

## Marine Fisheries Census 2005 and 2010 of Andhra Pradesh: A comparison

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Andhra Pradesh is one of the major marine fish producing states along the east coast of India. It has a coast line of 974 km with 9 coastal districts viz., Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore. There are two major fishing harbours at Visakhapatnam and Kakinada from where the bulk of trawl catch (about 70%) is landed. Socio-economic evaluation of the fisherfolk population, information on livelihood activities, education and professional status are the pre requisites for proper planning and implementation of programmes for their upliftment and social empowerment. Marine Fisheries Census 2005 and 2010 provides needed information for Government agencies, NGO's and other stakeholders.

### Fisherfolk and their occupations

According to the Marine Fisheries Census 2010, there are 555 marine fishing villages and 353 landing centres in Andhra Pradesh. This is an increase of 11% in terms of fishing villages and 30% with regards to landing centres compared to the Marine Fisheries Census 2005. However, landing centres in East Godavari, West Godavari and Prakasam districts showed decrease due to disturbance to fishing activities by industrial/other activities. The marine fishermen population of the state in 2010 is around 6,05,428. This showed a 19% increase in the marine fishermen population from 2005 to 2010. Among 1,63,427 fishermen families reported in 2010, about 98.5% belonged to traditional fishermen. The

Table 1. Comparison of landing centres, fishing villages, fisherfolk population, average family size and sex ratio details between Marine Fisheries Census 2005 and 2010.

District	Landing Centres			Fishing villages			Fisher folk population			Average family size			Sex ratio (Females to 1000 males)		
	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)
Srikakulam	54	55	1.9	107	128	19.6	81381	98450	21.0	4.3	3.9	-11.1	943	949	0.6
Vizianagaram	11	12	9.1	20	20	0.0	24543	20812	-15.2	4.6	4.1	-11.2	974	938	-3.7
Visakhapatnam	31	66	112.9	79	63	-20.3	129045	113632	-11.9	4.1	4.0	-3.7	967	923	-4.5
East Godavari	37	29	-21.6	53	97	83.0	85458	165208	93.3	4.1	3.7	-9.5	985	970	-1.5
West Godavari	9	7	-22.2	8	7	-12.5	8009	9188	14.7	3.6	3.8	4.5	931	952	2.3
Krishna	17	37	117.6	47	43	-8.5	54002	43005	-20.4	3.4	3.3	-3.5	981	955	-2.7
Guntur	6	8	33.3	34	36	5.9	28467	39333	38.2	3.4	3.3	-0.6	952	949	-0.4
Prakasam	43	39	-9.3	74	67	-9.5	51353	51511	0.3	3.8	3.4	-10.0	943	924	-2.0
Nellore	63	100	58.7	76	94	23.7	47733	64289	34.7	3.8	3.8	0.0	945	910	-3.7
<b>Total</b>	<b>271</b>	<b>353</b>	<b>30.3</b>	<b>498</b>	<b>555</b>	<b>11.4</b>	<b>509991</b>	<b>605428</b>	<b>18.7</b>	<b>4.0</b>	<b>3.7</b>	<b>-6.3</b>	<b>962</b>	<b>943</b>	<b>-2.0</b>

Table 2. Comparison of data on active fishermen, fishermen associated with fishing allied activities and other than fishing activities during 2005 and 2010

District	Active fishermen			Fishermen associated with fishing allied activities			Other than fishing activities			Total fishermen occupied		
	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)	2005	2010	Increase/decrease (%)
Srikakulam	20829	23559	13.1	34361	30644	-10.8	532	1011	90.0	55722	55214	-0.9
Vizianagaram	6321	5407	-14.5	5748	6143	6.9	821	65	-92.1	12890	11615	-9.9
Visakhapatnam	35121	26351	-25.0	36027	24427	-32.2	4472	1416	-68.3	75620	52194	-31.0
East Godavari	22892	45137	97.2	8346	23501	181.6	403	2916	623.6	31641	71554	126.1
West Godavari	2247	2479	10.3	2722	1837	-32.5	0	1	0.0	4969	4317	-13.1
Krishna	14626	12932	-11.6	23556	10102	-57.1	1103	2607	136.4	39285	25641	-34.7
Guntur	11458	10305	-10.1	8687	13479	55.2	536	56	-89.6	21311	23840	11.9
Prakasam	13366	13134	-1.7	16245	9875	-39.2	170	2804	1549.4	29781	25813	-13.3
Nellore	11754	11564	-1.6	16570	20081	21.2	690	123	-82.2	29014	31768	9.5
<b>Total</b>	<b>138614</b>	<b>150868</b>	<b>8.8</b>	<b>152892</b>	<b>140089</b>	<b>-10.2</b>	<b>8727</b>	<b>10999</b>	<b>26.0</b>	<b>300233</b>	<b>301956</b>	<b>0.6</b>

maximum number of families were in East Godavari (44,476) and Visakhapatnam (28,779) districts. Fishermen families dependant on marine fishing have increased by 26% compared to 2005 (1,29,246 families) in Andhra Pradesh. However, the average family size has fallen from 3.95 in 2005 to 3.7 in 2010, with maximum of 4.05 in Vizianagaram district and a minimum of 3.29 in Krishna district. The sex ratio (female to male) among fisherfolk has showed declining trend. The sex ratio in 2005 was 962 females per 1000 males whereas in 2010 it was 943 females per 1000 males. In 2010, women formed 48.5 % of the total population and the female to male ratio was maximum in East Godavari district (970 females/1000 males) and minimum in Nellore district (910 females/1000 males). Decrease in female to male ratio was observed in 7 districts except in Srikakulam and West Godavari districts where it has increased (Table 1).

The active fisherfolk population involved in marine fisheries activities of Andhra Pradesh has increased by 8% from 1,38,614 in 2005 to 1,50,868 in 2010. Though active fishermen population in the state has increased, it has actually decreased in six districts (Vizianagaram, Visakhapatnam, Krishna, Guntur, Prakasam and Nellore) indicating that

fishermen are moving to other professions as these districts are more urbanised/industrialised. The full time and part time fishermen recorded during 2010 are 1,27,837 and 19,373 respectively. The part time fisherfolk population showed a decline of 30% from 29,109 in 2005 to 19,373 in 2010. There was an increase in activities like marketing of fish and labour activities over the five year period from 2005 to 2010. Other associated activities like net mending, curing /processing and shrimp peeling activities recorded downward trend (Fig.1).

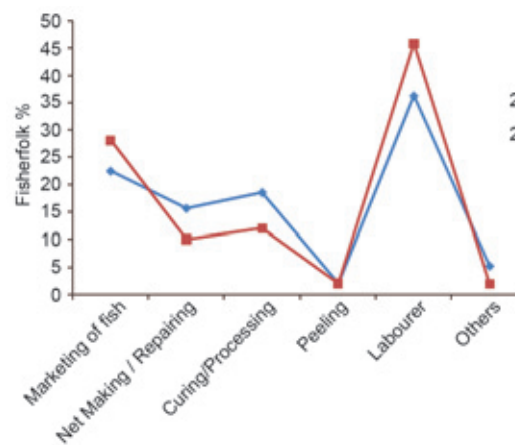


Fig. 1. Fisherfolk engaged in fishing allied activities during 2005 and 2010

### Economic status

In 2010, about 97% of the total 1,63,427 fishermen families came under the Below Poverty Line (BPL) category. Vizianagaram district had highest number of below BPL families (99.9%) followed by Krishna (99.7%), Nellore (99.4%), Guntur (98.9%), Srikakulam (98.8%), Visakhapatnam (97.7%), East Godavari (96.7%), Prakasam (96.2%) and West Godavari (55%).

In 2005, only 99,374 (19.5%) fisher folk had membership in co-operatives, of which 46.5 % were in fisheries co-operatives and 53.6% in other co-operatives. In 2010, 1,20,497 (19.9%) fisherfolk had membership in co-operatives of which 31.4% were in fisheries co-operatives and 68.6 % were in other co-operatives. The decrease in membership in fisheries co-operatives from 46.5% in 2005 to 31.4% in 2010 indicate the dissatisfaction of the fisher folk with fisheries co-operatives.

Infrastructure development in fishing villages was improved due to conversion of *Kutch* houses to *Pucca* houses. Percentage of *Pucca* houses in 2010 was around 70% in fishermen villages with an increase of 17% over the year 2005. The other infrastructure upgradation like electrification of fishing villages increased from 95% in 2005 to 99% in 2010. In 2005 about 4.4% of fishing villages had bank facility which improved to 7.2% by 2010. It is evident that government has taken up developmental activities for upgradation of living standards of the fisherfolk.

### Educational status

As per 2005 marine census, about 625 educational institutions were situated in the marine fishing villages of which 82.5% were primary level schools, 15.52% were secondary level schools and 0.8% were colleges. About 1,11,403 fisher folk (21.8%) had primary level of education, 45,827 had secondary level education (9%), and 8,384 had above secondary level (1.7%). According to the 2010 report, there were 688 educational institutions in the marine fishing villages, 10 % higher than that of 2005. Of these 83% were primary level, 14.4% were secondary level, 1.3% were colleges and 1.3 % were

technical institutions. About 34.28% of fisherfolk population (children below 5 years excluded) were educated at different levels. Among fisherfolk, 18.33% had primary level of education, 12.75% had secondary level, 3.2% had above secondary level and the rest (65.7%) of the population were unschooled. Among maritime districts, East Godavari had highest fisherfolk with primary education (22%), followed by Krishna (21.7%), Visakhapatnam (18.6%), Nellore (18.5%), Prakasam (17.2%), Vizianagaram (16%), Srikakulam (14.2%), West Godavari (13.2%), and Guntur (12%). Proportion of unschooled fisher folk was highest in Vizianagaram district (77.6%), followed by Nellore (75.4%), Guntur (69.9%), Prakasam (68.7%), West Godavari (68%), Visakhapatnam (64.7%), Srikakulam (63.5%), East Godavari (62.3%), and Krishna (58.9%). The percentage of population having secondary and above secondary level of education has increased from 2005 to 2010. Also the percentage of population having primary level education and not educated category has declined from 2005 to 2010, indicating that fisherfolk are moving towards higher education (Fig.2).

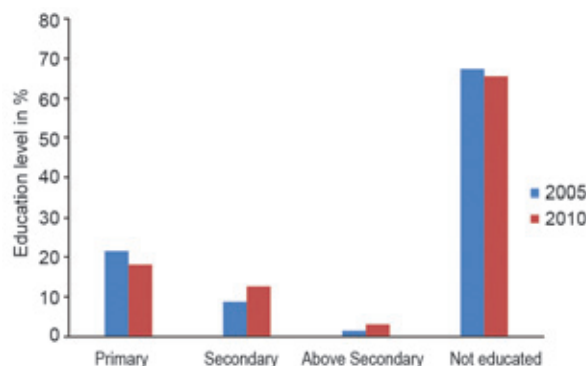


Fig. 2. Educational status of fisher folk in 2005 and 2010

### Craft and Gear

Andhra Pradesh ranks fifth in contribution to the marine fish landings of the country. The average annual marine fish landing of Andhra Pradesh during 2000 - 2010 was 1.99 lakh t. Fishing effort declined by 33% and 9% in terms of fishing units and fishing hours respectively, during the 11 years period. Annual average catch shows an increasing trend over the years, with the advent of multiday fishing and

oceanic fishing for tunas by traditional and mechanised sectors. The fishery is contributed by mechanised, motorised and traditional sectors. However, the motorised and mechanised sectors are slowly and steadily replacing the traditional sectors. As per 2010 census, there are 31,741 crafts engaged in the fishery of which 3,167 were mechanized (9.9%), 10,737 motorized (33.8%) and 17,837 were non-motorized (56.2%). In the mechanized sector gillnetters, trawlers and ring seiners constitute 52%, 42% and 6% respectively of the total mechanized crafts. There were 41,039 crafts engaged in fishing in 2005, of which 2,541 were in mechanised (6.2%), 14,112 motorised (34.8%), and 24,386 non-motorised (59%) sectors. Though there was increase in number of crafts in mechanised sector by 24.6%, overall number of crafts decreased by 22.65% from 2005. This was mainly due to decrease in non-motorised (26.85%) and motorised units (23.9%) (Fig.3).

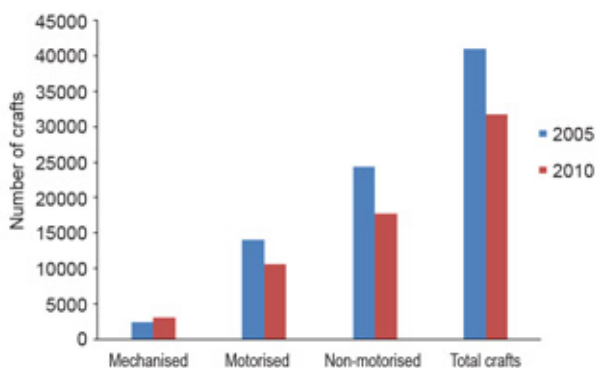


Fig. 3. Number of crafts in marine fisheries sector in 2005 and 2010

In Andhra Pradesh, there were 1,341 trawlers involved in fishing in 2010. There was 26% decline in trawlers from 1,802 in 2005 to 1,341 in 2010. Districtwise contribution was Visakhapatnam (43%) with 579 trawlers, East Godavari district (36%) with 487 trawlers, Guntur district (11%) with 150 trawlers, Krishna district (6.3%) with 85 trawlers and Prakasam district (3%) with 40 trawlers in 2010. Between 2005 and 2010, mechanized gillnetters showed tremendous growth from 424 in 2005 to 1644 in 2010. The motorized sector and artisanal sector showed decline of 27 % and 24% respectively

in number of crafts operated during the same period.

In 2005, only 29,604 crafts (72.1%) were owned by the fisher folk of which 68% were traditional non-motorised, 30% were motorised and the remaining 2% were mechanised craft.

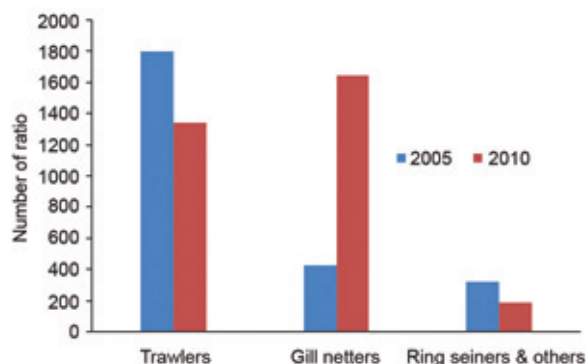


Fig. 4. Mechanised crafts in 2005 and 2010

In 2010, about 31,168 crafts (98.2%) were owned by fisherfolk of which 2,447 (7.9%) were mechanised, 3,965 (12.7%) were motorised and 24,756 (79.4%) were non-motorised.

The number of crafts owned by fisherfolk has increased from 72.1% to 98.2% during the five years period. The ownership of mechanised crafts has increased from 2% to 7.9%, while for traditional non-motorised crafts it has increased from 68% to 79.4%. However, there is decrease in ownership of motorised craft from 30% to 12.7%. The increase in

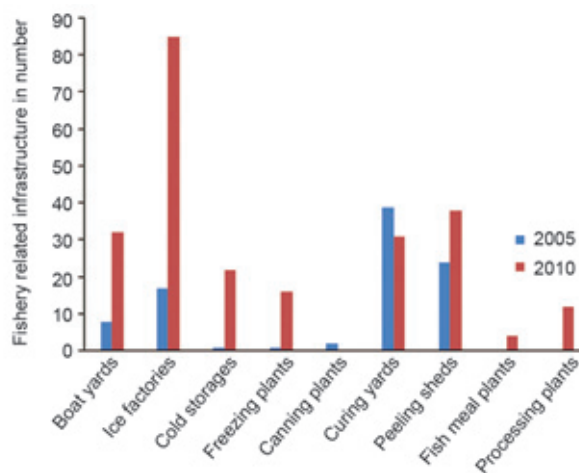


Fig. 5. Fishery related infrastructure during 2005 and 2010

mechanised and non-motorised crafts owned by fisherfolk during 2005-2010, indicates that many of non-fisherfolk who owned crafts have left the fishing industry.

Fishery related infrastructure in terms of boat yards, ice factories, cold storages, freezing plants and peeling sheds have developed during 2010 compared to 2005. Fish meal plants and processing plants were added infrastructures. However, curing yards decreased due to enhancement of a cold storages and ice factories.

### **Conclusion**

Over the years, the marine fish landings of Andhra Pradesh have shown a considerable increase but the socioeconomic status of fisherfolk, indicate that they did not reap the benefits of the increased production. Although the basic amenities available to the fisherfolk through the developmental processes showed increasing trend, Infrastructure

development in connection to fishermen livelihood options was lagging. Infrastructure greatly contributes to the processing, marketing and the quality of the produce and development of the community as a whole. This is the prerequisite for marine fisheries sector and fisherfolk development in coastal areas. Though ice factories and processing plants have increased fishermen are still losing their earnings due to post harvest losses which is considerable. The main constraints perceived by the fishermen are lack of proper road connectivity from fish landings centres to urban areas for marketing, cold storages for preservation, and electricity shortage for ice plants, lack of proper berthing facilities and minimum guaranteed price of fish. The self sufficiency and skills of the fishermen along with proper infrastructural support can directly contribute to the socioeconomic upliftment of the less privileged fishermen community of Andhra Pradesh.