CIFEG – In the Service of International Cooperation

by Michel G. Leleu

A recent addition to those organizations dedicated to strengthening international geoscience especially in the developing countries is the International Centre for Training and Exchanges in the Geosciences. Based in Paris and financed primarily by France, CIFEG works both independently and in cooperation with other organizations, such as Unesco, AGID and IUGS, in arranging training programs, scientific meetings and workshop. CIFEG also provides space and facilities for visiting geologists and publishes several periodicals and special reports. In this brief article, the Director of the Center explains its aims, structure, organization and priorities. (Ed.)

Background and Role

The great gap in economic, scientific and technical development between the countries of the North and those of the South constitutes one of the major problems of our time. There has been much debate and reflection aimed at bridging this gap by appropriate and original solutions, but unfortunately no solution is yet in sight.

In the earth sciences, one outcome of French participation in this debate has been the creation of the International Center for Training and Exchanges in the Geosciences, known briefly as CIFEG from its name in French, Centre International pour la Formation et les Echanges Géologiques. CIFEG is a public foundation created following a proposal made by the President of the Republic of France at the closing of the 26th International Geological Congress held in July 1980 in Paris.

CIFEG's objective is "to develop, in the field of geological sciences, exchanges between all countries, industrialized or developing, particularly by facilitating the circulation of scientific and technical information and encouraging training programs for technicians and scientists, especially on behalf of those countries seeking to attain a higher level of scientific, economic and industrial development." The Center "shall cooperate with public and private, national and international organizations interested in the Earth Sciences, as well as with French or foreign countries or associations interested in international cooperation in the field of geology."

In the pursuit of these objectives, the Center has developed a two-phase approach. The first involves "the analysis of requirements in the field of scientific and technological exchanges, training and documentation of the developing and recently industrialized countries, by means of postal surveys and exploratory visits, and by making use of the contacts established in the course of its activities and the network of Associate Members." The second approach is "the organization of projects in reply to identified requirements: drawing on the expertise available in the national and international geological communities, CIFEG then proceeds to design and implement projects in direct response to the priority requirements identified." Efforts are made to attract national and international cooperation, thus increasing the amount of funding for each project.

The first survey of training and exchange requirements was undertaken in Africa, and formed the basis for the priority themes of CIFEG's action in that continent. Likewise, exploratory visits were made in 1986 and 1987 to several Southeast Asian countries, as a result of which the first projects for that region have been selected.

Major Fields of Activity

Training Programs: Projects undertaken in this field may be "one-off" or form part of a medium-term plan (such as related to programs for human resources management, and to the guidance of foreign students following university courses in France and Europe). Table 1 lists past, current and some future training projects organized or co-sponsored by CIFEG (see also Fig. 1).

TABLE 1: CIFEG Activities in the Field of Training

Analysis of Requirements in Training and Exchanges

Southeast Asia (Laos, Nepal, Pakistan, Vietnam)

Central and Latin America (on the theme of natural geological hazards)

Training Program

Training of engineers and geologists from the Ministry of Mines and Energy of Guinea (5-year program - 1981-1986)

Training Workshops

Sedimentary phosphates (Dakar, Senegal - November 1983)

Geological evolution of Africa (Paris, France - February 1985)

Rural hydrology and hydraulics in fissured basement zones (Roorkee, India - March 1985)

Precambrian geology: Applications to gold exploration (Bujumbura, Burundi - August 1986)

Geochemical exploration techniques in tropical rain forest zones (Ho Chi Minh City, Vietnam - December 1986)

Peat: state-of-the-art and utilization (Lomé, Togo - April 1987)

Mineral exploration for gold (Kuala Lumpur, Malaysia - June 1987)

Groundwater exploration and development in regions underlain by crystalline basement rocks (Harare, Zimbabwe - June 1987)

Remote sensing applied to geology (Nairobi, Kenya - September 1987)

Interpretation of airborne geophysical data (Bangkok, Thailand - September 1987)

Figure 1: Group of foreign students visiting French organizations.

A Center for Information and Exchanges: CIFEG is well equipped, both in terms of human and material resources, to undertake studies on selected themes within the framework of international cooperation in the geosciences. It organizes scientific meetings on its own or in conjunction with other groups (Fig. 2) and prepares, publishes and distributes documents on the geology of the developing or recently industrialized countries. Table 2 is a brief list of CIFEG activities in this field.

TABLE 2: CIFEG Activities in the Field of Exchanges and Information

International Symposia and Scientific Meetings

Mineral resources of the oceans and the Third World. Distinguished lecture, E. Seibold (Paris, France - February 1983)

Geotectonical structure of the Lake Chad basin (Paris, France - June 1983)

Symposium on the geology of Sri Lanka (Peradeniya, Sri Lanka - September 1983)

African continental sediments (Cairo, Egypt - October 1983)

New approach to research on alkaline ring complexes (Jos, Nigeria - December 1983)

Evolution of plate tectonic concepts and its implication for the exploration of hydrocarbon and mineral deposits in Southeast Asia. Distinguished lecture, J. Katili (Paris, France - June 1984)

Franco-Brazilian cooperation in metallogeny (Paris, France - June 1985)

Global change in Africa during the Quaternary (Dakar, Senegal - April 1986)

The Birimian System in West Africa (Paris, France - June 1986); Abidjan, Cote d'Ivoire - December 1986; Monrovia, Liberia - late 1987)

Modern methods of mineral exploration (Accra, Ghana - early 1988)

Scientific and Technical Information

Creation of a documentary center on African geology.

Preparation of a reference book on African geology.

Figure 2: Visit to the Taiba mine (Senegal) during the "Phosphates" workshop.

As regards scientific and technical information, CIFEG possesses through its documentation center, its international network on African geology, and its access to bibliographic data bases, an efficient mechanism for the preparation and publication of periodicals and thematic or reference documents. Those published to date are listed in Table 3.

A Center for Visiting Geologists: CIFEG is located in a small building in the heart of Paris, with more than 350 m² floor space. The first floor is occupied by the documentary center and includes the library, the map library and a reading room. The second floor comprises a spacious conference room, which can seat up to forty persons, and a number of offices at the disposal of visiting geologists. The third and last floor is mainly taken up by the Center's permanent staff and the computer facilities (Fig. 3).

Geologists passing through Paris may take advantage of the Center's visitor offices, conference room, documentary center, and computer and secretarial facilities. The location of the Center simplifies contacts with Unesco and IUGS, which has a small liaison office situated on the premises. Likewise, the proximity of Brussels means that CIFEG is only a couple of hours away from the headquarters of the European Economic Community.

Organization and Resources

CIFEG's Administrative Council, which defines the Center's policy, is composed of up to twenty-four members, each of whom serves for four years. Five members are appointed by the French Minister for Foreign Affairs and the respective Ministers of Mines, Research, Universities and Cooperation. Two members each are appointed by the Director General of Unesco, the President of IUGS, and the Director General of the establishment in charge of the French national geological survey. The Council can then co-opt up to 13 other members who are either distinguished scientists or representatives of the principal sectors of the Earth Sciences.

At present, the Administrative Council comprises twenty-two members - ten from France, six from other parts of Europe and six from developing or recently industrialized countries (Fig. 4). One additional person from the African continent is in the process of being nominated. From its members the Council elects a Board composed of a President (currently Prof. M. Vigneaux), two Vice-Presidents and a Treasurer. The Board also includes a Secretary who may not be a member of the Administrative Council. The Board is elected for a one-year period, with a possibility of re-election.

TABLE 3: CIFEG Publications

Periodicals

Pangea - 3 issues per year. Subscriptions 200 FF (French and English)

African Geology - Quarterly. 1987 Subscription 350 FF (French and English)

CIFEG News - Quarterly. Free (French and English)

Occasional Publications Series

H.S. Regional workshop on the role of geoscience educational institutes in national resources development in Africa - Proceedings (1983)

N°. 1: Lois de répartition, hypothèses de pronostics et méthodologie de la recherche des gisements de minéraux utiles solides dans le Territoire de la République du Tchad, par M.M. M'Baitoudji (1984)

N°. 2: The Precambrian of West Africa and its correlations with eastern Brazil - Le Précambrien de l'Afrique de l'Ouest et ses corrélations avec le Brésil oriental - Final report IGCP 108-144 (1984)

N°. 3: 13th Colloquium of African Geology, St. Andrews (Scotland - 10-13 September 1985) - Abstracts (1985)

N°. 4: Evolution géologique de l'Afrique (1985)

N°. 5: La dorsale de Reguibat mauritanienne; essai de synthèse et évaluation du potentiel minier de sa partie orientale, par R. Giraudon

N°. 6: Recent advances in the geology of Sri Lanka - Proceedings of the symposium on the geology of Sri Lanka, Peradeniya, 1983

N°. 7: Journée spécialisée: Métallogénie du Brésil (compte rendu)

N°. 8: Bibliography of geological sciences for the Republic of the Sudan, by J.R. Vaïl, J.P. Duggua (1986)

N°. 9: Bibliographie géologique thématique de la République Centrafricaine, par C. Censier, C. Carre, G. Simonet (1986)

N°. 10: Les formations birrimiennes en Afrique de l'Ouest, journée scientifique, compte rendu de conférences (1986)

N°. 11: International congress on magmatism of extensional regions, Lubumbashi, Zaïre, 10-15 August 1986 - Abstracts

The permanent staff (Fig. 5) of CIFEG is comprised of seven members at present (geologists, technical and administrative personnel) and one director. Their task is to implement the policy defined by the Administrative Council. In addition, there are a varying number of temporary and voluntary staff.

In order to develop the Center's contacts with its correspondents, a category of Associate Members was introduced in late 1986. Any individual geoscientist or geoscientific organization interested in the objectives of CIFEG may become an Associate Member and, in return for a contribution - financial or the equivalent in publications - will be granted numerous privileges concerning the activities of the Center. For example, participation in training projects organized by CIFEG is facilitated, and documents published by the Center may be purchased at special rates. The body of Associate Members forms a particularly sensitive network through which information flows freely and rapidly. The Center possesses two data processors, on which PANGAEA and the Occasional Publications series are prepared, and two IBM-PC computers equipped with a 10 Mb memory, in which the data bank on African geology is stored. These are used to publish electronically the quarterly bulletin African Geology.

The activities of CIFEG are financed through subventions from the French government (55%), national and international contracts of various kinds (40%) and through the sale of documents and the financial contributions of members (5%). Apart from such direct financing, CIFEG follows a policy of co-operating with other organizations in its projects both in an organizational and financial capacity. Since its creation, CIFEG has entered into cooperative agreements with Unesco, EEC, AGID, Asian Development Bank, Association of African Geological Surveys (for which CIFEG operates a technical secretariat), several Asian geological surveys and many universities. In 1987, this policy will probably enable the Center to double its potential.

Main Themes for CIFEG Action

The surveys and exploratory visits undertaken in Africa and Southeast Asia, to identify the geoscientific requirements of these countries, have led to the establishment of a priority order for the resulting projects. In terms of energy and mineral supply, topics of major importance to the developing and recently industrialized countries are mineral exploration, exploitation, ore processing, resource management, and related subjects. The world-wide drop in ore prices has deprived some of these countries of much of their export revenue and, in some cases, has caused serious social problems.

A second priority area concerns urban geology. The high birth rate and rural exodus that exist in many developing countries have resulted in a dramatic increase in urban populations. Among the numerous problems that result are uncontrolled urban growth, a shortage of building and building materials, pressures on drinking-water supply, and those associated with the disposal and processing of refuse and waste water.

A third major area is that of environmental geology. Natural catastrophes are all the more dramatic because it is usually the most poverty-stricken nations with already weak economies that are most affected. The major danger zones in the world are well known (Central and South America, Southeast Asia, . . .), and work on this aspect of geology must be intensified.

These are major problems that geologists are increasingly called upon to solve. If an effective remedy is to be found, adequate structures must be set up and specialists trained. CIFEG will associate itself with national and international efforts to this purpose.

Figure 3: Student operating CIFEG's internal bibliographic data base.

Europe constitutes the fourth and last area of CIFEG's action. At the present time, the Center is participating in the setting up of European networks for scientific and technical cooperation. The objective is not only to help organize and operate such networks, but most importantly to familiarize them with the urgent problems facing the geologists from developing and recently industrialized countries.

Aims for Development

In the first phase of its existence, CIFEG has demonstrated its potential and has made itself known to and recognized by numerous national and international bodies. The Center's on-going program now includes: training programs on the priority themes previously mentioned. Every two years, a training workshop on energy or mineral resources will be held in Africa, on urban or environmental geology in Southeast Asia, and equivalent topics, from 1989, for Latin America.

Figure 4: The Administrative Council of CIFEG.

For historical reasons, Africa has been and will remain an area where CIFEG is particularly active, in response to numerous and urgent requests for assistance. The main emphasis here is on problems of energy, mineral and water resources and of urban geology. At the same time, the drastic shortage of scientific and technical information calls for special efforts in the publication and distribution of documents, as well as the creation and development of documentary centers.

In Southeast Asia, geological considerations have far-reaching social and economic consequences. CIFEG is working here primarily in cooperation with various national and international training projects. The first projects have now been implemented and activity will be developed in future years.

In Central and South America, CIFEG has so far organized or participated in a limited number of training projects, but the plan is to develop activities with emphasis on the theme of environmental geology.

CIFEG also plans to set-up decentralized liaison offices, to inform industrialized countries of the most urgent needs of the host region, to help formulate these needs in terms of projects capable of attracting funding, to supervise any activities subsequently organized and, finally, to enable better and faster circulation of geological information from north to south. Depending on the availability of funds, the first liaison office will be opened in Africa, and a second could be opened two years later in Southeast Asia.

CIFEG is now in the process of creating in Paris a documentary center on African geology, to be opened in 1988. Its task will be to collect information on African geology, circulate it to those interested and to compile bibliographic studies on a specific subject or region. It will be backed up by the already existing documentary network and connected to the African liaison office.

CIFEG's horizons are vast, its objectives ambitious. Its achievements to date, though modest, have shown what the Center can do. Its material resources are all helping to make CIFEG a center with a future, able to cooperate actively with all organizations and individuals who believe firmly that the earth sciences can be put to good use in the service of development.

Figure 5: CIFEG staff members and visitors.

Dr. M. Leleu has been Director of CIFEG (103, rue de Lille, 75007, Paris, France) since 1985 and is also in charge of the technical secretariat of the Association of African Geological Surveys. The former director of BRGM's Mineralogical and Geochemical Analysis Department, his main research interests concern rock-water interaction processes in the genesis of and exploration for mineral deposits.