

RESEARCH NOTE

Comparative study of gross tonnage of wooden purse seiners of Ratnagiri, Maharashtra

■ SIDDHESH S. DESAI, MAKARAND T. SHARANGDHAR AND ASHISH S. MOHITE**ABSTRACT**

For the wooden purse seiners having capacity ranging from 25 to 50 tons, the overall length ranged from 11.58 to 19.1 m, breadth at midship 2.28 to 7.90 m, depth of vessel 1.52 to 2.95 m, length of freeboard 0.6258 to 1.2147 m, draught 0.8941 to 1.5705 m, length of keel 8.81 to 14.28 m and horse power of engine between 94 to 198 hp. Whereas, for wooden purse seiners having capacity ranging from 50 to 100 tons, overall length ranged from 11.39 to 17.9 m, breadth at midship 3.4 to 7.90 m, depth of vessel 1.58 to 3.4 m, length of freeboard 0.6505 to 1.4 m, draught 0.9294 to 1.5882 m, length of keel 8.16 to 13.68 m and horse power of engine between 99.24 to 151 hp. All wooden purse seiners were fitted with Ashok Leyland make six cylinder inboard diesel engines.

KEY WORDS : Purse-seining, Wooden purse seiners, Gross tonnage, Technical specifications

How to cite this Article : Desai, Siddhesh S., Sharangdhar, Makarand T. and Mohite, Ashish S. (2016). Comparative study of gross tonnage of wooden purse seiners of Ratnagiri, Maharashtra. *Engg. & Tech. in India*, 7 (2) : 84-86; DOI : 10.15740/HAS/ETI/7.2/ 84-86.

Purse seining was first attempted in Goa in 1957 when the territory was still under Portuguese rule. In Maharashtra, this type of fishery was initiated in the year 1983 along the coast of Ratnagiri. The present study is an attempt to compare the technical specifications of wooden purse seiners with their gross tonnage; operated from Mirkarwada fishing harbor of Ratnagiri, Maharashtra.

Mirkarwada minor fishing harbor situated about 2 km on the west of the Ratnagiri city was chosen for the present study. The detail information regarding the specifications of wooden purse-seiners and the engines fitted on them were undertaken by physically sampling the units and by collecting the information from purse-seine operators. Collected data was analyzed for the required parameters with the appropriate statistical procedures wherever required (Snedecor and Cochran, 1967).

The detailed technical specifications of wooden purse seiners having capacity ranging from 25 to 50 tons and 50 to 100 tons, operating from Mirkarwada landing center, Ratnagiri are stated in Table 1 and Table 2, respectively. Correlation of the gross tonnage with the specification of the wooden purse seiners of Ratnagiri are stated in Table 3.

Many researchers reported tonnage of different vessels, Ziener (1958) studied about 22,000 indigenous types of boat in India having capacity of 2 tons and above. Ben-yami (1994) reported that the tuna purse seiners were with 300 to 400 tons capacity while the purse seiners operated along Ratnagiri were having lower tonnage capacity. *Mara Padava* boats operating along Andhra Pradesh coast had gross tonnage of 2.5 tons (Chennubhotla *et al.*, 1999), trawlers operating along the Ratnagiri ranged from 12.00 to 61.36 tons (Yewale, 2005), trawlers operating from Mirkarwada ranged from 14.00 to 49.43 tons (Kunjir, 2004). Piniella *et al.* (2007) reported Spanish fleet had tonnage

Sr. No.	Specifications	Ratnagiri			
		Mean	Minimum	Maximum	Standard error
1.	Overall length (m)	15.3613	11.58	19.1	± 0.1944
2.	Breadth at midship (m)	5.5117	2.28	7.7	±0.6474
3.	Depth of vessel (m)	2.2337	1.52	2.95	± 0.0269
4.	Draught (m)	1.3139	0.8941	1.7352	± 0.0158
5.	Freeboard (m)	0.9197	0.6258	1.2147	± 0.0110
6.	Length of keel (m)	12.1809	8.81	14.288	± 0.1548
7.	Horse power (hp)	107.19	85	198	± 2.5008
8.	GRT (t)	44.0639	30.15	49.89	± 0.7519

Sr. No.	Specifications	Ratnagiri			
		Mean	Minimum	Maximum	Standard error
1.	Overall length (m)	15.4381	11.39	17.9	± 0.1829
2.	Breadth at midship (m)	6.8823	5	7.9	± 0.0652
3.	Depth of vessel (m)	2.6158	2.05	3.4	± 0.0338
4.	Draught (m)	1.5387	1.2058	2	± 0.0199
5.	Freeboard (m)	1.0771	0.8441	1.4	± 0.0139
6.	Length of keel (m)	12.3202	8.816	13.68	± 0.1447
7.	Horse power (hp)	128.40	92	198	± 6.2554
8.	GRT (t)	66.4814	50.67	103.31	± 1.8012

Sr. No	Specifications	Tonnage (tons)	
		25 - 50	25 - 50
1.	Overall length (m)	-0.1197	0.0813
2.	Breadth at midship (m)	0.3657*	0.6957*
3.	Depth of vessel (m)	0.5180*	0.6957*
4.	Draught (m)	0.5180*	0.7660*
5.	Freeboard (m)	0.5180*	0.7660*
6.	Length of keel (m)	-0.1742	0.2071
7.	Horse power (hp)	0.3577*	0.5937*

* indicates significance of value at $P < 0.05$

between 20 and 100 tons, which is similar as reported in the present study. Yingyuad and Chanrachkij (2010) studied the Thai purse seiners having gross tonnage of 10 to 120 tonnage. All the wooden purse seiners were fitted with six cylinder Ashok Leyland engines. Five models were observed *viz.*, AL- 400 (48), AL-402 (41), AL-412 (13), AL-680 (15) and AL 680 TC (05).

Conclusion :

The comparative analysis of the gross tonnage with the technical specifications of the wooden purse seiners of Ratnagiri, Maharashtra would serve as a base line information for the technological modifications the vessels may undergo to increase their efficiency in the coming years.

Acknowledgement :

The authors wish to thank the authorities of College of Fisheries, Ratnagiri (Dr. Balasaheb Sawant Konkan

Krishi Vidyapeeth, Dapoli) for providing necessary facilities, their kind encouragement and guidance during the course of the investigation.

REFERENCES

- Ben-Yami, M. (1994).** Purse seining manual. *Fishing News Books*, London, England: 404p.
- Chennubhotla, V. K., Seshagiri Rao C.V., Chittibabu, K. and Nageswara Rao, T. (1999).** Craft and gear used for marine fishing along the Andhra Pradesh coast. *Marine Fish. Informat. Services*, **159**: 1-7.
- Kunjir, S.N. (2004).** Catch composition and economic analysis off Ratnagiri coast. M. F. Sc. Thesis, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, 116 pp.
- Piniella, F., Sorigyer, M.C. and Fernandez-Engo, M. A. (2007).** Artisanal fishing in Andalusia: A statistical study of the fleet, Department of Maritime Studies, University of Cadiz, Spain, 573-581pp.
- Snedecor, G.W. and Cochran, W. G. (1967).** *Statistical methods*. 6th Ed., Oxford and IBH Publishing Co., New Delhi, 593pp.
- Yewale, V.G. (2005).** Design features of trawls operated along the Ratnagiri coast of Maharashtra state. M.F. Sc. Thesis, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, M.S. (INDIA).
- Yingyuad, W. and Chanrachkij, I. (2010).** Purse seine fisheries in Thailand, Southeast Asian Fisheries Development Center, 2-6pp.
- Ziener, B. P. (1958).** Mechanisation of Indian Fishing Boats. 123-125pp.

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