

KADALEKUM KANIVUKAL

(Bounties of the Sea)

Farm School Series on marine fisheries
broadcast by All India Radio, Thrissur

Edited by

**K. RAVINDRAN
KRISHNA SRINATH
K.K. KUNJIPALU
V. SASIKUMAR**

Published by



CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY
Matsyapuri P.O., Cochin - 682 029

&



ALL INDIA RADIO
Ramavarmapuram, Thrissur - 680 631

DEMERSAL FINFISH RESOURCES OF INDIA

S. Sivakami

Central Marine Fisheries Research Institute
Cochin - 682 014

Fish based on their depthwise distribution may be grouped mainly as pelagic and demersal, the former occupying surface waters and the latter the neretic areas in the continental shelf. Demersal fish though generally occupy the sea floor, feeding on the benthic organisms and detritus, perform vertical and horizontal migration in search of their feeding and breeding grounds. Most of them lay their eggs in the surface waters or in the intermediate depths. The eggs after their larval phase return to the bottom to lead a demersal life.

Demersal finfish landings of India

During 1985-1993, the demersal finfish landing was found growing from 4.51 lakh tonnes in 1985 to 6.24 lakh tonnes in 1993 with a decline to 4.98 lakh tonnes in 1989. During this period the total marine fish landings has grown from 15.23 lakh tonnes to 22.77 lakh tonnes in 1992 and 22.45 lakh tonnes in 1993. The contribution of demersal finfish production to total marine landings however declined from 29.62% in 1988 to 24.28% in 1993, the average being 26.85%.

Major demersal finfish resources

Elasmobranchs, represented by sharks (*Carcharhinus* spp; *Scoliodon* spp; *Rhynchodon* spp; *Sphyrna* spp;) skates (*Pristis* spp, *Raja* spp.) and rays (*Himantura* spp; *Rhynchobatus* spp.) are landed more from Maharashtra (12,180 tonnes) and Gujarat (10,943 tonnes) coasts. Seasons of abundance for elasmobranchs is September - October and January - March. They are caught mainly in handlines, longlines, drift net, seines and trawls.

Catfish landed mainly from Maharashtra, Gujarat, Orissa and Kerala during October - December and January - March are caught in trawls and purse seines. Major species landed are *Tachysurus* spp; *Osteogeneosus* spp. and *Batrachocephalus* spp.

Among lizard fish, *Saurida tumbil* and *S. undosquamis* are the important species. The landings are more in Kerala mainly during July - September. The gear used is trawl.

Perches, represented by a variety of species such as *Epinephelus* spp., *Lutjanus* spp., *Lutianus* spp., *Nemipterus* spp., and *Priacanthus* spp., are landed more from Kerala (46,836 tonnes) and Tamil Nadu (19,875 tonnes). Being reef dwellers, they are caught more in hooks and lines, traps and in trawls.

Croakers are landed from Gujarat and Maharashtra. The important gears used are trawls and gill nets. These fishes are caught mainly during October - December and January - March. They mainly consist of *Pseudosciaena diacanthus*, *Otolithes* spp. and *Johneios* spp.

Flatfish, represented by *Cynoglossus macrostomus*, *C. dubins* and *Psettodes erumei* are landed more from Kerala, Karnataka and Maharashtra. They are caught mainly in cast nets, boat seines (*Paithu vala*) and gill nets during August - November period.

Other important groups such as threadfins and pomfrets are landed more from Gujarat and Maharashtra. Goatfish is landed more from Tamilnadu and Kerala.

Utilisation

All the demersal finfish are used for consumption both in fresh and dry form. The liver of fish such as elasmobranchs and catfish is used for extraction of liver oil. The tanned skin of elasmobranchs known as 'shagreen' is used for making fancy articles and their dried fin is a delicacy used in soup in the middle east countries. The air bladder of catfish and sciaenids is used for the preparation of 'isinglass' - a purifier in breweries. The flesh of these fish can also be used for the preparation of fish powder, kheema and fish paste. Species such as silverbellies, smaller sciaenids and flatfish are used as fish meal and manure.

A perusal of the landing particulars of demersal finfish resources of India during the period 1985-93 shows that their landings increased over the years from 4.5 lakhs tonnes in 1985 to 6.23 lakh tonnes in 1993. This increase in fish landings may

be ascribed to the increasing mechanisation. The number of mechanised fishing crafts increased from 8,086 units in 1973-77 to 19,013 units in 1980 and 46,918 units in the nineties.

Nevertheless, the data shows that the contribution of demersal fish resources to total marine landings over the years has decreased from 29.61% in 1985 to 22.55% in 1989, the percentage increase thereafter being within 24.36% to 27.80%. According to an earlier estimate, the proportion of demersal fish declined from 35% in seventies to 28% during late eighties. One of the reasons for this decline may be attributed to the increased concentration of trawlers in the inshore waters within 50 m depth. Continued trawling in the inshore waters, besides affecting the growth of fish, can also alter the benthic ecosystem and nursery grounds of many fish, especially when trawlers have smaller cod end mesh size.

A perusal of the catch data during 1985-93 shows that groups such as catfish indicate a declining trend over the years, which may be due to the operation of purse seines which encloses the shoals of catfishes enmasse including the mouth breeding male ones. It is also reported that the effect of purse seining is not region specific, since catfish is reported to be migratory.

Exploratory surveys along the Indian EEZ have shown that there is rich abundance of non-conventional fishery resources such as bulls eye (*Priacanthus* spp.) , Indian drift fish (*Ariomma indica*) and black ruff (*Centrolophus niger*) in waters of 50-300 and 500 m depth especially off south west coast of India where an estimated potential of 27,500 tonnes of these fishes is reported.

Potential availability of fast growing perches such as groupers, snappers, breams and basses along the EEZ of India offers scope for enhancing demersal finfish production. It is estimated that a total of 14,600 tonnes of major perches can be obtained from the Indian EEZ. Since these fish are reef dwellers, attempts are to be made to capture them using line fishing, traps etc. With promising international market, these fish can also be raised through mariculture techniques of floating and submerged cage culture.

According to a recent estimate, Indian EEZ has a demersal fishery potential of 1.933 million tonnes, of which 1.28 million tonnes is expected from within 50 m depth area, 0.653 million tonnes from waters of 50-200 m and 0.028 million tonnes from 200-500 m depth. The present level of exploitation including shellfish is 2.08 million tonnes from 0-50 m and 0.63 million tonnes from 50-200 m depth. In order to tap the additional available resources, measures such as observation of closed season, regulation of mesh sizes and adoption of mariculture technologies may be resorted to.