

# IOCARIBE and Inter-Country Cooperation in the Caribbean

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## RESUMEN

La Asociación Regional para el Caribe de la Comisión Oceanográfica Intergubernamental (IOCARIBE = siglas en inglés) es un programa de Investigación Marina Cooperativo en le Caribe, enfocado a facilitar la información científica necesaria para los involucrados en el desarrollo y administración de los recursos marinos vivos y no vivos de la región. Se expone y se compara con su predecesor, el CICAR, y se enuncian 22 recomendaciones para ayudar a que su efectividad sea segura en una cooperación inter-estatal.

From 1968 through 1975, the Intergovernmental Oceanographic Commission (IOC) of UNESCO sponsored a scientific investigation of the Caribbean, the Cooperative Investigations of the Caribbean and Adjacent Regions (CICAR). That operation culminated in a week-long symposium in Caracas in July of 1976 at which the CICAR results were presented in the fields of physical, chemical, and geological oceanography, biology, fisheries, and meteorology. These papers were published by FAO in two volumes of proceedings.

Because CICAR demonstrated that regional cooperation in marine science was possible and effective in the Caribbean, and because a good cooperative infrastructure had been developed, the IOC in the fall of 1975 agreed to establish in the Caribbean its first regional association, IOCARIBE, and a 6-year trial period was authorized. The first meeting of this new regional association was held in Caracas following the CICAR-II symposium in 1976. That was one of the most sophisticated meetings to be held on Caribbean marine science. Whereas CICAR had been a relatively loose association with few well-defined scientific goals, that Caracas meeting of IOCARIBE took a new approach. Representatives of the participating nations were asked what they considered to be the most important aspect of the sea insofar as their own nation was concerned. The answer was loud and clear: marine food resources and economic development. But the development and management of fisheries resources are the purview of FAO and not of UNESCO. Because UNESCO and IOCARIBE are marine science organizations, the decision was wisely made that IOCARIBE would concentrate on developing the marine scientific information which was needed by those concerned with the development and management of fisheries and with developing other coastal resources. At subsequent workshops in Martinique and Trinidad, projects related to the marine scientific aspects of the Antillean "pot" fishery, the Central American spiny lobster fishery, and the environmental geology of the Gulf of Paria were planned. Dr. William Ford of Canada is project coordinator for the Antillean fisheries project, and Dr. Robert Menzies of the United States for the spiny lobster project, but as yet no leader for the environmental geology project has been identified. Subsequently, a regional pollution monitoring project, CARIPOL, was

established with Dr. Donald Atwood of the United States as the coordinator. Close cooperation with WECAF has marked the entire effort so far, and this is exemplified by their asking IOCARIBE to plan and carry out a Caribbean marine turtle workshop in 1982 for which plans are already well underway.

Each participating nation has an IOCARIBE national associate that acts as the focus for that nation, and the whole operation is run from the office of the IOCARIBE secretariat here in San Jose. Dr. Robert Lankford is the IOCARIBE secretary. He has worked hard to make IOCARIBE a success, and it is really he or Dr. Manuel Murillo, IOCARIBE chairman, who should be giving this paper today.

That is a very brief summary of the salient factors in IOCARIBE. It is alive and well and functioning, but how does this relate to inter-country cooperation, the theme of this session today? I would like to be able to paint a beautiful picture of close intercountry cooperation within the region, of frequent meetings to coordinate the activities of adjacent states, of substantial national commitment of resources to joint activities, but I am sorry to say that I am unable to do so. It might be worthwhile, in hope of future improvements, to indulge in speculation as to why these things have not happened and how they might be encouraged to come to pass in the future.

Unlike the Mediterranean where all of the major nations are continental rather than island and where most of them are at about the same level of development, the Caribbean has many small island nations as well as larger continental ones, and they cover the full spectrum of degrees of economic development and marine scientific capability. Each country has its own list of national priorities. These may include the improvement of public health, agriculture, transportation, education, tourism, and industrialization, and may or may not include marine resource development. The real lack, however, appears to be the absence in most states of an individual at a policy-making level sufficiently concerned about the importance of improving the nation's relationship with the sea to influence national policy. Regardless of how enthusiastic a university scientist or a fisheries officer might be, unless he is able to convince the nation's decision-makers of the benefits to be gained from intelligent management and exploitation of the nation's marine resources, inter-country cooperation and regional cooperation will occur at levels no higher than that of the committed "individual."

Thus one solution is to have concerned and committed individuals, and the level of national involvement will be a direct reflection of the degree of internal influence of these individuals. It is people that make the system work, people who care and are willing to commit themselves to the marine cause. Without these dedicated people, no system of regional or inter-country cooperation will work.

What success CICAR had and IOCARIBE has had to date can be attributed largely to individuals who wanted these programs to succeed and worked to see that they did. Thus for improved inter-country cooperation in marine science and technology in the Caribbean, the first prerequisite is well educated, articulate, dedicated marine supporters, be they scientists, engineers, technicians, educators, administrators, or public officials. If a country does not have them, it should either buy them from a more developed country, "rent them" from UNESCO or another UN agency, or — preferably — grow its own by sending outstanding university students for specialized training abroad. In this last case, it is essential that positions

commensurate with their advanced educational level be available on their return home, or they will go elsewhere where their capabilities can be effectively utilized at a reasonable level of compensation.

IOCARIBE realizes this need and has tried to meet it in several ways. It has included a training, education, and mutual assistance (TEMA) component in all IOCARIBE projects. It has asked each IOCARIBE member state to designate both a national associate to IOCARIBE and a national training contact. It co-sponsored a workshop on coastal area management in Mexico City for planners, administrators, developers, and environmental scientists from some seventeen nations in the Caribbean. This was an effort to inform those already at decision making levels of the importance of wise planning for the development of their national coastal areas.

IOCARIBE is one of several regional projects in the Caribbean area. FAO has the WECAF project, and UNEP has its action plan for the wider Caribbean, but all of these call for varying degrees of national commitment. Any infrastructure that a nation can develop to participate in these UN projects can form the basis for good inter-country cooperative efforts.

Cooperation in marine science and technology between two countries or among the several countries of a region will usually involve countries of varying degrees of development. For this reason, it would be well to reiterate the conclusions reached in a 22-nation marine science workshop held in Bologna, Italy in 1973 (Report of the Marine Science Workshop, Johns Hopkins University, 1973, concluding observations, pp. 73-78).

1. The development of a viable national marine science capability is not accomplished instantaneously. It is a long, slow process, but it can be considerably speeded up by capitalizing on the experience and capability of nations which have been involved in marine science longer and have advanced further down the road toward an independence in their ability to deal effectively with the ocean and its resources.

2. "The Lord helps those who help themselves" is the way one speaker expressed the idea that a nation cannot sit back and wait for an outsider to solve its marine science problems. Each nation must initiate its own efforts, establish national goals and priorities, hopefully obtain a national commitment to learning about its ocean and the resources it contains, and be willing, as a nation, to commit a portion of its own manpower and funding to this effort.

3. The marine science and technology needs of each coastal nation wanting to move ahead in this field must be carefully studied, evaluated, and documented. The international agencies may be the best means of accomplishing this, but the present marine scientists of the country must be involved in the elaboration of these national needs. Future requests for assistance must be relevant to meeting these national needs.

4. The universities in each nation, as the traditional fountainheads of knowledge, must be heavily involved in the national marine science program, for the role of the university is not only the imparting of knowledge, but in fact, the generation of new knowledge. Marine science also provides an intellectual stimulus and challenge that, if properly met, can provide the intellectual outlet that man as a reasoning being demands.

5. Although intellectual stimulation is an admirable national goal for many countries it ranks, on the list of national priorities, well below those of adequate animal protein for a growing population, optimum utilization of marine resources, and improvement of national economic base and gross national product. The development of a sound scientific basis for meeting these needs must rest in the universities, and it is essential that they be a viable element of any national program in marine science.

6. The development of a marine science capability and the increase in the effective recovery of a nation's marine resources must go hand in hand, must proceed cooperatively together. This was not a unanimously agreed upon concept by any means. Those who disagreed felt, "Give us the fish and the oil, and we will worry about the science later." The general feeling however, and examples were cited, was that any project involving offshore resources — be they living or nonliving — involved the accumulation of data that could contribute to the overall understanding of the systems and regimes that impact the resource. Developing understanding is the business of research, so the two are natural allies and should proceed together — resource development and management, and research.

7. Numerous programs in the past between developed and developing countries, as well as programs of international agencies carried out in developing countries, have, upon their termination, left nothing behind. There was a complete consensus that local marine scientists and technicians must be heavily involved in any assistance program, to the extent that they can carry on the work when the formal project is completed.

8. No global solutions are possible, but rather each nation must be considered as a separate case with unique national needs, present capabilities, degree of national commitment, abundance of offshore resources, and desire for assistance. These must all be considered in any plan for assistance.

9. Cooperation nationally among the university researchers in marine science and the nonuniversity groups involved in oceanic affairs (navy, industry, foreign office, and others) is essential if a firm basis for the receipt of bilateral or UN agency assistance is to be developed.

10. Means must be found for generating a marine enthusiasm among the students who are attracted to science and technology as their life work. Visiting lecturers and berths on visiting research ships can contribute to this kindling of an oceanic interest.

11. National mechanisms must be developed whereby the leading marine scientists have a meaningful input into the formulation of national policies affecting the ocean and marine resources.

12. The major marine science need of developing countries appears to be development of an adequate critical mass of manpower adequately educated and trained in technology to provide the base for intelligent resource management and recovery.

13. Although fisheries received the major attention among the possible recoverable marine resources, it was pointed out repeatedly that there are other reasons for nations to learn about the sea. These include mineral resources (oil, gas, sand and gravel, the minerals in manganese nodules, phosphorite, and dissolved minerals), the disposal of man's wastes (radioactive and others), weather

forecasting, commerce, national defense, recreation, and the providing of an outlet for man's innate curiosity about the seas around him.

14. The results of any experiment or study offshore by any nation must be integrated into the local framework. This entails the providing of results in the form of data and/or published results as well as specimens for the local reference collection.

15. In general, assistance is more welcome from UN agencies than from bilateral arrangements because the receiving nation is part of the agency itself and the level of trust is higher than for bilateral arrangements in which there may be some degree of mistrust of the motives of the more developed country. However, bilateral arrangements are often preferable where there are social or political ties or where a particular and perhaps unique capability is desired.

16. Sophisticated and expensive equipment should be shared on a regional basis with the most advanced nation acting as the overseer.

17. Developing countries should be accorded the chance and provided with the ability to make their own decisions.

18. Developing countries do not need to start out with the sophisticated equipment in use in the more developed countries. If the degree of accuracy of a measurement is known, the degree of precision is less important.

19. Data *per se* are useful only as they contribute — through scientific endeavor — to knowledge. This reinforces the need for good university departments in marine science.

20. High priority should be accorded the development of human resources, and this should probably be the first rather than nearly the last of this series of items on which there appeared to be general agreement.

21. Visiting "experts" must be carefully selected. Even though a developing country can benefit from a visit of even short duration, it is desirable to have these experts remain in the country for 2 to 3 years if maximum benefits are to be realized.

22. For the more developed countries that have some expertise, it is often more desirable to develop cooperative bilateral arrangements whereby they can carry out joint projects to the material benefit of both nations.

Most of these Bologna workshop observations apply to inter-country cooperation in the Caribbean, and many of them reflect what I feel is the major problem inhibiting such cooperation on an effective scale: the people problem.

IOCARIBE is one of the regional programs, like the Gulf and Caribbean Fisheries Institute, that is trying to develop inter-country cooperation in marine science and technology, but it needs the help of you who are already committed scientists and marine specialists. With your help and personal commitment, inter-country cooperation through marine science and technology can become a reality.