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**MARINE CATFISH  
RESOURCES OF INDIA**

EXPLOITATION AND PROSPECTS

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## CHAPTER EIGHT

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### GENERAL REMARKS AND FUTURE APPROACH

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Consequent upon the recent introduction of mechanised fishing on a large scale with trawls as the chief gear all along the Indian coast, many hitherto less known demersal fisheries have come to occupy a prime place on the fisheries map of India. One such group is the catfish assemblage. With an estimated annual average catch of 52 thousand tonnes over a five year period from 1977 to 1982, the catfishes constituted about 4% of the total estimated 'all-fish' catches. Though the increase in the catfish landings was nominal during the 8-year period from 1962 to 1969, a three fold increase was noticed during the succeeding period up to and inclusive of 1984. This increasing trend is reflected in the estimated landings in most of the maritime states of India. Thus, while a nine-fold increase was noticed

in West Bengal during the period from 1977 to 1982, in Orissa a six-fold increase up to 1981 was reduced to a four-fold increase in 1982. In both the Andhra and Tamil Nadu states, the estimated landings, however, were characterised by decreasing trends. In Kerala, Goa, Karnataka, Maharashtra and Gujarat increasing trends in the estimated landings were reported. Thus, among the eight maritime states, excepting Andhra and Tamil Nadu states, the general nature in the production of catfishes was one of increasing trend. Importantly, no state was without the catfish component in their fisheries wealth. Hence, catfishes are bound to play a very important role in future plans of many states for diversification towards better utilisation of fisheries resources that abound their waters.

Although the trawl is the chief gear in most states, exploitation of catfishes by other indigenous non-mechanised gears, such as hooks & line, drift nets, bottom-set gill nets, boat seines, purse seines etc., is also prevalent depending upon the regional bias towards a particular method of harvesting. Thus, while drift nets are of considerable importance along the Gujarat coast, purse seines are noteworthy in Karnataka and to a lesser extent in Kerala. Among the maritime states on the east coast viz., West Bengal, Orissa, Andhra and Tamil Nadu, hooks & line, boat seines and bottom-set gill nets appear to be the chief gears of operation for catfishes. It may, nevertheless, be said that presently the catfishes are being exploited by both mechanised and non-mechanised craft and gear. The future success of the fisheries for catfishes, however, would largely depend on how best the mechanised trawl fishing is organised, developed and deployed because of the single factor that the major contribution to the fishery wealth of catfishes is made by the trawls.

Although many species constitute the catfish group, only a few are of fisheries importance. They are: *Tachysurus thalassinus*, *T. tenuispinis*, *T. serratus*, *T. dussumieri* and *Osteogeneiosus militaris*. With a wider distribution and larger contribution all along the coasts of West Bengal, Orissa, Andhra and Tamil Nadu on the east coast of India and up to Kerala on the west coast of India, *T. thalassinus* is the single important species of catfish among the five species that support the fisheries for catfishes. With an equally wider distribution but with lesser contribution, the next important species of catfish is *T. tenuispinis*. *T. tenuispinis* is however, more abundant along the West Bengal, Orissa, Andhra and in north Tamil Nadu than in other maritime states. In south Tamil Nadu, Kerala, Karnataka and Maharashtra, *T. dussumieri* appears to dominate. *O. militaris* appears to be endemic to Gujarat, where it is a fisheries of importance. Similarly *T. serratus* is more abundant off south Tamil Nadu and Kerala than they are in other states. The lesson seems clear that the future abundance of

catfish fisheries is largely dependent upon and revolves round the question of how best research and operational efforts are directed towards understanding and harvesting populations of and fisheries for *T. thalassinus* and *T. tenuispinis*.

In the light of the above findings, a knowledge of the extent of stocks of catfish available in our waters is vital if steps for expansion and (or) more exploitation are to be recommended or implemented. Based on data inputs such as the various growth parameters, rates of mortality, present length at first capture ( $l_c$ ) and the exploitation rate (E) obtained from an analysis of samples from trawler catches only, a maximum sustainable yield (MSY) of about 440 per recruit could be obtained at levels of  $E = 0.70$  and  $C = 0.66$  for all the five species of catfishes considered in the present study. But for *T. thalassinus* at all the centres studied, E ranged from 0.79 to 0.83 and C from 0.24 to 0.50. In other words, the values required for obtaining a MSY-400 g/recruit are nowhere in the range and, therefore, a reduction in effort and an increase in mesh size are indicated. Although E was nearer to the required level in the case of *T. tenuispinis*, the C values are at much lower levels indicating the need to increase the mesh size. For *T. serratus* and *T. dussumieri*, the C values are too low. Hence, as in the case of *T. thalassinus*, a reduction in both E and C are indicated. *O. militaris* appears to be the only species which has both the values of E and C at the required level.

Hence, considering the fact that all the four species of catfishes are under heavy fishing pressure, it is quite obvious that either C is increased or fishing pressure reduced if C is to be maintained at the present level. In view of the fact that trawling presently is so designed and directed towards exploitation of prawns, it is extremely unlikely that the former recommendation would be accepted, although a rational exploitation of the stocks of catfishes in future would yet seem to depend upon such a course of action and implementation.

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