THE NEED TO RATIONALIZE A CARIBBEAN FISHERY

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During 1968 the countries around the Caribbean imported 60,000 tons (120 million pounds) of fish and fish products, over 80 per cent of which went to Puerto Rico, Jamaica, Trinidad and Tobago. The total value was $36.2 million (Table 1). It would be reasonable to assume that since 1968 with inflationary trends this value would have at least increased by 50 per cent for the same amount of goods.

Table 1. Imports Quantity and Value by Country, 1968.

Country	Quantity Metric tons	Value CIF US$ x '000
Jamaica	18.965	9.540
Trinidad & Tobago	3.250	2.036
Barbados	1.436	864
Guyana	2.489	1.498
Leeward Islands	1.022	555
Windward Islands	2.301	299
Surinam	1.654	878
Netherlands Antilles	1.836	1.540
French Guiana	281[1]	193
Martinique	3,164	1.959
Guadeloupe	1.883	1.284
Puerto Rico	21.093	15.533
Total	59.374	36.179

[1] Figures refer to 1967.

After Vidaeus 1970.

In terms of exports, the only significant figures are from Trinidad and Tobago, French Guiana, Barbados and Puerto Rico. In the case of the latter the exports represent processed tuna caught by non-Puerto Rican vessels and for the other territories, shrimp, caught basically by vessels not owned in the Region (Table 2).

Table 2. Export of Fish and Fish Products, 1968.

Country	Quantity (tons)	Value[1] US$ x '000	Comment
Jamaica (69)	40	19	
Trinidad & Tobago	1,000	750	Frozen shrimp
Guyana	4,264	3,655	" "
Barbados	1,218	3,669	" "
Leeward Islands	75	...	Lobster
Windward Islands	45	...	
Martinique	-	-	
Guadeloupe	30	60	
French Guiana	3,358	...	
Surinam	1,569	...	Frozen shrimp
Netherlands Antilles	-	-	
Puerto Rico	54,400	69,600	Canned Tuna

Source: Official Trade Statistics.

[1]The values set out in the official trade publication do not always include the full FOB value of the product.

After Vidaeus, 1970.

The last census of 1968 done by the UNDP Project showed a total of 13,055 vessels with 29,700 fishermen directly employed; from this we could assume a figure of at least twice as many indirectly employed. The direct employment ranges from one per cent of the male labour force as in the case of Curacao to 9.6 in Dominica.

The Resource

Regrettably most people think of fisheries resource as fish, plain fish, but this is not so. A fishery resource is made up of finfish, shellfish, whales, seals, squid, octopus, sea weed, etc. and it is within this context that economic planners must see the development of fisheries as a resource. It becomes even more important as fisheries, if managed properly, is a most important renewable resource as opposed to minerals or agriculture which has serious land space constraints.

The Caribbean region is not richly endowed with fishery resources but there is ample to keep hundreds of thousands of our people employed and to provide the most inexpensive source of protein to all of the people of the Caribbean to a point where we could

approximate Japan if not surpass her as the world's largest per capita consumer of fish and fisheries products.

Trawling appears to be the lowest risk and easiest form of fishing. There are trawlable grounds from Trinidad to North East Brazil. Over a dozen boats have done exploratory fishing on this ground over the last 20 years. Between 1966 and 1971, the UNDP/FAO Fisheries Development Project had three vessels operating in this region. The M.V. Calamar fished the shelf off the Guyanas quite intensely. They confirmed that there is an extensive trawl resource for fish between the 5 and 20 fathom lines off the Guyanas.

The catch consists mainly of sea trout *(Cynoscion virescens)*, whiting *(Macrodon ancylodon)* and croaker *(Micropogon furnieri)*. The overall catch rate was 676 pounds per hour of trawling and was made up of 68 per cent marketable fish, 28 per cent industrial fish and 4 per cent invertebrates. (In these days of flesh separators the industrial fish would yield 50 per cent of its flesh, hence the percentage of marketable fish would be increased.) Trawl production was highest off the Suriman River where up to 1000 pounds per hour were caught. Since then, FAO production dynamics experts have estimated a sustainable production of 400 million pounds per annum.

Other forms of fishing tried include hand lining or banking as we know it in the West Indies. This form of fishing produces snappers, groupers and jacks. The yields from the various areas where this form of fishing was tried, indicated that production of these species could be increased from 50 million pounds to 200 million pounds. The whole Caribbean area has the potential for increased fishing for snapper, grouper and related species. However, in the northern Leeward Islands Ciguatera fish poisioning seems a definite hazard.

Shark fishing was carried out by the Calamar off the Guyanas and between hand lining and bottom sets of steel cable, over a period of 8 cruises, 4,600 sharks of 25 species weighing 165,000 pounds were caught. From this it is estimated the Coast of the Guyanas will yield 5,000 pounds of shark per boat per day.

From August 1967 to March 1968, two 110-ton converted tuna long-liners fished out of St. Martin, each equipped with catcher boats which were shipped on the mother vessels. The catcher boats utilized long lines and bottom long lines. During the 8-month period both vessels produced a total of US$124,000. (Note value of currency at that time.)

Some elementary work was done on live bait pole fishing for tuna and other pelagic species by the Project vessels. Apart from the fact that most of the personnel on board were novices and that there were other constraints, they still managed to reach catch rates of 72.9 pounds per hour.

However, it is a well known fact that the Japanese long liners have fished the Caribbean Sea from 1955 to 1958 and now the Koreans and the Venezuelans to a lesser extent, although by 1966 they had

about 43 small vessels tuna-fishing in the area. The Cubans, since 1957 have developed a fleet which fishes the Caribbean, Gulf of Mexico and the Atlantic.

I do not subscribe to those economic theories on complete self-sufficiency of small nations as export orientation becomes a null factor in economic planning and production targets. For example, squid and octopus occur through the region and are very common in many areas. Squid particularly is short lived so that the potential yield is a large percentage of the unfished stock. Estimates of the standing stock of squid in the region are between 0.5 to one million tons. Here is a product that we do not ourselves eat but which could be exported to the Far East, Europe and large population centres in the United States on the east and west coasts.

It is now internationally recognized that there is a very important shrimp fishery stretching from Trinidad down to Brazil in which about 500 vessels (foreign to the region) produced in 1973 a total of 48,208,000 pounds of heads on shrimp.

So far we have looked only at the resource from a processing stand point of a primary raw material. But fish is more than that, it is not only the flesh, which can be salted, dried, canned, fermented or put into a host of other palatable forms, there is also the technology of the by-products.

From fish we get both oil and meal from the waste. We can go further to manufacture glue from the heads and skins. In many species such as the scaenids, catfishes and serranids, the air bladder is thick enough to be collected, dried and converted to isinglass which is invaluable in the clarification of wine.

Shark skin is prized for leather, the teeth for curios and necklaces, the backbone for making walking sticks and most of all, the fins for soups.

Apart from fish, let us look at oysters as a resource. Only in Trinidad and Jamaica are local oysters available for eating although there are in the Caribbean hundreds of acres of swamp in which oysters could be cultivated. For that matter, most probably mussels also.

There are five species of turtles in the region the most important of which is the green turtle as it is esteemed for its meat and plaston by gourmets the world over.

An organisation in the Cayman Islands has recently started to breed and grow green turtles at a rate which makes it the cheapest meat in the world. There is little reason why the technology should not be easily transferred to all the other islands.

In the Caribbean, we eat the conch meat and throw away the shell or in the case of the Virgin Islands, ship the shells to Italy to be made into high price cameos. In Naples where most of the cameos are made, in 1951 there were as many as 6.000 persons of all ages engaged in cameo carving. The operation is to a great extent artisan and

whole families participate in carving from raw shell or pieces supplied by jobbers. Instead of sending the shells to Italy, why don't we bring the Italians to the shell?

Flying fish as a resource is exploited principally by Barbados. Of the 575 fishing boats (1968 figures) roughly 80 per cent are engaged in fishing flying fish from December to June, hence Barbados has become known as *The Land of the Flying Fish.*

The fact of the matter is that flying fish is not indigenous to Barbados but is available throughout the Caribbean. To be more precise it is a family of fish that is available around the hot band of the world.

Very little studies have been carried out on the flying fish populations of the region hence it is not possible to give a prediction on the standing stock but it is obvious that it is a fishery in which all the islands from Tobago northward could remuneratively be engaged in for a period of the year.

Discussion

Table 3 shows that almost 66 per cent of the total imports into the region is made up of cured fish. This amounts to a total of 76.4 million pounds. Using a conversion factor of 3.8 pounds of wet fish to one pound of finished product we see the immediate need for 290,320,000 pounds of wet fish to be converted to dried cured product.

Table 3. Composition of Fish Imports by Major Commodity Category, 1968.

	Tons	%
Total Fish Imports of Which:	59,400	100
Cured fish	38,200	64
Canned fish	12,700	21
Other products	8,500	15

After Vidaeus, 1970.

An investment report on trawl fishing off the Coast of Guyana done under the auspices of FAO, shows the profitability of operating a 70-foot trawler which (based on a catch rate of 488 pounds per hour) should produce 840,000 pounds of marketable fish. Hence, to produce the amount of wet fish necessary to satisfy the area market, we need 345 trawlers of the 70-foot class. But alas, it is not that simple.

The fisheries of the temperate regions of the world yield a dominant size of fish in the catch (known as year-class strength)

whereas in tropical trawling the catch is made up of a wide range of species and sizes of which only specific sizes can go in cured fish production. As a result there is a decent percentage of the catch left over which will have to be sold fresh, frozen and in other forms. The point here, however, is to show that 345 trawlers referred to in the last paragraph is not the correct number, but double that figure would be more accurate, i.e. 690 vessels.

This is a gigantic undertaking which I do not believe any one country in the territory could handle, yet if every country were to become individually involved there would be chaos with the logistics of movement of produce, duplication and *scales of economy* problems. It therefore appears that the logical answer for this is a joint nationalized Caribbean enterprise.

In the case of the inshore fishery, most of the world's fisheries administrations are now realizing the valuable contribution that is being made by the inshore fishermen and that the answer is not just bigger, faster more mechanized boats. In Trinidad and Tobago, there is no investment so small that can employ so many men and provide such a high return on investment.

Unfortunately, nearly every island has a different type of vessel and within each country no two vessels are identical which means that there is great inefficiency in construction and propulsion. If vessels were standardized boats could be built faster; the engines would be standardized and spare parts could become more readily available both from the reduction of the range of inventory carried by the agents and cannibalization of older engines. This would again lay the ground work for assembling and eventual manufacturing of engines in the regions.

Many of our beaches are littered, to a point of pollution, with sea weeds of various species, yet we import liquified seaweed as a fertilizer.

Squid abound in our waters but only our Chinese community are willing to eat them so much so, they are imported into Trinidad dried, and the trawlers dump tons of them while shrimping.

The problem of fisheries development in the Caribbean is not a national one but an international one, as none of us carry enough population for a horizontally integrated fisheries development while the sea remains a common boundary with a common resource for joint exploitation.

Unless fisheries development is nationalized on a Caribbean basis, a few of the countries will develop to some extent and struggle with each other for the markets.

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