Analysis of the Mexican Scientific Production in Marine Science 1994-2005, through the information systems: Periódica, ASFA and SCI. (Preliminary Report)

Irene Beltrán Rodriguez

INTRODUCTION

Science is the most important cultural and social phenomenon of the last four centuries (Meltrit, 2003), scientific activity and its impact on society has been evaluated through bibliometric studies. These studies are carried out using data extracted from scientific publications.

Bibliometry is employed in order to measure growth in the production of Mexican research in marine sciences and its impact, through the data bases Periódica, Aquatic Sciences and Fisheries Abstracts (ASFA) and Science Citation Index (SCI). The analysis was completed during the period between 1994 and 2005.

OBJECTIVES

General Objective.

To analyze reported Scientific Literature in three systems of bibliographic information: SCI, ASFA and Periódica, corresponding to works carried out by Mexican institutions in the area of marine sciences from 1994 to 2005, and to determine which one better represents the scientific activity of the group.

Specific objectives.

• To determine the behavior of the Mexican scientific publication in the area of marine sciences, through the data bases SCI, ASFA and Periódica.
• To determine the geographic and institutional structure of marine sciences in Mexico.
• To identify the main users of the information from the Mexican scientific community in the area, through the citations made to scientific works published by Mexican investigators in marine sciences.

METODOLOGY

Sources

For the development of this study three data bases were employed: Periódica, ASFA, and the SCI. The former is national and the latter two have a great impact internationally.

Periódica, it contains the information published in Latin America and the Caribbean in Spanish.

ASFA. It contains and divulges bibliographies on both marine and fresh water environments to the community world-wide, including fishing, aquaculture, contamination, biology, biotechnology, non-living resources, oceanography and limnology, the handling, the conservation, the policy and legislation of the quality of water.

SCI. It is the most extensive of the indices of citation with international and multidisciplinary cover of Scientific Literature.

Method used.

Scientific Literature published by Mexican investigators in the area of marine sciences for the period 1994-2005, was carried out in the following way:

From the online version of the ASFA system, the Boolean operator Not New Mexico was used to search for and recover all the Mexican works which appeared in the field of Affiliation. A total of 3,730 records of works published by investigators assigned to Mexican institutions were recovered.

In the same way, the reports of the SCI were also reviewed from their online version, by means of the use of the Web of Science. In this case, the works corresponding to the following thematic categories were separated: Fisheries, Marine & Freshwater Biology and Oceanography. From this data base 2,065 records of Mexican production were obtained.

In the case of the Periódica data base, the search was made online in the OCLC version, the records were obtained in the field of Affiliation Author, delimiting the search only to Mexican authors. Altogether 1,836 works corresponding to Mexican institutions were recovered.

The programs Access and excel were used to analyze and process the data obtained.

Actually, the Periódica and SCI data bases have been analyzed and partially processed using the indicated programs.

Excel has been used to elaborate the tables and graphs and to calculate the percentages shown in the analysis of the preliminary results.

RESULTS

Figure 1. Scientific production by year.

Figure 2. Mexican scientific production by language.

Table 1. The most productive journals.

Table 2. Scientific production by organizational structure.

Figure 3. Scientific production by geographical structure.

CONCLUSION AND DISCUSSION

The number of articles published in scientific Mexican journals has decreased in the last few years.

The language Mexican investigators prefer to publish in is English.

A national and international level Mexican investigators prefer to publish in the Ciencias Marinas Journal.

Investigation into marine sciences in Mexico is produced by public universities and by research centers.

Practically the same institutions publish investigations as much in national as in international journals. These preliminary results provide important data for those people involved in decision making.