

Fisheries Information

In-House Activities in Support of  
IDRC Fisheries Projects

Report & Overview

Science & Technology Information  
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## I INTRODUCTION

### I.1 Subject Scope of Report

This report assesses the development, work and future of the in-house fisheries information project (3-N-XX-7410) and is intended to enable decisions to be made as to the role of IS in-house resources within the context of fisheries information services.

### I.2 AFNS/SS Programs

The project was originally developed in response to a request from the AFNS Division where great emphasis has been laid upon research on aquaculture -- the cultivation of finfish, shellfish and aquatic plants in fresh, brackish and coastal waters. Later, the SS Division developed interests in artisanal fisheries and marine policy issues. Studies supported by the Centre revealed the vast potential to be realized from research in aquaculture and artisanal fisheries.

### I.3 Information Sciences Division

The serious lack of information services in certain parts of the world in specific subject areas such as fisheries and health has led to the development of IS support to bibliography construction. IDRC's capacity to build, manage, and search computer data bases has been directly employed to help fill important gaps in developing country information, e.g. the SALUS data base. The library of IDRC has also played an important role in providing information to projects.

### I 4 Criteria

This report, as well as presenting an overview and an examination of the extent of the role IDRC can and should play in providing the projects it supports with information, will provide a basis for discussion of the present commitments, future plans and costs of the fisheries information service.

### I.5 Methodology

This report was conducted by the STI Group, and with the collaboration of the AFNS Fisheries program. Various sources of information have been used:

- (a) project files (3-A-76-4082 and 3-N-(79-84)-7410);
- (b) staff discussions;
- (c) bibliometric analysis of the service; and
- (d) examination of and discussions with other services.

The information gained therein was used selectively in the compilation of this report. A potential bias, inherent in this report, needs to be recognized in that the report was initiated and conducted by IS Division itself. This is not accidental. It is

felt that before this program can be permitted to continue in any shape or form, it needs an assessment of its services and an assessment of current externally available services. It was not felt necessary to solicit the opinions of users since user demand has been monitored closely over the life of the project. Discussion of user demand can be found in the project files and will be referred to in this report. Other reasons for not conducting a major user survey is the small size of the user community -- about 400 in this case -- the highly personal nature of the service and the lack of comparison groups.

#### **I.6      Proposed Approach/Purpose**

The overview describes the service, identifies issues and responsibilities, pinpoints roles and changes, suggests courses of action, and advises on the future role of IS in fisheries information. The report approaches these issues in a step-by-step fashion, to facilitate documentation of the issues and to provide scenarios giving evidence of satisfactory alternatives.

### **II        GLOBAL FISHERIES INFORMATION**

#### **II.1     Fisheries Information in World Perspective**

In recent times, considerable effort has gone into the establishment of information services in agriculture and other sectors at the national, regional and international levels. This has not been the case with fisheries. Even though fisheries has been acknowledged as an area which has enormous potential, the technical manpower and scientific knowledge in this area is extremely limited. The literature in the fisheries data bases is not so large nor so well defined as in, say, agriculture. Well over half the world's fisheries literature is based in the industrialized countries and directly relates to them. In developing countries fishing is, by and large, small-scale.

IDRC's interest in fisheries follows the recent interest in tropical fisheries and aquaculture as a protein source for the Third World. Tropical fisheries development has expanded fivefold between 1948 and 1976. Tropical and subtropical fisheries provided 34% (7 million metric tons) of the total world catch in 1948 (19 million metric tons); while in 1976, they provided 47% (35 million metric tons) of the total world catch of 74 million metric tons. What was produced by tropical fisheries in 1976 was almost double what was produced in the whole world in 1948 -- development has been extremely rapid. However, difficulties in effectively managing the tropical fisheries resource have arisen for two reasons: (1) generally, in a trawl catch in the tropics, some 60 species will be collected whereas, in temperate countries, a trawl catch will be

comprised of no more than 10 species; and (2) migratory fish are a common property resource. In temperate countries, it is possible to rely on neighbouring countries for information regarding migratory habits, whereas in tropical countries the neighbour has the same problem, that of ignorance of the biology and habits of the fish.

Aquaculture is defined as the growing of aquatic organisms under controlled conditions. The organisms most commonly cultured include fish, shellfish and algae. In 1976, over 60% of the total world aquaculture production of 6 million metric tons came from Asia and the Far East and a total of 76% came from less developed countries. The actual practice of aquaculture dates back thousands of years and has been documented in the writings of the Chinese, Egyptians, Japanese, Romans, and Greeks. However, even though 75% of the world's population depends on fish (fish are the most important source of animal protein in the tropics) for animal protein, knowledge of aquatic species, in comparison to that of domesticated animals, is rudimentary. To date, only three major species groupings of fish have become domesticated: (1) carp (European, Chinese and Indian species), (2) salmonids (salmon and trout), and (3) catfish (American and Asian).

Lack of information has been at the heart of the constraints to the extensive application of aquaculture worldwide and these include: (1) difficulties in obtaining a supply of fry of the important species (70% of the cultivated food fishes do not breed voluntarily in captivity); (2) lack of information regarding the natural food and artificial feeds required for effective growth and reproduction; (3) difficulties in controlling diseases and parasites; and (4) lack of precise knowledge of the genetics, selective breeding and hybridization of fish and shellfish. However, even with these limitations, aquaculture is clearly recognized as a viable method for improving the food supplies of the less developed countries.

## II.2

### International Services

At the present time, the major international cooperative information systems concerned with fisheries and aquaculture are the Aquatic Sciences and Fisheries Information System (ASFIS), and the International Information System for the Agricultural Sciences and Technology (AGRIS).

The **Aquatic Sciences and Fisheries Information System** (ASFIS) is the international information system for the science and technology of marine and freshwater environments. It was established in 1971 jointly by FAO and the Intergovernmental Oceanographic Commission of UNESCO and its operation is monitored by the ASFIS Advisory Committee. Daily operations are in the hands of FAO's Fisheries Department. ASFIS currently has 11 participating national centres

only two of which are located in a developing country. One of these is being implemented in Asia with IDRC support (3-P-83-0240, see Section VI below).

ASFIS products include:

- (a) Aquatic Sciences and Fisheries Abstracts (ASFA);
- (b) Aquaculture Abstracts;
- (c) Marine Science Contents Tables (MSCT);
- (d) Freshwater and Aquaculture Contents Tables (FACT);
- (e) World List of Aquatic Sciences and Fisheries Serial Titles; and
- (f) An International Directory of Marine Scientists.

ASFA is published monthly in two volumes. Part 1 includes biological sciences and living resources abstracts while Part 2 lists ocean technology, policy and non-living resources abstracts. Each issue contains over 2,500 abstracts followed by author, subject, taxonomic and geographic indexes. It has the greatest coverage of fisheries information of any abstracting journal. ASFIS claims that it includes more than 75% of the world's fisheries literature.

Aquaculture Abstracts has been published quarterly since 1984 and represents a compilation of the aquaculture-related references included in the ASFA data base. Each issue contains over 600 abstracts. This represents some 8% of the more than 30,000 abstracts published in ASFA every year.

A major deficiency of ASFIS has been the lack of developing country participation, despite its mandate for the establishment of regional and national centres to act as ASFIS focal points and input centres in developing countries.

The **International Information System for the Agricultural Sciences and Technology (AGRIS)**, coordinated by FAO, is a worldwide information system which also collects and distributes information. Approximately 10 pages of each issue are devoted to aquatic sciences and fisheries information. Relevant subject areas covered include: (1) fisheries production, (2) oceanography, (3) limnology, and (4) aquatic biology. Each year some 250,000 documents are indexed on ways of improving agriculture and producing more food of which only about 1.5% or 3,750 are on fisheries. Output is available on magnetic tape or in printed form by publication of AGRINDEX, a monthly current awareness service which contains an average 10,000 citations per issue, of which about one-sixth are non-conventional literature. Input for AGRINDEX comes from 92 national centres located in developed and developing countries. Although these centres predominantly process agricultural and technical information, some fisheries information is also included. Some of the AGRIS by-products, such as AGRIASIA, have compiled special fisheries bibliographies. These are also very useful tools for locating fisheries information in the developing countries.



**On-line services include:**

- (1) BIOSIS PREVIEWS which combines Biological Abstracts and Bioresearch Index;
- (2) SCISEARCH -- the Science Citation Index;
- (3) Oceanic Abstracts;
- (4) ASFA;
- (5) AQUACULTURE whose document delivery functions have recently been taken over by the U.S. NAL.;
- (6) AGRINDEX; and
- (7) The Commonwealth Agricultural Bureaux (CAB) data base, which also contain some references on fish farming as it impinges on agriculture.

Fisheries information is also available in journals specific to other related subject areas, such as medicine, veterinary medicine, agriculture, engineering, oceanography, natural history and others.

**11.3**

**Associations/Institutions**

Other sources of information can be found at institutions, universities or associations. These often provide quite extensive services.

The **International Association of Marine Science Libraries and Information Centres (IAMSLIC)** represents a dynamic and active network of over 140 professional and institutional members from 20 countries including the developing countries. This Association maintains a directory of cooperating members, a newsletter, and is compiling a union list of oceanographic atlases and a union list of serials held in marine science libraries. Annual meetings are held but, so far, the proceedings have not yet been published. IAMSLIC also regularly presents the ASFIS Editorial Board with recommendations to improve the quality and content of the ASFIS products.

The **International Centre for Marine Resources Development (ICMRD)** is funded by the U.S. Agency for International Development and is housed at the University of Rhode Island to provide a common base for international application of research and training programs in marine-related fields, especially in relation to developing countries. Three areas are emphasized: 1) socio-economic and cultural aspects of coastal communities depending on artisanal fisheries activities; 2) the post-harvest loss of fishery products (which may be as high as 50%); and 3) establishing effective management control over living marine resources within the exclusive economic zones (EEZ).

ICMRD includes an information service which supplies information to interested developing country libraries, institutions and

individuals as well as to ICMRD staff. The librarian in charge is also the President-Elect of IAMSILIC for 1985. The information service collects and disseminates information on small-scale fisheries development including stock assessment, extended EEZ management, cooperatives, extension, marketing techniques, fishing gear technology, fish processing and handling, small boat design and related statistics on developing countries. The collection consists of over 7,000 books, documents, proceedings and serials; reprints are not collected. The ICMRD Library also has ready access to the host of marine institutions in the area including the Pell Marine Science Library, the Sea Grant Depository, Marine Advisory Service, Graduate School of Oceanography, the Marine Biological Library at Wood Hole and others.

The **International Centre for Ocean Development (ICOD)**, an entirely new non-profit organization located in Halifax, will draw on Canadian academic and technological resources and others to offer programs of assistance in response to specific national objectives of concerned developing countries in the context of ocean resource management and the Exclusive Economic Zones (EEZ). ICOD is not yet a fully functional entity, but it is expected to commence its program of work in mid-1985. It is expected that ICOD will support efforts to achieve a globally integrated and interdependent system of ocean resource management including the gathering and dissemination of relevant information.

The **Asian Fisheries Society (AFS)** which was officially established on 2 May 1984 in Los Banos, Philippines, also promotes the exchange of information by interaction and cooperation among scientists and researchers involved in fisheries research and development in Asia, especially through the publication of research results. It also promotes awareness of the importance and manner of sound aquatic resources, utilization, cultivation, conservation and development, and the establishment of national fisheries societies.

Extension information is served in Asia by the **Southeast Asian Fisheries Information Service (SAFIS)**, a project supported by IDRC since 1981 at the Southeast Asian Fisheries Development Centre (SEAFDEC) Secretariat in Bangkok, Thailand. SAFIS is intended to enhance the relationship between extension workers and small-scale fisheries/fish farmers in the region and to foster the transfer of appropriate technology to improve their income by translating and publishing extension materials for free distribution. Extension manuals are translated from local languages or dialects to English and vice-versa. As of March 1984, twelve extension manuals were available on such subjects as: oyster culture, mussel culture, cockle culture, prawn culture, sea bass culture and others.

The SEAFDEC Secretariat also coordinates, with IDRC support, the **Southeast Asian Fisheries Information System (SEAFIS)** which

facilitates access to fisheries information and data within and outside of Southeast Asia. SEAFIS serves as the Southeast Asian regional input centre to ASFIS (see Section VI below).

Specialized information analysis of the literature of brackish water species of fish is being carried out by the **Brackish Water Aquaculture Information Service (BRAIS)** also supported by IDRC at the SEAFDEC Aquaculture Department (AQD). BRAIS is part of the Network of Aquaculture Centres in Asia (NACA) sponsored by the FAO/UNDP Aquaculture Development and Coordination Programme. BRAIS was established in 1984 to provide consolidation of information of the specific subject area including special bibliographies, question-and-answer services, data base searches, document delivery and other products of specialized information analysis centres. BRAIS will also provide input to ASFIS through SEAFIS and establish the first part of a cooperative regional network on aquaculture information.

In 1984, IDRC also approved support to enable the existing **Indonesian Fisheries Information System (INFIS)**; Indonesia is not a member of SEAFDEC) to collect, process, repackage and disseminate fisheries literature and to participate in SEAFIS, thereby adding its national fisheries literature to ASFIS. The emphasis in this system is to repackage current literature in local language and in simple formats designed to meet the requirements of fisheries extension workers. However, this project will also ensure that Indonesian national fisheries literature is available both within the country, within the Southeast Asian region and to other fisheries researchers worldwide using ASFIS products.

The **Aquaculture Information System (AQUIS)** is a computerized system of experimental data meant to aid planning and development agencies, investors, financial and research institutions and aquaculturists in the retrieval of aquaculture data. The system is run by MINISIS software on the HP 3000 computer at the National Aquaculture Centres for Asia (NACA) in the Philippines, Thailand, China and India. The FAO Aquaculture Development and Coordination Programme (ADCP) headquarters in Rome also inputs data to the system. To date, over 1,100 "data units" can be searched on the system by ADCP staff in Rome. IDRC has provided the MINISIS software running the system and has also been approached to help support the implementation of the AQUIS system.

The **International Centre for Living Aquatic Resources Management (ICLARM)** has recently received a grant from IDRC to provide selective fisheries information services to fisheries researchers in tropical developing countries including staff of IDRC-supported fisheries and aquaculture projects. ICLARM has small but good library facilities, teletype access to international data bases and an action-oriented staff. ICLARM already has a solid publications program including a bi-monthly newsletter with a current awareness

bibliography section. The intent of IDRC's grant is to enable ICLARM to act in an intermediary role in the provision of tropical fisheries information services; to bridge the gap between the needs of tropical fisheries researchers and the, as yet, not fully implemented services which the other regional fisheries information systems are developing. ICLARM's services will be discussed in more detail in Section VI of this report.

There are no regional fisheries information systems in Latin America or Africa. However, the **Centro de Informacion Cientifica y Humanistica** (CICH) of the Universidad Nacional Autonoma de Mexico has been the ASFA input centre for Latin America since 1978. CICH inputs over 1,300 items per year for ASFA; 70% of these come from Brazil, Mexico, Chile, Argentina and Venezuela for an average of 182 items per country per year. The remaining 30% come from 11 other countries, including the United States, for an average of 35 items per country.

The overall picture is that 81 items per country per year are input to ASFA by 16 countries in Latin America. This is a very poor representation as Part I of ASFA alone contains over 30,000 items per year input by a total of 12 input centres, but the Latin American (so far, the only developing country input centre) portion consists of only 1,300 items per year or 4%.

It is important to find some way of strengthening the Latin American and African representation in the ASFIS system as is being done by supporting the development of the SEAFIS input centre to ASFIS for the Southeast Asian region.

The FAO supports a fishery products processing and marketing information system called **INFOFISH** in Asia and **INFOPESCA** in Latin America. Both of these systems use the same bi-monthly semi-technical magazine, FAO INFOFISH Marketing Digest, as a general information vehicle, but each supports its own range of publications relevant to the needs of their region. INFOFISH in Malaysia produces English-language publications on the culture of various species while INFOPESCA publishes catalogues, maps and other Spanish-language publications related to artisanal and other fishing technology. Both of these also publish an expensive but up-to-date bi-weekly market information report.

### III IDRC'S FISHERIES INFORMATION PROJECT

#### III.1 History

The development of the IDRC fisheries program has emphasized aquaculture in the small-scale sector, as characterized by the remoteness and isolation of project staff from normally available sources of information. Hence, AFNS first attempted to meet this information gap by employing a member of staff part-time to cope with requests for original documents. In September 1975, a request to IS Division was made by AFNS to pay the salary of the part-time researcher who was already employed and based in Vancouver. IS Division at the time felt that the Centre Library was best set up to deal with such requests from IDRC staff and their projects. It is also interesting to note that, prior to the hiring of the part-time staff member, no record of requests was found to have been made through the library from any fisheries project.

The IS Division suggested that AFNS-Vancouver send all reference material to the Centre Library so that they could provide the necessary literature searches and document delivery. AFNS felt that this would not be the best solution since a collection was needed in Vancouver in order to get the interaction of the faculty staff of UBC and the scientists in local government fisheries institutions. More than a response to requests was therefore envisaged in the service. In other words, what was at issue was the establishment of a specialized information service for aquaculture.

Early in 1976, a DAP was put forward to continue the service, but for one year only in order to give time for the users to find local or regional information services or for IDRC to find a replacement service in a developing country. The DAP stated that the IS operation was an interim solution only, pending the development of a suitable project proposal from a developing country institution (see Appendix 1).

This DAP was eventually extended to 31 March 1979 to use up remaining funds, at which time a full-time fisheries information officer was recruited to replace the original part-time staff member and the project was continued as an in-house activity.

The new fisheries information officer was a subject specialist. From this period on, the role of the project began to change dramatically from a simple document delivery service to a more sophisticated one including the production of a regular current awareness bibliography and a question-and-answer service. The project consolidated its services, but a suitable fisheries information service in a developing country could not be found.

### III.2 Role of the Project

The purpose of this section is to examine the main objectives of the project. In January 1976, the major objectives were as follows:

- to expose project researchers to worldwide sources of information;
- to acquaint them with the authoritative journals in their field;
- to help them explore new areas in fish farming, and
- to organize information in the Vancouver Office and preparation of background material for AFNS Staff.

In July 1977, the Associate Director of Fisheries further clarified the primary objectives by saying he felt that the project scientists needed to establish their own information networks so that they should learn the importance of seeking information as well as how to seek information.

The broad intent of the fisheries information project, then, was to "stimulate national research staff themselves to seek every expedient means to find suitable references of relevant information". The service promoted this, and intended to phase itself out gradually leaving behind personnel "who will continue to be able to obtain literature by their own national initiatives, arrangements and exchanges". In the early stages, it was also felt that the project should not be misconstrued as a service providing "a comprehensive literature retrieval system". The key element was what was termed "exposure-training" to provide researchers in remote stations with a sort of "do-it-yourself" kit.

### III.3 Project Outputs

From 1976 onwards, services were expanded by the project to include: a) a current awareness bibliography, b) document delivery, c) retrospective searching and question-and-answer services, d) the production of a fish processing newsletter, and e) other activities.

#### **Current-Awareness Bibliography (CAB)**

In 1976, periodic bibliographies, grouped by broad subject headings, were compiled largely by manual searching of the existing office collection and by manual searching of local library resources. In 1977, these occasional bibliographies were named "Current Awareness Bibliography for IDRC-Supported Fisheries Projects" (CAB) and given volume and issue numbers. They averaged 150 references per issue, but could contain as many as 300 references. In 1979, the

bibliography began publication on a quarterly basis with numbered references listed alphabetically by author and subject and taxonomic indexes were provided.

The CAB covers the following information relevant to developing countries, but not necessarily published by them: practical, as opposed to purely academic and theoretical, information on tilapia, carp, mullet, milkfish, chamé, certain catfish, other native species; mollusc culture, including oysters, mussels and cockles; seaweed culture; invertebrate and mariculture; inland lakes and reservoirs and their fisheries; and including their following aspects -- culture, pen and cage culture, induced breeding, egg and larval rearing, nutrition, growth, feeds, pond quality, diseases, parasites, ecology; and their processing, products, handling, storage, marketing, transportation, etc.; socio-economic and cultural information in this regard; and other information deemed to be of value and interest to IDRC-supported fisheries projects.

In 1983, a new section was added to the bibliography called "Information Notes" which was intended to announce and stimulate interest in, and use of, information resources available in the project regions.

Information relevant to the research needs of the IDRC-supported fisheries and aquaculture projects was selected from SDI Computer searches of: ASFA, BIOSIS, SCISEARCH, FSTA, Commonwealth Agricultural Bureaux and AQUACULTURE data bases; subject-specific retrospective computer searches of the above and of the Oceanic Abstracts and Agricola data bases; by manual searching of the "Agrindex", "Agriasia", "Aquaculture Abstracts" and the "Current References in Fish Research" indexes; an increasing number of bibliographies published by FAO and other libraries/institutions/organizations in developing countries; and from documents and references coming to the attention of the information specialist by various means including exchanges, subscriptions, donations, request and by other selection.

The CAB is not only distributed to IDRC-supported fisheries projects but also to related institutions, organizations, libraries, and individuals. Four hundred copies of each issue are distributed. Out-of-print issues and extra copies are available on microfiche.

### **Document Delivery**

An estimated 2,000 documents have been sent out per year (average 8 documents per working day) or over 12,000 documents over the life of the project to 1983. Most document requests stem from the CAB. Most of the references cited in the CAB are not held by the project or the Centre Library. When documents are requested by users, an attempt is made to: 1) obtain a copy on ILL; 2) encourage the user to write to the author to obtain a reprint; or 3) the information

specialist attempts to obtain a copy through various contacts in the developing countries. A copy is then kept by the project to fulfill future requests for that document.

The collection policy of the project became intricately linked to the CAB through document requests. Because of the limited financial and staff resources, CAB users were always encouraged to utilize local or regional information resources to obtain copies of documents.

### **Retrospective Searching and Question-and-Answer Services**

Retrospective and special-topic searches, question-and-answer services and the compilation of special bibliographies were an important service offered by the project. Such searches were performed on the basis of special requests by IDRC-supported fisheries and aquaculture projects and by IDRC fisheries program staff who needed consolidation of information in a particular field. The manual portion of such searches was performed by the information specialist, computer searching through the User Services of the IDRC Library. The manual portion of these searches was particularly important during the early years of the project. At that time the Centre Library did not have ready access to the relevant data bases as it now has. For instance, in 1984, AGRIS became available to the Centre Library on-line. The Centre Library can now receive requests for specific searches directly from IDRC-supported fisheries projects and from fisheries program staff without going through the fisheries information specialist. These are now processed through the Centre Library at the rate of six a month.

Requests for searches were most frequent when the Associate Director (Fisheries) and the fisheries information specialist worked out of the same office in Vancouver. It is probable that the ASRO librarian also receives such requests from the Associate Director (Fisheries) located there, apart from the requests for searches made to the Centre Library.

The question-and-answer service has never been extensively developed because of limited staff resources and because AFNS division supplies consultants to the projects which have particular problems. Questions which have come to the attention of the fisheries information specialist were usually referred to the appropriate IDRC program staff (the Associate Director (Fisheries)) or researcher/scientist. More often than not, this would turn out to be a consultant working for the AFNS division.

The forerunner of the CAB **subject-specific bibliographies/synopses** played an important role in filling gaps in the research literature. Some, such as the synopses on the conch and on the chamé and the bibliographies on the milkfish, egg and larval



rearing, and the rabbitfish, were published by IDRC as Manuscript Reports for wider dissemination. Other subject-specific bibliographies are compiled as reference tools to be used by participants of IDRC-supported workshops and were usually included in the published proceedings or were simply used to inform project or program staff about the literature available on a specific topic. These bibliographies were compiled in consultation with consultants and include the following:

- References on fish processing;
- References on fish culture;
- References on mollusc culture;
- Cage and Pen culture of Fish: A Preliminary Bibliography with two supplements;
- List of Products, Manufacturers, and Suppliers prepared for the Workshop on Floating Cages and Net Pen Enclosures;
- Aquaculture Economics: A Bibliography;
- Induced Fish Breeding: A Preliminary Bibliography;
- The Use of Solid and Liquid Wastes in Aquaculture: A partly Annotated Bibliography;
- Potential for Fisheries Development in Reservoirs in Southeast Asia;
- Provisional Bibliography: Fish by-catch from Shrimp Trawling prepared for Round Table on Non-Traditional Fishery Products for Mass Human Consumption, September 15-19, 1980 and for the Consultation on Shrimp by-catch Utilization, 27-30 October, 1981;
- Preliminary Bibliography on Fish Quarantine;
- Milkfish Update - 1983;
- Asian Finfish Nutrition;
- Artisanal Fisheries in Latin America: A bibliography; and
- Numerous other short bibliographies.

The capture of 'non-conventional' literature was important in these bibliographies. As a consequence, about 30% of the fisheries information specialists' time could be spent in one year on such work with the Centre Library providing the necessary computer searches.

In 1980, the project was approached directly and without prior approval of Director of IS Division to assist in the editing and production of a **newsletter on tropical fish processing** by the AFNS program officer in charge of post-harvest projects. The newsletter was intended as a medium of technical information exchange between the various fish processing projects and other fish processing researchers and technologists around the world. The reason given was lack of information. At that time, only FAO's "Fish Tech News" was available but it did not provide the technical information, articles and bibliographies the AFNS projects needed. The first issue was published in 1981, but was discontinued after five issues because it was never officially sanctioned or properly funded. However, IDRC recognizes the need for such information and has

expressed interest in supporting its continued publication in the developing countries if an appropriate interested institution can be found.

Other duties have been assigned from time to time by program staff. These have included advising on the purchase of special equipment and travel to fisheries projects for purposes of project-monitoring. The information specialist's role in Vancouver also included being in charge of public relations for the office, monitoring and assisting fellowship students in local universities, as well as developing and maintaining a fisheries collection.

#### IV RESOURCE USE

##### IV.1 Costs/Users Analysis

Given the length of time of the project operation, it is appropriate to look closely at the relative value of the outputs and services. The information support provided by the project caters primarily (but not exclusively) to the information needs of the AFNS supported fisheries and aquaculture projects. There are some 51 such projects including those in the Cooperative Program. There are also seven related projects supported by the Social Sciences Division. Seven of the AFNS projects are in the area of fish processing.

The global distribution of the AFNS projects is:

Asia	48%
Latin America	19%
Caribbean	16%
Africa and Middle East	17%

This distribution is reflected in the mailing list for IDRC fisheries publications.

<u>AREA</u>	<u>%</u>	<u>ACTUAL ADDRESSES</u>
Asia	36%	763
Latin America & Caribbean	28%	589
Developed Countries	23%	452
Africa & Middle East	13%	267

The subjects covered by the current AFNS projects may be classed as follows:

fish processing	20%
mollusc culture	17%
seaweed culture	7%
invertebrate and mariculture	14%
fish health and genetics	7%
other	35%

In 1982/83, there were 210 requests for references, some for IDRC publications, but also for reprints from documents cited in the CAB. In 1983/84 there were 67 requests for references and information generated by the CAB.

The CAB has a circulation of 400 and it contains an average 200 (between 150 and 300) items per issue or 1,200 items per year. There are four issues a year. The average cost of printing and distributing one issue of the CAB over the years has been about \$600 CAD. Thirty formal issues of the CAB have been published, with one more to come, for an estimated total cost of \$18,600 CAD.

Up to 35% of the information specialist's time has been estimated as spent on compiling the CAB. Extrapolating from Table 1, which details the budget over the years for the fisheries information service, the compilation of the CAB has cost \$60,445 in salaries over 8 years. This brings the total for compiling, printing and distributing the CAB to \$79,045 or \$9,880 per year.

Other aspects of the work include photocopy services, searching for non-conventional literature and follow-up questions with the scientists. Less than ten percent of the time was involved with interaction with scientists. If we delete the consultancy line item from the budget in Table 1 and subtract the salary costs involved in compiling the CAB, we find that the total cost of providing these other services is \$180,655 or \$22,580 per year. Of course it is not really possible to separate the cost of compiling the CAB from the cost of the related services, since many documents have been collected for the CAB via other services. However, it does serve to allow us to calculate the cost of each reference cited in the CAB for purposes of comparison with the cost of each reference cited in other IDRC supported information projects. For the CAB, this figure is \$8 per reference when the costs of compiling the CAB are separated from the other services performed by the project, or \$27 per reference if the total project cost (minus the consultancy line item) is considered along with the cost of printing and distributing the CAB. For the purposes of this report, the figure of \$27 per reference will be used, since that is the way we normally calculate the cost for each reference cited in other projects we support.

**TABLE 1. FISHERIES INFORMATION BUDGET - 1976-1985**

DETAILS	3-A-76-4082	3-N-79-7410	3-N-80-7410	3-N-81-7410	3-N-82-7410	3-N-83-7410	3-N-84-7410	TOTALS
Years	1976-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1976-1984
Duration	22 months	12 months	12 months	12 months	12 months	12 months	12 months	94 months
Salary and Benefits	22,000	18,000	20,000	25,500	29,000	28,000	29,900	172,700
Reprography	2,500	500	500	500	500	700	700	5,900
Supplies	500	1,000	1,000	500	500	1,000	1,000	5,500
Computer Services	1,000	500	500	1,000	1,000	500	500	5,000
Travel	1,500	2,000	3,000	10,000	5,000	4,000	5,000	30,500
Consultancies	15,000	-----	-----	-----	-----	-----	-----	15,000
Casual Help	-----	-----	-----	500	2,000	2,000	2,000	6,500
Relocation	-----	-----	-----	-----	5,000	-----	-----	5,000
Postage	-----	-----	-----	-----	-----	2,000	2,000	4,000
Training	-----	-----	-----	-----	-----	400	400	800
Books	-----	-----	-----	-----	-----	-----	500	1,000
Contingency/Other	4,000	-----	-----	-----	-----	-----	200	4,200
TOTALS	46,500	22,000	25,000	38,000	43,000	39,400	42,200	256,100

## IV.2 Bibliometric Analysis

As part of another exercise, the information specialist conducted a bibliometric study of the CAB. It is considered useful to provide an account of some of the results in the report because of the particular relevance to such user issues as:

- What is the mean age of the documents cited?
- What is the distribution of the colour of country of origin of the documents cited?
- What is the distribution of the cited formats?

### **Data Collection and Sampling**

Data was collected by a stratified random sampling technique of the CAB. The series was split into two groups, one for the bibliographies compiled by Turnbull and one for those compiled by Szpakowska. An independent random sample (61) was taken from each group and the two sub-samples were later pooled for further analysis. It should be noted that the two groups were of different sizes: Turnbull's consisted of 2,342 cited references while Szpakowska's consisted of 1,677 cited references.

The number of references in each group was divided by 60 to arrive at the count between samples. The first sample in each group was determined by using random number tables for a total of 61 random samples in each group. The simple random sampling technique was deemed too cumbersome to use for such a large population (over 4,000 references in all). The cluster sampling techniques were not appropriate because the references in each issue of the bibliography are listed alphabetically by author and a bias could be introduced.

### **Variables**

For each reference sampled, the following information was coded: (1) an identifying number, (2) an identifier for the compiler of the reference, (3) the age of the reference (year bibliography published minus the year the reference was published), (4) the publication format of the cited reference (journal, monograph, serial or proceedings), and (5) the origin of the reference (developing country or developed country as used in IDRC). The non-coded age of the references was also collected as well as the specific country of origin and, in the case of journal references, the name of the journal. Except for the non-coded age of the references which was considered to be an ordinal-level variable, all others variables were nominal-level.

The variable, age of reference, was chosen to reflect the current value of the reference at the time it was listed in the bibliography. The ages were coded into age classes because some ages were too poorly represented for statistical purposes. Whole

years had to be used since that was the way they were listed in the bibliography. Publication format, too, was limited to four possibilities and, fortunately, all references cited fell into one of the four categories. No doubt, the categories would have to be changed if a larger random sample was chosen. All other sample measurement was straightforward. Because the bibliography focusses on information relevant to the developing countries, it is generally assumed that a substantial proportion of its references should originate in the developing countries. Therefore, measuring the variable "origin" should provide some meaningful data for this analysis.

### **Study Scope and Limitations**

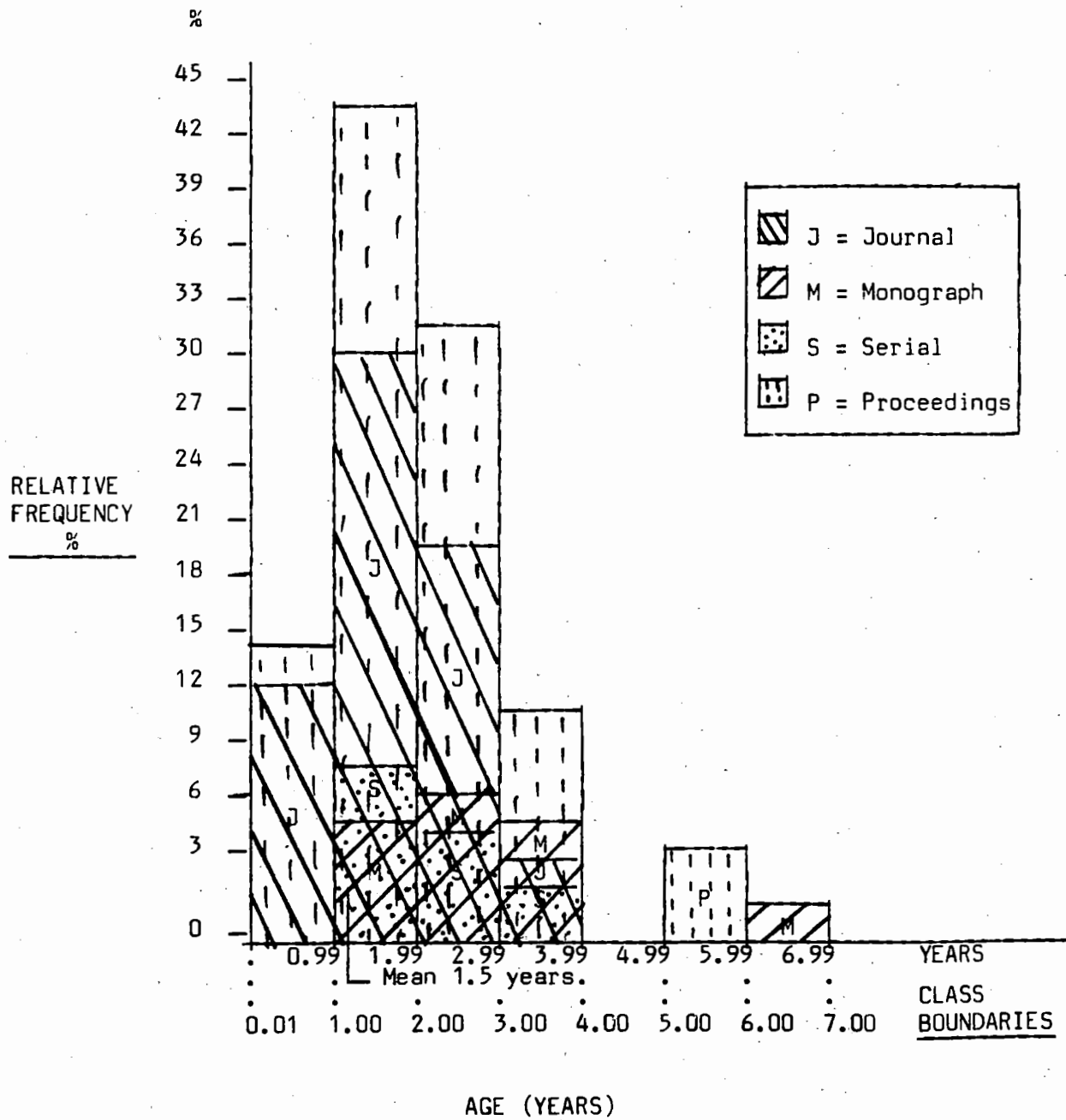
Because of the special nature of this bibliography, the scope of the study was quite narrow. The overall purpose was to evaluate some general assumptions made about the bibliography. These evaluations were made in the presentation and the assumptions were clarified.

Some of the analyses performed showed some interesting results. For instance, the distribution of the countries of origin of the sampled references resembles that of the Bradford's Law distribution. That is, a few core countries provide a large proportion of the references, while most countries only provide one reference. An in-depth study of the countries of origin of these references, say with a random sample of 2,000, could assist IDRC's AFNS program division in determining where research was being conducted on tropical aquaculture. On the other hand, the Library could then ensure that abstract and other journals from the core countries were available to continue providing the literature support that the bibliography once offered. One might also decide to compile a national aquaculture bibliography, choosing the appropriate countries in conjunction with the results of such an in-depth study. And as a theoretical consideration, it would be interesting to see if this distribution does indeed follow Bradford's Law.

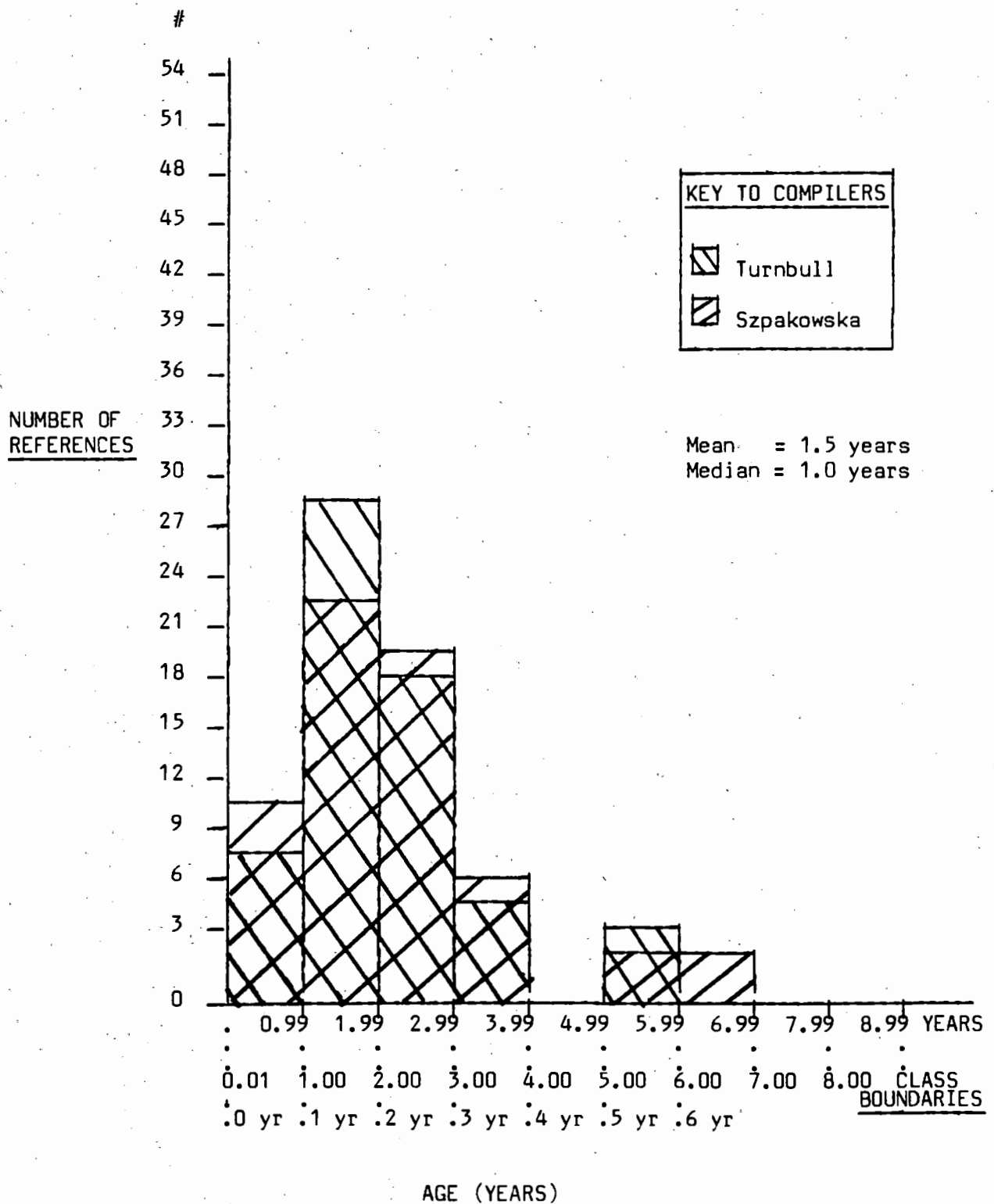
### **Conclusions**

It was determined that, based on age of reference, publication format and origin of document, there has not been a significant change in the structural characteristics of the "Current Awareness Bibliography for IDRC-Supported Fisheries Projects" over time. It was found that 64% of the sampled references were of journal format with a median age of 1 year (Figure 1). Monographs and serials made up another 30% of the references with median ages 2 years and 1 year respectively. Proceedings made up the remaining 6% with a median age of 2 years. The overall median age of 1 year for the bibliography reflects its current awareness function (Figure 2). Almost 52% of all references sampled originated from the United States, India, and the Philippines, while 57% of all journals sampled only had one reference. Aquaculture, ICLARM Newsletter,

**FIGURE 1. References Cited and Age - Breakdown by Format**



**FIGURE 2. Number of References Cited and Age of Reference Histogram**





Journal of Food Science, Comparative Physiology-Ecology and FAO Infofish Marketing Digest accounted for 16.5% of all references sampled. Some evidence was presented for further studies to test for Bradford's Law for journal citations and countries of origin.

## **V ASSESSMENT/ISSUES RAISED**

### **V.1 Issues**

The broad issue raised by this service concerns the overall program aim of the Division which seeks to assist the establishment of better information systems and services to meet the needs of scientists, technologists and officials of developing countries, the idea being to assist developing countries to help themselves. The most important information is that which is generated within a particular country. The Information Sciences Division seeks to avoid creating a dependency relationship so that developing countries do not come to rely on outside sources of information, and, most importantly, the divisional program acknowledges the existing unconnected proliferation of libraries and information services which results in much duplication of effort and that interconnection and cooperation leads to a more rational use of resources and avoidance of waste. A donor organization such as IDRC which makes resources available for activities in developing countries must be very conscious of its responsibilities; it must exercise great care if it is to succeed in promoting self-reliance. The following points need to be borne in mind when considering the support of the establishment of information services:

- the need to avoid duplication of effort. If several institutions are providing information in an unconnected manner, each will be doing similar work and each service in itself will be incomplete;
- existence of a "multiplier effect" that will increase the benefits of the investment;
- evidence of a "mandate". Established information services require some degree of consultation from the professional community in order for it to take on a defined role;
- the work should be compatible. A fairly high degree of standardization is required. An institution working alone can set any standards;
- subject scope should be tightly defined; and
- that the activity is capable of standing on its own feet financially.

V.2

Rationale for Fisheries Information Support

This section of the report intends to present the special information needs of fisheries and aquaculture researchers in developing countries especially as it relates to IDRC-supported fisheries projects. Much of this information is abstracted from the fisheries information files.

Some of these special needs have already been expressed earlier in this report. For instance, in January 1976, it was noted that the project researchers had little knowledge of the subject area, had a lack of awareness of sources of information and of ways to obtain information. AFNS staff also stressed the lack of knowledge of information gathering on the part of project researchers.

Although much of this is because of actual lack of knowledge, another factor is the publishing standards of international journals and the competitive requirements of developed country researchers which discourage the developing country researchers from submitting and publishing their reports.

Reports are often contained in lesser known periodicals and occasional publications which, although they contain considerable relevant and valuable information, are not accessible except by the direct participation of their producers in information exchange programs at either the national or regional level. Only 21% of the information captured by ASFIS (the largest fisheries and aquaculture data base) is relevant to or written by developing country researchers.

Unless researchers have access to some type of retrieval service from a local library, they will not be able to obtain information that could be of great benefit. Part of this stems from a lack of awareness of what are or can be sources of information, who the experts in the field are, how to obtain reprints by writing to authors, etc.

The type of information needed by developing country researchers is different. The developing country fisheries and aquaculture researcher lives in tropical climates where attempts to manage their fisheries resources have been hampered because: 1) a trawl catch in tropical waters generally collects some 60 species of fish, whereas a trawl catch in temperate climates comprises no more than 10 species; and 2) migratory fish are a common property resource between neighbouring tropical countries.

Fewer species of fish adapt to the colder waters. Because these species are few in number, it is relatively easier to gain more specific information about them. In tropical climates, where the waters are relatively warm all year round, there are many different species of fish and more information is needed about them.

In temperate countries, it is possible to rely on neighbouring countries for information regarding migratory habits whereas in tropical countries, the neighbouring countries are often ignorant of the biology and habits of these fish. This underscores the need for adequate information services in developing countries.

V.3

### Assessment

Information or research has a production cost and a value may be placed on it. Researchers are willing to devote time and money to obtain it. A major cost in any information service is the administrative overhead. The difficulty in obtaining economic costing for any information service is that researchers are not willing to recognize the total running costs involved. At the same time, administrators do not often share the same perception of value of information as the researcher. The basic question, therefore, of any information service is "how much does the service cost?" and "who should pay?".

In the case of the fisheries information service, the clientele has grown according to the number of IDRC fisheries projects which, over the ten years of the project's life, never exceeded 51 projects. The CAB, however, is sent free of charge to libraries, institutions and individuals other than IDRC fisheries projects; in fact to anyone who asks for it. This has been done to maintain exchanges and contacts and to ensure that non-conventional information, not readily available elsewhere, is received by the information specialist and in response to interest expressed by these other users. This is, in fact, the procedure followed by all information services -- that is, their mailing lists are always larger than the number of strict "users" of their services would warrant because they also have to service their information "sources".

The fisheries information service to IDRC-supported projects has always been provided on a free basis. This has one major disadvantage. Where there is no charge for a particular service, there is a tendency to receive no feedback about the value of the service in respect of the needs of its clientele. If charges are made, some strong evidence is at hand on the desirability of the service. There is a subscribers list and its rise and fall says something about the usefulness of the service.

We have already introduced, amongst the issues raised, a series of points which should be carefully considered before embarking on support for information services of any kind. In considering the evidence in relation to the fisheries information project, it is important to discuss the impact these points have on this project in some detail.

### **Duplication**

There is no doubt that, amongst the correspondence reviewed over the past ten years, the clientele have remarked in a positive manner on the usefulness of having such a service. The arguments in favour of setting up the service have focussed on:

- a remote research community with little access to available services;
- a neglected field of information;
- a dispersed literature base; and
- the economic impact of aquaculture on developing country food needs.

When the project was first conceived, all of these points applied. IDRC fisheries projects were widely scattered having, in a few cases, only remote access to normal information channels in the narrow subject area of aquaculture. However, over the past ten years, the situation has gradually improved in two ways: (1) the world has generally become a smaller place in terms of improved communications facilities -- many places previously poorly serviced by telecommunication facilities have improved chances of being contacted by teleprinter or, in some cases, by satellite facilities to the major data bases suppliers (EURONET, DIALOGUE, etc.); and (2) the quantity and quality of coverage of fisheries literature on existing data bases has been vastly improved. For instance, the ASFIS system now routinely produces "Aquaculture Abstracts" and a greater effort has been made to obtain developing country input. Over the past two years, IDRC has been instrumental in bringing about greater developing country involvement. In Asia, four fishery information projects have been supported by IDRC funds.

### **Multiplier Effect**

Donor agencies, such as IDRC, like to consider the possibility of a multiplier effect that will be capable of increasing the benefits of an investment in a service. The "static supply" situation of the IDRC fisheries project rules out any benefits of this kind. The highly personalized nature of the service, for a few projects, means that the work is not necessarily related to what is being done elsewhere, has no chance of becoming a comprehensive service and has no other partners capable of sharing in the totality of work done. Moreover, IDRC has recognized from the beginning that the project has a distinct limited "lifetime" role only. It was only an interim solution until an appropriate developing country institution could be found to operate the service.

### **Mandate**

Information services don't just happen. Some degree of consensus based upon an agreed mandate is required. This is usually from within the professional community and is necessary if the service is to have a credible defined and controlled role. As originally conceived, the fisheries information service could not be defined as an information service per se because it aimed to serve a small, select clientele, and a clientele presumably with a limit on the time it could expect to receive the service. The idea was to service ongoing IDRC-supported projects. So far so good. But the service not only continued to supply information after a project ceased to be supported by IDRC, but also extended its clientele beyond the original projects. It, therefore, proffered a service that dodged the issue of a mandate: it offered an incomplete, uncoordinated service without clearly defined parameters.

### **Compatibility**

In any information service, a fairly high degree of compatibility is required to evaluate users so as to easily link information with other services. However, this service working alone virtually set its own standards, and this makes it difficult for the user to fit it in with other data bases.

### **Subject Scope**

The subject scope, whilst being limited to fisheries and aquaculture, has not formally recognized the broad discipline except within the demands of the AFNS program. Hence, its transfer to another institution requires recognition of the gaps in the service. In other words, it is very much tied to IDRC's own programs and does not necessarily reflect the wider needs of fisheries and aquaculture researchers worldwide.

### **Self-reliance**

The project is entirely based on an annual infusion of IDRC funds and, specifically, funds from IS Division being made available for the continuance of the service.

### **Conclusion**

Because of the above points and because it is not IDRC's role to provide such specialized information services itself to the developing countries, but rather to foster the development of such services within developing country institutions, and because several fisheries information services have now been established in the developing countries to whose services fisheries researchers can now turn, it is not realistic to expect the project to continue to be supported after March 31, 1985. In the next section, we suggest some alternatives/scenarios.

## VI ALTERNATIVES/SCENARIOS

### VI.1 Alternatives

The problem of provision of information to IDRC supported fisheries projects falls properly into two categories: 1) access to current data/provision of copies of original documents; and 2) the question-and-answer type of service. Under the latter heading, we may include the compilation of special bibliographies. Usually, these bibliographies have been compiled as a result of some conference or seminar sponsored by IDRC and for which IDRC fisheries program staff felt a literature review could be useful. An example is the "Artisanal Fisheries in Latin America" bibliography, which was prepared in support of a workshop held in Chile in January 1985.

The first category, the access to current information/provision of copies of original documents, is already partially dealt with on a routine basis through the IDRC Library Staff who are well placed to handle most general enquiries from any IDRC-supported project. (As a point of information, many of the IDRC fisheries projects contain line items for access to information.) The Centre Library already responds to a great many requests and, by virtue of its access to many data bases, is equipped to deal with many information inquiries confronting a typical project. In particular, the Centre Library already provides the computer searches requested by fisheries projects through the fisheries information specialist as well as providing fisheries program and projects staff with SDI service on topics of special interest to them. Therefore, terminating the project should have no new impact on the Library's resources. Access to a fisheries specialist would, however, be desirable. Over the past two years, IDRC has been instrumental in bringing about greater developing country involvement. In Asia, four fishery information projects have been supported by IDRC funds. One of these, at ICLARM (3-P-83-0242), has expressed its willingness to take over, as much as possible, the role of the IDRC fisheries information project in 1984/1985. This could be done by continuing the same broker-type role in searching the major data bases and providing the same bibliographic coverage as the CAB and by supplying it to IDRC projects free-of-charge. If the subject coverage of both ICLARM and the CAB are compared, only a few subjects are not covered by ICLARM. These are:

- parasites;
- fish processing;
- product handling; and
- storage and fish products.

It should be noted in this specific area that IDRC is considering tropical fish processing from a project point of view and we must consider that ICLARM covers most subject matter necessary for IDRC-supported projects. For example, in November 1984, ICLARM completed

several tropical bibliographies such as the one on "Socio-cultural, Economic and Institutional Aspects of Tropical Fisheries and Aquaculture". The situation can be elucidated somewhat by comparison of readership data for the two services:

<u>REGION</u>	<u>IDRC/CAB</u> %	<u>ICLARM Newsletter</u> %
Asia and Pacific	36	60.1
Latin America and Caribbean	28	7.5
Africa and Middle East	13	20.3
All Developed Countries	22	12.1

ICLARM is weakest in Latin America, but is striving to improve this situation. Nevertheless, some 200 copies of the Newsletter are distributed in that region. Total readership of the ICLARM newsletter is estimated to be 12,000 people. This is far greater than the IDRC/CAB readership. On the question of document delivery, ICLARM claim that if a document is cited in their bibliography it is available from their library.

The question-and-answer service has been stressed since the IDRC fisheries information project began and great emphasis was placed on Vancouver as a site because of its closeness to the UBC experts and fishery research institutions. In practice, the main resource was always the original Associate Director. Based on a reading of the files, there is very little evidence of close, day-to-day contact with the scientists. After the Associate Director resigned and the position transferred to ASRO, there was little contact with working scientists and, in fact, the project could not continue to function in a credible manner in this respect. The IS-supported project with ICLARM, "The Selective Fisheries Information Service", is an attempt to augment this aspect of the problem. ICLARM, by virtue of its own projects and contacts worldwide, is best placed to act in a referral mode by directing specific questions on scientific matters to the most appropriate person. It maintains a directory of scientists/researchers. The Selective Fisheries Information Service has already begun to operate its question-and-answer service. We have had a chance to examine ICLARM's files on this aspect of the service already and the service is getting a good response.

Other regional initiatives have been put in place with IDRC support which will compensate for the cessation of the IDRC/CAB service. The Southeast Asian Fisheries Development Center (SEAFDEC) presently has two information projects in operation: The Southeast Asian Fisheries Information Service (SEAFIS, -3-P-83-0240) and Extension Materials (SAFIS, -3-P-80-0175). SEAFIS is the focal point for the ASFIS global fisheries information network. The SAFIS project aims to provide extension-type materials for small-scale fisheries. In addition, specialized information analysis in brackish water species is provided by the BRAIS project in the

Philippines (3-P-83-0241). At the same time, priority is being given to support similar information projects in Africa and Latin America. The situation in West Africa is being closely followed by ORSTOM who have placed priority on providing more financial support to fisheries information in that region.

Few would deny the interim experimental basis of the IDRC fisheries information project in that the scientific information needs of developing country fisheries and the way to meet them are imperfectly understood. The AFNS Division took a lead role in responding to a felt need from its own staff. This raises an important issue that requires further discussion. The decision to allocate human and financial resources to do the job in-house instead of supporting work in the developing countries to some extent invalidates our arguments about building up resources in the developing countries, especially information centres, the question of long-term financing and the dependency question.

## VI.2

### Scenarios

The following scenarios may be studied:

- (1) Retain the fisheries information service as an in-house project indefinitely; in effect postponing the date at which the work would be done in the developing countries. This conflicts with IDRC's underlying role, set out above.
- (2) Retain the service but continue to seek a centre of excellence in a developing country. No one centre of excellence is likely to be satisfactory to the user community worldwide, and a network is a more useful solution.
- (3) Discontinue the service and transfer it to an existing project permanently e.g., ICLARM.
- (4) Discontinue the service and transfer it to an existing project ad interim and continue to search for a centre of excellence/network in developing countries. IDRC Library to continue to respond to project requests for documents.
- (5) Discontinue the service without commitments.

The main point to consider is that the underlying assumption both on the part of AFNS and IS is that the in-house project was only a temporary solution. This is implicit in all the correspondence and in the original DAP. Solutions based on the scenarios must take note of this. Costs must also be a factor: for instance, would it have been cheaper to have provided subscriptions to existing information services? Human resources are critical. At what level of training should the position be staffed? Was a subject specialist needed? Should the position have been part-time or full-time? At no time were any of these basic questions fully addressed.



## VII

### CONCLUSIONS/RECOMMENDATIONS

There are persuasive arguments for continuing to support some form of information service to fisheries projects, but most of the scenarios in the previous section are flawed because ultimately developing country involvement in provision of information services will be delayed. The broad overview of this report is to conclude that we opt for scenario (4); i.e., that the IDRC fisheries information project should cease operations fully by March 1985 in favour of increased efforts to support fisheries information projects worldwide. As a first step, the IDRC-supported Selective Fisheries Information Service at ICLARM will help bridge the gap and will go a long way to providing the same quality service in most areas with the possible exception of Latin America.

Table 1 indicates actual expenditure by IDRC over almost eight years of \$256,100. A basic comparison of this figure with the number of projects and potential users gives an indication of the cost per user of this service -- either \$5,000 per project if we base the cost on the number of projects or, if we base it on the CAB distribution list, a cost of \$640 per CAB reader over eight years. Annual costs work out to \$625 per fisheries project or \$80 per CAB reader. Certainly, this project has provided a large benefit at a reasonable cost. However, it might have been expedient for IDRC to consider covering the cost of subscriptions to Aquaculture Abstracts or AGRINDEX to each of the AFNS projects at less cost. The cost of maintaining such a service at IDRC was relatively inexpensive in terms of per item cost but relatively costly in terms of human resources and the loss to the general program spending in the area of development of appropriate infrastructure in the developing countries themselves.

Continued in-house activity has tended to push back the day when developing countries take responsibility for fisheries information services according to the principles of user demand.

The analysis shows that most user demand comes from Asia and most AFNS projects are located in that region and it is now best served by IDRC-supported information projects. Readership of the ICLARM bibliographic services is also highest in the Asian region.

The IDRC/CAB has neither been designed nor coordinated sufficiently well to act as a long-term project that could simply be transported elsewhere. Too little consideration has been given to compatibility and coordination for viable information alternatives in the developing countries.

Although it contains much useful information, analysis of the CAB shows a wide variation in quality and quantity of relevant data. In recent years, much peripheral material has crept in largely to augment Social Science projects.

Practical staff and budget constraints preclude the continuation of the project.

The operation of the project has greatly contributed to our knowledge of the actual working conditions and problems of a specialized information service.

IDRC/IS should remain active in the promotion of the development of greater services to fisheries researchers worldwide as well as our own IDRC-supported projects without being the sole collaborator and provider of the work itself.

It is, therefore, recommended that:

The IDRC fisheries information project be phased out on 31 March, 1985;

IDRC continue to collaborate with ICLARM on the delivery of the service and, at the same time, look at such other centres of excellence that may be determined to supply services that are well coordinated with other worldwide services in network support for the betterment of all users of fisheries information;

IDRC library continues to provide back-up services on request to all IDRC-supported fisheries projects;

The fisheries information specialist be available for consultation and liaison for an interim period;

Those fisheries documents retained by the fisheries information specialist (see Appendix "B") should be transferred to the most appropriate developing country library/information service;

IS Division look sympathetically at requests for advice and training in those areas most badly affected by the immediate withdrawal of services, e.g. Latin America and parts of Africa, and give priority to resolving the information problems in these areas;

IS Division in collaboration with AFNS fisheries program, continue to consider possible developing country institutions likely to support a fish processing Newsletter.

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INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

**DIVISION ACTIVITY PROJECT (PAP)**

Date 19 July 1976

File 3-A-76-4082

Administration of Funds

Program Division

Information Sciences

External ☐Centre Partnership ☐Centre Administered ☒

Name and Affiliation (if consultancy)

Title (if seminar, conference, etc.)

Ms. D. Bartkow,  
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Aquaculture and Fisheries  
Information (Bartkow)

**Budget Terms and Conditions**

Information assistant salary and benefits	\$22 000
Photocopy and mail costs	\$ 2 500
Equipment, supplies and local travel	\$ 500
Commercial computer search services	\$ 1 000
Travel to Ottawa	\$ 1 500
Consultancies (travel, expenses and fees)	\$15 000
Contingency	\$ 4 000
	<u>\$46 500</u>

**Description**

Staff of the fisheries and aquaculture research projects supported by AFNS in Asia, Latin America and Africa have for some time expressed a strong need for a relevant literature service. For the past year, Miss Deanna Bartkow has been employed part-time by AFNS to develop a simple information service based particularly on the strong fisheries library collections in the Vancouver area - the five technical libraries of UBC, and the fish processing and aquaculture library of Environment Canada - and also upon CAN/SDI current awareness searches, other computer-based systems, and the Vancouver office collection.

This PAP transfers the management of this service to Information Sciences Division and allows for a further 18 months of operations. The demands on the Vancouver office are now so great that part-time work is insufficient. Working full-time, Miss Bartkow will provide a current awareness service in subject areas of interest to the AFNS projects, together with retrospective search services on request. Photocopies will be provided where necessary, although requestors will be encouraged to depend upon local resources as much as possible. IDRC Library will advise on the organization of the document and record collections in the Vancouver office and will also arrange to tap outside literature services.

At the same time, consultant(s) will be used to try to identify a suitable developing-country research institution which may eventually take over responsibility. We are already in touch with two institutions that might be suitable, one in South Asia, the other in Southeast Asia. This PAP, therefore, allows for an extended visit to Asia by a competent fisheries librarian, with a view to developing a project proposal.

Approved By

  
Officer

Authorized By

Date

### Library Collection

What has since become known as the "Vancouver collection" was started by the Associate Director (Fisheries) in 1971 and consisted largely of his own personal collection of reprints, FAO documents and other reports. This collection grew rapidly until, in 1976, it became necessary to hire a part-time research assistant to maintain and organize it. In mid-1976, this became a full-time job and the Centre Library in Ottawa began to assist in its development by purchasing and cataloguing monographs and serials and flagging possible items of interest. Some effort was made to distinguish the IDRC position of the "Vancouver collection", but it was neither very successful nor very consistent.

The collection was always primarily concerned with reprints and non-conventional literature, much of it gathered at conferences, on trips to various fisheries institutions in the developing countries, and by a vigorous program of photocopying journal and report literature. Apart from the Associate Director's personal collection, the subject scope reflected primarily the research interests of staff of IDRC-supported projects and of IDRC fisheries program staff. Later, the collection tended to reflect the subject scope of the current awareness bibliography compiled by the fisheries information specialist (see Section III) as attempts were made to meet document delivery requests based on the references cited.

An inventory was made of the Vancouver collection in January 1984, when the IDRC Reference Librarian and the fisheries information specialist visited the office to dismantle the library and sort out the personal collection of the Associate Director (Fisheries). At that time, the collection consisted of some 15,000 items including reprints, reports, monographs and serials contained in some 400 pamphlet boxes, 3 filing cabinets and 65 shelves. Twenty-nine boxes of material were determined to be part of the personal collection and were returned to the Associate Director (Fisheries). Of the remaining material, forty-one boxes of monographs, reports and serials were selected to be shipped to Ottawa for possible inclusion in the Centre Library based on the Library's policy of maintaining a current and non-technical collection. Another thirty-five or so boxes of material was donated to the local library of the University of British Columbia and to other libraries.

Of the material brought back to Ottawa, some 315 monographs have now been included in the Library collection as well as some 25 serial titles. About 150 FAO documents have also been included but are not catalogued individually. Five pamphlet boxes of reprints on the conch and on carp are retained in Library Archives for reference and information on fisheries institutions has been added to the InfoQuest files. Other materials have either been absorbed into Project Archives or have been sent to appropriate Regional Offices.

Ten pamphlet boxes of documents cited in the CAB and three boxes of documents which were not included in the Centre Library's collection have been kept by the fisheries information specialist pending their transferral to a developing country institution. These documents should be regarded as part of the resources which may be transferred with the Project.