and 15-20 mm cod end mesh size. The gill net with mesh size 80-160mm, are often spread at the inshore realm, length about 500m and vertical hanging more or less 10-15 feet.

Since an inception of PFZ-Mission along Ratnagiri coast.

### Conclusion:-

This is evident that there has been a growing awareness amongst the users in using PFZ advisory. An increase of these most due to the use of supplementary devices, such as GPS, fish finder and also the fish viewers have got more familiar with the fishing grounds. On the receipt of PFZ advisory without wasting their time the fisher should reach the fishing grounds. Besides, they might fish beyond the traditional fishing grounds. The fish catch with different varieties encountered throughout the fishing season under PFZ and Non-PFZ realm. The fishing activities must be carried out at the actual fish aggregation is an important standpoint. An attempt has been made to sort out the pelagic and demersal fish catch for the analysis. The fish catch landed upon follow up of the PFZ advisory were taken into consideration as compared to outside-PFZ to calculate the total fish catch, percent success, reduction in search time and morphometric characters of major fishes from selected fishing boats viz. purse-seine, trawl and gill net from Harnai, Mirkarwada and Sakhari-Natye in Ratnagiri district coast. The number of boats of each type purse-seine, trawl and gill net was fixed during each dissemination; two from each fish landing center one for within and other outside PFZ. The data was analyzed in both within and outside PFZ to obtain total fish catch.