

## **ICLARM'S SELECTIVE FISHERIES INFORMATION SERVICE: PROJECT ADD (ANALYSIS AND DOCUMENT DELIVERY) \***

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### **ABSTRACT**

ICLARM's Selective Fisheries Information Service: Project ADD (Analysis and Document Delivery) provides fisheries researchers, students, aquaculturists and decision makers in the tropics access to key literature and facilitates links with other workers. Mini-reviews on frequently requested topics, specialized bibliographies, a current awareness service, and training are other components of the project. Six hundred-seventy enquiries from 91 countries were received from March 1988 to August 1990. The occupation or position and major subjects of enquiries were monitored. The need to budget for information needs was introduced to a large group of users. The information provided was subjected to a user evaluation with encouraging results.

### **INTRODUCTION**

Fisheries researchers, students, aquaculturists and decision makers in the tropics are often hindered by a lack of key references. Fisheries and aquaculture information sources other than individual libraries in developing countries particularly in the tropics, are almost non-existent (Temprosa, 1986). Furthermore, the literature resources are scattered and to track down and retrieve references are often no simple matter in Southeast Asia (Pongase, 1982). The International Center for Living Aquatic Resources Management (ICLARM), organized to conduct, stimulate and accelerate research on all aspects of fisheries and other living aquatic resources extended in 1984 its Information Program capabilities with the Selective Fisheries Information Service (SFIS). Phase I (March 1984 - March 1987) of this International Development Research Centre (IDRC) of Canada supported project provided advice in strengthening the information capability of fisheries institutions in developing countries; provided answers to specific questions of researchers working in subject areas of ICLARM expertise - finfish and mollusc aquaculture, integrated farming, and small-scale fisheries and resource management; and produced bibliographies and state-of-the-art reviews on important topics identified by trends in the enquiries. Phase II (March 1988 - December 1990) continues these

functions and is producing a series of mini-reviews on selected topics and provides a current awareness service in the Information Department of Naga the ICLARM Quarterly. During phase I, materials sent were provided free of charge. In phase II, much of the materials were either exchanged for reprints of scientific articles, research reports, essays, or photographs or slides of research or fishing activities. Charges for service, materials, and postage were made.

The project also included a training component wherein demonstrations of computer searches were conducted for librarians from local universities. Internship programs for several local computer science students were also completed. Also, six Indonesian Fisheries Information System (INFIS) personnel were trained in librarianship and library computerization.

Linkages with other specialized information systems such as the United Nations Environment Programme's Regional Co-operation in Scientific Information Exchange in the Western Indian Ocean Region (RECOSCIX-WIO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), International Environmental Information System (INFOTERRA), the Brackishwater Aquaculture Information System (BRAIS) of the Aquaculture Department of Southeast Asian Fisheries Development Center (SEAFDEC), and the Seaweed Information Center (SICEN) of the University of the Philippines Marine Science Institute were maintained.

Project personnel included ICLARM's chief librarian (project leader), a research assistant who prepares the mini-reviews and two library assistants.

## METHODOLOGY

Enquiries were usually sent by mail, although there have been telex or facsimile, phone-in and walk-in enquirers. Enquiries not referred to other information sources/resource persons were searched on several computer databases: the Aquatic Sciences and Fisheries Abstracts (ASFA) Compact-Disk Read Only Memory (CD-ROM) version, our library databases and sometimes, our technical staff databases. The ASFA search identifies the body of worldwide literature available for each particular enquiry, while the in-house databases identify materials actually present at the library of ICLARM staff's reprint collections, in particular "grey literature" (meeting papers, project reports, preliminary research results, and theses (Temprosa, 1986)). For the information packages provided with a fee, a two tiered service fee system is in use - US\$5.00 for developing countries and US\$20.00 elsewhere. Data on subject of enquiry, country/territory of origin, occupation of enquirer, payment mode, number of titles/abstracts/materials sent were recorded. A questionnaire card was included for evaluation.

## RESULTS

During the second phase 670 enquiries were received from 91 countries/territories (as of August 1990) and averaged 22 enquiries per month (Table 1). This compares with the initial phase of the project which handled 687 enquiries from 84 countries/territories averaging 19 requests per month.

Most enquiries were received from Asia (41%) and Africa (25%). Enquiries from the developing regions (71 countries) totalled 84% (Fig. 1). Requests from Nigeria topped the list with 101 enquiries, followed by the Philippines with 100, India with 74 and the U.S.A. with 40 enquiries.

Finfish culture systems (pond culture, cage culture, etc.) followed by fish biology, crustaceans, and general fisheries were the top subjects of enquiry. This differed from the initial phase results wherein tilapia culture, integrated farming, resource management and crustaceans were the top 4 categories (Table 2). Requests for the list of materials used in the preparation for the mini-reviews such as "Who's working on Indo-Pacific tropical red tides?" (Vega, 1989a), "Who's working on *Epinephelus* culture?" (Vega, 1989b), and "Who's working on women in fisheries?" (Vega, 1989c), have been received.

Where the occupation of the enquirer was determinable (N=498), researchers were the largest group (34%), followed by administrators (27%), academic/library personnel (19%), students (12%), and growers (8%) (Fig. 2).

## MATERIALS SENT

Materials sent to enquirers consisted of combinations of ASFA and inhouse database printouts, photocopies of key references, library duplicates for disposal, and ICLARM publications. SFIS-ADD provided a total of 13,335 computer-retrieved titles, 1,633 photocopied titles, 82 library collection duplicates and 383 copies of various ICLARM publications, including brochures. Ninety-one percent of computer retrieved titles and eighty-one percent of the photocopies/duplicates/publications were sent to researchers in developing countries. Twenty-four percent of enquiries were included in the exchange program, 14% were paid for by the users, 8% were referred to other information sources, and 54% were still answered free of charge (Fig. 3).

## RESULTS OF USER EVALUATION

A total of 272 evaluation cards were sent out, of which 85 (31%) have been returned to date. See Annex 1 for the questionnaire card. Eighty-four responded to the question on quality. Of these, 87% rated the information very useful, 12% of slight use, while 1% found it of no use (Fig. 4-A). As to the quantity of materials provided (N=80), 62% replied it was most of what was needed, 19%

found it all that was needed, while 19% reported the amount inadequate (Fig. 4-B). Responses to question 3a (N=71) indicate that the materials provided background knowledge to 52% of the respondents, and improved project quality for 41% (Fig. 4-C). There was no effect on 7% of the respondents. For question 3b (N=50) 48% of the respondents perceived an improvement to subject knowledge, but didn't lead to new research ideas, 44% led to new research ideas/projects, while 8% felt no benefit (Fig. 4-D).

The information provided was helpful in locating and communicating with others in their field to 84% of the respondents.

Many respondents commented on the promptness of service and usefulness of the information.

### **MATERIALS RECEIVED**

The majority of materials received through the exchange option of the project were mainly new to the library - 84 reprints, 20 monographs, and 32 other papers. We are anticipating additional theses and research reports promised in exchange for materials sent.

### **DISCUSSION**

The materials provided by the SFIS had a positive effect on the users. An important result was the link it provided to workers in the same field. A comment from the Yap Fishing Authority was "The references on who to write to for more information were useful". This link could overcome or minimize problems of obtaining references and communicating research results among scientists of tropical aquatic research. Copies of western technical journals and other important information sources are difficult to obtain in developing countries and far flung areas as exemplified by the remark of Mr. David Zoutendyk of the Cook Islands. "It is extremely useful to researchers like myself in isolated locales to have a service like yours willing to provide information gathering work. Thank you very much."

While SFIS-ADD provided key documents, nearly one-fifth of the questionnaire card respondents found the materials inadequate. We suppose that these users were expecting more reprints rather than abstracts/reference lists as in the comment of Mr. Jimmiel Mandina of Finland: "The information lists for the subject in question were very useful. I would be more grateful if more reprint copies could be sent also". Another comment along this line by Idemunda Oseyomon of Nigeria was "The information should be available in the form of a publication of a manual on the subject". A solution to this could be to ask them to return the inhouse holdings list marking the titles of materials they would like to receive. While this may work for users in developed countries, users elsewhere are often hard pressed for funds or have restrictions on foreign currency exchange.

The exchange of reprints or other materials would be preferred, although payment through UNESCO or equivalent coupons could be a solution for these users.

One cannot overlook the time and effort saved by researchers. Dr. V. K. Rajbanshi of Singapore comments: "The Selective Fisheries Information Service of ICLARM is most useful to the scientist in expediting their research since finding the literature is one the very time consuming parts of the research". Indeed, very few researchers in the tropics have access to computerized bibliographic information sources. Our use of the CD-ROM version of ASFA which is updated quarterly provides both current and up to about 10-year old titles/abstracts on a wide range of aquatic sciences and fisheries topics.

The quality of research conducted by users particularly in developing areas was enhanced. Forty-one percent of the respondents to question 3a of the evaluation card claimed some improvement to project quality. While 52% percent of the respondents said the information provided background information only, presumably, subject knowledge for this user group increased.

The materials provided by the project reaches crucial personnel: researchers active in the field and administrators who formulate local and national fisheries/aquaculture/aquatic resources policies.

Scientists in developing areas are now aware that information is a commodity available for exchange or pay. Jutie Limin of Indonesia comments "We still need SFIS help in the future. Articles for exchange will be sent soon. Thank you very much" or of Mr. Rante, also Indonesian "As soon as I finish my thesis, I'll send to you a copy. Thanks a lot for your kindness, your attention, and your friendship".

### RECOMMENDATIONS

From the results of SFIS-ADD, I can say that the service is indispensable for users in the tropics. The service should continue to provide documents and linkages for scientists and administrators in the developing areas.

Information kits can be assembled from prepared modules and be tailored to specific needs.

The facilities of ICLARM and the experience of project personnel must be used for the benefit of all. The challenge of reaching a wider geographical area, particularly Latin America and the Indian Ocean nations should be met.

### REFERENCES

Pongase, A. D. 1982. Finding fisheries facts in Southeast Asia. *ICLARM*

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**Temprosa, R. M.** 1986. Development of a library-based tropical fisheries information center: The ICLARM experience. IN: *Marine Science Information: An International Commodity*. Grundy, R. L., R. T. Ford, and M. J. Beardsley (eds.). 11th Annual Conference of IAMSILIC, Virginia Institute of Marine Science, Gloucester Point, Virginia, 14-18 October, 1985. p.111-6

**Vega, M. J. M.** 1989a. Who's working on Indo-Pacific tropical red tides?. *Naga, The ICLARM Quarterly* 12(3):11.

**Vega, M. J. M.** 1989b. Who's working on *Epinephelus* culture?. *Naga, The ICLARM Quarterly* 12(1):19.

**Vega, M. J. M.** 1989c. Who's working on women in fisheries?. *Naga, The ICLARM Quarterly* 12(2):16.

Table 1. Number of SFIS requesters by country/territory  
(March 1988 - August 1990)

COUNTRY/TERRITORY	NUMBER
NIGERIA	101
PHILIPPINES	100
INDIA	74
USA	40
ARGENTINA	1
AUSTRALIA	13
BAHRAIN	1
BANGLADESH	10
BERMUDA	2
BOLIVIA	2
BRAZIL	4
BRUNEI	3
CANADA	7
CHILE	1
COLOMBIA	12
COOK ISLANDS	3
COSTA RICA	2
COTE D'IVOIRE	1
CUBA	2
DENMARK	1
EGYPT	4
EL SALVADOR	1
ETHIOPIA	4
FED. REP. GERMANY	9
FIJI	10
FINLAND	1
FRANCE	5
GHANA	5
GUATEMALA	5
GUYANA	2
HAITI	1
HONDURAS	1
HONG KONG	1
INDONESIA	21
ISRAEL	2
JAMAICA	1
JAPAN	1
KENYA	23
LIBERIA	1
MADAGASCAR	2
MALAYSIA	15

MALDIVES	1
MARIANAS ISLANDS	1
MARSHALL ISLANDS	1
MAURITIUS	4
MEXICO	10
MICRONESIA	4
MONACO	1
MOZAMBIQUE	2
NEPAL	3
NETHERLANDS	3
NEW CALEDONIA	8
NEW ZEALAND	2
NICARAGUA	1
OMAN	3
PAKISTAN	6
PANAMA	1
PAPUA NEW GUINEA	7
PEOPLE'S REP. CHINA	1
PERU	2
POLAND	1
PORTUGAL	1
PUERTO RICO	5
REP. OF KOREA	1
REP. POP. du BENIN	1
SAUDI ARABIA	2
SENEGAL	1
SINGAPORE	6
SOLOMON ISLANDS	21
SOUTH AFRICA	5
SRI LANKA	13
ST. CATHERINE	1
ST. LUCIA	1
SUDAN	2
SURINAME	1
SWEDEN	6
TANZANIA	4
THAILAND	8
TONGA	2
TRINIDAD & TOBAGO	4
TUVALU	2
UGANDA	3
UNION OF MYANMAR	1
USSR	2
UNITED KINGDOM	10
VANUATU	1
VENEZUELA	1



VIETNAM	2
ZAMBIA	4
ZIMBABWE	6
***Total***	670

Table 2. SFIS enquiries by major subject.  
(March 1988 - August 1990)

TOPIC	NO. OF ENQUIRIES
CULTURE SYSTEMS	162
FISH BIOLOGY	141
CRUSTACEANS	105
GENERAL FISHERIES	93
MOLLUSCS	39
TILAPIA	41
RESOURCE MANAGEMENT	36
CARPS	20
INTEGRATED FARMING	29
SOCIOECONOMICS	23
ECOLOGY	28
SEAWEEDS	22
PROCESSING	15
FISH/SHELLFISH NUTRITION	19
NON-FISH CULTURE	18
OTHERS	178

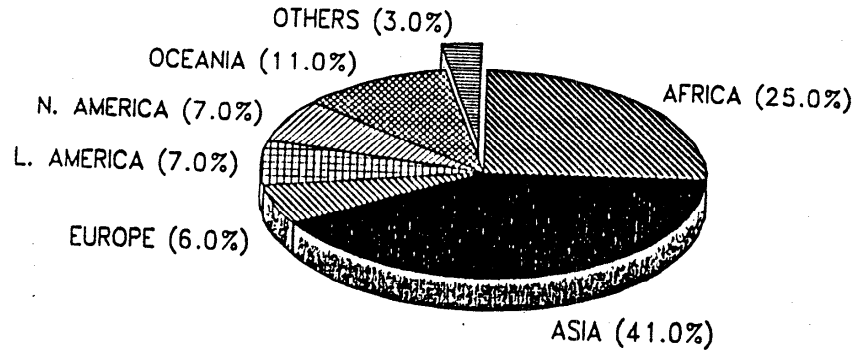


Figure 1. Geographic spread of enquiries received by SFIS-ADD. (N=670) (March 1988 - August 1990).

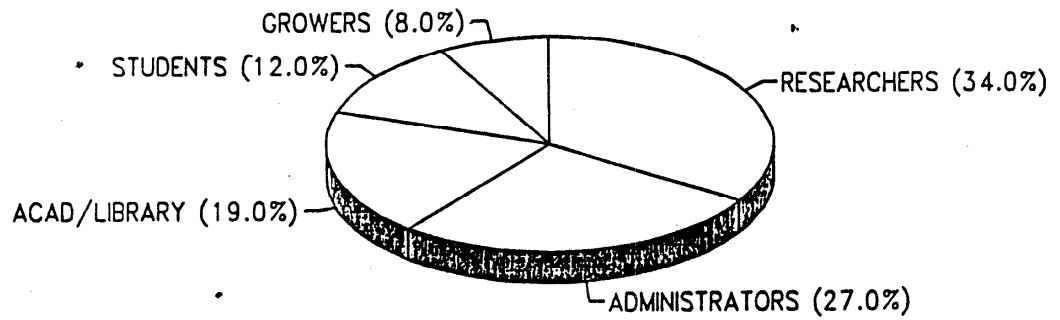


Figure 2. Occupation or position of SFIS-ADD enquirers. (N = 498) (March 1988 - August 1990).

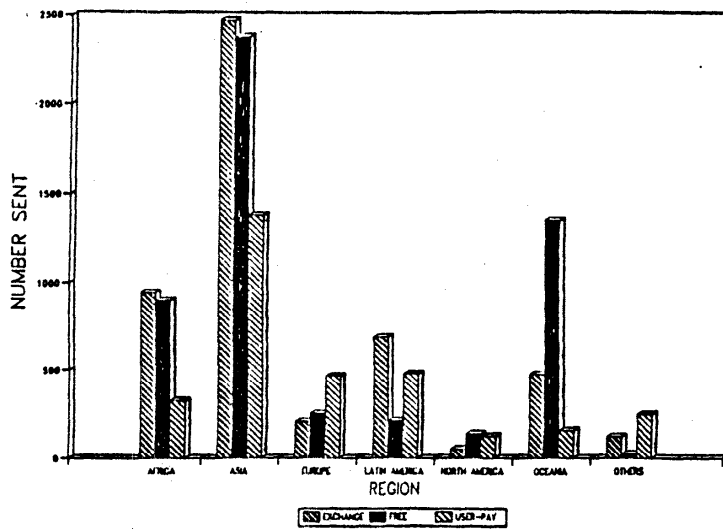


Figure 3-A. Mode and destination of citations/abstracts sent by SFIS-ADD. (N = 13,335) (March 1988 - August 1990).

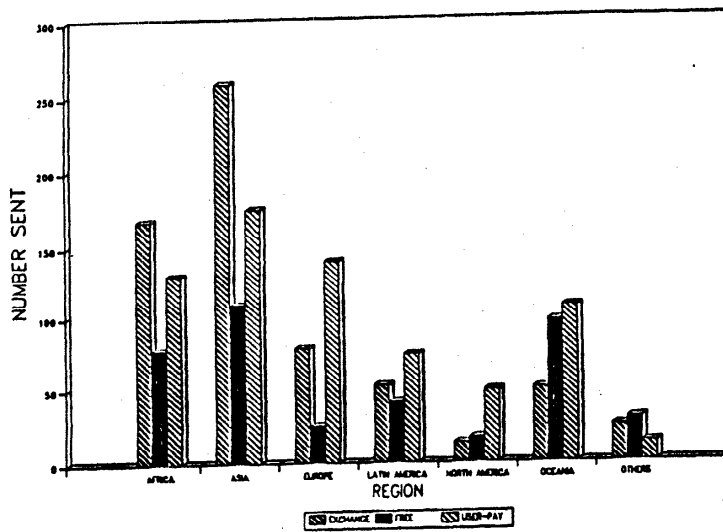


Figure 3-B. Mode and destination of photocopied documents and library duplicates sent by SFIS-ADD. (N = 1,715) (March 1988 - August 1990).

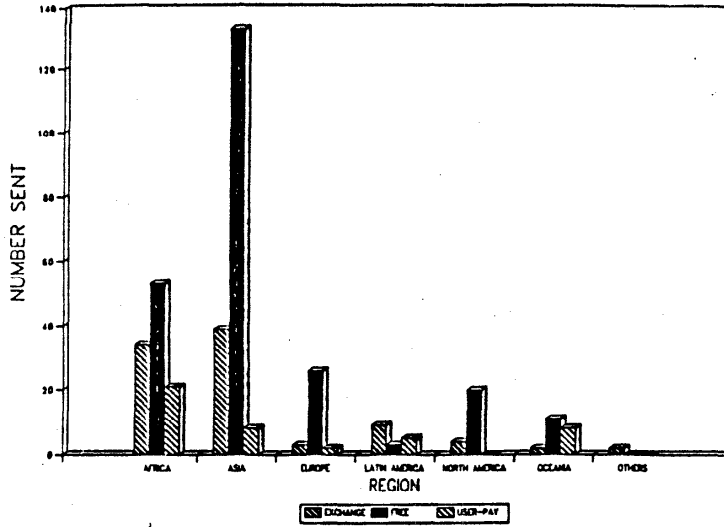


Figure 3-C. Mode and destination of ICLARM publications sent by SFIS-ADD. (N = 383) (March 1988 - August 1990).

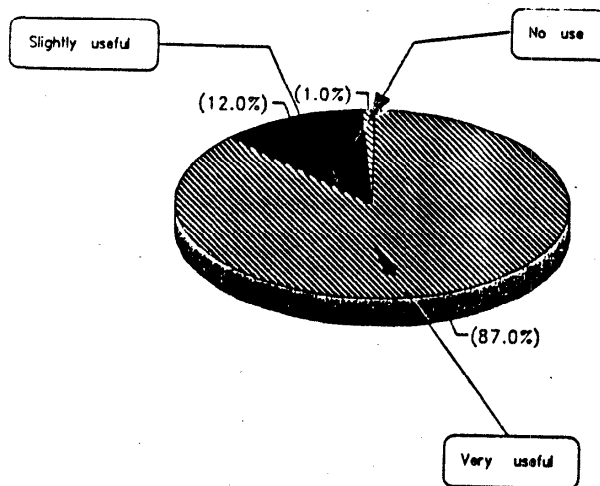


Figure 4-A. SFIS-ADD user's evaluation on the quality of information provided. (N = 84) (March 1988 - August 1990)

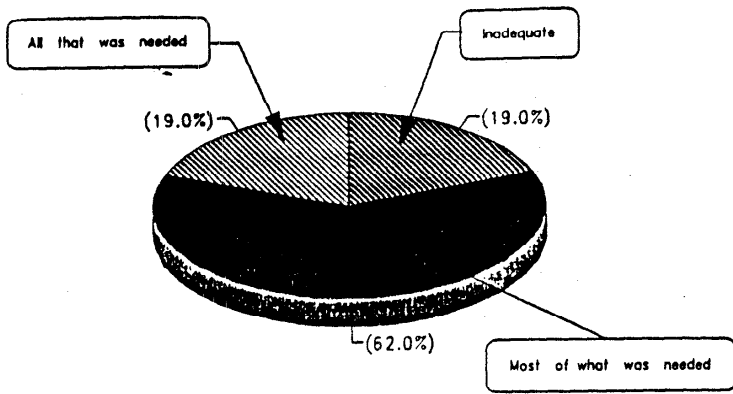


Figure 4-B. SFIS-ADD user's evaluation on the quantity of information provided. (N = 80) (March 1988 - August 1990)

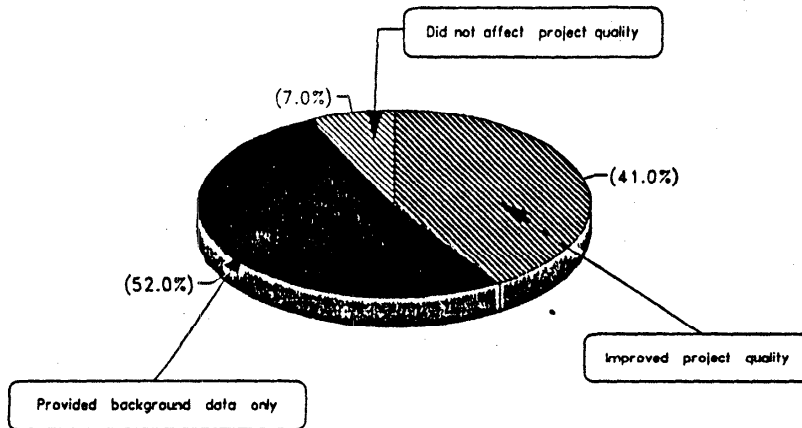


Figure 4-C. SFIS-ADD user's evaluation on the effect on specific projects of the information provided. (N = 71) (March 1988 - August 1990)

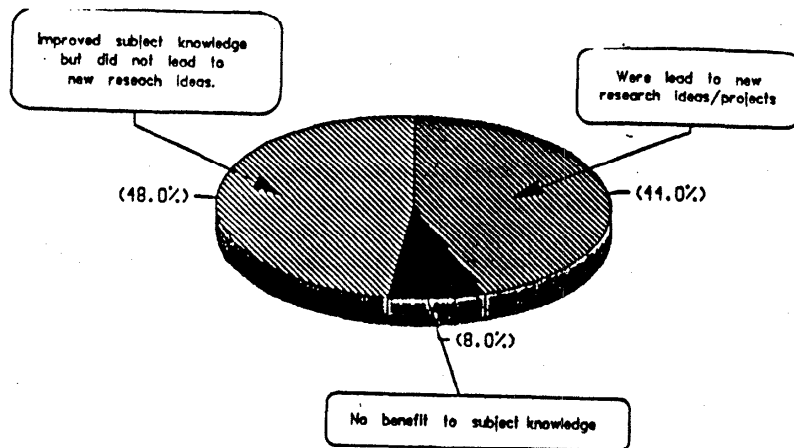


Figure 4-D. SFIS-ADD user's evaluation on effect of the information provided on general knowledge. (N = 50) (March 1988 - August 1990)

We would be grateful if you would complete this questionnaire and mail it back to us after you have assessed the information provided by ICLARM's Selective Information Service.

1. Quality. The information was:
 

<input type="checkbox"/> very useful	<input type="checkbox"/> slightly useful	<input type="checkbox"/> no use
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2. Quantity. The information was:
 

<input type="checkbox"/> all that was needed	<input type="checkbox"/> most of what was needed	<input type="checkbox"/> inadequate
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- 3a. If for a specific project, the information:
 

<input type="checkbox"/> improved the project quality	<input type="checkbox"/> provided background data only	<input type="checkbox"/> did not affect the project
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 or
- 3b. If for general knowledge only, the information:
 

<input type="checkbox"/> led to new research ideas/projects	<input type="checkbox"/> improved subject knowledge but did not lead to new research ideas	<input type="checkbox"/> had no benefit to subject knowledge
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4. Did the information help you locate or communicate with other researchers in your field?
 

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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Comments:

Name and address:

Annex 1. SFIS-ADD user's evaluation card.