

# Indian National Information Programme for Marine Science

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*Explains the steps to be taken for a better utilization and management of information resources available in institutions concerned with marine sciences in India. The role and the services and facilities of the NIO Library are described.*

## 1 INTRODUCTION

India is one of the fortunate countries to have a long coastline. Waters of the Arabian Sea and the Bay of Bengal wash its shores on its west and east respectively. These waters of tropical belt, being highly productive, keep the country's living resource potential in the green. Over the last few years, non-living resources - minerals, oils and gas - also are being exploited at some places well confined to the Exclusive Economic Zone (EEZ). Availability of such consistent wealth be living or non-living, has undoubtedly made a considerable impact on the country's economy. This, in turn acted as a catalyst for the proliferation of number of institutions for research and developmental (R&D) activities and higher education in the field of marine science (as a part of human resources development) during the post - independence era. A detailed account of the history of these developmental activities have been documented in the form of comprehensive review<sup>1</sup>. As of now a sizable number of trained personnel in the field of science and technology (S&T) could be identified in the marine science discipline in India. So far, 86 institutions have been identified till to-date<sup>2</sup> situated mostly along the east and west coasts of India (figure .1), engaged in specific or multidisciplinary branches of marine sciences (table 1). This table does not take into account the large scale efforts in the field of exploration, preservation, canning and export of the marine (living) resources by the business house in the private sector.

Exchange of information amongst these institutions helps in bettering the expected output and in reducing the duplication of research efforts. In a way, information science as such has its' role to play to meet the above requirements. However, the procurement of the required major and subsidiary research material (dealing with the developmental activities) in the form of information is quite expensive.

The generation and dissemination of information is the principle scien

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tific aspect that one is confronted with today. In the developed nations this problem is not serious as they are the main sources of generation of information and they also exploit fully the latest technological advancements in communications systems available for dissemination purposes. While this is the situation in general, the field of marine sciences is no exception to this. It may not be very much our of the place to mention that the R & D studies in marine sciences occupy a special and unique status as far as expenditure are concerned. Logically so, is the marine science information component. In India, around 1 to 2 % of the total institutional budget is spent on information related activities. Considering the prevailing inflationary trend, this percentage has hardly any meaning. It affects the users of multidisciplinary institutions more as their store houses - the libraries - can not do justice for any singular discipline. Coming to the educational institutions, I reserve my comments as they need no further appraisal.

Over and above the problems of funding, the accessibility and awareness of the available information would have their impact in contributing to the quality and quantity of research output. Thus, funding and management of the available resources need consideration at this stage.

Funding, as we all know, for the development of a strong information base at any institutions depends on several external factors. The library and information professionals (LIP) have a significant role to play for better utilization of the available resources.

This paper attempts to address some of the steps proposed to carry out the task of better utilization and management of information in the marine based institutions in India. These include mainly:

1. Survey of available resources from the region,
2. publicizing the information available at the house to the prospective user(s)/organizations(s), and
3. development to network.

The final stage of the proposal deals with the service component. These various steps suggested, could be executed in the assigned order or simultaneously depending on the availability or trained personnel.

A case study has also been made following these steps. The results of which are highlighted to support the functional aspects of the said proposal.

## **2 PROPOSAL**

### **2.1 Survey**

Personal visits to user organizations in a way door-to-door complaining is proposed for information collection on the infrastructure, resources, skills and user communities. These visits also provide an opportunity for detailed discussions with the heads of different institutions as well as the LIP. and for identify-

ing contact persons for liaisoning. The advantages of closer cooperation among such centres, the mutual benefits that could be accrued as a result of sharing and exchange of resources, information, databases and expertise would then be spelt out. In addition this would also cultivate the utilization of available information resources at specified laboratories and finally lead to getting them admitted to the network - a next stage of this proposal.. This aspect would illuminate the needs for infrastructure development, training requirements, etc., at one or more centres. Modalities to meet such needs based on priorities identified could then be formulated to seek further support from user organizations of other funding agencies.

All the above efforts (groundwork) would strengthen the activities of the coordinating centre. the overall architecture of the system could then be well framed. The major institutions with their resources would act as nodal points, support mutually either on sharing/participating basis and extend the facilities (assist) to those with weaker information base.

## **22 Information Awareness Programme.**

Based on the experience gained so far, the following are some of the significant points that need to be detailed to underline the importance of this stage:

1. Unawareness: Majority of the users express difficulty in getting exposure of the available, large marine science literature,
2. Information professionals: Inadequate availability of trained personnel to handle information dissemination and other relevant/ associated/affiliated tasks.
3. Modes of information dissemination using modern tools, and
4. Need to make users aware that the literature they publish could well be publicized through relevant data bases.

### *221 Modus operandi*

While on the job of information collection through direct or indirect means, the personnel would pass on the handouts - brochures, pamphlets, etc., projecting the strength of the collections, different services that NIO library could offer; lecture and demonstrate the utility of the data base searches. They would ascertain the information requirements of the prospective users and think on possible solutions. The users - who are in-a-way information generators - would also be informed about the importance of inclusion of their publications in the databases - national and international.

## **23 Network Development**

The structural aspects of the network would be finalized after identifying the definite user organizations. The network formation would help in:

1. developing and maintaining union catalogues of documents available at all the centres under this framework;
2. promoting the use existing standards, modalities (techniques, designs, etc.) in the information handling;
3. the use of contemporary technological advances: computer-based methods, microcomputers, database design, telecommunication/satellite networks, etc.;
4. developing and maintaining a national database of import to the national programmes and R&D in these areas;
5. making information services tailor made to user organizations;
6. sharing and utilizing resources at optimum level;
7. ensuring optimum capture of information on published/unpublished literature in various branches of study and its' input to databases-national and international; and
8. acting as a strong resourceful unit for international associations.

## 24 Services

There would be certainly and increasing demand for the services mainly in the form of literature search and document delivery after practicing first two stages of the proposal. The literature searches could be done on national and international data bases using - Compact Disc technologies or on-line facilities. On-line searches are again dependent on the availability of funds. The problem of document delivery is rather crucial. to make document delivery service effective, it would be necessary to develop contacts with other information centres of relevant discipline, spread all over the world to capture required and unavailable literature within this country. Even if free availability of documents may not always be possible, the cost of such facility on the basis of mutual cooperation would certainly be less than that of commercial services.

## 3 CASE STUDY

The library of the National Institute of Oceanography (NIO) is one of the largest libraries in the field of marine sciences in India housing a collection on all multidisciplinary areas of this subject. The overall growth is shown in figure 2. The increase in the collection of this library is three fold during the last fifteen years. In recent past, however, owing to the limited funds available, the acquisitions show a decreasing rate of growth. The collection is always being referred by various users. Over 10,000 annual borrowings by 400 users are recorded at the circulation counter of the library. One of the reasons for significant use of the collection by the in-house user community could be envisaged in the efforts made in: i) display of the latest acquisitions, and ii) circulation of new arrivals lists. The frequent short duration visits of the students and research scholars

from various Indian universities for literature survey, studies etc., to NIO library also reflect sufficiently on the collection and facilities offered.

### **31 Resource Sharing**

To a limited extent the libraries of NIO and Goa University share their collections. This has helped in reducing the expenditures to the tune of Rs.75,000/- at each institution annually. Within the institute (including its three regional centres), similar practice has contributed to a saving of Rs.1,00,000/-

### **32 Computerization**

The library is equipped with modern tools for information dissemination like microcomputers handling national and international databases. The staff has been sufficiently trained, in India and abroad, in modern information handling techniques. Under the modernization programme, the library has also computerized some of its' housekeeping operations by developing software tuned to the local needs.

### **33 Awareness on Modern tools of information handling**

When the library introduced the ASFA database on compact disc (CD-ROM), a series of demonstration programmes for the in house users were organized. Table 2 provides its increasing use over the years. The success of this experiment underlines the need for launching an information awareness programme outside this institute to increase its utility to the maximum.

### **34 International Participation**

#### *341 Cooperative Information System*

The library is also participating in the international information dissemination activities. With its merits it has recently been recognized as the National Input centre for Aquatic Sciences and Fisheries Abstracts - a cooperative international information system's database, managed by mainly United National agencies like FAO, IOC, UNEP, etc., in the field of study with a designated role in capture and transfer of bibliographic data pertaining to marine science literature published in India.

#### *342 Document Delivery*

The library routinely supplies photocopies of the documents required by other institutions on receipt of requests since last many years. During 1990, the library has also gained an experience in document delivery at national and international level. The Inter-Governmental Oceanographic Commission of the United Nations' project: Regional cooperation in Scientific Information Exchange in Western Indian Ocean (RECOSCIX - WIO) at Kenya has recognized this library as the cooperating institution in providing the required literature.

The recent report of the project highlights the fact that during 1990, the major share 35% of their requests for copies of documents are met by NIO in shortest possible time and at nominal charges. While the rest was met by 17 other cooperating institutions.

#### *343 Networking Efforts*

During 1990, efforts were also made to organize a workshop, with a view to bring together LIP from various Indian institutions dealing with marine science studies, as one of the strategies to fulfill the aim envisaged in the above proposal. However, this exercise did not yield any encouraging results.

#### **4 CONCLUSION**

A scheme for collection and dissemination of information to various user organizations has been proposed considering the dwindling funding from the principle sources. The activities, on aspects of collection, handling and dissemination of information pertaining to marine sciences, covering this proposal have been put to practice at the laboratories of NIO with the limited staff members, trained in India and abroad. This exercise yielded satisfying results. Encouraged by the success of the experiment, a proposal has been submitted for consideration at the national level.

#### **REFERENCES**

1. VARADACHARI (VVR) and DAS (VK). *Oceanography in India*. In RAJAGOPAL (NR), Ed. *40 Years of research: a CSIR overview*. 1987. Council of Scientific and Industrial Research; New Delhi. 62p.

**Table 1. Type of organizations studying specific/all subjects in marine sciences in India**

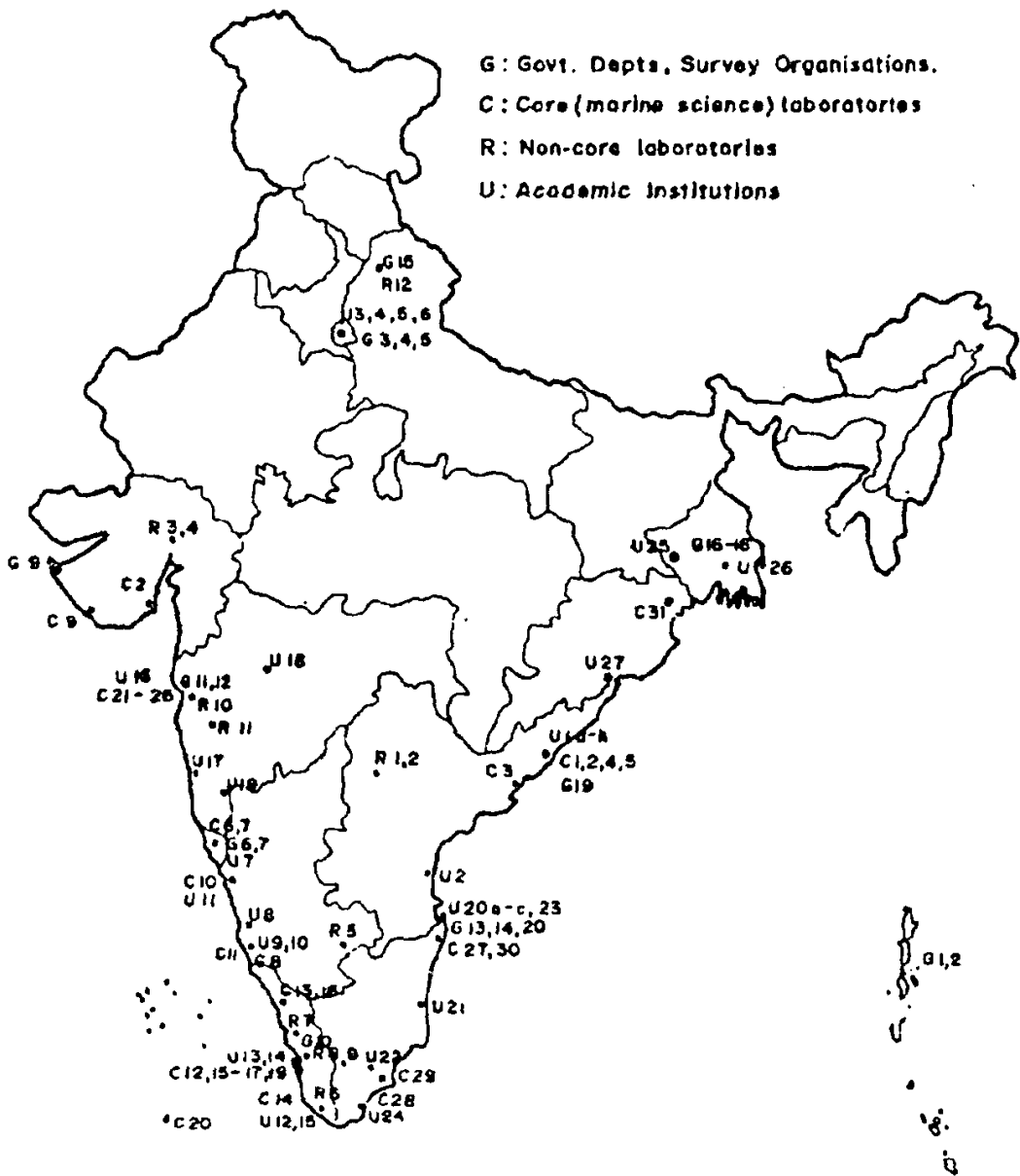
Type	Bio/Ecol	Fish	Chem	Phys	Geol/Geop	Tech/Engg	Gen
Govt	4	7		3	3	3	1
Main labs	7	20	5	5	2	2	
Auxiliary labs		1	1	2	4	2	3
Univ Dept.	22	10	7	6	9	4	

**Table 2. Number of ASFA searches carried out since commissioning**

Year	Number of NIO users	Searches for		Total
		NIO users	Non-NIO users	
1988-89*	54	146	39	185
1989-90	47	421	142	563
1990-91	95	435	169	604

\* = from 18 October 1988

FIGURE-1: LOCATION OF ORGANISATIONS IN INDIA DEALING WITH MARINE SCIENCE ASPECTS





## LIST OF INSTITUTIONS IN FIGURE 1

**Andamans**

G1 Fsi, Port Blair

G2 Zsi, Port Blair

**Andhra Pradesh**

C1. Nio, Rc Waltair

C2 Cmfri, Rc Waltair

C3. Cift, Rc Kakinada

C4 Nstl, Waltair

C5. Cifnet, Waltair

C19 Gsi, Waltair

R1. Ngri, Hyderabad

R2. Nrса, Hyderabad

U1. Andhra Univ., Waltair

U2. Svυ, Kavali

**Delhi**G3. Min. Agri Fish Div.,  
N Delhi

G4 Dod, N.delhi

G5. Imd, N.delhi

U3. Jnu, N. Delhi

U4. Univ. Delhi, Delhi

U5. lit, Delhi

U6. Jmi,n. Delhi

**Goa**

C6. Cift, Panaji

C7. Nio, Dona Paula

C6. Dir. Fish, Panaji

G7. Fsi, Margao

U7. Goa Uni, Bomboli

**Gujarat**

C8. Csmcri, Karwar

C11. Cmfri, Mangalore

G9. Gujarat Fish. Aduat Sci,  
Port Okha

R3. Prl, Ahmedabad

R4. Sac, Ahmedabad

**Karnataka**

10. Cmfri Karwar

C11. Cmfri, Mangalore

G8. Gsi, Mangalore

R5. Isro(nnrms) Bangalore

U8. Krec, Suratkal

U9. Fish. Col., Mangalore

U10. Mangalore Univ.  
Mangalore

U11 Karnataka Univ. Pg Centre Kodibag

**Kerala**

- |                           |                               |
|---------------------------|-------------------------------|
| C12. Cmfri, Cochin        | C13. Cmfri, Calicut           |
| C14. Cmfri Cizhinjam      | C15. Cift, Cochin             |
| C16. Nio, Cochin          | C19. Cifnet, Cochin           |
| C18. Cift, Calicut        | C19. Cifnet, Cochin           |
| G10. Gsi, Cochin          | R6. Cess, Trivandrum          |
| R7. Idrb Trichur          | R8. Cess, Cochin              |
| R9. Gsi, Cochin           | U12. Univ. Kerala Trivandrum  |
| U13. Cochin Univ., Cochin | U14. Kerala Agri Univ. Cochin |
| U15. Kerala Agri. Univ.   |                               |

Velanikkara

**LakshawEEP**

- C20. Cmfri, Minicoy

**Maharashtra**

- |  |  |
|--|--|
| C21. Cmfri, Bombay                               | C22. Nio, Bombay                               |
| C23. Cift, Bombay                                | C24. Ncml, Bombay                              |
| C25. Taraporewala Mar. Biol.<br>Res. Stn, Bombay | C26. cife. Bombay                              |
| G11. Fsi, Bombay                                 | G12. Ongc, Bombay                              |
| R10. Barc, Bombay                                | R11. Cwprs, Pune                               |
| U16. Inst Of Sci, Bombay                         | U17. Coll. Fish & Mar Biol. Res. Stn Ratnagiri |
| U18. Marathwada Univ.<br>Aurangabad              | U19. Kolhapur Univ., Klopapur                  |

**Orissa**

- C31. Cift, Sambalpur
- U27. Berhampur Univ., Nerhampur

**Tamil Nadu**

- |                                |  |
|--------------------------------|--|
| C27. Ciba, Madras              | C28. Cmfri, Tuticorin                            |
| C29. Cmfri, Mandapam           | C30. Cmfri, Madras                               |
| G13. Fsi, Madras               | G14. Zsi, Madras                                 |
| G20. Bobp, Madras              | U20. Cas Bot., Madras                            |
| U21. Cas Mar. Biol., Poro Novo | U22. M.k. Univ., Madurai                         |
| U23. Iit, Madras               | U24. Tamil Nadu agric. Univ. Fish Col. Tuticorin |

**Uttarpradesh**

G15. Naval Hydroger Office, Dehra Dun

R12. Kdmip (ongc), Dehra Dun

**West Bengal**

G16. Gsi, Calcutta

G17. Cpt Calcutta

G18. Zsi, Calcutta

U25. Iit Kharagpur

U26. Calcutta Univ., Calcutta.

FIGURE 1. N.I.O. LIBRARY - THE GROWTH

