

Introduction

The application of computers and computer science to indexing and abstracting of scientific and technical literature, its massive storage and retrieval during the 1960s, library automation and publishing routines together with the development of online and teleprocessing operations during the 1970s and the almost daily increase in capacity and reduction in size and price of computers that have brought them to the domestic environment during the 1980s, are possibly the most dramatic effects of modern technology on information, documentation and library science. They have given rise, in some developed countries, to current information technology.

New technologies usually arise in developed countries and represent for developing countries not only a challenge but a threat that the scientific and technological gap will increase along with their dependence on developed countries.

Since it would be unwise to ignore international trends, developing coun-

CICH and Aquatic Science Information in Latin America

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tries will be forced to import completely or partially the new technologies and develop their own infrastructure capable of coping with them while they are still engaged in trying to master previous technologies.

We must realize that in most developing countries the already mentioned catalytic effect of information on the development of science and technology and on the diffusion of culture is hardly recognized and that they depend, to a large extent, on information generated in the developed countries; it is neither as cheap nor as easily accessible to them as it is for the producers. The very often poor communications, the language barrier and the technical, political and economic

Some of the output from CICH

Periódica and *Clase* give the contents pages of Latin American journals in the Sciences and in Sociology, Economics and Humanities, respectively. They are thoroughly indexed by keywords and author. Published three times a year, subscription costs US\$100/year.

Bibliografía Latinoamericana is in two parts. They are published twice a year; subscription is US\$100/year.

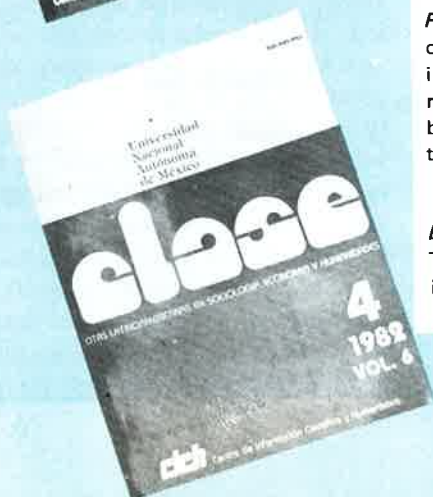
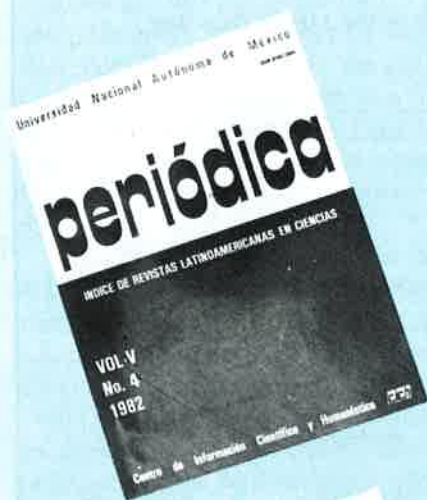
limitations play definitive roles in the access to information in these countries.

While developed countries are normally self-sufficient in their document holdings, most developing countries have to import a high percentage of the documents they need. There are often only a few, if any, institutions endowed with the proper documental infrastructure to support research and development activities using current information technology.

CICH

The Mexican government had been developing a scientific and technical documentation center with the help of Unesco since 1951. Despite a successful development in the 1950s, this center ground to a halt in 1961 after losing its autonomy and director.

At the time 80% of the center's users were from the Universidad Nacional Autónoma de México (UNAM). By 1971, UNAM possessed 33% of Mexico's total research infrastructure. Thus, when, in



1970 the Mexican Government decided to stimulate the country's scientific and technical development, it was quite natural that the University should decide to set up, in 1971, the present Centro de Información para Ciencias y Humanidades (Information Center for Scientific and Humanities Research). CICH was planned as a multidisciplinary center fully covering the broad spectrum of interests in research activities in a university of this size.

UNAM, with its 300,000 students and its 27,000 teachers, is an enormous research and teaching establishment and it is logical that it should have a comprehensive information center of its own. The center is naturally also available to users throughout Mexico, the Americas and the world at large, nothing being more universal in character than information concerning the results of research.

Thus, the seed planted twenty years earlier by the Unesco experts showed its quality and endurance and came to bear magnificent fruit in the shape of the present center, CICH.

CICH is located within the UNAM university city, occupying an area of 1,400 m². The Center has a variety of computers and 85% of its activities are computerized. Despite a large library containing issues of some 1,000 Latin American periodicals and over 300 secondary and other journals, 84% of requested material must be ordered from sources abroad. Interestingly CICH has managed to maintain a central acquisition system for the 119 departmental libraries of UNAM plus the National Library and National Periodicals Library. It distributes 80,000 issues of 5,000 journal titles for which there are 9,000 subscriptions.

CICH's Information Department produces an index to Latin American scientific journals, embracing about 300 journals, the Latin American Bibliography, and has a selective dissemination and current awareness unit.

In 1978, CICH was designated as the Latin American regional inputting center to the FAO-based Aquatic Science and Fisheries Information System (see p. 16) for ASFA, the latter's monthly abstract journal. ASFA is currently produced in two parts broadly divided into living resources (ASFA-1) and non-

living resources (ASFA-2). In 1984 a new product derived from ASFA-1, Aquaculture Abstracts, appeared.

Most of the material is provided to the Center free of charge in exchange for the international recognition afforded by citation in ASFA.

Identification of documents is achieved through a number of sources, including those periodicals already included in ASFA, personal contacts between FAO and CICH personnel, various scientific societies and individual researchers within Latin America, and through the database of CICH itself.

Inputting material into ASFA is no simple matter. A summary in English is required. On occasions, none is provided with an article, and even in cases where an english abstract is already provided it is often not useful for ASFA purposes. Analysis of each item requires classification according to the 27 categories and 144 subcategories of ASFA-1 or the

17 and 119 corresponding classes of ASFA-2.

By the end of 1981, a total of 136 relevant periodicals had been identified from 15 Latin American Countries. Five countries make up 70% of the total—Brazil (18%), Mexico (17%), Chile (14%), Argentina (13%) and Venezuela (7%). The other participating countries are Colombia, Costa Rica, Cuba, Ecuador, El Salvador, United States of America, Nicaragua, Panama, Peru, Puerto Rico and Uruguay. Over 1,300 items are processed annually for ASFA.

The main outlets for aquatic science and fisheries information in Latin America are not so numerous. The principal sources number about 23 (see box).

The literature in this field seems to be increasing rapidly. CICH has adequate manpower—45 fulltime professionals—to cope with present trends in this and the other scientific and technological disciplines that it serves.

LATIN AMERICAN JOURNALS RELATED TO AQUATIC SCIENCES AND FISHERIES

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| Acta Zoológica Lilloana (Argentina)* | I † |
| Anales del Instituto de Biología. UNAM (Mexico) (Zool.)* | II |
| Anales del Instituto de Ciencias del Mar y Limnología. UNAM (Mexico) | I |
| Anales del Instituto de Ciencias Marinas de Punta de Betín (Colombia) | I |
| Atlántica (Brasil) | I |
| Boletín. Instituto del Mar del Perú (Peru) | II |
| Chile Pesquero (Chile) | III |
| Ciencia e Cultura (Brasil)* | I |
| Ciencia y Desarrollo (Mexico)* | III |
| Ciencias Marinas (Mexico) | I |
| Ecosur (Argentina)* | II |
| Gayana Botánica (Chile)* | II |
| Gayana Zoológica (Chile)* | II |
| Lagena (Venezuela) | I |
| Lilloa (Argentina)* | I |
| Limnobios (Argentina) | II |
| Mar y Pesca (Cuba) | III |
| Physis (Argentina)* | I |
| Polipesca (Ecuador) | III |
| Revista de Biología Marina (Chile) | I |
| Serie Científica. Instituto Antártico Chileno (Chile)* | II |
| Técnica Pesquera (Mexico) | III |

*These journals are not devoted specifically to aquatic sciences and fisheries.

†Grade I journals are high academic level primary publications, with fixed requirements for authors. Grade II journals are also good quality primary journals but give no specific instructions to authors. Grade III journals are popular or semi-technical.