

# **Marine Fisheries Research and Management**

*Editors*

**V.N. Pillai and N.G. Menon**



**Central Marine Fisheries Research Institute**

*(Indian Council of Agricultural Research)*

Tatapuram P.O., Cochin-682 014

Kerala, India

**2000**

**Marine Fisheries  
Research and Management**

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Central Marine Fisheries Research Institute  
Tatapuram P.O., Cochin-682 014

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*Published by*

**Dr. V.N. Pillai**

Director,

Central Marine Fisheries Research Institute,

Tatapuram P.O., Cochin-14

**ISBN : 81-9012 19 - 0 - 1**

*Citation styles*

*For entire volume*

**V.N. Pillai and N.G. Menon** (Eds) 2000.

*Marine Fisheries Research and Management,*

Central Marine Fisheries Research Institute, Cochin,

pp. 914

*For individual article*

**Devaraj M. and K.K. Appukuttan**, 2000.

Perspective of coastal aquaculture in India.

In: *Marine Fisheries Research and Management,*

V.N. Pillai and N.G. Menon (*Editors*),

Central Marine Fisheries Research Institute, Cochin: 676-687

*Price :* **Rs. 500/-**

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*Printed at :*

**Cherrys Printers**, Kaloor, Kochi-17.

Phone : 345681

## **PREFACE**

*After completing five decades of dedicated research in marine fisheries and allied subjects, the Central Marine Fisheries Research Institute, under the umbrella of ICAR, has gained considerable strength and confidence to manage Indian marine fisheries, which face challenging problems in respect of sustainability of coastal production, mariculture implications, exploration and exploitation of potential deep sea / oceanic pelagic, mesopelagic resources. The Institute has the responsibility to address all fishery research needs in the 8129-km long coast and 2.02 million km<sup>2</sup> EEZ waters. Accordingly, all our endeavors are directed towards solving the fishery dependent problems like ever increasing fishing pressure, demand for target resources, technology creep through mechanization / motorization and the resultant high fishing mortality, poor recruitment, overfishing etc. and related issues which might crop up from time to time consequent on irrational human pressure and interaction in a climatically limited fishable habitat and the conflicting interest groups that play in this sector. The excessive interference of man in the easily accessible shallow coast, the most vulnerable species, sensitive and fragile ecosystem in the wake of living resources exploitation, with the support of a strong technology, has not only depleted many resources, but also degraded or even denuded several inshore habitats and thereby even spoiled or disfigured the aesthetic beauty of the coasts, the coral reefs, the sea grass meadows, the mangroves, the estuaries etc. In order to solve the often-reported conflict between conservation and development in*

marine fisheries sector, a strong and convincing database on fish biology, resource status, marine environment, socio economics of capture and culture fisheries are essential to evolve suitable management measures and to assess the adequacy of any crises / impact / stress management plan in this multiple resource user sector and to list out various mitigative measures for each impact. A regular monitoring of all these factors together with clear knowledge on the biology and behaviour of species in question are the minimum necessity to sustainably manage the exploited species / resources. Regular collection of all those parameters from a highly dynamic and climatically controlled habitat / ecosystem of Indian region is often beset with operational / infrastructure / human endurance limitations. In spite of the above constraints the Institute could generate volumes of data in space and time on all aspects in line with international standards and often this data base has been acclaimed world over and utilized for stock assessments / developing prediction models. The Institute is also looking forward to make the mariculture research and its outputs not only viable nationally but also competitive globally in an era when wild hunting slowly gives way to farming and domestication of coastal species, The voluminous database, infrastructure facilities coupled with the qualified scientific / technical manpower have empowered the Institute to take up consultancy services in diverse topics at globally competitive rates to serve all type of clients.

In connection with the Golden Jubilee of CMFR Institute, we have immense pleasure to bring out a publication entitled "**Marine Fisheries Research and Management**". The review articles included in this book are written exclusively by the scientists / technicians of the Institute. The subject matters broadly focus on pelagic, demersal, crustacean and molluscan capture fisheries, national marine fish wealth, the environments, sensitive coastal ecosystems, pollution, gear impacts, potentials from the deep and hitherto little exploited resource realms, mariculture of

crustacean, molluscan, finfishes and other ancillary marine organisms, seaweed and fishery economics and extension. A wide spectrum of problems, prospects and management practices in line with the broad global outlook for 'responsible fishing', relevant to each resource and each situation are thoughtfully dealt with in the articles along with an exhaustive list of references in the subjects concerned. The authors have taken sincere efforts to synthesize and interpret the data gathered over the years, into knowledge for the direct use to fishermen, entrepreneurs, scientists, students, managers and policy makers.

I am glad to express my gratitude to Dr. M. Devaraj, former Director of CMFRI, for initiating this task to publish a compendium on the major research results of the Institute during the last five decades (1947 - 1997). I take this opportunity to thank all contributors of this Institute, external referees like Shri. C. Mukundan, Dr. M.M. Thomas, Shri. K.H. Mohammed, Dr. A. Noble and Shri. K. Raman, Retired Scientists, and other senior colleagues of the Institute for the critical evaluation of the papers and Drs. K. Rengarajan, V.S.R. Murthy, K.J. Mathew and N.G. Menon, members of Golden Jubilee publication committee, CMFRI, for the help rendered at one time or other during the preparation of this book. I hope that this book would serve as an excellent guide to students of fishery science, researchers, managers, entrepreneurs and policy makers.

Cochin  
June 2000

Dr. V.N. Pillai  
Director

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