



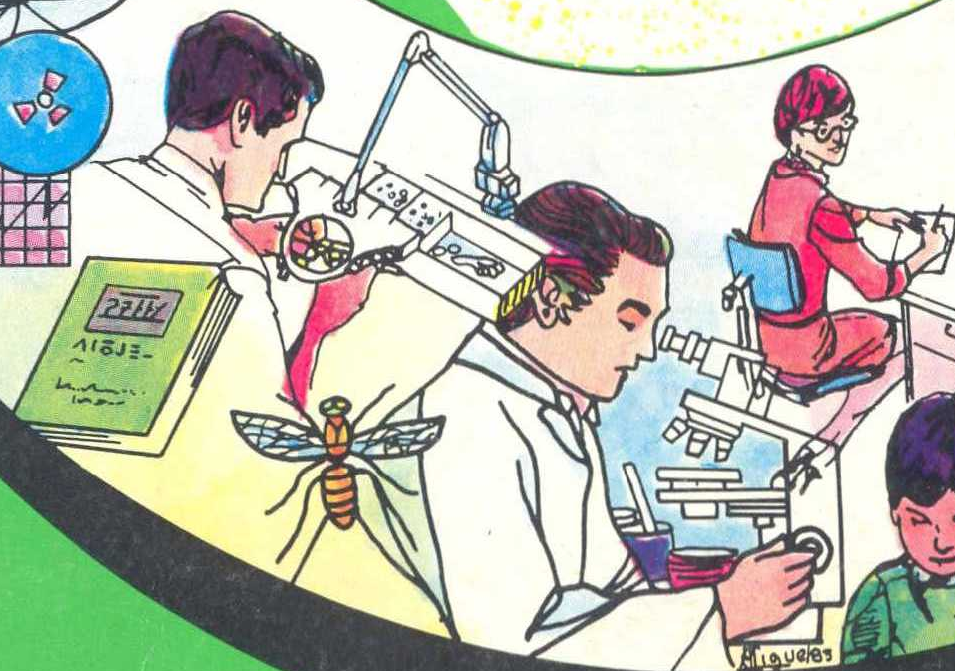
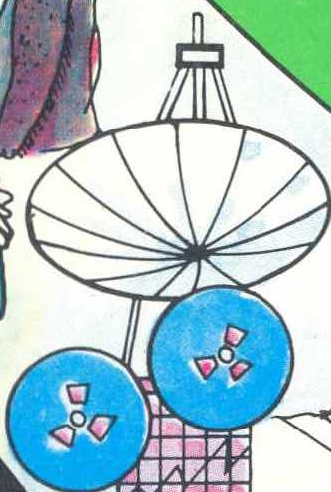
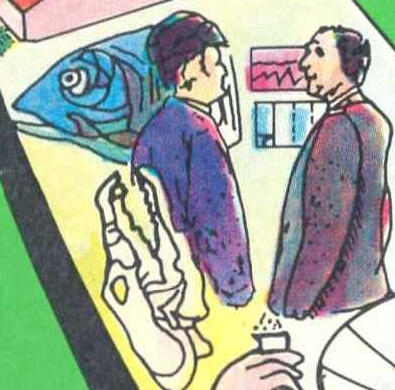
CONICIT IN SCIENCE AND TECHNOLOGY

1973



10 YEARS PROMOTING NATIONAL DEVELOPMENT

1983



Editor

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The logotype of CONICIT: the fingered leaf which symbolizes science and its branches; the compass, that signifies technology which touches the branches of science.

The role of CONICIT is thus represented in its promotion of scientific and technological knowledge.

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INSTITUTIONAL ORGANIZATION

NATIONAL COUNCIL ON SCIENTIFIC AND TECHNOLOGICAL RESEARCH (CONICIT)*

CONICIT is a national institution which was created by Law of the Republic No. 5048 on August 9, 1972 in order to promote the development of science and technology through systematized research or creative work and to advise the national government in defining the scientific and technological policies of the country.

OBJETIVES

In order to comply with the provisions established by law, CONICIT set down the following basic objectives:

- To promote the development of science and technology for peaceful purposes by means of systematic research or creative work, thus contributing to the strengthening of the scientific and technological framework of the country.
- To lend assistance to the Government of the Republic on scientific and technological aspects and to coordinate with the National Office of Planning and Economic Policy on everything relative to Scientific and Technological Policies and Planning.
- To supply financial aid to those entities or persons that are performing or wish to carry out research projects, giving preference to those projects which tend to develop new processes to increase national production, thus contributing to the improvement of the quality of life in Costa Rica. CONICIT also gives precedence to those projects which help increase knowledge of flora, fauna and other natural resources of the country.
- To participate financially with other organizations in joint programs or projects for the development of science and technology.

* Consejo Nacional de Investigaciones Científicas y Tecnológicas.

BOARD OF DIRECTORS



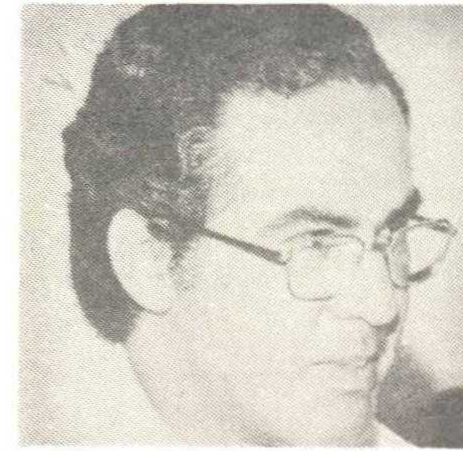
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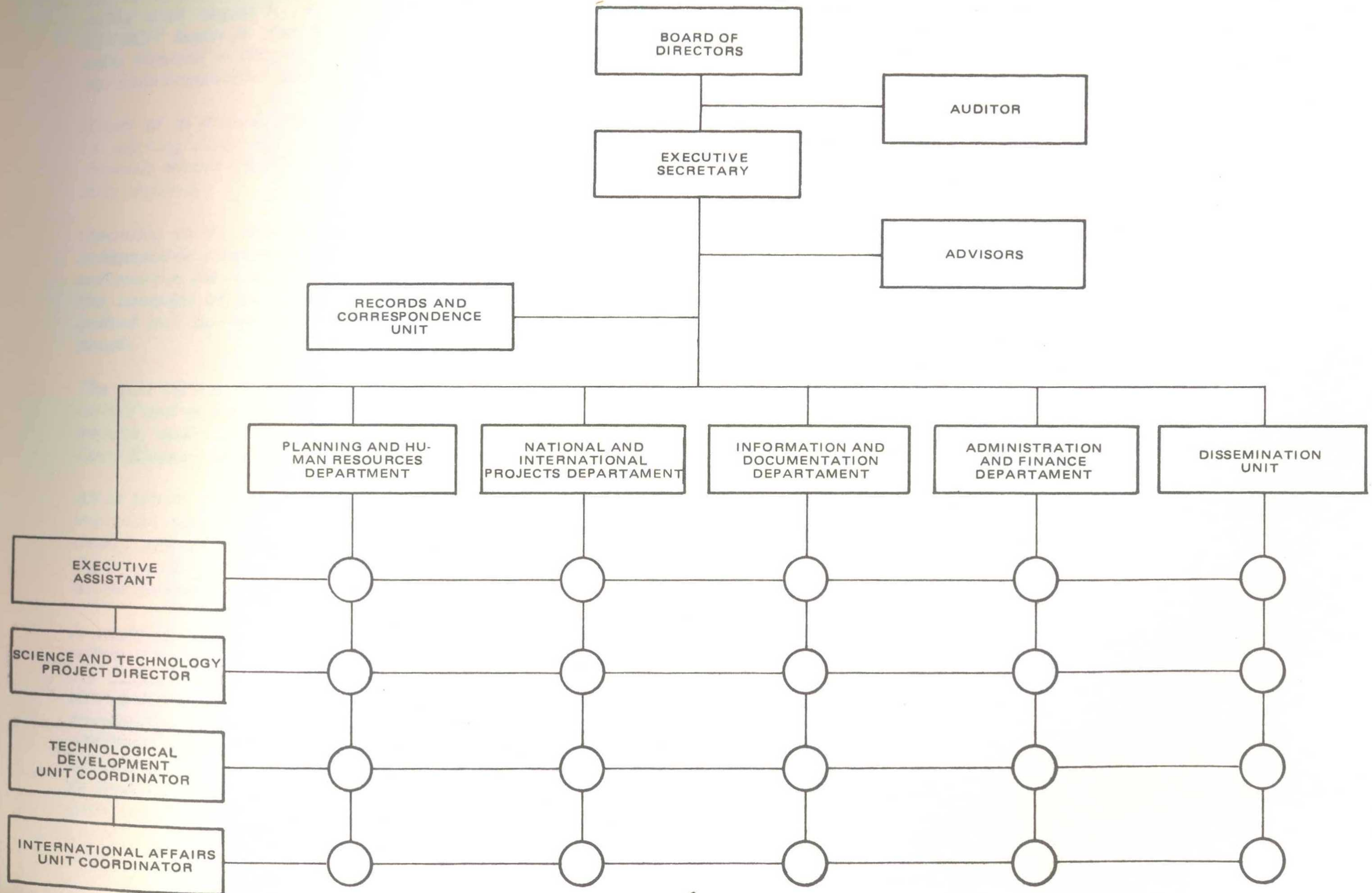
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NATIONAL CONCIL ON SCIENTIFIC AND TECHNOLOGICAL RESEARCH ORGANIZATIONAL CHART



INTRODUCTION

Even though law 5048 which created CONICIT was sanctioned by the then-President of the Republic, José Figueres Ferrer on July 28, 1972, the institution did not actually open its doors to the public until August 1, 1973. At the beginning of its endeavors, CONICIT began to plan how it would accomplish the necessary tasks involved in carrying out the important national labor that had been commended to it.

Aware of its historic responsibility, the institution devoted itself to working diligently and growing according to its needs and demands almost silently and without fanfare as responsibility and duty required.

Operating on the premise that science and technology are today indispensable elements in development—and they will be more and more in the future—CONICIT resolutely launched itself into the conquest of these foreign ingredients which needed to be grafted into our medium for the well-being of the Costa Rican people.

The two aspects of science, both as a fundamental element of culture and as a producer of instruments of social and economic impulse, ought to become a part, to the fullest extent, of the Costa Rican society.

All of this in itself justifies that a guiding institution with such an important task at hand, having a character which is broad and clearly national, and at the same time universal, sees to it that the scientific and technological labors have unity and cohesion within the overall actions of the country.

It would not have been possible to accomplish any work whatsoever within that conceptual and structural framework if it had not had the support and political favor of the succeeding governments during the last few years. The introduction of the scientific and technological component in all of its fullness—a phenomenon which can only happen over a long period of time—is not possible without a determined and congruent political willingness for it to happen. This does not mean that we are completely satisfied with respect to the effort and backing we have received. The

job we have ahead of us in CONICIT is enormous and merits for the good of the country all of the attention of politicians and statesmen.

CONICIT has endeavored and will continue to endeavor with strong determination to contribute to the success of this fundamental undertaking which in any event belongs to every Costa Rican. Whatever is done to mitigate and diminish the effects of the enormous hiatus existing between the rich countries and the poor countries will historically be welcomed and appreciated by future generations. The world cannot nor must not be split into two halves which make the reconciliation of these two hemispheres more and more difficult. This historical moment demands imagination and creative work to which we from both sides have a right, for the sake of the harmony, the peace and the justice that all human beings deserve.

On these pages we have summarized the quiet and constant labor of the institution which is pleased to work with pride for the citizens of our country. After ten years of continuous effort, CONICIT has grown and has many valuable workers whose perseverance and love for the institution are reflected in the fruits represented here.

I express with joy and pleasure, on behalf of all those who have offered information here, that although it only represents the labor of small period of the history of an immense task, it is presented with pride and satisfaction by Costa Ricans to our fellow citizens.

Rodrigo Zeledón
President

BOARD OF DIRECTORS

**SCIENTIFIC POLICY AND PLANNING AND
TECHNOLOGY**

SCIENTIFIC AND TECHNOLOGICAL POLICIES AND PLANNING

CONICIT is responsible for promoting the development of science and technology in the country. This obliges it to establish a capacity for planning its activities and also participating with the Department of National Planning and Economic Policy (MIDEPLAN), in the formulation of scientific and technological policies which contribute to national development.

This is presently being done through the combined effort of CONICIT and MIDEPLAN by the organization of a Chapter on Science and Technology for the National Plans on Development from the periods 1979 through 1982 and 1983 through 1986. These plans emphasize the explicit recognition on the part of the national government of the importance of the science and technology; an ingredient in the planning process of national development.

PRIORITY AREAS IN SCIENCE AND TECHNOLOGY

In 1980, CONICIT and OFIPLAN worked together in order to determine priority areas in science and technology for the development of Costa Rica. The results were subsequently evaluated recognizing their importance in setting up priority projects within the national plan of development.

This work points out CONICIT'S interest in improving the mechanisms for determining priorities and establishing which contribution science and technology should make in the national plans for economic and social development.

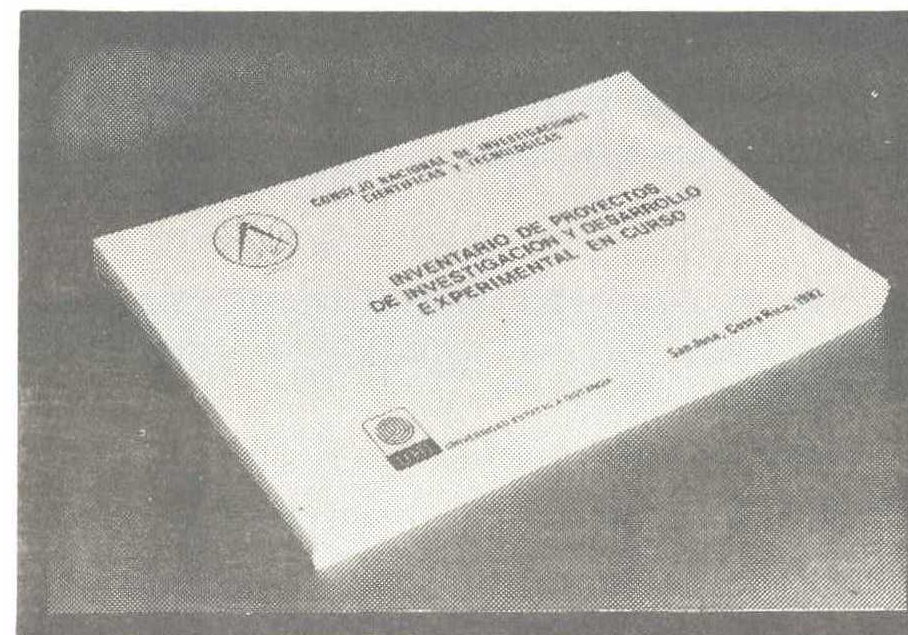
PRESENT SITUATION AND CHARACTERISTICS OF RESEARCH IN COSTA RICA

In 1982 CONICIT and the International Center of Research for Development (CIID) of Canada, combined efforts in doing a descriptive study on the present state of research in the country.

This study has served as a point of departure in carrying out others which will make it possible to visualize in an integral way the state of research in the country. One of these, "DIAGNOSIS OF RESEARCH IN COSTA RICA" will lead to a qualitative evaluation of research activities.

INVENTORY OF EXPERIMENTAL RESEARCH AND DEVELOPMENT PROJECTS IN PROGRESS

CONICIT has for several years endeavored to keep up to date a national inventory of experimental research and development projects in progress, such as those corresponding to the years 1976, 1979 and 1982. The objective is to provide a basis for the formulation of policies and scientific and technological planning and to provide researchers and institutions with necessary information so that research will not be duplicated. This allows optimum utilization of the financial and human resources assigned to this field



This booklet includes the names of institutions that carry out scientific and technological research, the projects, their objectives and when they are being carried out. It also indicates the principal researcher in each case.

DIAGNOSIS OF THE INDUSTRIAL SECTOR

The diagnosis of the industrial sector is part of a project carried out by CONICIT with the financial support provided by a loan from the International Agency for Development (AID).

The diagnosis had the objective of identifying those areas in which technological change and could contribute significantly to improvement of the wellbeing of the Costa Ricans, or to give the Costa Ricans a potential for improvement and better utilization of Costa Rica's resources.

This study was assigned to the Institute of Research in Economic Sciences of the University of Costa Rica.

The preliminary results which came forth from this study suggests some economic indicators which characterize the industrial firms which according to the Uniform International Industrial Classification involve the source of raw materials, an analysis of exportations, as well as energy consumption by the industrial sector, to name a few decisive parameters.

CONICIT would be able to use this information in order to point out the most pressing needs or problems which merit research, to promote that research, and to advise the researchers in the labor of formulating and structuring the proposals for related projects dealing with the priority needs of the country.

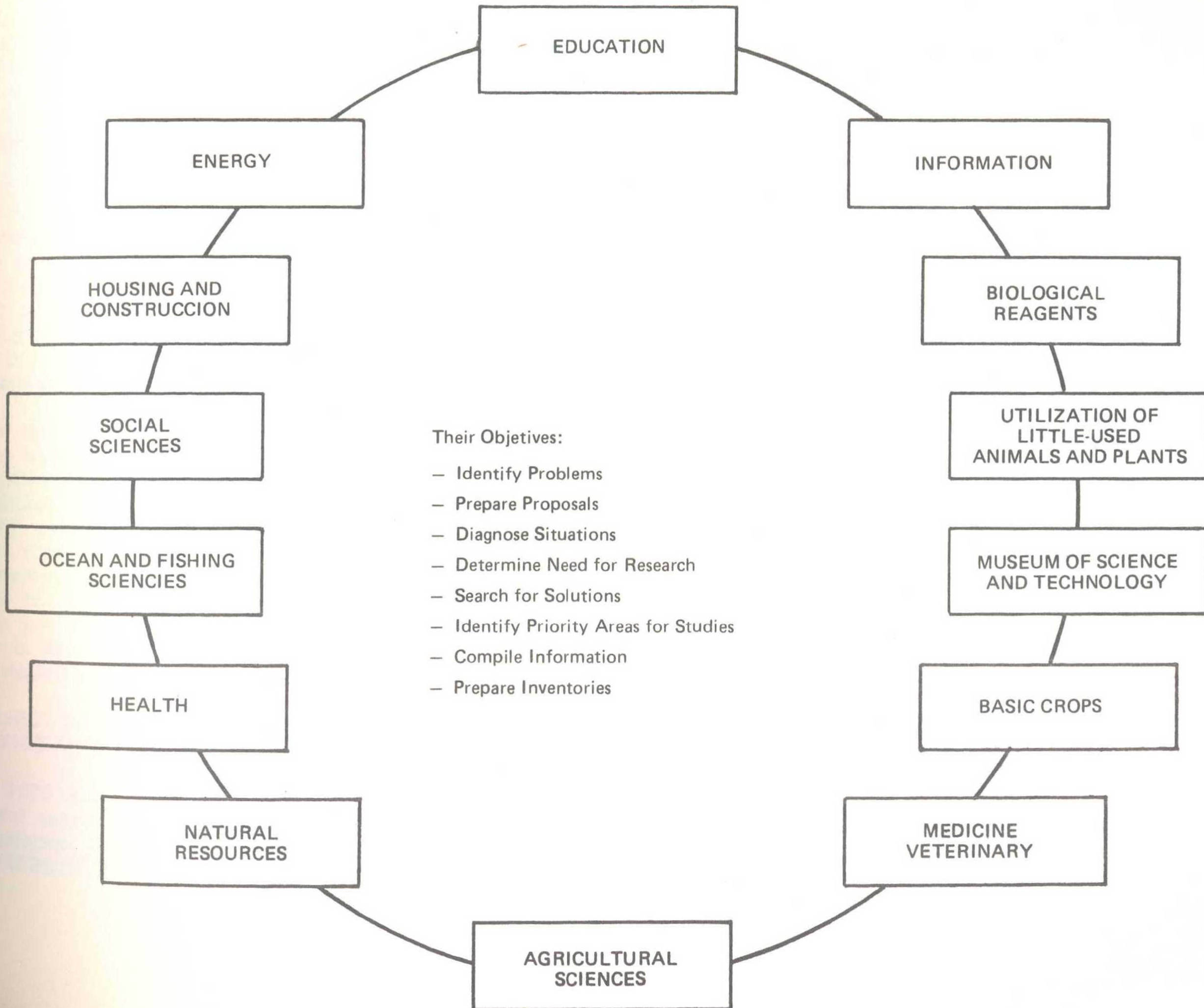
INTER-INSTITUTIONAL COORDINATION

One of the objectives that CONICIT proposed for itself, to make it more effective in its promotion of science and technology, was to establish liaisons with other institutions. This has been achieved to a great extent by stimulating through its participation in the productive, educational and economic sectors. During these ten years of labor, the institution has been represented in organizations of inter-institutional coordination. To name some, we list the following:

- Consultant Comisión on Agricultural Research (CONIAGRO)
- Sectorial Technical Committee on Administrative Reform of the Educational Sector.

- Sectorial Technical Committee on the Educational Sector.
- Board of Directors of the National Loan Council for Education (CONAPE)
- Inter-institutional Committee on Project "Development of the Infrastructure and the National Task Force on Scientific and Technological Planning, MIDEPLAN-FICYT, (United Nations).
- Commission for Scientific and Technological Development for Central America and Panama, OAS.
- Coordinating Committee, "Science and Technology Project", AID-CONICIT.
- National Council on Inter-institutional Coordination.
- Vice Rectors Committee on Research of the Public Universities.
- Permanent Conference of the National Organizations on Policy in Science and Technology in Latin America and the Caribbean of UNESCO.
- The Inter-science Association (Federation of Associations for the Advancement of Science in the Americas) Executive Committee.
- Coordination Meetings of Project Directors in the Organization of American States (OAS).
- Council on Development for the Atlantic Huetar Region.
- Coordinating Committee for International Technological Cooperation.
- Sectorial Technical Committee of the Sector for Industry, Energy, and Mines.
- Committee for the Elaboration of the National Plan of Science and Technology.

COMMISSIONS CREATED BY CONICIT
(1983 - 1983)



COMMISSION FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT IN CENTRAL AMERICA AND PANAMA

The Commission for Scientific and Technological Development in Central America and Panama was created in 1975 by agreement 242/75 of the Inter-American Council on Education, Science and Culture of the OAS for the purpose of identifying the common basic elements for the formulation of a Plan for Scientific and Technological Development for the Central American sub-region.

CONICIT has been around since its creation and has had responsibilities in the coordination of lines of action such as in Ocean Sciences and in information. Moreover, CONICIT was represented in the presidency of the commission during the years 1979-1980.

By its participation, CONICIT has demonstrated its interest in bringing about a closer coordination among the countries that make up the sub-region in their efforts to develop science and technology.

Out of the Commission have come projects of great importance for the sub-region, such as the project on Instruments of Policy and Scientific and Technological Planning dealing with the agricultural sector. The Commission has also been responsible for the collective defining of problems through international forums such as the one held at the World Conference for the Development of Science and Technology in August of 1979 in Vienna. In addition it has been declared as the advising organization of the planning departments of the area. Finally, it has been active in the formation of human resources in scientific and technological policy.

PROJECT ON ESTABLISHING THE BASIS FOR THE FORMULATION OF SCIENTIFIC AND TECHNOLOGICAL POLICY

Since 1976 until now this project has received the technical and financial assistance of the Regional Program of Scientific and Technological Development for the Organization of American States (PRDCT-OAS).

This project has directed efforts toward the preparation of studies which would give the necessary basis for the formulation of policies in science and technology as well as the training of specialists in this field.

The main results obtained are summarized below:

- Three courses on Scientific and Technological Policies and Planning given in 1976, 1977 and 1982.
- Analysis and systematization of the functions of planning and scheduling for CONICIT (1982).
- Reflection on the methodological approaches to planning scientific and technological prospects (1982).
- Preparation of the terms of reference for a System of Statistics in Science and Technology (1981).
- Analysis of the results and recommendations of Project (IPPCT (1983).
- Preparation of the terms of reference for the "Seminar on the Situation of Science and Technology in Costa Rica" (1983).
- Proposal for incorporating into the National Budget those functions which would allow the identification of expenditures in science and technology.
- Course on Budget Planning for Science and Technology directed toward officials of the public sector.

PROJECT ON INSTRUMENTS OF POLICY AND SCIENTIFIC AND TECHNOLOGICAL PLANNING (IPPCT)

Project IPPCT took three years and ended in August of 1982. It was an important endeavor for CONICIT along with the assistance of the OAS, the Department of National Planning and Economic Policy (MIDEPLAN) and the International Center on Research for Development (CIID) of Canada in improving the national capacity in the area of formulating policies in science and technology within the agricultural sector.

It must be pointed out that this project was carried out in two phases. The first of these considered a study on the goal of the State in relation to Technological Development in the agricultural sector as well as the change observed in its principal activities of production.

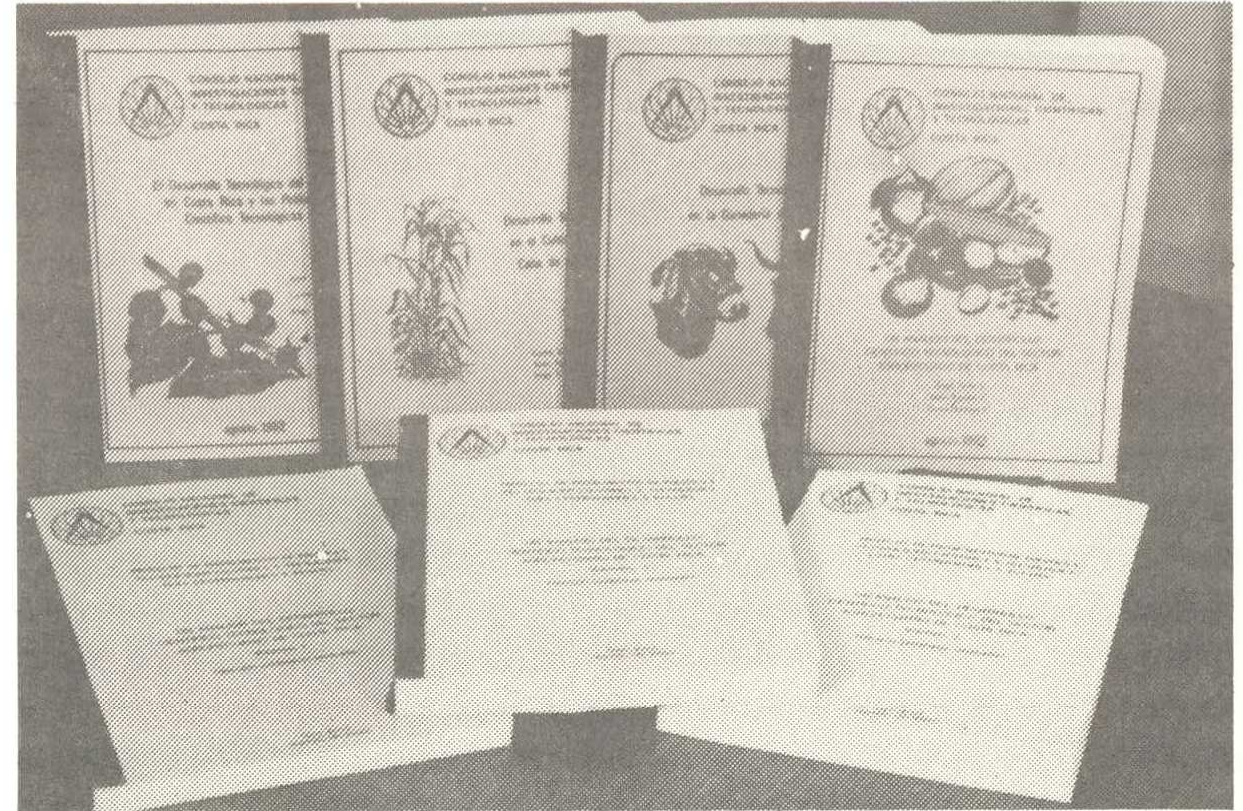
This made it possible to evaluate the different organizations that participate in the processes of generation, adaptation, diffusion and adoption of technology which make up the Agricultural Scientific Technological System. This analysis was done extensively and more in depth for certain activities, such as the raising of coffee, sugar cane, rice and meat livestock. For these activities an interpretation was made concerning their development and the policies which the State either explicitly or implicitly applied in directing it.

With respect to the second phase which included activities of planning and training, it ought to be mentioned that during 1982 a continuous evaluation was made of the work methods as well as the mechanisms required in transferring the methodology employed in the project to the personnel of CONICIT and to other similar groups.

The accomplishments of this phase also included a preliminary proposal for the restructurization of the Consulting Council on Agricultural Research (CONIAGRO) and for the preparation of proposals for the reports presented on events related to science and technology in the field of agriculture.

Through the results of the project it was determined that the policies of research, extension and institutional organization were those having the greatest impact on the technological change

observed in an important number of agricultural activities. Moreover, it was confirmed that the private sector is very important in relation to the technology that Costa Rican farmers adopt. Also important was the conclusion arrived at that for the public organization to generate and disseminate technology, the continuing labors of research constitute a central element in explaining certain technological development observed in this sector, even when they are not heavily financed.



One of the objectives of the Project on Scientific and Technological Policy and Planning was the preparation of publications on technological development in the Agricultural Sector. Through these publications the part of the project having to do with orientation in agricultural policy is maintained.

PROJECT ON PRIVATE TRANSFER OF AGRICULTURAL TECHNOLOGY (TPTA)

This project was begun in September of 1982 arising out of IPPCT. It was programmed for one year for the purpose of describing and analyzing the process of technological transfer among the private enterprises having to do with the Costa Rican Agricultural Sector. This process occurs within the framework of relations of supply and demand in the market of agro-chemicals, improved seeds, machinery and agricultural equipment. In addition, this project was designed to identify activities in those businesses related to the generation and adaptation of commercialized technology in those markets.

HUMAN RESOURCES TRAINING

DEVELOPMENT AND TRAINING OF HUMAN RESOURCES

The development of highly qualified human resources which can be utilized in activities contributing to the development of the country for the purpose of generating new scientific knowledge, achieving a multiplying effect through the creation and development of a national technology or the adaptation of foreign technology to our needs. This has been one of the main goals CONICIT has set for itself since it was begun. The reason for this is that CONICIT has realized that development is directly related to the number of high level scientists and technicians within the country. With this purpose in mind, CONICIT supports the academic development, and the perfecting of human resources as well as keeping scientists and technicians up to date with the latest advancements.

Since a developing country could not be expected to offer all of the alternatives in higher learning and specialization required in the elaboration of scientific and technological policy related to the social economics of the country, the development of human resources abroad, especially at the post-graduate level is one of the aspects in which CONICIT, in spite of its financial limitations has placed the greatest emphasis.

Through the program "Short Courses and Intensive Training" CONICIT offers the opportunity to scientists and technicians to go to other countries in order to participate in activities of short duration which make it possible to acquire new theoretical knowledge, learn new techniques or skills, or share experiences with recognized scientists or groups.

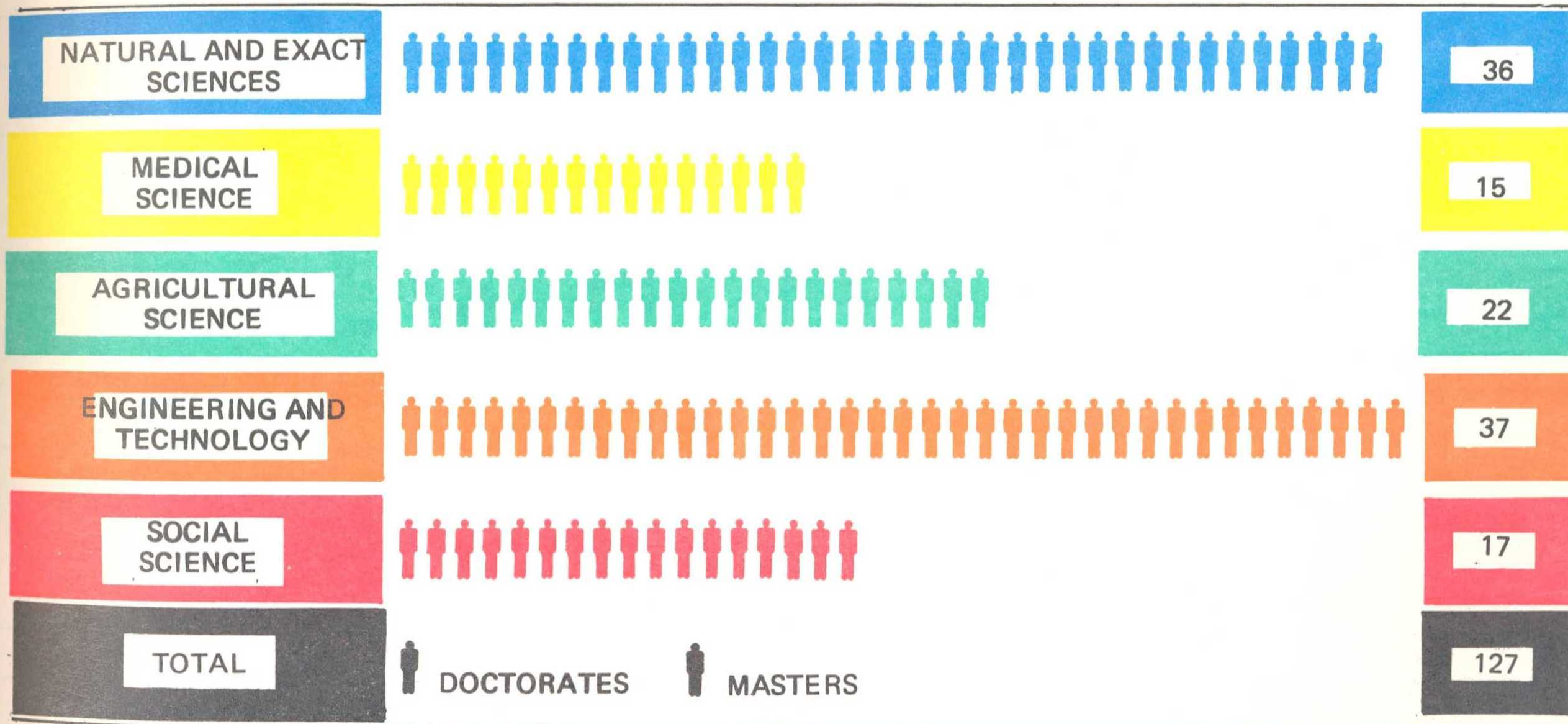
CONICIT also provides financing for attendance to scientific activities so that members of the national scientific community may participate in congresses, conferences, seminars, symposiums, and meetings in which the latest findings within their specific field of interest are made known, and the opportunity is presented for establishing contacts with other colleagues and those who are collaborating in the development of one particular project.

In order to extend the possibilities for dialog and learning to the greatest number of professionals possible who work in the country, both among themselves and with specialists from abroad, CONICIT has promoted and financed congresses, seminars, symposiums and meetings both at the national and international level.

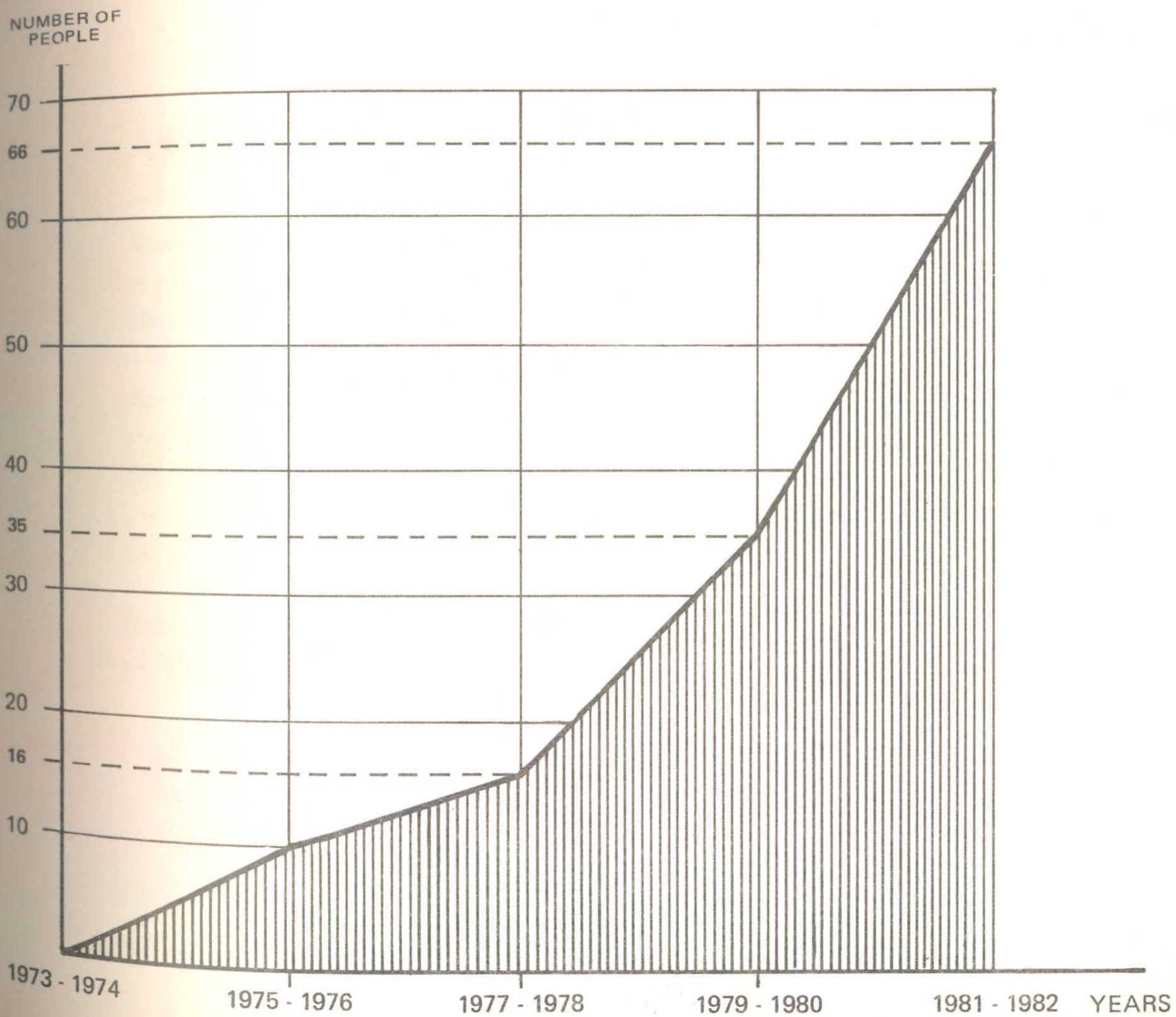
In addition to the enormous efforts that have been made to promote the training of our human resources at the highest level, CONICIT has placed special attention on education beginning at the pre-school levels in order to inculcate in our educators the importance of promoting and motivating the innate aptitudes of their learners in observing, discovering and analyzing the world that surrounds them thus promoting creative and critical thought in our future citizens.

**NUMBER OF PEOPLE BENEFITING FROM THE FINANCIAL AID
PROGRAM FOR POST-GRADUATE STUDIES ABROAD ACCORDING TO THE SCIENTIFIC OR
TECHNOLOGICAL AREA
(1973 - 1982)**

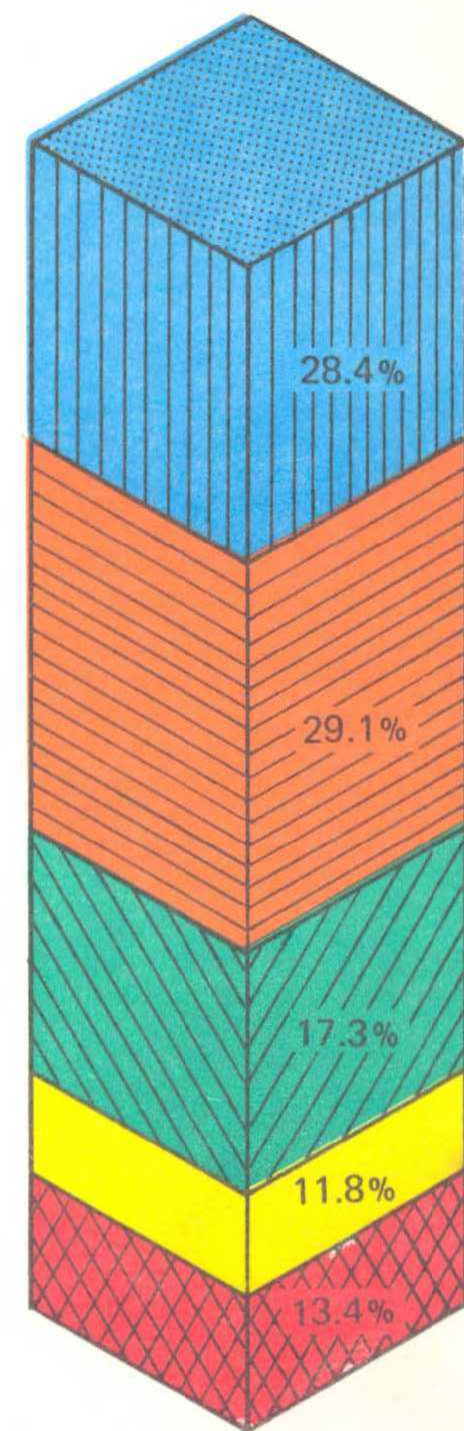
HUMAN RESOURCES




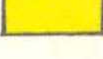



NUMBER OF PEOPLE BENEFITING FROM THE FINANCIAL AID PROGRAM FOR POST-GRADUATE STUDIES ABROAD IN THE PERIOD 1973 - 1982



Distribution according to scientific or technological area (%)

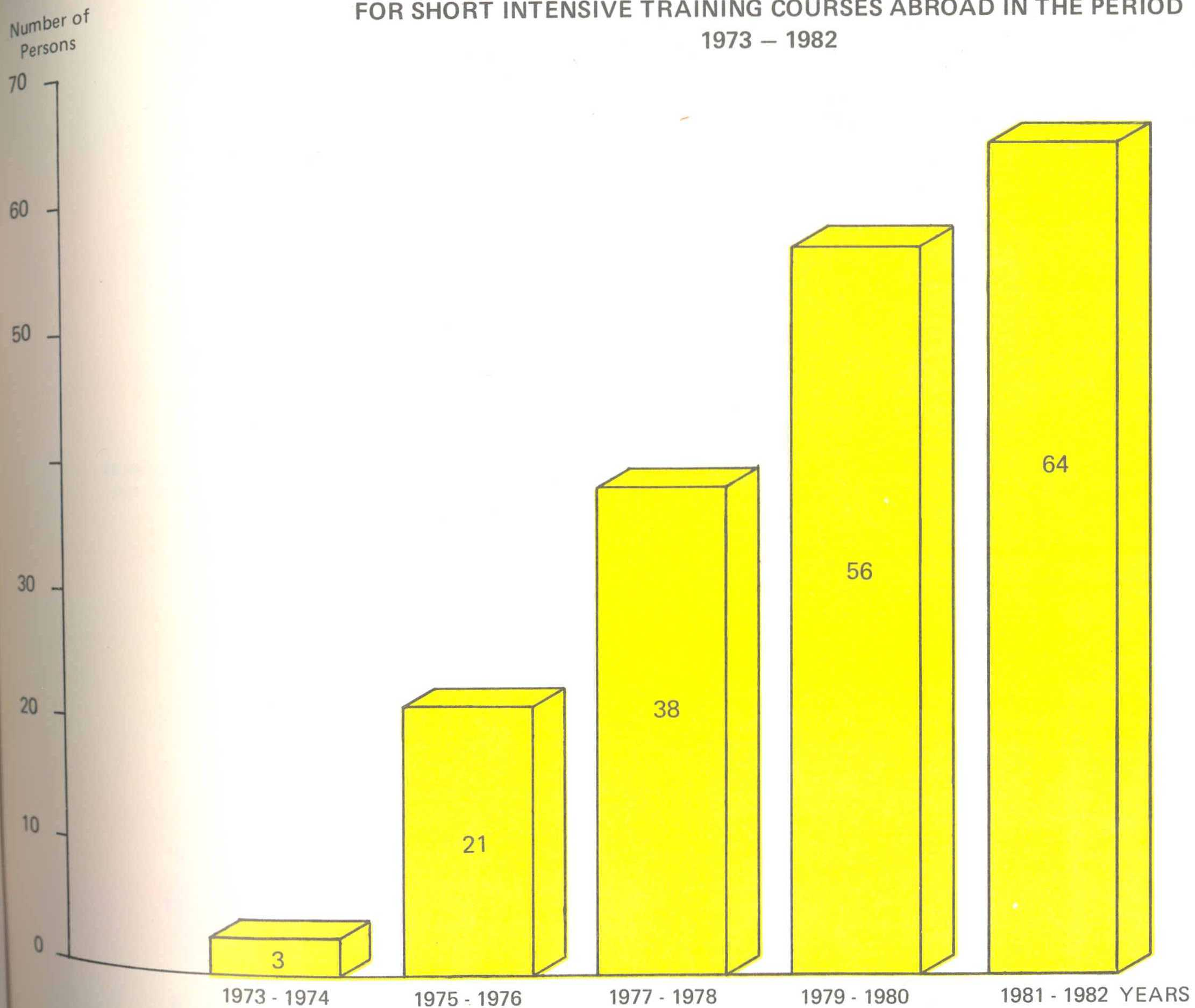


-  Exact and Natural Science
-  Sciences of Engineering and technology
-  Social Science
-  Agricultural Science
-  Health Science

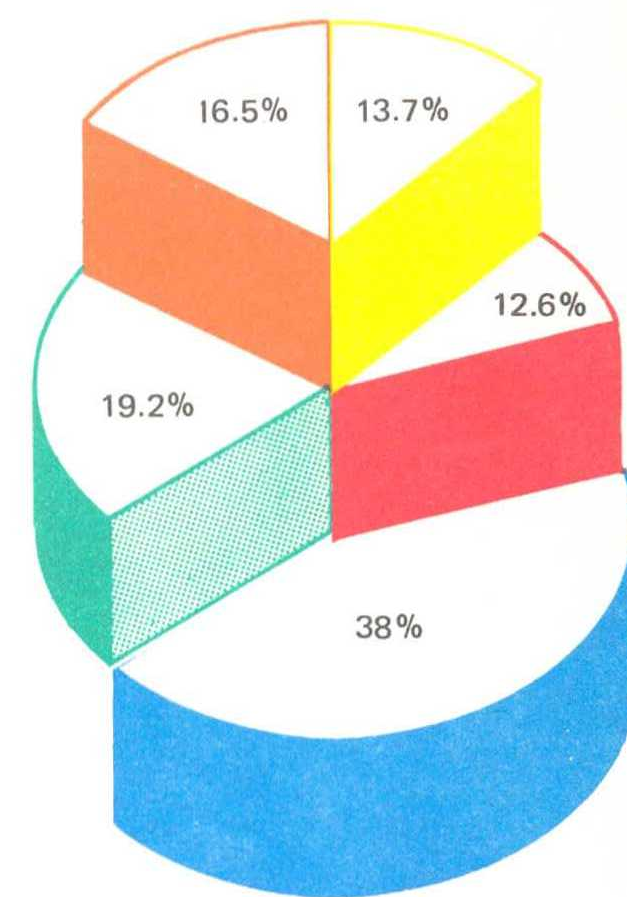
**NUMBER OF PEOPLE BENEFITTING FROM THE FINANCIAL AID PROGRAM FOR ATTENDANCE OF
SCIENTIFIC ACTIVITIES ABROAD BY YEARS ACCORDING TO SCIENTIFIC OR TEACHNOLOGICAL AREA
(1974 – 1982)**

AREA	AÑOS										ABSOLUTE	
		1974	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL	PROPORTION (%)
Exact and Natural Sciences		4	3	5	12	13	15	16	15	7	90	39.50
Health Sciences		—	—	3	4	17	11	13	6	1	55	24.10
Agricultural Science		—	3	6	1	4	7	1	1	1	24	10.50
Science of Engineering and Technology		5	1	3	2	4	2	2	6	4	29	12.70
Social Science		2	1	1	7	3	10	5	1	0	30	13.20
TOTAL		11	8	18	26	43	45	37	29	13	228	100.00

NUMBER OF PEOPLE BENEFITING FROM THE FINANCIAL AID PROGRAM
FOR SHORT INTENSIVE TRAINING COURSES ABROAD IN THE PERIOD
1973 - 1982



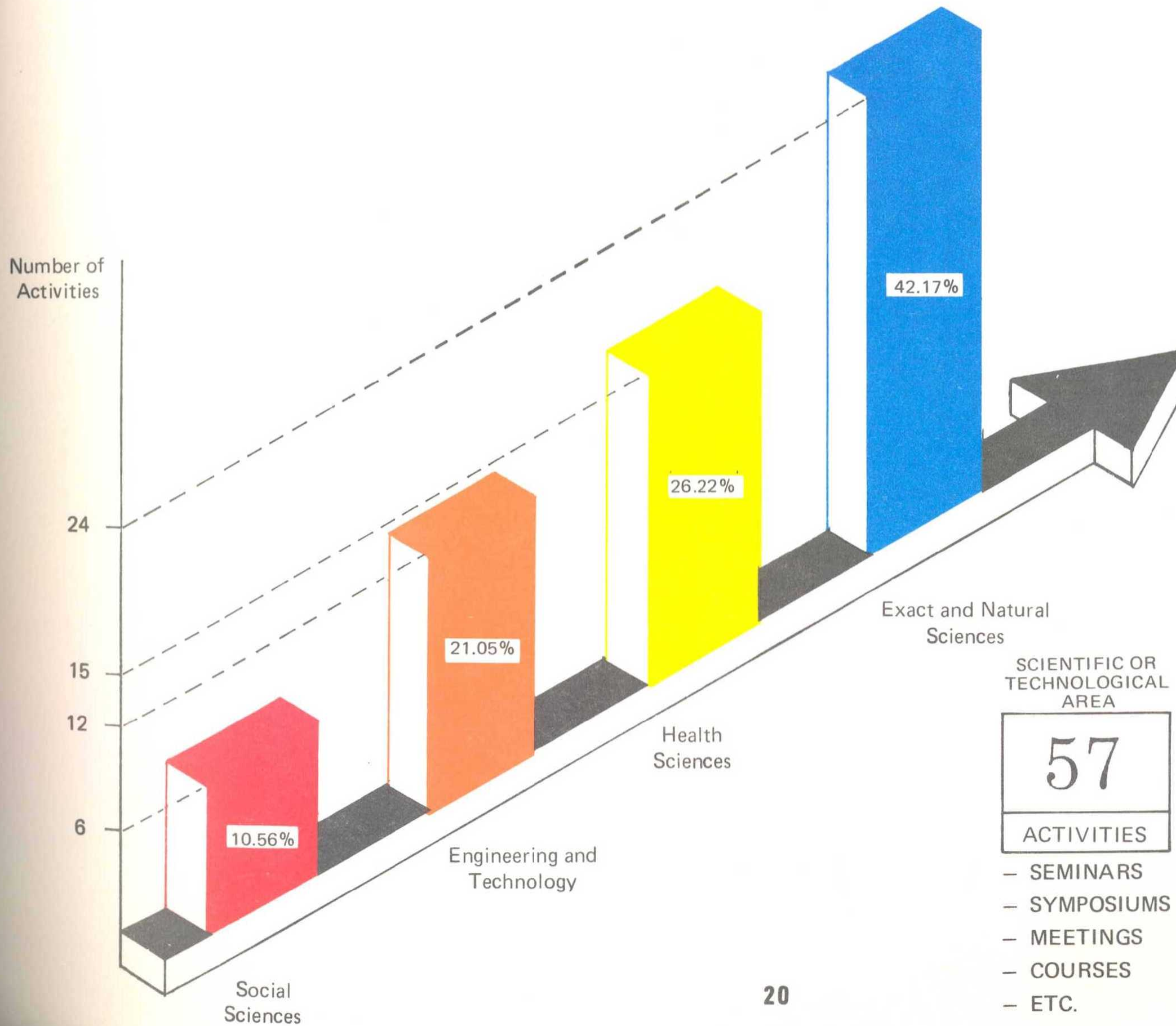
DISTRIBUTION ACCORDING TO SCIENTIFIC
OR TECHNOLOGICAL AREA
(%)



- Exact and Natural Science
- Health Science
- Agricultural Science
- Sciences of Engineering and technology
- Social Science

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SHORT COURSES

NUMBER OF NATIONAL AND INTERNATIONAL SCIENTIFIC ACTIVITIES CARRIED OUT IN THE COUNTRY WITH FINANCING FROM CONICIT ACCORDING TO ACIENTIFIC OR TECHNOLOGICAL AREA (1974 – 1982)



Dr. Marcel Roche, publisher of the magazine INTERCIENCIA, participated in the international symposium on creativity and teaching of the sciences.



Workshop for laying the foundation for a System of Information in Marine Sciences and Fishing and Aquaculture Resources (SIMPA).



International symposium on Forestry Sciences and their contribution to the development of Central America.

**SCIENTIFIC AND TECHNOLOGICAL
RESEARCH**

SCIENTIFIC AND TECHNOLOGICAL RESEARCH

If we consider scientific and technological research to be the generation of new knowledge, concepts, methods or relations, as well as the adaptation, design or creative modification of technologies, equipment or processes, we can better understand its importance within the context of the national policy on science and technology.

Scientific and technological research contributes to establishing a growing wealth of useful information in the country, in solving the technical problems involved in our economic and social development, in improving the quality of what we produce, in finding new ways or alternatives in using our natural resources, in keeping money within the country. Since national technologies are developed which don't require the payment of duties, more profit is gained from exportations and or new foreign markets are captured. Another extremely important result of research is the creation and strengthening within the country of human resources capable of handling the different elements of scientific and technological development which in turn has a multiplicative effect on the growth of the scientific and technological capacity of the country.

In order to enrich the stock knowledge of our scientists and technicians and encourage the exchange of experiences, CONICIT provides the finances to bring in scientists and professionals from abroad to give lectures or carry out teaching and research activities together with established groups in our institutions and centers of investigations.

For the reasons just mentioned and conscious of the fact that the economic and social development of a country depends on its research capacity, CONICIT, from the time it was created, has encouraged scientific and technological research.

THE CLODOMIRO PICADO TWIGHT AWARD

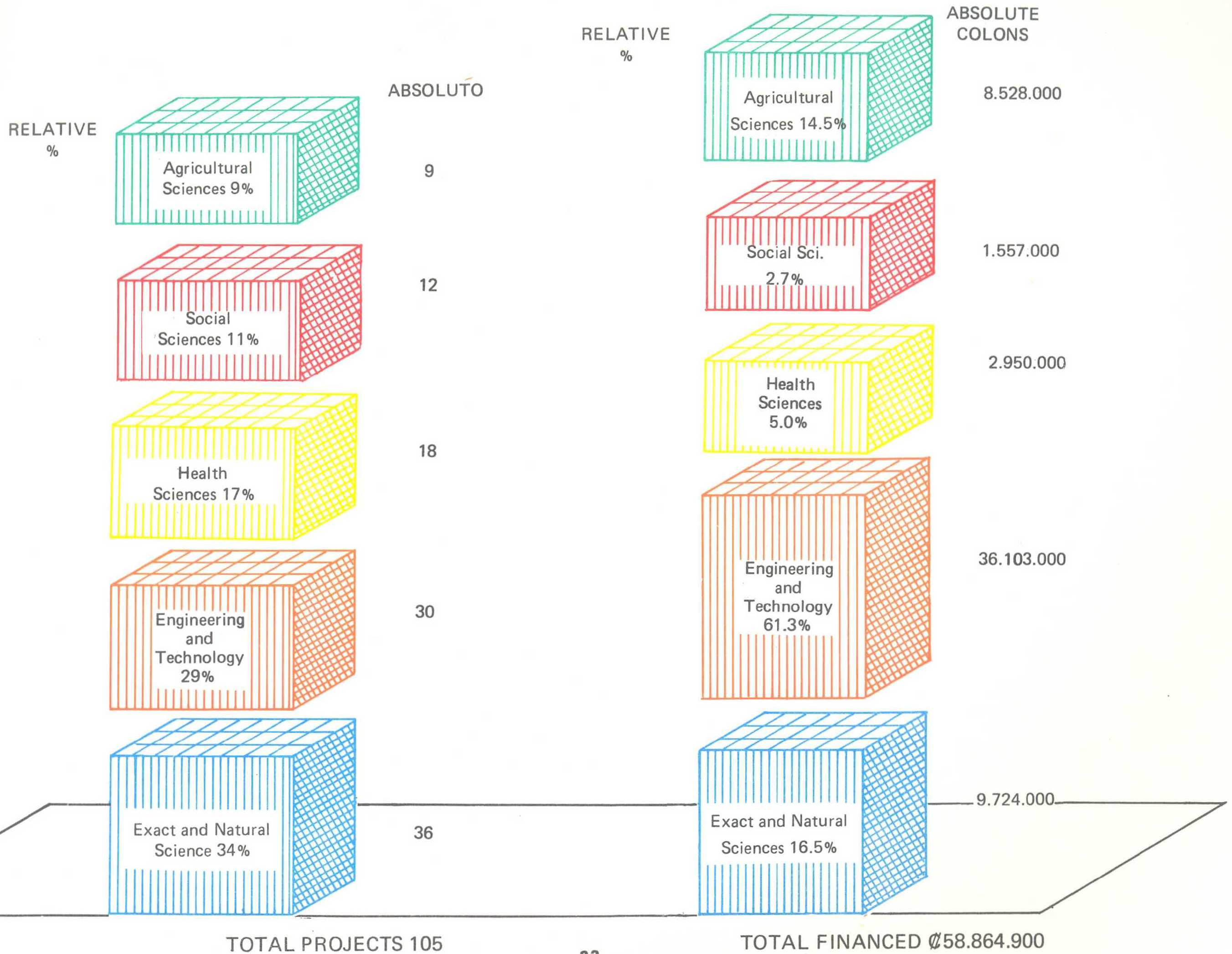
At the initiative of CONICIT and the Ministry of Culture, Youth and Sports the National Clodomiro Picado Twight Award for Science and Technology was established in 1976 to be given to those young professionals (under 36) who had dedicated their efforts to research in the fields of chemistry, physics, biology and mathematics or any other fields combining these or having to do with applications of these sciences. The awards was to be given bi-annually, but beginning in 1981, it was decided that it would be given annually alternating from year to year between scientific and technological projects.

The first of these awards was given to Dr. Gabriel Macaya Trejos and Dr. Guy de Teramond Peralta for their research on "The Organization of the Genomial of Eucarions" and "The Determination of the Nuclear Forces Between two Neutrons", respectively.

The prize for 1980, also shared, was given to the scientists Dr. Julio Mata Segred for his project on the "Physical-Chemical Relation in the Hydrogen Ion", and Eng. Juan Bosco Tuk Duran for "Structural use of Tropical Timbers" and Lic. Jose Maria Gutierrez Gutierrez for the research project "Studies on the Biological Action of Snake Venoms.

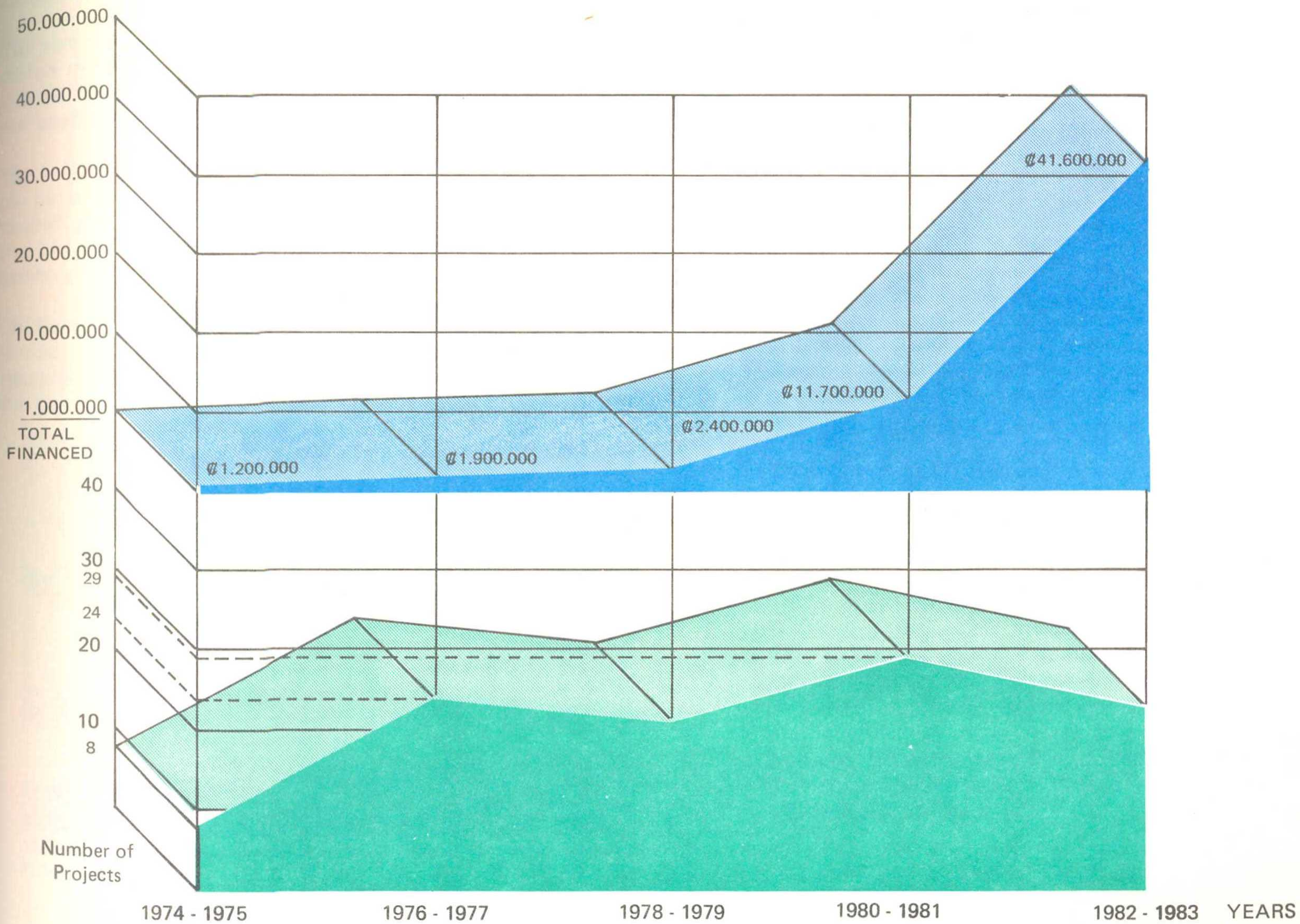
In 1982 the award was given to M.Sc. Jorge Cortes Nuñez for his research project "Cahuita National Park: A Reef with Problems".

NUMBER OF RESEARCH PROJECTS FINANCED BY CONICIT ACCORDING TO SCIENTIFIC OR TECHNOLOGICAL AREA AND FINANCIAL RESOURCES DURING THE PERIOD (1974 - 1983)



*Data taken up to May 1983

**EVOLUTION OF FINANCIAL RESOURCES AND THE NUMBER OF RESEARCH
PROJECTS FINANCED BY CONICIT
(1974 - 1983)**



* Data taken up to May 1983

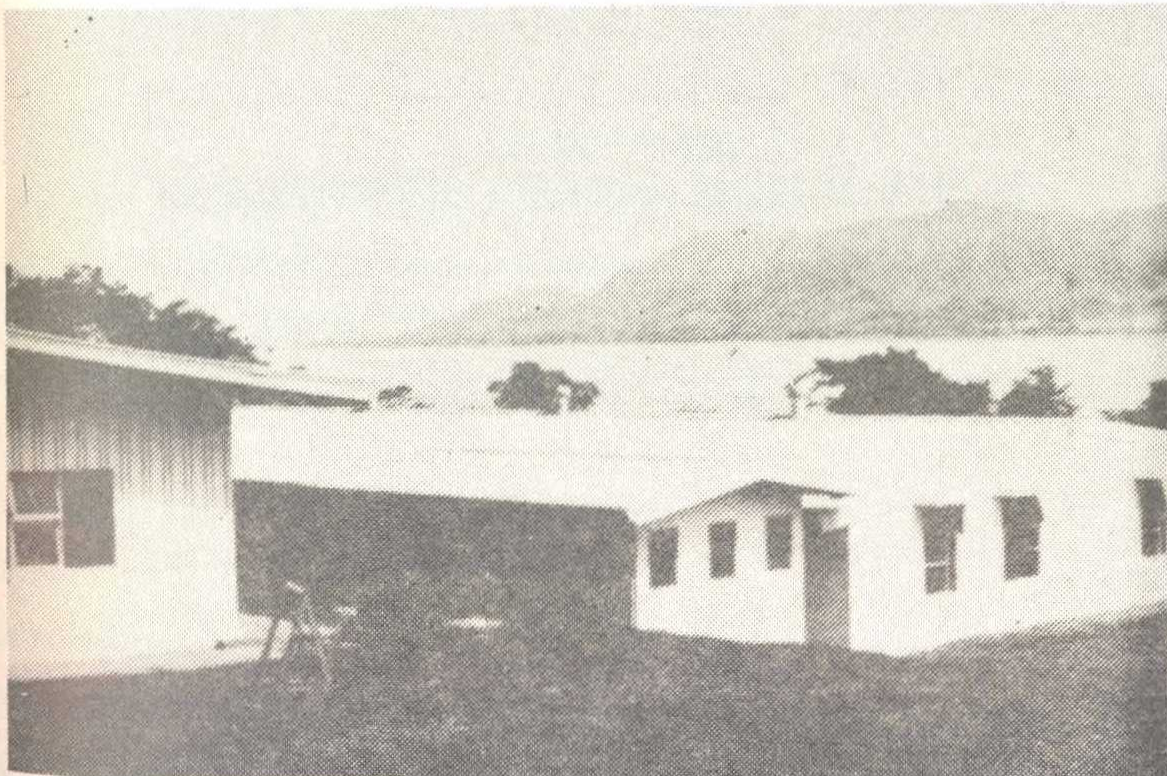
DEVELOPMENT OF THE INFRASTRUCTURE OF SCIENCE AND TECHNOLOGY

LABORATORY FOR MARINE RESEARCH

The idea, which goes back to 1976, was promoted by a recommendation made by the Ocean Sciences and Fishing Commission of CONICIT, an organization which took it up itself to analyse the real possibilities of installing an ocean sciences laboratory.

The vast coasts and the diversity of marine environments as well as the potential riches of the country in its oceans will be able to be studied and evaluated in the future thanks to the installation of the First Laboratory of Marine Sciences in the country, constructed in Punta Morales.

On February 27, 1982, officials from CONICIT along with the Minister of Agriculture and Livestock, Herman Fonseca Zamora, inaugurated the laboratory buildings located on a farm donated by the Industrial Agricultural League of Cane Sugar Producers.



The Research Laboratory of Marine Sciences has a capacity for twenty scientists to work.

CENTER FOR THE IMPROVEMENT OF THE TEACHING OF THE SCIENCES (CEMEC)

At the initiative of CONICIT, along with the full backing of the Ministry of Public Education, the Center for the Improvement of the Teaching of the Sciences (CEMEC) was created in 1977. Its mission would be to try to bring about a profound change in the traditional concept of "teaching", in order to awaken within the students their innate aptitudes and abilities so that they would be able creatively to handle basic knowledge, better understand the world, sharpen their observations, reasoning and critical thinking, cultivate and use their creative abilities, both with themselves and for others. In order to support and strengthen CEMEC, CONICIT signed an agreement with the Ministry of Public Education providing financing for projects, bringing in specialists, giving continuing education courses to officials, holding joint programs, producing teaching materials and training teachers in new technologies.

Throughout its six years of existence, CEMEC has been responsible for a significant labor instilling in educators a different vision of what the educational process is in the teaching of the sciences. Programs such as "Creative Science", "Conservation of Resources", "Marine Education", "Production of Didactic Material", "How Scientists Work", "Research in Science and Mathematics", "Science Clubs", and "Resource Banks" have helped to successfully guide our youth. The results are observed little by little in the attitudes of the youth, our hope for tomorrow. CONICIT continues to provide unconditional support to CEMEC in order that its goal might be achieved: to contribute in producing citizens who are objective, reflexive, critical and creative, and above all that they discover vocations in science and see to it that these areas are strengthened.

HEALTH RESEARCH INSTITUTE (INISA)

INISA was conceived and developed as a result of the deliberations of the Health Commission created by CONICIT which in 1974 recommended the creation of an institute in order to carry out health research. This institute is linked to the Vice Rectory of Research of the University of Costa Rica and is assigned to the Schools of Pharmacy, Medicine and Dentistry. Its scientific task is carried out within the framework of programs, projects and sub-disciplinary in nature. It has been extremely productive and has published more than 120 articles and chapters in national and international magazines and books.

RESEARCHERS BENEFITING FROM ECONOMIC AID

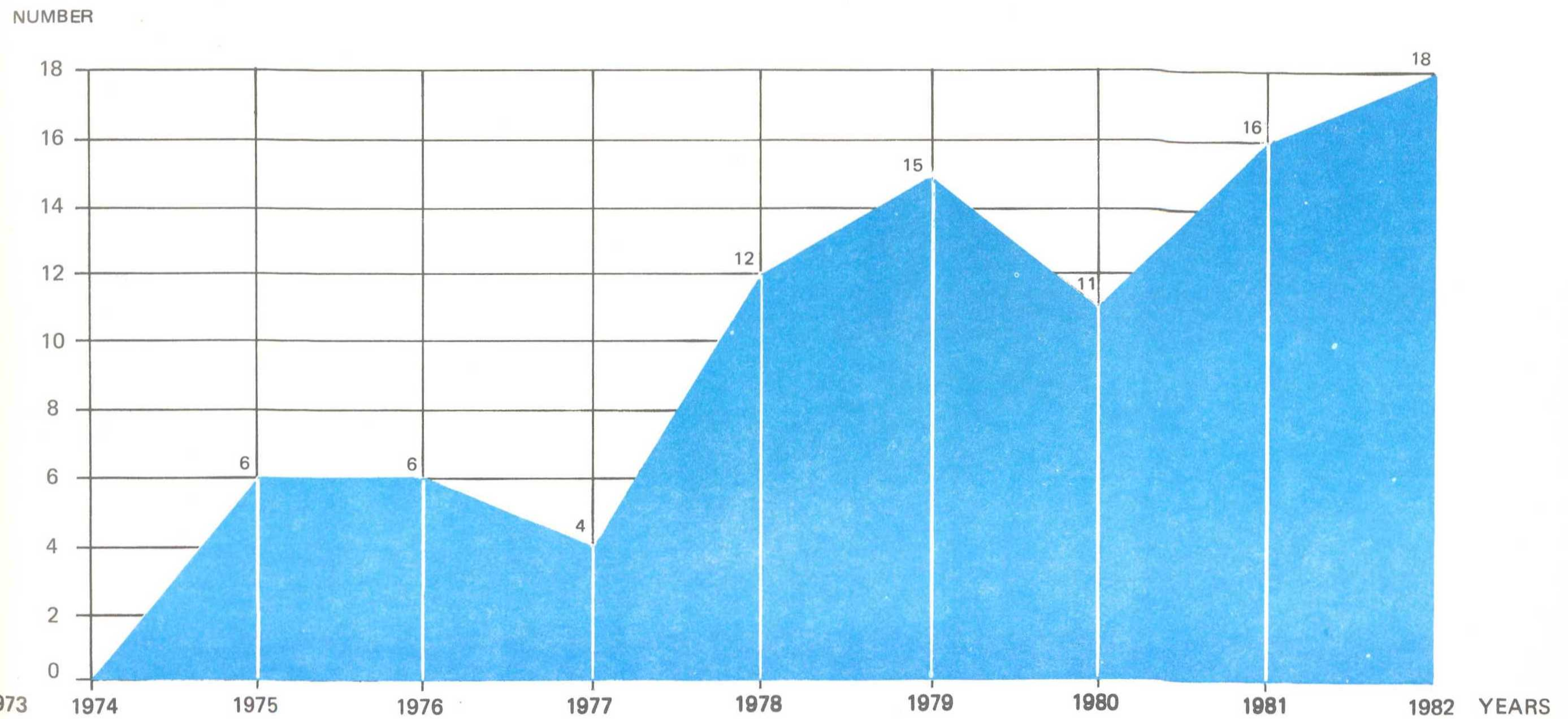
Two main purposes sustained the program "Financial Aid for Scientific Researchers": to repatriate our scientists living abroad and to keep within the country those scientists whose production is abundant, continuous and of high quality.

AID TO RESEARCHES DURING THE PERIOD 1974 – 1982 IN SCIENTIFIC TECHNOLOGICAL AREAS

AREA	1975	1976	1977	1978	1979	1980	1981	1982
Agriculture	—	—	1	1	1	1	1	2
Biology	3	2	4	1	4	4	4	2
Physics	—	—	—	4	2	2	1	1
Microbiology	—	—	—	4	2	—	1	5
Chemistry	—	—	—	—	2	3	3	2
Health	1	1	1	2	2	4	5	—
Engineering	—	—	—	—	—	—	—	—
TOTAL	4	3	6	12	13	14	16	12

SOURCE: Annual reports of CONICIT.

NUMBER OF SCIENTISTS RESEARCHERS AND PROFESSIONALS BROUGHT
TO THE COUNTRY FOR SHORT PERIODS
(1973 – 1982)



**INFORMATION, DOCUMENTATION
AND DIVULGATION**

SCIENTIFIC AND TECHNOLOGICAL INFORMATION, DOCUMENTATION AND DISCLOSURE

Scientific and Technological information as an instrument of development plays a relevant role in supporting all priority areas in national development. Through mechanisms such as documentation, disclosure and computer science the student, the researcher, the professional and the man in the productive sector is provided with the means for achieving his goals in an effective way.

COMPREHENSIVE CATALOG OF PERIODICAL PUBLICATIONS EXISTING IN COSTA RICA

The Comprehensive Catalog of Periodical Publications Existing in Costa Rica, which is received in 76 units and centers of information and documentation in the country contains information referring to approximately 15,000 titles.

It is an important instrument in offering services of bibliographical information and for promoting the easy acquisition of periodical publications from the main libraries or centers counteracting the decrease in information flows in the area of science and technology from abroad.

CREATION, DEVELOPMENT AND STRENGTHENING OF CENTERS OF INFORMATION AND DOCUMENTATION NETWORKS

Right from the start, one of CONICIT's aims has been to develop a national system of information. For this reason it has participated in the creation of various centers, such as:

- Center of Technological Information of the Technological Institute of Costa Rica.
- National Center for Agrucultural Information of the Executive Secretary of Planning for the Agricultural Sector.
- Industrial Information Unit of the Executive Secretary of Planning for the Industry, Energy and Mines Sector.

Moreover, the collections of materials in several units of information and documentation have been strengthened through the purchase of or subscription to specific magazines and journals.

As a result of a seminar-workshop held in 1983 in which several national institutions participated, the foundation was laid for the National System of Information in Marine Sciences, Fishing Resources and Aquaculture (SIMPA).



One-thousand copies of the collective catalog of periodical publications were printed.

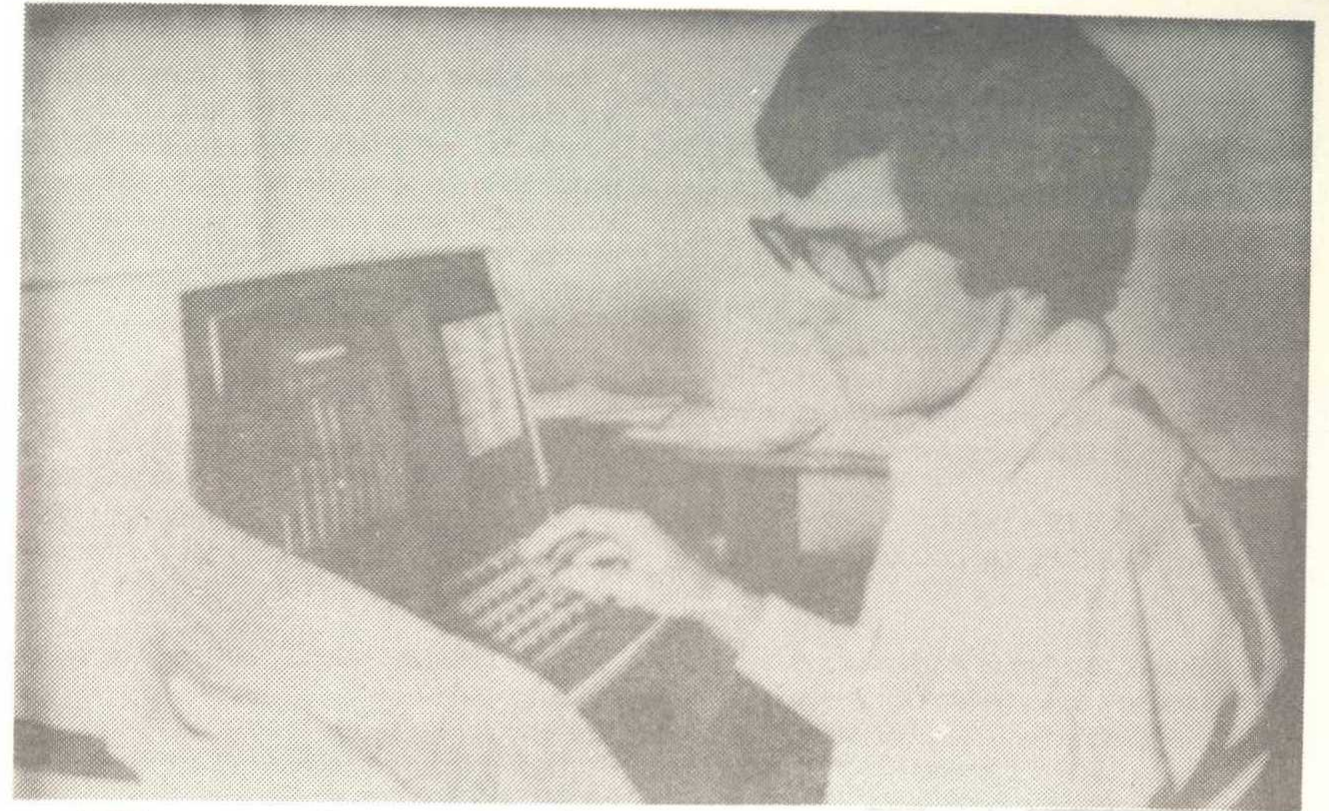
LIBRARY

CONICIT's library specializes in information and documentation concerning scientific and technological planning as well as other diverse aspects of science and technology. It offers the following services:

- Planning and preparation of specialized bibliographies.
- Orientation of researchers in locating specialized information.
- Lending of materials (within the library, to take home or to other libraries).
- Dissemination of information it receives.



The library offers its services to the scientific community and to the general public.



In 1982 a system of computerized data processing was initiated which assists in the labor of the institution.

COMPUTER UNIT

This unit by applying the facilities of computer science, has developed the following systems for handling information:

- Industrial and Agroindustrial Legislation of Costa Rica (1959 – 1983)
- System of Information in Marine Science, Fishing Resources and Aquaculture (SIMPA).
- Periodical publications edited in Costa Rica.
- Inventory of Research and Experimental Development Projects in Progress.
- Follow-up on Costa Ricans who have received scholarships to study abroad.
- Control of Research projects financed by CONICIT.

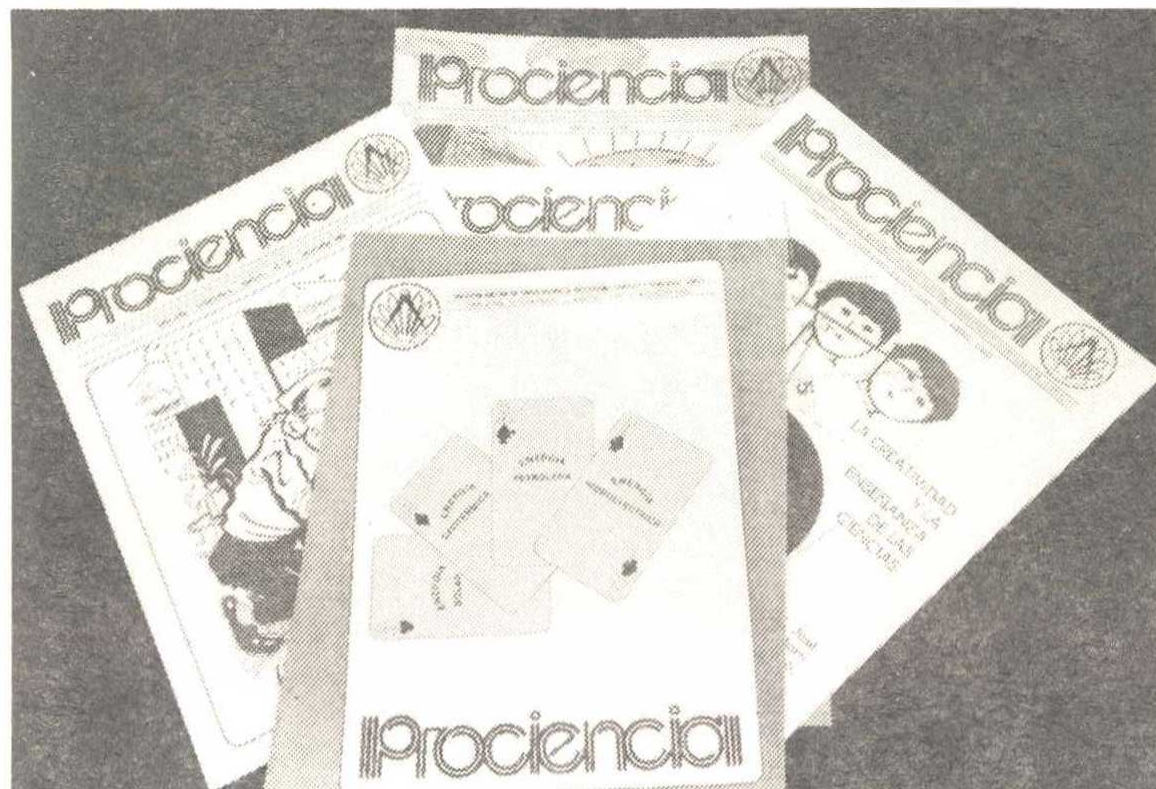
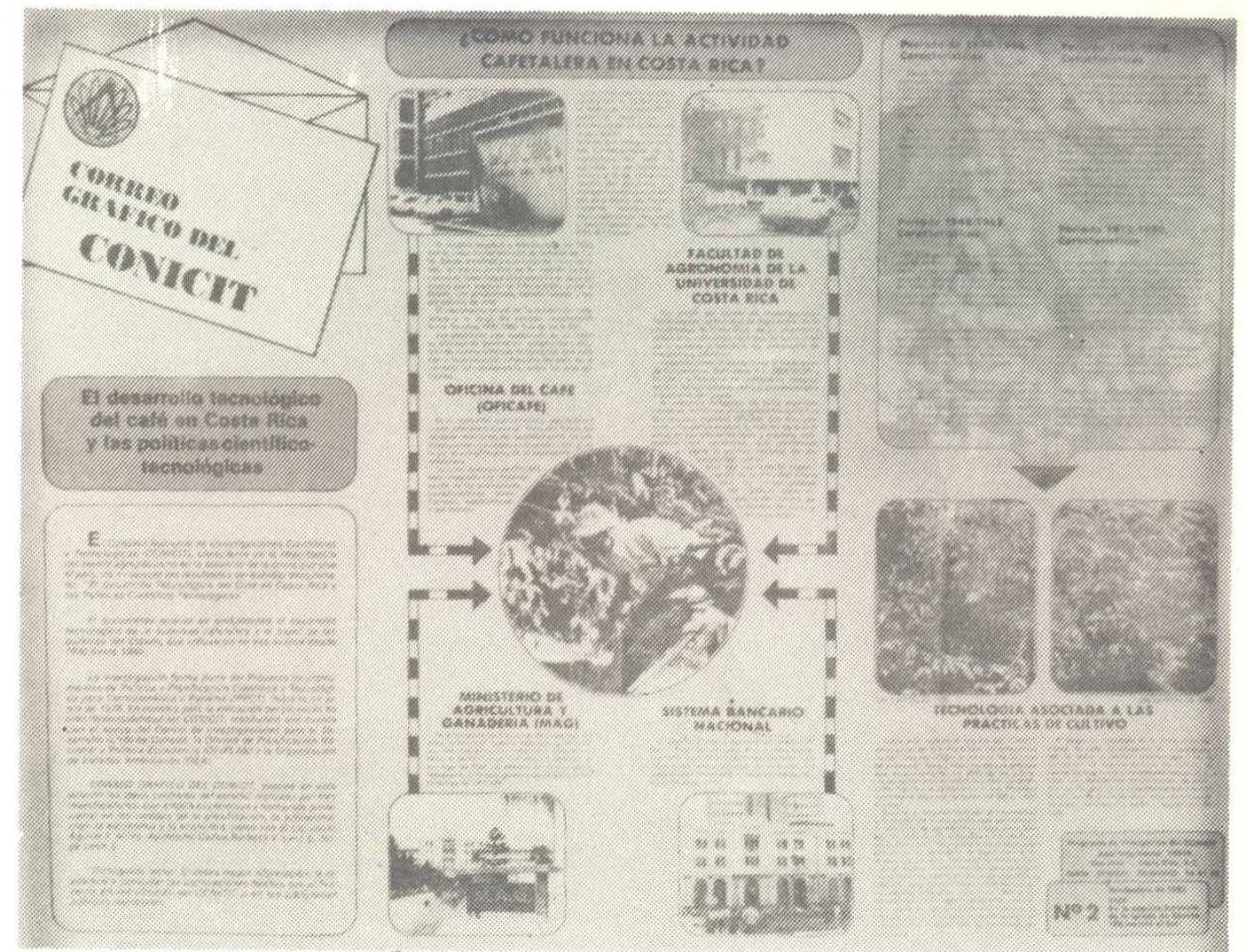
DISSEMINATING INFORMATION ABOUT CONICIT

In 1975 CONICIT decided to offer an informative bulletin describing its most relevant activities.

Through the dissemination of information a greater national awareness of the transcendancy and projection of science and technology as indispensable ingredients for development has been promoted.

Within this context scientific journalism began to be developed which is so important in the national aspirations for scientific progress.

In August of 1976 the first informative bulletin of CONICIT called PROCIENCIA which is a 12 page, bi-monthly magazine, appeared for the first time. This publication has been circulated to all entities involved in scientific knowledge.



Also in that year a program was initiated called "How Scientists Work in Costa Rica" which was directed toward secondary education. It consists of series of lectures written by national scientists who have received assistance from CONICIT in their research projects.

The Section of Information Disclosure makes available to students of all levels a total of 65 films which have a purpose of heightening in an even greater way the interest of students in science and technology.

Since 1982 in coordination with Radio University of Costa Rica the bulletin CONICIT IN SCIENCE AND TECHNOLOGY is broadcast. In this program, information is given on important projects being carried out in science and technology. Also time is given for interviews with officials of the institution. In addition, the GRAPHIG NEWSLETTER OF CONICIT was created which is a bi-monthly publication informing on activities directed toward the productive sector.

Besides the other means of disseminating information already mentioned, material is constantly being sent to the press and occasionally especial documents are published.

Other related tasks are the organization and promotion of seminars, meetings and lectures on science and technology along with the participation of national and foreign experts. In all, this new ideas have arisen which have contributed to the improvement of the information service which have benefited the Costa Rican community.

CONICIT, concerned with the need to disseminate information on scientific and Technological activities, created the Annual Scientific Journalism Award in 1981 as an incentive to reporters working in these fields.

With the same objective, the institution organized the First Seminar on Scientific and Technological Journalism in may, 1983; it was attended by more than 48 journalists. As an outcome of this activity, it was resolved that the Association of Scientific Journalism of Costa Rica be established.

PUBLICATIONS AND SOME DOCUMENTS PREPARED BY CONICIT

Priority Areas in Science and Technology and their relation to Development, 1981. OFIPLAN—CONICIT.

Sociological Aspects in the process of technological adoption in Coffee in Two Costa Rican communities (Project IPPCT), 1982.

Collective Catalogs of Periodical Publications existing in Costa Rica. (Two editions 1979 and 1983).

Creativity and the Teaching of Science. 1982.

Technological Development in Rice Growing (Project IPPCT), 1982.

Technological Development in Coffee Growing (Project IPPCT), 1981.

Technological Development in Sugar Cane Growing (Project IPPCT), 1981.

Technological Development in the Raising of Livestock (Project IPPCT), 1981.

Directory of Socio-economic Units, 1978

Descriptive documents of the Project "Instrument of Scientific and Technological Policy and Planning" (IPPCT), 1981.

CONICIT in Figures, 1974—1975

Technological Development of Coffee in Costa Rica and Scientific and Technological Policies (Project IPPCT). 1982.

The Present State and the Tendencies in the Field of Scientific and Technological Policies (CONICIT—OFIPLAN). Meeting of organizations on Scientific and Technological Planning and Policy. La Paz, Bolivia. 1981.

Estate of Technological Development in the principal activities of the agricultural sectors, 1981.

Guides for libraries, filing systems, services and centers of information and documentation in Costa Rica, 1975.

Guide to units who produce information on ecology, 1978.

Index of research in progress in Costa Rica, 1975.

Annual reports of CONICIT 1974—1982.

National Inventory of Research and Experimental Development. Projects in progress, 1983.

Research on Computer resources, Preliminary report, 1982. Science Today, 1978.

National Monograph presented to the Conference of the United Nations and Science and Technology for Development, Vienna, Austria, 1979.

National Report from Costa Rica, for the Iberoamerican meeting on Science and Technology, Madrid, Spain, 1979.

Administrative procedures applied in the planning of agricultural research projects, 1982.

National Meeting on Industrial Information, last, San Jose, 13—14 July 1978.

National Meeting on Industrial Information, 2nd, San Jose 5—7 Dec, 1979.

Magazine PROCIENCIA (Bi-monthly) 1976—1983.

International Symposium on Forestry Sciences and their contribution to Development of Tropical America, 1981.

An Analysis on Scientific and Technological Development in the Agricultural Sector of Costa Rica, 1980.

**INTERNATIONAL COOPERATION AND
NATIONAL TREATIES**

INTERNATIONAL COOPERATION AND NATIONAL AGREEMENTS

In spite of its short existence CONICIT has managed to gain wide support and recognition from international organizations and institutions in the field of science and technology which has led to a great variety of relations and cooperation with them.

This support is seen in the technical and financial assistance CONICIT receives from the scientific and technological development program of the OAS, from the International Center for Research for Development (CIID) of Canada, from UNESCO, from the Provisional Science and Technology Fund through project COS 81/TO1 coordinate by MIDEPLAN, AID from the United States, etc.

Meriting special attention is the trust placed in CONICIT on the part of the Agency for International Development (AID), in administering the loan "Science and Technology" amounting to \$4,500,000 designated to the promotion of scientific and technological development of the country. In the list found on the following page the type of relations that CONICIT maintains with foreign institutions can be observed.

NATIONAL AGREEMENTS

The activity of promoting science and technology by CONICIT on the national level has materialized in several ways such as in the case of the cooperation agreements with national institutions which involve different kinds of aid such as technical assistance, financing for research, train of human resources, etc. The following are some of the institutions with which links of cooperation have been established: The Costa Rican Office of Social Insurance (CCSS), the Department of Public Education (MEP) the Office of Coffee (OFICAFE), the National Commission on Educational Loans (CONAPE), the Department of Agriculture and Livestock (MAG), National University (UNA) University of Costa Rica (UCR), Department of Industry, Energy and Mines (MIEM), the Technological Institute of Costa Rica (ITCR), the National Correspondence University (UNED) and the Department of National Planning and Economic Policies (MIDEPLAN).



Eng. Ernesto Macaya, representing CONICIT presents the keys of the vehicles to Eng. Vidal Quiros, Rector of the Technological Institute of Costa Rica. The vehicles will help accomplish the extension of the work on the Project Science and Technology which receives funds from a loan by AID.

CONICIT'S RELATIONS WITH FOREIGN ORGANIZATIONS AND INSTITUTIONS

INSTITUTION	COUNTRY	TYPE OF RELATION	YEAR
1. Agency for International Development (AID)	U.S.A.	Loan for development project "Science and Technology".	1979
2. Interscience Association (Federation of Associations for the Advancement of Science in the Americas)	Multi-national	Member.	1976
3. International Research Center for Development (CIID)	Canada	Agreement/Technical and Financial Cooperation.	1979
4. National Council of Scientific and Technological Development	Brazil	Agreement/Scientific and Technological Exchange.	1979
5. National Research Council on Science and Technology (CONACYT).	Mexico	Agreement/Scientific and Technological Exchange.	1974
6. National Scientific and Technological Research Council (CONICIT).	Venezuela	Cooperation Agreement.	1977
7. Superior Scientific and Technological Research Council.	Spain	Exchange of Information.	1978
8. International Federation of Documentation (FID).	Multi-national	Member.	1974
9. United Nations Provisional Scientific and Technological Fund for Development.	Multi-national	Financial and Technological Cooperation/Interinstitutional Project.	1981
10. Gulf and Caribbean Fisheries Institute.	Regional	Affiliate.	1974
11. International Foundation for Science.	Multi-national	Affiliate.	1974
12. International Geographical Union.	Multi-national	Affiliate.	1974
13. International Union for Biological Science.	Multi-national	Affiliate.	1974
14. Rosentiel Institute of the University of Miami.	U.S.A.	Agreement.	1983
15. Weizman Institute.	Israel	Program of Scientific and Technological Cooperation.	1976
16. National Science Foundation (NSF).	U.S.A.	Cooperation Agreement.	1976
17. National Technical Information Service (NTIS).	U.S.A.	Agreement.	1978
18. Tropical Studies Organization (OTS).	U.S.A.	Cooperation Agreement.	1974
19. United Nations Educational Scientific and Cultural Organization (UNESCO).	Multi-national	Technical and Financial Cooperation.	1974
20. Program of Scientific and Technological Development (PRDCT-OEA).	Multi-national	Technical and Financial Cooperation.	1974
21. International Program on Scientific and Technological Information Transfer of Unesco (UNISIST).	Multi-national	Focal Point.	1973
22. OAS Information and Technical Assistance Project for Industry in Central America and the Caribbean.	Regional	Focal Point.	1975
23. System of Information on Agronomics Research in Progress of the United Nations (Caris).	Multi-national	Link Organization.	1976
24. International Consulting System on Sources of Information about the Environment.	Multi-national	Focal Point.	1974
25. The Latin American Scholarship Program of American University (LASPAU).	U.S.A.	Contract "Post-Graduate Study Programs".	1981
26. University of Oregon.	U.S.A.	Agreement/Scholarship Plan.	1982
27. University of Rhode Island.	U.S.A.	Agreement/Provides Training.	1981