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**United Nations Development Program  
Food and Agriculture Organization of the United Nations  
Fishery Development Projects in the Caribbean**

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**Abstract**

This paper gives a general resume of the objectives, the activities, and the results of several fisheries programs which the UNDP supports in the Caribbean. It reviews the development and results of five projects located in the Caribbean and Gulf of Mexico and presents a brief summary for each project. An over-all view is given of the orientation similarities and differences of the several programs, and an assessment is made of their contribution to the countries and the region.

**INTRODUCTION**

The United Nations Development Program, including its parent agency, has been in existence for only a little more than a decade. Yet during this short period greater changes have been made in the fisheries of the world's developing countries than have taken place throughout their entire previous history. During this same decade great changes have also taken place in the fisheries industry of the world's developed nations.

As a word of explanation, the UNDP is an agency of the United Nations, established originally in 1958 as the UN Special Fund, with headquarters in New York. It is responsible for assisting the developing nations to raise their levels of food and industrial production and to increase their economic well-being. The projects it supports cover all sectors of modern technology, from agriculture, health, and labor to the most complex industrial and scientific problems. In our field (fisheries) its contribution has been significant. In many places, a developing nation's scene has changed from one of picturesque, pleasant and unproductive artisanal fishing to dynamic industrial complexes yielding modern products and high returns.

In 1964, when my predecessor, Dr. Hiroshi Kasahara, reported to the Gulf and Caribbean Fisheries Institute on the Programs for Assistance in Fishery Development, the UNDP then had ten fishery projects and only six were actually in operation.

In the ensuing years, the UNDP, through its executing agency, FAO, has completed eleven projects, is presently engaged in or preparing to operate forty-two projects, and is considering twenty-one others. Several hundred fisheries technicians are deployed around the world. Budgets for these programs have amounted to \$125.0 million, of which about three-fifths was supplied by the co-operating governments. I realize that these figures may not be tangible to you insofar as they have meaning in their effect upon individual fisheries projects. They do, however, indicate the magnitude of the global effort that is taking place to upgrade the fisheries sector of the developing nations' economies.

The picture in detail is not all this simple, however, and not all activities undertaken can be immediately identifiable as successful. In many new countries the development process is a slow one, since all the elements required to support the growth of modern methods are not always present. In some cases, the project is simply the yeast that starts a trend, which then may require years to reach its full momentum. The Caribbean area is one example. There are five projects presently being supported by the United Nations Development Program in the Caribbean area: The Central America Fishery Development Project (REG 30), the Caribbean Fishery Research and Development (REG 189), the Colombia Marine Fisheries Development Project (COL 22), the Venezuela Fishery Research and Development Project (VEN 14) and the Mexico Fisheries Research Project (MEX 15). We will look at each of these to see how they compare, what their objectives are, and what have been some of the results to date.

#### CENTRAL AMERICA FISHERY DEVELOPMENT PROJECT (REG 30)

The Central America Fishery Development Project includes Costa Rica, Guatemala, Honduras, El Salvador, Nicaragua and Panama. The project was originally declared operational in November 1966 with a total budget of \$5.7 million, funded in part by the countries and in part by the UNDP. The Central America's project objectives were to help the countries assess their marine resources, foster increased fishery products, stimulate marketing and develop the fisheries economy. The project got off to a slow start, because there was a delay in delivery of the four project vessels. Once the vessels were delivered and the project became operational, the situation changed and it is now under full steam and producing results of considerable value to the participating countries.

Deep-water shrimp resources recently found by the project's exploratory activities off the Pacific Coast of Central America will probably lead to additional investment in vessels and equipment as the tempo of this new-found resource speeds up.

Lobsters have been found in significant quantities off the coast of Honduras and Nicaragua, and fishery production has increased seven-fold in Nicaragua.

New fisheries products for both export and local consumption are being stimulated by the activities of the project in the countries. Advice on improving the processing technology throughout the region is being given. All this leads to the need for financing fish terminals, markets and shops. These activities may be underwritten by financing from the International Bank.

Interest developed by the project has already brought an investment of \$10 million to construct a fishing port in Panama City. Part of the Panamanian shrimp and purse-seine fleet is being modernized at a cost of \$3.7 million. There is also the possibility that international funds may be available to finance trawling vessels in the Nicaraguan fishery.

This project terminates at the end of 1971. Several new local industries will have been developed as a result of its work. While we cannot assess the total investment the project has attracted, we do know that it is already several times greater than the project's total cost.

## THE CARIBBEAN FISHERY DEVELOPMENT PROJECT (REG 189)

The Caribbean fishery development project began in August 1965. The project has gone through its first phase and is now in its second one. Original funding was \$2.2 million, of which approximately \$1.5 million was supported by the UNDP. This project was a co-operative venture of nineteen governments: Barbados, Antigua, Monserrat, St. Lucia and Antilles, Grenada, St. Vincent, Dominica, French Republic, Republic of Haiti, Jamaica, Surinam, Trinidad and Tobago, Guadalupe, Guyana, Puerto Rico, St. Kitts and Nevis-Anguilla.

Its objectives were to conduct exploratory fishing, to carry out market studies and demonstrations, and to train fishermen, officers and fishery officials. Three vessels were supplied for the exploratory work; two of 82 feet and one of 56 feet.

A 2-year continuation of the project began this year in June, with a budget of \$1.8 million, of which \$1.2 million was furnished by the UNDP. Although the project is still under way, it has already piled up a significant amount of investment in its area.

The three research vessels have found valuable fish resources in the region, particularly along the Guiana shelf. Capture of skip-jack and other pelagic fish like mackerel, wahoo, etc.; long-line fishing; shark fishing; and pargo fishing can be increased if not significantly improved. One benefit from the marketing and demonstrations is the increase in the consumption of fish taken by local fishermen. Today Caribbean nations must import about three-fourths of their fish needs. As consumption of local fishery products increases, these countries by 1975 may be saving nearly \$30.0 million a year in foreign exchange for fish products that must now be imported.

The exploratory fishing and marketing operations of the project have demonstrated that there are good investment possibilities in the trawl fisheries off the coast of the Guianas.

In its training and demonstration operations, the project is training trawl crews, captains, fishery officials, developing fish-processing facilities, setting up distribution net works and market schemes, and providing investment consultant services. Private investment and some public investment will be generated from this activity. Unfortunately, in most places in the Caribbean, the infrastructure for the developing fisheries is inadequate or lacking, so that fish landing as well as processing and marketing facilities throughout the area will require public investment. The project has presented plans for fisheries terminals in Jamaica and Trinidad. Financing for these is likely to be forthcoming shortly.

It is difficult to obtain precise information on investments in so many countries, even though some of them are small. Information also is difficult to obtain from companies who wish to keep their investment programs confidential. Several large companies have invested in the region, but as yet we cannot estimate just how great their investment in the Caribbean region is. For those that have released their investment figures, we can say that they total more than \$17.0 million in fishing vessels, shore facilities and marketing structures. The pay-off in investments in fisheries has more than justified the original cost of the project - approximately \$4.5 million.

## COLOMBIA MARINE FISHERIES DEVELOPMENT (COL 22)

The Colombia fisheries project became operational in January 1968. It is a country project with an original budget of \$1.95 million, of which the UNDP contributed almost \$1.0 million. Its objectives were to conduct resource surveys along the Pacific and the Caribbean coasts of Colombia.

Its work along the Pacific has demonstrated that shrimp resources must be managed to maintain production and to ensure adequate financial returns from vessel operations. The Caribbean activities have been devoted mainly to the survey of shrimp resources. To date, they have shown considerable quantities of shrimp from Barranquilla and to the eastward. Colombia's fisheries export about 1,700 tons of shrimp per year with a value of about \$5 million. Fin-fish are also caught with the shrimp. In a country lacking adequate sources of protein, the potential value of these fin-fish resources to the industry looms high.

One interesting development of the project has been the assessment of the oyster resources of Ciénaga Grande. They presently produce almost \$2.0 million worth of oysters annually. The oyster industry can be expanded if the fresh waters of the rivers flowing into Ciénaga Grande can be adequately controlled. The project is stimulating action on this control, since it would increase oyster revenues four-fold, to about \$6 million. If the full potential of this resource is developed, as much as \$8 to \$10 million of oysters can be harvested each year.

While it is too early to determine the present level of investment generated by the project, it is already assured that the fisheries of Colombia will continue to become a greater part of the nation's economy.

## VENEZUELA FISHERY RESEARCH AND DEVELOPMENT (VEN 14)

The Venezuela fishery research and development project became operational in December 1967. Like Colombia's project, it serves a single country. Total funding is almost \$5.5 million, with \$1.2 million contributed by the UNDP. Its objective is to determine the pelagic fish stocks available, evaluate the marine resources to determine their economic potential, and supply exploratory and experimental fishing and consultant services in processing, technology and marketing.

The research program of the project on what stocks are available has generated an increased interest by the private and public sectors in the fisheries. Project monitoring of the stocks of thread herring have shown that a 10-fold increase in the production from 500 to 5,000 tons is within the safe limits of the resource. Two or three other species are lying fallow and under stimulus may be expanded in like magnitude. As a result, the investment tempo has increased during the past few years. The demersal studies have found a promising new shrimp fishery in eastern Venezuela. It too is being pursued.

An unmeasurable but nevertheless important contribution of this project is the technical advice given both by direct contact and by demonstration to local industry and fishermen. The technical assistance given to the industry is starting to bear fruit, or should I say, fish. Industrial techniques are being up-graded as modest local investments are fed into the industry. For example, facilities for utilizing stick water are being installed in some local plants. Prospects are encouraging enough to anticipate that the expanding fish industry will seek out other pelagic fish resources. Local fleets are being modernized. Project personnel are supervising new construction of 11-meter vessels valued at approximately \$5,000 each, and plant improvements are being made to specifications furnished

by the project's technical staff.

The upgrading of the industrial processes, the improvement of production, and the increase of productivity and profitability are all real benefits whose numeric value cannot be estimated.

The project has prepared a fisheries development plan which will lay the groundwork for reorganizing the fisheries administration and apply incentives for fisheries development, assist in standardizing the quality of processed products, stimulate consumption of fish in the country and expand and modernize the fishing fleet. The plan is under review for adoption by the State Planning Organization.

The program, if implemented, will generate about \$30.0 million in new investment when put into effect.

#### MEXICO - FISHERIES RESEARCH (MEX 15)

The objective of this project, which was declared operational on 27 October 1969 for \$1,670,900, is to determine the magnitude of the pelagic and demersal fisheries resources in Mexican waters. As this project has just recently started, it is too early to assess its contribution to the Mexican economy. However, even though the technical details of the resources are not yet available, investment schemes are already under discussion with one of the international banks on funding, training, ship-maintenance procedures, sport-fishery development, and culture of fish in brackish water. The schemes in these areas can be implemented even while the project goes on about its major tasks. The Mexican Government is considering the adoption of similar projects that will be compatible with the development tempo and the policies of the country.

While the several projects in the Caribbean area require from one to several years before completion, worthwhile investment and development results have been forthcoming from each of them. Their influence upon the economy of the region will have an ever-expanding effect for a long time to come.