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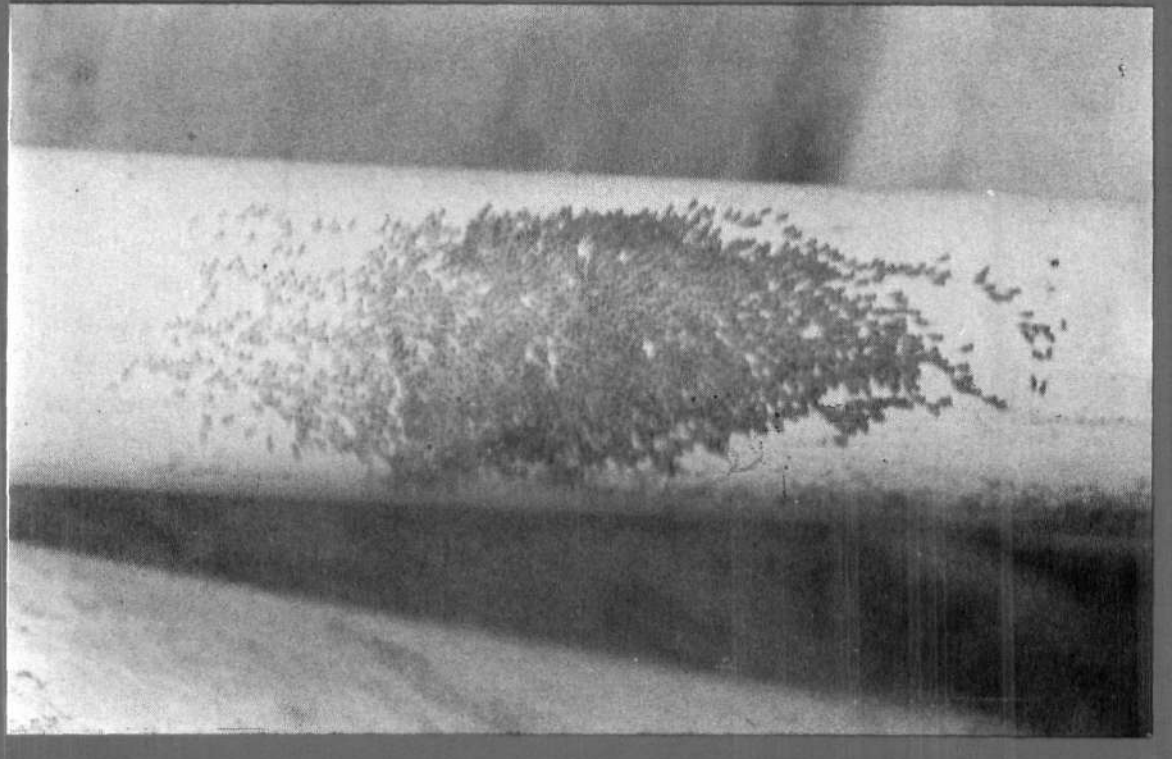

तकनीकी एवं विस्तार अंकावली
TECHNICAL AND EXTENSION SERIES

केन्द्रीय समुद्री मात्स्यिकी अनुसंधान संस्थान कोचिन, भारत
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भारतीय कृषि अनुसंधान परिषद
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

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914 BOOK REVIEW

Title	**Development of Marine Fisheries Science in India**
Author	**Pathrose Bensam**
Publisher	Daya Publishing House, Delhi-110 035
Price	Rs 640
ISBN	81-7035-207-X
Year of publication	1999
Number of pages	339 + illustration and BW photographs
Size	160 x 250 mm
Binding	Calico hard bound.

Marine Fisheries science is a recent offshoot of Biological Science with great scope for development as fisheries is gaining importance in the food security of all maritime countries. Although the subject is basically biological, it is multidisciplinary and includes many branches of marine sciences which have some bearing to the marine living resources. For the progress of the exploration and exploitation of marine living wealth, it is imperative to develop all essential harvest and post harvest infrastructure facilities along with a cadre of capable and well trained manpower resources for research, operation as well to manage the wealth sustainably. Since the marine fishery science is multidisciplinary and complex, a proper rationale to prioritise an appropriate curriculum most suitable to bring up able managers and to empower and enlighten the future marine resources user society is a national requirement. A concise attempt to bring all such subjects under the cover of a single document/book, though difficult, is necessary in the context of decreasing reading taste among the present day student/youth. Moreover most of the research findings in this science still hide behind scientific journals, which are generally either inaccessible or all the re-

sults might not be of direct relevance to the beginners of this science study.

The book under review "Development of Marine Fisheries Science in India" written by Dr. P. Bensam and published by Daya Publishing House, Delhi seems to be an attempt to achieve the above goal. The author has made all efforts to include a spectrum of subjects in condensed and capsulated form in the book. Since the author is not a specialist in many subjects dealt with in the book, minor/small errors have crept in at different places. This might have also happened while in the process of synthasising research results and condensing the subject contents drawn from different sources. Through careful scrutiny and editing those shortcomings could have been eliminated.

This book has three parts. The first part presented through 100 page covers 28 sections (each in 2 to 5 pages) as a general description on the world oceans and their characteristics, major currents; interrelationship of major organisms; origin and exploitation, techniques of marine fishing and fishing areas, major pelagic, demersal, crustacean and molluscan fisheries, marine algae, mammals and turtles; cultivable resources; environment and fisheries; fishing port facility; fish spoilage, processing, preservation and by products; fish trade and commerce; fisheries development tools; world fish production; fishing gear impacts; pollution; sustainable mariculture outlook for future. Although wide range of topics is covered in the above 28 sections, all of them are very brief and cursory, whereas some topics are jumbled and a few of them even stand out of the main theme of this part. However, in the scarcity of such Indian works of similar nature, this part would serve as a general introduction to convey overall global fisheries knowledge to beginners and students of fisheries education.

The second part of the book describes the basic research methodology normally applied in fisheries studies and research, with 36-sections spread over 120 pages, supported by many illustrations. This part deals with principles of species determination, methodology for data collection and analysis for estimation of production, linear measurements; biological and population characteristics; linear relation of parameters; age determination methods, maturation and fecundity; characteristics of early developmental stages; methods of estimation of early developmental stages, methods of estimation of phyto and, zooplankton, benthos; principles and methods of stock size; mesh selection; extension, economic and management methods prevalent in marine fisheries, and laws for judicious exploitation. There are many errors in sections 2.25 to 2.30 describing the fishery statistics, especially those dealing with mathematical formulae. As in the first part here also some of the sections, for example 2.5 to 2.7 project out of the main theme mentioned in this part entitled "basic method of research." There are some overlap of topics and contents which could have ben avoided if the sections "collection of data on size of a resource" (2.9) and "estimation of nation fish production" (2.10) are combined. The section on collection of data on biological parameter (2.11) is superfluous as the same is dealt with in subsequent sections. The estimation of stock size (2.29) by swept area method described in page 204 has been already dealt under 'method of estimating the standing stock by trawl experiments' in pages 126-127. Similar duplications are discovered at different parts in the book. Under the section 2.35 and 2.36 there is a grave omission with regard to current management practices followed the world over, as an example, FAO's Code of conduct for responsible fishing. Inspite of such inadequacies this part presents basic fisheries research methodology culled out from various scattered sources in a highly abridged form for use to beginners in the study of fishery sciences.

The third part spread over 134 pages cov-

ers 30 sections, mostly devoted to explain the history, research, evaluation and management of Indian marine capture fishery resources, a brief mention about the seed production and farming etc. with the support of many black & white photographs. This entire part seems to be scooped from the published and unpublished research results of the Central Marine Fisheries Research Institute, Cochin (CMFRI). The section on resources available (3.2) is a brief status of exploited Indian marine pelagic, demersal and midwater fishes, crustaceans, cephalopods, clams, mussels, oysters, algae, seafan, sea cucumbers, king crab, turtles, sponges, corals, mangroves and cultivable resources. In this section resources such as deep sea/oceanic mesopelagics, ornamental fishes/other marine curios etc., are not included though they are important future potential resources for exploitation and trade. In the section history of marine fisheries development, research and education the author has very briefly mentioned the development activities and research support which helped to transform the traditional fisheries of pre-independent era into an industrial sector. The present set-up available for researches in resource biology, fisheries education, training, mariculture etc. also find a place in these sections. The research results of major resources like, pelagic and demersal finfishes, crustacean and molluscan capture resources early life history of commercially important resources, fisheries environment, seed production and farming, physiology, genetics, nutrition and pathology of culturable resources, fishery economics, deep and high seas exploitation, endangered and threatened marine resources protection and conservation etc are mostly based on the recent research findings of the CMFRI. The contents of some sections in this part either overlap or sometimes duplicate as in the previous two parts of this book. This could have been avoided by amalgamating some of the closely similar topics and by proper editing.

An overall review of the boo gives an impression that greater emphasis is paid to marine capture fisheries and covered most of its allied topics, whereas the marine environment, mariculture and fisheries technology are not adequately represented, eventhough the research inputs in these areas have progressed considerably within the courntry. The author has given large volume of statistical data on fish catch, efforts, etc. without mentioning the source from where they were drawn except those provided in the tables. Similarly the photographs presented in the book seem to be borrowed from the publications of the CMFRI; whereas the same is not acknowledged.

In writing this book, the author has relied more on the researches/publications/reports of CMFRI, while the contributions of marine Institutions, like NIO, CIFT, FSI, CIFNET, IFP, CIFE, fisheries colleges of maritime Agricultural universities, different schools of marine sciences in universities etc. have not been adequately utilised to cover the various topics dealt with in this book. An extensive review of a wide range of researches done in many branches of fishery science at the above Indian institutions/universities would have added more content and strength to this book. A critical evaluation of the book by subject specialist can easily pin point several lacunae in both subject and content. Some of the prominent and glaring omission and inadequate description noted in this book are on water masses, artificial reefs, marine protected areas, mud banks, biodiversity of major ecosystem for plants and animals of importance in marine toxicology and pharmacology bioprospecting, sea ranching, ornamental marine organism, live fish/crab / lobster transport/trade; pollution; CRZ impacts on development/mariculture; microalgal culture, zooplankton culture; DSL; indicator species; deep/high seas fishing policy; responsible fishing etc. The inclusion of the above topics would have enriched the book as well as made the title justifiable and more apt. Although the

author has taken information from a large numbers of different Indian publications, the bibliography is limited to 51 citations in which only 20 are the works from India. Instead of giving such an inadequate bibliography, the author could have enlisted books for additional reading, which would serve to supplement and complement the contents presented in this book.

Despite the above observation, the author's efforts are worth appreciating, as there are only few Indian works similar nature. Compared to earlier works his attempt is unique wherein the author has carefully structured and aligned many often needed applied aspects relevant to marine fisheries research and development, present status, capability, lacunae, weakness and strengths, future thrusts and potential; while leaving aside the more academic components of this science which were already reflected and emphasised in different earlier Indian books. In this context it is worth mentioning that though the academic institutions have prescribed curriculum for courses in fisheries science, there were no serious attempt from the part of academicians to prepare any standard book or books to cater to the needs of their students. In such a situation, a scientist's (the author of this book) endeavour to help the students of this science is commendable. This book is recommended to graduate students of fishery science and to college/university libraries wherein fisheries /marine science courses are offered.

Dr. N.G. Menon,

CMFRI, Cochin

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