

DISCUSSION

Caribbean Session

Discussion Leader: G. B. Gross
Discussion Panel: H. C. Girigorie, R. C. Griffiths,
I. Kristensen, R. S. Wolf

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

W. E. Ripley

Q. Gross: The UNDP has been in operation for some years with fisheries projects all over the world, can you give us any information on the effectiveness of the UNDP program?

A. Ripley: The UNDP has had fisheries projects throughout the world and has been stimulating the development of fisheries since 1958. As an example of what has come about between 1958 and 1968, in 1958 the developing nations then shared 8.2 million tons of fish as their part of world production, but in 1968 their production was increased to 25.3 million tons. The developed countries in the meantime increased their production from 17 to 25 million tons. During the same period their rate of increase was not as rapid. These simple statistics do not imply that the UNDP programs are entirely responsible for the increase in the developing countries' share of the world fisheries production. They do, however, offer evidence that the stimulation given by fisheries projects has had an effect. The intangible effects of the technical assistance given in the fisheries projects that are executed by FAO for the UNDP certainly also have had an important contribution towards helping the developing countries obtain a large share of the fisheries of the world.

Q. Griffiths: Regional projects are a good deal more difficult than is ordinarily known by people who have not worked with them -- the problems related to different cultures, acceptance of different fisheries products, technical and economical problems related to contacts with other culture. Under these circumstances, are regional programs a wise thing?

A. Ripley: It is understood that regional programs have difficulties that are not inherent in an individual country program. However, the benefits often are quite extensive when a program is developed on a regional basis. There can be benefits of additional capital and market base for expansion of fisheries activities in the region and in the savings that occur, in pooling efforts in determining what resources are available for development. The UNDP has many regional programs and, in fact, 18 percent of the funds have been allotted for regional projects in the future.

Q. Girigorie: Are there any plans to follow up the Caribbean regional project?

A. Ripley: At this time there are discussions being held in planning for a new project. Although we do not know exactly what the final outcome will be, I believe there will be some kind of regional activity forthcoming as a follow up of the existing project. The resources work done by REG 189 has indicated good stocks of fish in the southernmost area of the region, and if the necessary capital and effort is brought to bear in this area, it should produce favorable results.

An Improved Field Method for Quality Evaluation of Shrimp Held in Refrigerated Brine and Ice

H. Rojas Garcia

Q. Kristensen: From other information available, the pH of shrimp gives inaccurate information of shrimp quality, could you explain the results that you obtain?

A. Rojas Garcia: The traditional method used in the determination of the pH of shrimp gives erroneous results, this might be in relation to the non-homogeneous extractive obtained by these methods.

If the shrimp lot to be examined is of unknown origin and thus including mixed qualities of shrimp, the "improved method" that I propose will not adequately serve as a freshness test, but, if the shrimp lot is of a known origin (in example, shrimp from a culturing pond) the method will be highly satisfactory.

Q. Griffiths: What is the practical importance of your findings in the use of color indicators?

A. Rojas Garcia: Reported results mainly from U.S. researchers show that "good" quality shrimp have a pH of 7.50 to 8.25, "acceptable" shrimp have a pH of 8.26 to 8.40. Our results indicate that the pH of "good" shrimp is of 6.7 to 7.30, "acceptable" shrimp have a pH of 7.20 to 7.30, and "borderline" shrimp have a pH of 7.65 to 8.20, these results as you can see are very different from other findings.

Strasburger
(Comment)

We have found in our work with canned marine products that the pH is extremely useful. In some cases the pH of the product has to be adjusted and stabilized. For other processes we did not find the pH to be a good indicator.

A. Rojas Garcia:

I do not claim that the traditional method of pH measurement in shrimp is a good indicator of quality. What I found in my research work was that *the method that I described* is useful to measure the pH of shrimp of a known history.

Status and Potential of the Fishery in the Caribbean

R. Juhl

Q. Wolf:

The UN/FAO Caribbean Fisheries Development Project recently completed a shark assessment survey. The results of the survey indicate availability of at least 10 to 12 thousand sharks per year in the Guianas coastal areas. Have you included this estimate in your figures on the potential of the Caribbean?

A. Juhl:

Yes, the results of those fishing tests were included. It is well to note that the shark fishery potential is several times the present production and its full development is expected in the near future with the advent of the much needed processing technology.

Q. Wolf:

Can you tell us the reason why these shark resources are not utilized to a greater extent commercially?

A. Juhl:

At the present time only a few of the island people and to a greater extent those from the Guianas coast consume shark, owing in part to social custom and limited processing techniques. The latter will, no doubt, be overcome by UN/FAO project activities in marketing and technology.

Q. Kristensen:

In many areas including Curacao, production of fish is low, except for seasonal over abundance which gluts the market and depresses the price. How have you managed to take care of these periods of over-abundance?

A. Juhl:

In Puerto Rico the fluctuation in fish production is considerably less than in the continental shore areas. In cases when production is above normal the excess is handled through ample existing marketing outlets. It is imperative, in situations of overabundance, to make available a greater number of freezing facilities and processing techniques such as drying and smoking, so that full advantage can be gained during periods of abundance. This will not only help to stabilize the price but also provide fish during periods of scarcity.

**Dynamic Factors Affecting the Performance
of the Antillean Fish Trap**

J. L. Munro

- Q. Wolf:* I realize that your fishing is mostly done with unbaited traps. Nevertheless, can you comment on the relationship between catches and the quantity of bait in the trap? What relation does this have to depth?
- A. Munro:* We could not provide you with any data on that. We have been fishing only in depths of 20-80 feet (6 m-26 m) with unbaited or lightly baited traps.
- Q. Gross:* Why do lobsters enter the Antillean fish traps?
- A. Munro:* I think that in a general case, the lobsters are looking for a refuge and, particularly at night, the trap appears to be an effective hiding place. They are also attracted to dead fishes in unbaited traps.
- Q. Girigorie:* A number of different types of traps have been tested by the UNDP Caribbean Fisheries Development Project, with good results in many cases. However, you report catches of only 2.2 fishes per day, or an average of less than a pound a day. Are the coastal waters in Jamaica fished out? Why do fishermen continue to fish?
- A. Munro:* In the Port Royal Reefs, our catches average about half-pound per day. Comparison with the results obtained by the Caribbean Fisheries Development Project is not really valid because they have been fishing in much deeper water. However, catch rates in the Virgin Islands, and on the Pedro Bank approach 10 pounds per day. This indicates that Jamaican near-shore reefs are seriously overfished, and fishing on these reefs is probably only practicable for part time fishermen.
- Q. Kristensen:* There are big fish available in some areas. Are the small fish used in Jamaica? Is it not possible to protect the small fishes?
- A. Munro:* Small fish are readily marketable in Jamaica and therefore, the average size of the fishes in the catch is not very important to the fishermen or to the consumer. However, our project is engaged in estimating the optimum mesh size for traps relative to the economic and biological status of the fishery. We believe that increasing the mesh size would dramatically improve the productivity of the fishery, because most species are captured when immature and well in advance of their optimum size.

**Porpoise Fisheries in the Southern Caribbean –
Present Utilizations and Future Potentials**

D. Caldwell and M. Caldwell

- Q. Girigorie:* You indicated that in some years only two or three whales are caught. Did you also say that in other years none were taken?
- A. Caldwell:* That is correct. In the Bequia whale fishery near St. Vincent, usually one or two humpback whales are taken each year and one or two sperm whales over any given period of several years. The fishery is dying, however, and in some years no whales of any kind are taken. The fishery is not declining for lack of whales, we are told, but because no new whalers are joining the fishery and the older men are gradually giving it up.
- Q. Wolf:* You indicated that demand for whale meat is high. Does this demand not encourage higher catch effort and consequently should not protection be increased in order to preserve the whales?
- A. Caldwell:* While the demand for whale meat is high, it is a local demand. None of the meat and blubber is exported from the islands where the whales are caught except that some of the Bequia whalemeat is taken to nearby St. Vincent. The numbers of whalers appear to be stable or on the decline because only a few men are willing or able to undertake the rigors and expense of whaling. While possible future regulation of the fishery should of course be kept in mind during any studies, there is presently no indication that the whale and porpoise stocks are declining in the Lesser Antilles. Present indications are that instead it is more likely that the local fishing effort is on the decline more so than the local cetacean stocks. Subjectively, of course, the whalers tell us that the local stocks appear to be the same as in years past, but that the fishing effort is much reduced. Consequently, under present conditions, the cetaceans appear to be in no special danger in the Lesser Antilles.
- Q. Jensen:* The walrus in Alaska is said to be heading toward extinction, yet many animals are wasted each year because they sink when shot and are lost before the fishermen can reach them. Do you have any thoughts on how many blackfish and porpoises are lost at St. Vincent in this manner?
- A. Caldwell:* Apparently essentially none. The nature of the fishery is such that the animals are harpooned and thus are attached to the catcher boat by a sturdy line that makes it simple for them to be recovered. Were they shot with rifles like the walrus most, undoubtedly, would be lost because the small toothed whales and porpoises all sink rapidly upon death.
- Q. Good:* Is there any support for research on the Lesser Antillean porpoises?
- A. Caldwell:* None of a fishery nature. We have a small amount of support from the American Philosophical Society for studies on cataloging the cetacean fauna of St. Vincent and the Fisheries Research Board of Canada has, on brief occasion, visited the region for similar reasons. To my knowledge no

broad studies on the biology, and especially the stocks, of these cetaceans are being undertaken with or without direct support. Sightings are sometimes recorded by research vessels in the region for other purposes, but the findings are often limited to "whale" or "porpoise" without a positive identification of the species seen. We are attempting to incorporate such data into our own overall catalog of West Indian and Caribbean records.