

The Network of Tropical Fisheries Scientists: Bridging Communication Gaps

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Rationale

Progress in stock assessment work on tropical fisheries has been slow and there are very few, if at all, fisheries which are rationally managed. The reasons are obvious: the biology of fishes, the nature of the fisheries and the institutions that manage them, as well as the limited educational opportunities available to scientists.

A great constraint is the fact that scientific personnel attached to fisheries institutions are often not well-versed in the quantitative aspects of stock assessment. This is partly an effect of the lack of relevant educational support systems. Only recently has fisheries stock assessment, and fisheries science for that matter, been given due consideration in universities in tropical developing countries. Furthermore, the avenues for information exchange are not many or are not fully utilized.

Objectives

As part of its commitment to disseminate and strengthen the use of stock assessment techniques, ICLARM announced the inception of the Network of Tropical Fisheries Scientists (NTFS) at a conference of the Indo-Pacific Fisheries Commission held in 1982. The NTFS has as its main objectives:

- The enhancement of communication between fisheries scientists working on aspects of management-oriented research
- The enhancement of output of these scientists by improving access to literature, providing free database searches, distributing

manuals and other literature and publishing a regular newsletter. The technical focus is on the estimation of the biological, fisheries and socioeconomic parameters which determine the magnitude of harvests and the application of those parameters to models to arrive at scientifically-sound management measures for tropical stocks.

Scope

Fisheries scientists invited or nominated for membership to the NTFS, who should have at least a B.S. degree or equivalent, are generally engaged in studies of the scientific aspects of assessment, conservation and management of tropical stocks. The orientation is two-pronged: one branch is oriented towards the development and/or improvement of existing methods for fisheries management (i.e., for stock assessment techniques) while the other emphasizes the application of these known techniques to specific fisheries. However, a recent survey of the perceptions of NTFS members regarding the future role of marine science revealed a list of nonconventional research themes such as coastal zone management and computer applications.

Membership

Network membership has grown from 60 in 1982 to the present 963. Meanwhile, the number of countries represented has grown from 52 in 1983 to 108 countries (see Table 1). The list of countries with the corresponding membership breakdown is shown in Table 2. A summary of the regional distribution of members is shown in Fig. 1. Members from Asia dominate the Network, accounting for 37% of total membership.

Table 1. Growth in NTFS membership and countries represented.

	1982	1983	1984	1985	1986	1987	1988	1989
Members	60	200	427	520	680	700	850	963
Countries		52	69	80	80	90	100	108

Membership growth can be largely traced to the participation of scientists in national/regional courses conducted by the Food and Agriculture Organization/Danish International Development Agency (FAO/DANIDA) Fish Stock Assessment Project in countries such as the Philippines, India, Tanzania, Mozambique or Venezuela. Likewise, the Norwegian Agency for Development Cooperation (NORAD), through its R/V Fridtjof Nansen Survey project, has bolstered the membership of Central and South American scientists. The remaining percentage of membership growth is accounted for by individuals who themselves expressed interest in the Network activities or were nominated by fellow members.

A survey of 103 NTFS members on their educational attainment and scientific productivity showed that 40% have Ph.D. or higher degrees;

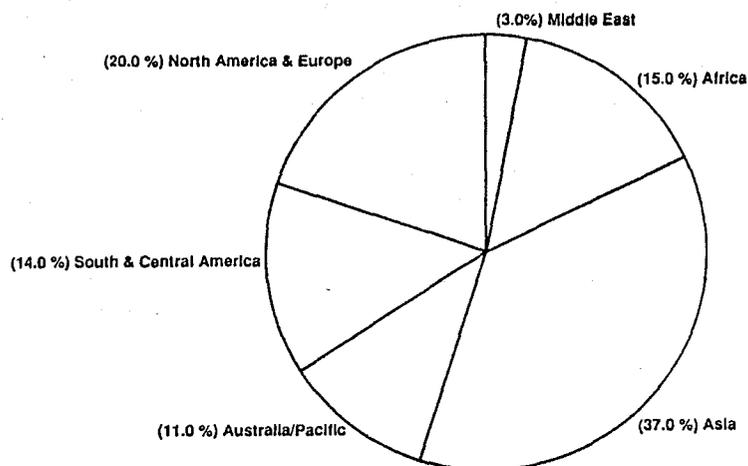


Fig. 1. Regional distribution of NTFS members, as of December 1989.

Table 2. Distribution of NTFS members as of December 1989, by country.

Country	Number	Country	Number	Country	Number
Algeria	9	Greece	2	Oman	3
American Samoa	1	Grenada	1	Pakistan	8
Angola	1	Guatemala	1	Palau	1
Argentina	2	Guyana	2	Papua New Guinea	15
Australia	51	Honduras	3	Peru	19
Bahamas	1	Hongkong	1	Philippines	113
Bangladesh	10	India	67	Puerto Rico	7
Barbados	7	Indonesia	42	Rwanda	1
Belgium	2	Israel	4	Saudi Arabia	2
Benin	1	Italy	20	Sénégal	10
Bermuda	2	Jamaica	3	Seychelles	5
Brasil	14	Japan	6	Sierra Leone	4
British Virgin Islands	1	Kenya	18	Singapore	3
Brunei Darussalam	5	Korea	1	Solomon Is.	9
Cameroon	6	Kuwait	6	Spain	4
Canada	12	Madagascar	2	Sri Lanka	23
Cayman Islands	1	Malawi	4	St. Lucia	2
Chile	11	Malaysia	38	Sudan	4
China	11	Maldives	3	Suriname	2
Colombia	8	Mali	1	Sweden	1
Cook Islands	1	Mariana Is.	1	Taiwan	1
Costa Rica	4	Mauritania	4	Tanzania	21
Cuba	2	Mauritius	6	Thailand	22
Côte d'Ivoire	4	Mexico	21	Trinidad & Tobago	6
Denmark	9	Micronesia	2	Turkey	2
E. Caroline Is.	1	Morocco	3	US Virgin Is.	3
Ecuador	5	Mozambique	2	USA	72
Egypt	12	Netherlands	7	Uganda	5
El Salvador	1	Netherlands Antilles	1	Union of Myanmar	7
Ethiopia	1	New Caledonia	5	United Kingdom	26
Fiji	10	New Zealand	3	Uruguay	1
Finland	1	Nicaragua	2	Venezuela	7
France	13	Niger	1	Yemen, Arab Rep.	1
Gambia	2	Nigeria	16	Yemen, Peo. Dem.	4
Germany, Fed. Rep. of	10	Niue	1	Zambia	4
Ghana	5	Norway	4	Zimbabwe	4
Total no. of members: 963					
Total no. of countries: 108					

45% are M.Sc. degree holders or equivalent; while 15% are B.S. or vocational degree holders or are informally trained.

Productivity of NTFS members (expressed in publication page "credits")¹ was culled mostly from the curriculum vitae of respondents. However, additional information was collected from literature searches made at the ICLARM library (ASFA, 1984-1988) and from the personal collection of ICLARM staff. The productivity profile of NTFS members is as follows:

No. of credits	No. of members
0	21
1 - 99	15
100 - 999	34
1,000 - 4,999	28
5,000 - 9,999	3
10,000 - 14,999	1
15,000 and above	1

Note that while 20% of the sampled members do not have any publications, only 5% have publication credits greater than 5,000. Furthermore, the geographical distribution of members did not have any significant influence on productivity, i.e., it did not appear that members from developed countries were more productive.

Fishbyte: The NTFS Newsletter

In their response to a questionnaire distributed in 1988, Network members unanimously ranked Fishbyte as the most useful service offered by the NTFS. The survey also showed that members were most interested in the main articles; this was followed by news items and bibliographic information.

The regular features of Fishbyte include: short scientific articles; letters to the editor; announcements pertaining to workshops/conferences, short- and long-term courses, job vacancies, and new literature and software; listing of publications available through the Network from various donors; listings of recent publications by Network members; and reports of current activities of Network members.

The main articles reflect the research themes of the Network and have either a methodological focus or a geographical focus, i.e., a direct application of existing methods to a specific fishery. The main articles are published in English although articles written in Spanish and French (with English abstracts) are also encouraged.

¹Publication credits were computed on the basis of quality (scientific content), quantity (number of pages), and relative contribution of individual author (position of author's name in cases where there is more than one author) to the publication. Quality or "scientific content" was based on categories devised by Rounsefell (1961) with minor modifications. For example, the category with the highest number of credits includes papers in journals, textbooks, and references of college level where each page is assigned 10 points.

Presently, selected publications from FAO and UNESCO² (titles are featured in Fishbyte) are available free of charge to all members. Additionally, reprints of papers by members, who otherwise do not have copies of their reprints or are not able to disseminate them due to mailing costs, are photocopied and distributed to interested members free of charge. Another important feature of Fishbyte is a report of the current activities of members. It is through this section that members are encouraged and enabled to communicate with each other. The 1988 survey revealed that 74% of the members communicated with each other to exchange reprints and other information. Furthermore, we found that communication flow among members did not follow the hypothesized "North-South" direction; "South-South" interaction was dominant. This suggests that the existence of the Network and the impact of Fishbyte help in partially resolving the problem of isolation among tropical fisheries scientists.

Fishbyte, which is published thrice a year is distributed free of charge to individual members and 130 libraries in 43 countries. Its publication and distribution costs are supported by a grant from the FAO/DANIDA Fish Stock Assessment Project and for the period 1987-1989, the NORAD.

Other Services

Aside from the publication of Fishbyte and the distribution of manuals and reprints from the NTFS collection and the ICLARM library, database searches are also offered although not many members avail of this service.

Since its inception, the NTFS has hosted 38 fisheries scientists from several of its member countries to train at ICLARM for periods from 2 weeks to 2 months and over to learn stock assessment techniques (see Table 3). Interns are usually provided a working space, a computer, free books and other publications, and the opportunity to interact with ICLARM's staff. This important service has elicited an enthusiastic response from and beyond the NTFS (an ICLARM training brochure is now available to respond to numerous inquiries). Thus, institutions would request training for some of their staff who may not yet be members of the NTFS. An expansion of this service is ideal but funding is the primary constraint. Interns who visit ICLARM usually secure their own funding from donor agencies (see Table 3) or use their personal funds, for which ICLARM provides discounts.

The NTFS also functions as an umbrella for the activities of other ICLARM projects which are related to tropical fish stock assessment, notably the Capture Fisheries Management Program's Tropical Fish Stock Assessment Project. Through this project, scientists from national fisheries agencies who have trained and are working on these techniques are integrated into the NTFS. Stock assessment modules are now at work in Indonesia, Peru, Zambia and Mozambique. Regular services and small incidental expenses are charged to the NTFS.

²Publications from the FAO/UNDP Regional Fishery Support Programme in the South Pacific are distributed free to all NTFS members who are Pacific Island nationals.

Table 3. Regional distribution of NTFS interns and funding institutions

Region	Number of trainees	Funding institutions
Southeast Asia	23	ICLARM, FAO, IDRC, JICA, BFAR, USAID, BOBP, FAO/SIDA, MMSU, GTZ/ICLARM Project, personal
South Asia & the Middle East	10	KISR, BOBP, UNESCO, IDRC, German Agency for Int'l Development (DSE), Univ. of Karachi, personal
Australia & the Pacific	1	personal
South America	1	GTZ
North America & Europe	2	FAO, French Ministry of Foreign Affairs
Africa	1	CEC

List of Abbreviations:

BFAR	- Bureau of Fisheries and Aquatic Resources, Philippines
BOBP	- Bay of Bengal Programme
CEC	- Commission of European Communities
FAO	- Food and Agriculture Organization of the United Nations
GTZ	- Deutsche Gesellschaft für Technische Zusammenarbeit
IDRC	- International Development Research Centre of Canada
JICA	- Japan International Cooperation Agency
KISR	- Kuwait Institute for Scientific Research
MMSU	- Mariano Marcos State University, Philippines
SIDA	- Swedish International Development Agency
USAID	- United States Agency for International Development

The Future Activities and Needs of the NTFS

The future activities of the Network can be gleaned from the survey responses of the Network members themselves. Network members foresee an expanded role of the NTFS to include the following: publication of a journal; extension work; submission of position papers; directory of personnel with a profile of research interests; assistance in securing funds, i.e., assisting members to secure funds for training/workshop; organizing regional meetings; and expanding the scope to aquaculture.

In the medium term, the most likely expansion of NTFS activities will focus on the increase in the frequency of publication of Fishbyte (4 issues/year); publication of a comprehensive directory of members with proper documentation of research interests and publications; and establishment of an internship program (in-house training at ICLARM) which will be granted to deserving members.