FISHERIES EDUCATION IN SOUTH INDIA
CHAPTER – 3
FISHERIES EDUCATION IN SOUTH INDIA

3.1 Introduction

India, blessed with diversified agro climatic regions, is endowed with rich aquatic and fishery resources offering ample scope and opportunities for fisheries and aquaculture development in the country. To manage these available vast resources and achieve the envisaged targets of bridging the gap between the potential and the production, the Indian Council of Agricultural Research (ICAR) has established a wide network of fisheries research institutes for developing technologies for the exploitation of various aquatic resources and an exclusive fisheries university for manpower development (Ayyapan and Diwan 2004).1

In parallel with the establishment of ICAR central fisheries research institutes under ICAR, fisheries colleges were established under Agricultural Universities to impart professional fisheries education in the country. The country’s first fisheries college was established at Mangalore (Karnataka state) in 1969 under the University of Agricultural Sciences, Bangalore. The latest fisheries college namely the 14th Fisheries College is established at Nagpur, Maharashtra. The mandate of these institutions is to generate specialized manpower for the development of fisheries sector of the state as well as of the nation.

3.2 History of Fisheries Education in India

In India the fisheries sector lays great emphasis on developing the fisheries education to produce professionally competent personnel. Education in all agricultural sciences including fisheries is the responsibility of Agricultural/Animal Science Universities in their respective states. However, prior to
independence, the importance attached to fisheries as a whole was far from satisfactory. In 1947 the Government of India started two ad hoc educational and training programmes—one in Calcutta for Freshwater fisheries and the other at Mandapam camp (Tamil Nadu) for Marine Fisheries. The Fisheries Education Committee (1959) headed by late Dr N K Panickkar, recommended to set up two national level institutes. One of them, the Central Institute of Fisheries Education, at Bombay was started in 1961 with FAO/UNDP aid. This institute was to impart postgraduate diploma level fisheries education to district level fisheries officers deputed by various state governments. The other one was the Central Institute of Fisheries, Nautical and Engineering Training established at Kochi (Kerala) in 1963 to train personnel for the fast expanding mechanized marine fishing sector. In the same year a Marine Products Processing Training Centre (MPPTC) was established at Mangalore under the Indo-Japanese Collaboration Programme for imparting postgraduate diploma training in fish processing technology. The polytechnics in the states of Tamil Nadu, Kerala and Andhra Pradesh took up a postgraduate diploma and certificate level training courses in Fisheries Technology and Navigation (Mohan 2005).

3.3 Fisheries Colleges under State Agricultural Universities/Veterinary and Animal Sciences Universities/Central Agricultural University

The State Agricultural Universities are autonomous institutions established by the concerned State Governments by Acts passed by the respective State Legislatures. Fisheries Education as a specialized discipline is offered under the aegis of State Agricultural Universities (SAUs), Central Agricultural University at undergraduate, postgraduate and doctoral levels. In 1969, the University of Agricultural Sciences of Karnataka State started offering courses such as BFSc, MFSc and PhD with the establishment of the country's first Fisheries College in Mangalore. Presently, the Fisheries College, Mangalore is under the Karnataka
Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka. The success of this institution prompted the establishment of 14 fisheries colleges in various states that offer BFSc, MFSc and PhDs programmes affiliated to the State Agricultural Universities/Veterinary and Animal Sciences Universities (Abraham 2004)\textsuperscript{3} A harmonized course curriculum with special emphasis on field based training is followed in the Fisheries Colleges of India. These fisheries institutions were established with the main objective of imparting university education in fisheries science and to conduct research and development in fisheries sector.

A list of Fisheries Colleges in India, imparting professional fisheries education is given in Appendix IV.

### 3.4 ICAR, Central and State Government Institutions

The fisheries research under the Indian Council of Agricultural Research is presently being carried out by the eight Central Research Institutes. These research institutes conduct research on survey, exploitation, experimentation, management and conservation of various aquatic resources namely freshwater, brackishwater, coldwater, coastal and marine ecosystems and for harvest and post-harvest technologies and an exclusive Deemed university for fisheries education. (The details of these 8 Central Research Institutes are given in Appendix IV). Among these 8 institutes, Central Institute of Fisheries Education (CIFE), Central Marine Fisheries Research Institute (CMFRI), Central Institute of Freshwater Aquaculture (CIFA), and Central Institute of Fisheries Technology (CIFT) presently offer, MFSc and PhD degree programmes in mariculture, freshwater and marine capture fisheries and fisheries technology etc The Indian Institute of Technology, Kharagpur, West Bengal offers M Tech Course with the specialization of Aquaculture Engineering and IIT, Madras offer M Tech Ocean Engineering.
3.4.1 Indian Council of Agricultural Research (ICAR)

On the recommendations of the Royal Commission on Agriculture (which was appointed by the Government of India to examine the conditions of agriculture and rural economy in India), the Imperial Council of Agricultural Research was established in 1929 as a registered society for promoting, guiding and coordinating agricultural education and research in the country. This was renamed Indian Council of Agricultural Research (ICAR) after independence and it was later reorganized for greater autonomy and flexibility in its operational and management aspects, during 1974. ICAR is now the apex body of the Department of Agricultural Research and Education (DARE) and is responsible for the organization and management of agricultural, animal and fisheries education and research in India. It is a nodal agency of monitoring and coordinating higher agricultural education including fisheries in the country. It receives 100 per cent finance from the Government of India which is utilized for agriculture, veterinary, animal and fisheries research and education through a network of Central Institutes and State Agricultural/Animal Science Universities (Livingston 1998).

3.5 Fisheries Education in other Academic Universities

The Annamalai University in Tamil Nadu has been offering courses in MSc and PhD in Marine Biology since 1960. It is the country’s first Centre of Advanced Study in Marine Biology under UGC. The Department of Marine Biology and Oceanography was organized in 1938 at Trivandrum by the erstwhile University of Travancore. It was renamed as School of Marine Sciences under Cochin University of Science and Technology (CUSAT) is conducting MSc and PhD degree courses in industrial fisheries, marine biology, marine geology and oceanography from 1962 onwards. The University of Udaipur, Rajasthan offers MSc course in Limnology and Fisheries. Further, several universities all over the
country offer courses in Fisheries, Fishery Biology or Ichthyology as a special subject in MSc (Zoology). However, the degrees awarded are under the faculties of Zoology, Marine Biology, Marine Sciences or Biosciences. Similar facilities for doctoral research are also available in many of the Central Fisheries Institutes. For the courses at National Institute of Oceanography (NIO) Goa, the degrees are being awarded by the Universities where the students register themselves. NIO is a research institute under Council of Scientific and Industrial Research (CSIR), for oceanography and marine science and is recognized by Goa University and other Universities as research center for doctoral programmes.

3.6 Fisheries Colleges and Central Fisheries Research Institutes in South India

In the absence of professional fisheries graduates, graduates in one or the other basic sciences were only being recruited to man the fisheries research and developmental establishments in the country. Therefore the need for professionally qualified fisheries personnel was being felt all over the country for the development and management of fisheries sector. Thus the professional fisheries education was started in South India with the establishment of the country’s first Fisheries College at Mangalore in 1969, under the University of Agricultural Sciences in Karnataka state.

The 2\textsuperscript{nd} and the 3\textsuperscript{rd} Fisheries Colleges were established at Tuticorin, Tamil Nadu and at Kochi in Kerala respectively under the respective State Agricultural Universities, almost on the same pattern of Mangalore Fisheries College. However, in the recent years the Mangalore (in the year 2004-2005) and Tuticorin Fisheries Colleges were brought under their respective State Animal Science Universities. These institutions have been imparting higher education in various branches of fisheries sciences at Bachelor, Master and Doctoral levels. The
institutions were started with a view to produce well trained professional fisheries personnel to man various fisheries activities and to carry out basic and applied research to solve the problems of the fishery industry and fish farmers.

At the same time Central Fisheries Research Institutes namely CMFRI and CIFT both at Kochi, Kerala and Central Institute of Brackishwater Aquaculture (CIBA) at Chennai, Tamil Nadu were also established under the ICAR, Government of India. These institutes are established to serve as nodal agencies for developing technologies for exploitation and management of marine resources, brackishwater aquaculture and for harvest and post harvest sectors. These institutions are primarily established with the objective of research and development activities. In addition to research and developmental work, they are also involved in higher education in fisheries offering Masters and PhD programmes in collaboration with CIFE, Mumbai. The students of Masters programmes course spend their first semester at CIFE, Mumbai, attending course work to gain an insight into the basic disciplines of fish and fisheries and later move to CMFRI and CIFT for carrying out research work for their dissertations.

However, these institutes are not involved in undergraduate education in fisheries sciences. In addition to the regular PhD programmes offered in respective universities, a few research scholars who are involved in the outside funded research projects also acquire PhD degrees from other conventional universities in respective states. The Table 3.1 shows the year of establishments of Fisheries Colleges/Central Research Institutes, programmes offered and the different departments in these institutions.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Year of establishment</th>
<th>Programmes offered</th>
<th>Type of Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Fisheries, Mangalore, Karnataka</td>
<td>1969</td>
<td>BFSc, MFSc, PhD</td>
<td>Fish Biology and Fishery</td>
</tr>
<tr>
<td>College of Fisheries, Tuticorm, Tamil Nadu</td>
<td>1977</td>
<td>BFSc, MFSc, PhD</td>
<td>Aquaculture</td>
</tr>
<tr>
<td>College of Fisheries, Panangad, Kochi, Kerala</td>
<td>1979</td>
<td>BFSc, MFSc</td>
<td>Fish Biology and Fishery</td>
</tr>
<tr>
<td>College of Fisheries, Nellore, Andhra Pradesh</td>
<td>1992</td>
<td>BFSc</td>
<td>Aquaculture</td>
</tr>
<tr>
<td>Central Marine Fisheries Research Institute, Kochi, Kerala</td>
<td>1947</td>
<td>MFSc, PhD</td>
<td>Fish Biology and Fishery</td>
</tr>
<tr>
<td>Central Institute of Fishery Technology, Kochi, Kerala</td>
<td>1967</td>
<td>MFSc, PhD</td>
<td>Aquaculture</td>
</tr>
<tr>
<td>Central Institute of Brackishwater Aquaculture, Chennai, Tamil Nadu</td>
<td>1984</td>
<td>PhD</td>
<td>Fish Biology and Fishery</td>
</tr>
</tbody>
</table>
3.7 Libraries of the Selected Fisheries Education Institutions in South India: a state-of-the-art

Fisheries institution libraries are the special libraries which have been playing an important role in supporting the research, teaching and extension mission of the Fisheries Colleges and Research Institutes. Rapid accumulation and dissemination of information is the most important feature of the 21st century. Fisheries graduates cannot afford to lag behind in this technology. Therefore a well-equipped library is a must to every fisheries institution since it is the nerve center of all educational and research programmes.

The fisheries institutions have recognized the need for proper library and information services due to: i) emphasis on research and ii) the use of different methods of teaching and evaluation, where there is emphasis on seminars, tutorials, assignments, periodical assessment, etc. Therefore teaching in such a system of this nature has to be library-oriented; otherwise it would be almost impossible for a student or a research scholar to keep abreast of developments in the educational and research pursuits.

The services rendered in these libraries are, however, confined to the fisheries scientists, teachers, researchers and students. Most of the libraries render specialized services like documentation, bibliographic, current awareness services, reprographic in addition to the normal library functions. Most of the fisheries institution libraries have computerized the library activities. Considering the importance of electronic information services for development of fisheries sector, the survey has been conducted to analyze the libraries of these institutions.

As explained in 'Methodology' section in chapter 1, the sample population is drawn from the selected Fisheries Colleges/Research Institutes in South India.
In this section, an attempt has been made to present an analysis of the libraries of these fisheries educational institutions (Table 3.2). The information provided is based upon a survey conducted among the librarians of these institutions. The collection of data was through structured questionnaire and personal visits to these institutions. The questionnaire used for the survey is given in appendix III.

The state-of-the-art of the libraries has been presented with the following facets:

I. Name of the library and year of establishment
II. Traditional information sources
III. Traditional information services
IV. Internet facility
V. CD-ROM facility
VI. Other network facility
VII. In-house library automation
VIII. Library users
IX. Library staff strength
<table>
<thead>
<tr>
<th>Name of the library and year of establishment</th>
<th>Traditional information sources</th>
<th>Internet</th>
<th>CD-ROMs</th>
<th>Other Network facilities</th>
<th>Informati on services</th>
<th>In-house library automation</th>
<th>Library staff strength</th>
<th>Library users</th>
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<tr>
<td>Name of the library and year of establishment</td>
<td>Traditional information sources</td>
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<td>Information services</td>
<td>In-house library automation</td>
<td>Library staff strength</td>
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</tr>
<tr>
<td>Central Marine Fisheries Research Institute, Kochi, Kerala 1954</td>
<td>Books 15000 Journals 50 Bound vol 1000 Thesis 80 Tech report 150</td>
<td>2003</td>
<td>VSNL</td>
<td>ABAFR FFWW Food &amp; Human nutrition in AGRIS</td>
<td>LAN</td>
<td>CAS/SDI RS BBS CPS LES Pub,NCS</td>
<td>Cataloguing WebOPAC Circulation Serials control</td>
<td>Local (Alice for window)</td>
</tr>
</tbody>
</table>

3.8 Inferences

From the above presentation of the Fisheries Colleges/Research Institutes in South India and the state-of-art of the libraries that are considered for the study the following inferences could be drawn

1. Higher education in Fisheries started with the first Fisheries College in 1969 at Mangalore, Karnataka. Currently there are 4 Fisheries Colleges in addition to 3 Central Fisheries Research Institutes in South India.

2. The Fisheries Colleges offer a broad-based 4-year undergraduate programme. Master's and Ph.D degrees in several disciplines of Fisheries Sciences are offered both in the Fisheries Colleges as well as the Central Fisheries Research Institutes.

3. Para-fisheries education in some form or the other is also being imparted in several traditional universities.

4. It is found that the traditional information sources in Fisheries libraries under study are mainly in the form of books, journals, theses and technical reports and the traditional information services include reference, bibliographic, book lending and current awareness services.

5. In majority of the institutions Electronic Information Sources are made available in the recent decade.

6. It is observed that all the institutions are subscribing to a number of CD-ROM databases but only the CIFT, Kochi is subscribing to the web-based EIS.

7. The libraries under study are accessing Internet through Leased line, Dialup or VSAT connection.

8. The libraries under study are accessing the Internet mainly through the ERNET, BSNL and VSNL Internet Service Providers.

9. All the institutions under study have LAN facility but Campus Wide Network System is seen only in College of Fisheries, Mangalore, College of Fisheries, Nellore and College of Fisheries, Tuticorin.
10 Most of the institutions are providing the internet browsing facility for more than ten users at a time.

11 Majority of the libraries are providing stand alone single drive CD-ROM search facilities and these are restricted to limited number of users at a time. Only CIFT and CMFRI, Kochi libraries are providing networked CD-ROM database services to their users.

12. The in-house library automation is not fully operational in 4 of the libraries under study. But fully automated and computerized services are provided to its users in the libraries of College of Fisheries, Tuticorin, CIFT and CMFRI, Kochi.

13. The teachers/scientists are the major category of library users in these institutions. Research scholars and postgraduate students are limited in number.
References:

1. Ayyapan, S and Diwan, A D (2004) Road map to increase fish production and productivity in India. *Fishing Chimes*, 24 (4) 24-26

