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Part Two

MARCH 1990



NATIONAL SYMPOSIUM ON RESEARCH AND DEVELOPMENT IN MARINE FISHERIES

MANDAPAM CAMP
16-18 September 1987

Papers Presented
Sessions III & IV

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
P. B. No. 2704, E. R. G. Road, Cochin-682 031, India

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IMPACT OF VERTICAL HIGH OPENING NETS IN GUJARAT

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ABSTRACT

Field trials were conducted with an improved version of V. H. O. net of BOBP in Saureshra waters by the Gujarat Fisheries Aquatic Sciences Research Station, Veraval. Both the fish catch and value improved. This centre has been helping fishermen to fabricate this modified version of net which is popularly known as DISCO net to fishermen. The acceptance is total and within last two years 1500 modified V. H. O. nets were fabricated at Veraval alone. This paper gives the salient features of modified design and comparative statistics.

As per the published Boat census of Gujarat, there are 646 trawlers, 54 mechanised gill netters, 301 dug out canoes with OBM and 18 non-mechanised boats operating from Veraval, in Junagadh District (Table 1). This district with its important fishing ports like

Navabunder, Dhamlej, Sutrapada, Hirakot, Veraval, Chorwad, Mangrol and Porbander land more than 50% of the total marine fish catch of Gujarat. Boats from other parts of Gujarat also migrate to these ports as the fishing ground is nearby and infrastructure facilities including approach to port are better developed.

Table 1. No. of fishing vessels in Veraval and Mangrol

Sr. No.	Centre	Year	Trawler	Gill netter	OBM	Non-Mech.	Total
1.	Veraval	1983	626	82	277	11	996
		1985	646	54	301	18	1019
2.	Mangrol	1983	168	13	120	8	309
		1985	167	13	122	2	304

During 1982-83 the Department of Fisheries introduced the vertical high opening (VHO) nets among fishermen of Gujarat in collaboration with CIFNET, Cochin. Thereafter trials were carried out and the designs were modified to suit the local conditions. Double bridle of 22 m showed a better performance as compared to the original single bridle system. Adjustable chains weighing 5 kg each was also removed as it was giving difficulties while fishing for prawns in the muddy bottom. The 40 mm piece was replaced by 60 mm. A 75% replacement of 48 mm mesh gave better performance at a reduced RPM and the total weight of the net was considerably reduced.

After intensive extension work in the field, i. e. educating fishermen on the importance of

conservation of juveniles and catch-return viability of VHO nets, operational techniques were imparted to fishermen. With the traditional trawl nets, fishermen were finding it difficult to maintain sustainable production. The income per boat was also reducing. Pomfret, seer fish, squid, cuttlefish etc. were landed in negligible quantities in conventional nets.

The catch composition of VHO nets which included fishes like pomfret, seer, perches, squid, cuttlefish, pellona, silver-bar alongwith eels, prawns and lobsters, and good quantity of big sciansids (dhoma), *Lactarius* and ribbonfish was the main attraction. Sciansids, *Lactarius* and sole (Jib) were of big size. They were salted and sun dried for human consumption.

The total catch during 1982-83 was less compared to previous year (Table 2). But as the size of fishes landed was big the return in terms of value was more.

Table 2. *Marine fish landings in Junagadh District*

Year	Catch of Gujarat St.	Catch of Junagadh Dist.
1981-82	2,20,607 MT	1,28,695 MT
1982-83	1,92,669 MT	1,15,241 MT

The above figures show that when the VHO big mesh nets were introduced, there was a slight decrease in the catch. The only attributable reason is that the filtration capacity of the nets is much more, whereby the juveniles are saved and allowed to grow further. This presumption is strengthened by the increase of total catch from 1983-84 onwards (Table 3).

As there is a steady increase of catch year by year, the shortfall in catch during 1982-83 can be attributed towards the filtration capacity of VHO nets. This should be the main reason for increase not only in production but also in size.

Table 3. *Marine fish landing at Veraval and Mangrol*

Year	Catch of Gujarat	Catch of Veraval	Catch of Mangrol	
1982-83	1,92,669	58,036	11,160	} figures from July to June
1983-84	2,23,291	63,527	20,962	
1984-85	2,90,708	86,392	21,111	
1985-86	N.A.	1,27,084	16,117	- figures from July to March

Table 4. *Marine fish production by different fishing gears*

Year	Total catch by gillnets (t)	Total trawl catch (t)	Total catch by non-mech. boats (t)	Total landings (t)
<i>Veraval :</i>				
1982-83	2,352	52,145	195	58,036
1983-84	7,219	57,063	245	64,527
1984-85	8,033	78,186	173	86,392
1985-86	4,249	118,981	34	127,084
<i>Mangrol :</i>				
1982-83	3,072	7,017	34	11,160
1983-84	5,673	15,253	36	20,962
1984-85	5,907	15,067	137	21,111
1985-86	4,126	11,949	42	16,117

Note : 1985-86 - data from July to March
Other years - data from July to June

The demand for VHO type of nets showed an increase. To cope up with the demand, the craft and gear unit of the Department started training local fishermen to fabricate nets by tailoring from machine-made webbing and this turned out to be a great success. Now fishermen rarely hand-fabricate webbings. After the introduction of VHO nets the sale of ready made webbing has picked up considerably.

From conservation point of view also this net plays an important role. Jamnagar Coast was famous for polynemus (Dara) fisheries. But now Dara remains a rare species compared to olden days. Likewise pomfrets (black and white) landed at Madhwad-Veraval were of very good size. Now-a-days the quantity caught and the size have reduced very much. The hilsa (Palla) catch stands without much change. During trawl net operation the juveniles of Dara, Pomfret and Indian Salmon are

caught and destroyed. This may be the reason for the gradual disappearance of Dara and reduced catches of pomfret. In the conventional nets the mesh size used is 40/60 mm on the wings. This is very dangerous from the point of view of conservation of resources. As VHO net starts with 160/120 mm average on wings and front belly, it permits juveniles and all smaller fishes to escape to a great extent.

Table 4 shows a steady increase in the fish catch mainly from trawlers. Now a-days almost all boats are using VHO variations and the upward trend in catch is due to this. The major marine catch contribution in Gujarat is from Veraval & Mangrol (Junagadh dist). During 1984-85, 70% of the total catch was from Veraval and Mangrol.

For resource conservation, it is advisable to impress upon fishermen to use VHO type of nets and avoid destruction of juveniles.