

INSTITUTE OF CURRENT WORLD AFFAIRS

FM - 14
Fish and the Northeast

Recife,
Pernambuco.

Mr. Richard H. Nolte,
Institute of Current World Affairs,
366 Madison Avenue,
New York 17.

15th. May 1967.

Dear Mr. Nolte,

The hunger and malnutrition of the Brazilian Nordestino is the starting point for any social agitator. Although the force of his arguments is often reduced by his histrionic style, Josue de Castro vividly describes the situation in several works including "The Geography of Hunger".

Though often referred to loosely in conjunction with one another, hunger, the result of a shortage of all food, and malnutrition, the result of an unbalanced diet, obviously have no necessary connection. The effect of hunger is an immediate acute suffering, while that of malnutrition frequently manifests itself only indirectly through loss of health, proneness to disease, limited energy and a shortened span of life. During droughts in the Northeastern interior, when all sources of sustenance are dried up, acute hunger has been felt and starvation occurs, but at other times there, and in the humid coastal zone the real and permanent evil is malnutrition. The deformed bodies of the poor, the great majority of Nordestinos, with their protruding **stomachs** and thin limbs, are a result of parasitic infections and an inadequate diet, not a lack of food.

The basic diet in the Northeast is manioc flour, excellent for stuffing and distending empty stomachs, but with extremely limited nutritive value. Throughout the region the value of the food at the morning and evening meals lies almost exclusively in carbohydrates, for they consist of bread, water biscuits, manioc flour and tubers. Only at midday is starch supplemented with a little protein from beans, fish, ~~or~~ meat.

Two factors contribute to malnutrition: poverty and ignorance. The quantity of protein and vitamins absorbed is always distressingly low, but the vitamin intake could be much higher were it not for ignorance and deeply ingrained custom. Vegetables in the form of tomatoes, peppers, onions and carrots are bought as an afterthought with any money left over **when** the week's purchases have been made. Since they are not filling, vegetables are considered a "weak" food.

Fruit also, although cheap and plentiful, is very rarely bought. The rural population plant their own or gather wild fruit in season, and when they move into the town it does not occur to them to buy fruit in any systematic way. If fruit is sold by an ambulant salesman people buy it to eat on the spot, but consumption is totally haphazard. The only fruit popularly thought to have significant nutritive value is the cashew; common fruit like jack-fruit or mangoes **are** thought to be harmful to the liver, but their taste makes them worth eating.

The case of proteins is different. Meat, fish and dairy products are all expensive by any standards. While on the coast fishermen and local consumers

eat fish almost every day, six miles inland the population can generally only buy fish or fresh meat once a week in the local market. Children drink human, powdered or goats' milk, and cows' milk is only drunk on the plantations or farms where the owner happens to feel sufficiently generous to give the whey of the milk to his employees. Butter and cheese are also well beyond the reach of most. During the week the poor eat xarque, the dried, salted meat sent up from the South, or resort to tins of sardines; both these foods are far from cheap, but they have no better alternative. In the sertão where beef is more easily obtainable, the price is still a limiting factor. However, in the state capitals where meat and fish are available every day, despite the lower price of fish the urban population, perhaps through custom, prefer to buy meat.

Protein deficiency, therefore, would seem to be attributable to poverty, not ignorance. When in 1962 the minimum rural wage was more than doubled, one of the immediate results was a greatly increased consumption of meat. Now, however, the earnings of a whole day's work will not buy a kilo of meat.

One of the reasons for the high price of beef is the regional shortage of cattle, for although cattle rearing with cotton growing are the main products of the dry hinterland, and cattle production in the sugar zone is rapidly growing, it still falls very far short of the local demand, and well over half the local needs are imported from the South. As long as this continues to be necessary, the additional transport costs and the unmet demand will keep prices beyond the reach of most.

Of the alternatives to increase the protein intake of the Nordeste, one of the most easily realizable is to develop the fishing industry in the area, so that far more fish is caught, and it is more widely distributed at a reasonable price. At the moment most fishing is carried on under extremely primitive conditions: the subject of this newsletter will be how much this industry should be expanded and with what priorities, together with an account of one plan in which I have been particularly involved.

Along the thousand mile littoral stretching from the western borders of Ceará to the northern part of the state of Bahia, there is very little variation in fishing craft and techniques. To the north west, towards the Amazon canoes are used and to the south, the depletion of jangada wood and other influences has resulted in a more general use of small sailing boats. Along the northeast coast, outside the state capitals, there are very few motor boats indeed, and the jangada, the sailing raft built of balsa-like logs still dominates the scene as it must have done in pre-Columbian times.

In less than a dozen cities are there more than a small nucleus of motor boats, and of these seven are state capitals. Almost all the fish landed at these ports is sold there, and more than about thirty miles inland the only fish available is imported dried cod, tins of sardines, or paradoxically, dried fish from the south of the country.

There are approximately fifty thousand fishermen along this coast living as marginal peasants in conditions of great poverty. In order to survive, many are compelled to eke out their earnings with a secondary activity such as harvesting coconuts, planting a small patch of land, laying shrimp

traps during the winter, or acting also as entrepreneurs and selling fish in the market. Both jangadas and other sailing craft are unable to go out for long periods, carry only a limited catch, and are subject to the vagaries of the weather. During the winter the winds are too strong in the south and too weak in the north, so that months may pass when the fleets are well nigh paralysed. The fishermen in the interior look upon their profession with distaste, but they find it extremely difficult to find employment in the cities, and to them anything is preferable to working on the land.

In the state capitals there are fishermen using jangadas and small sailing boats from their beaches. It is particularly surrealist to see the rafts landing on a beach in Recife with multi-storey apartment blocks and neon lighting as a background. Those cities which have a deep sea fishing fleet still have far too few boats working. In Recife nearly half of these are Japanese, although the Brazilian fleet is growing slowly. The boats, fishing on the banks off the coasts of Maranhão and Ceará, and off the island of Fernando de Noronha, often employ crews formed of jangada fishermen from the interior. Such fishermen's earnings are usually based on a distribution of the catch and although low, are considerably higher than those of inshore fishermen. Moreover, since the boats are not dependent upon the weather, earnings are more or less regular throughout the year. Berths are highly competitive, but turnover is high, for crews see little of their families and after a few months of working on a large vessel for the money, they prefer to return to their families and impecunious life on the beach.

The system of preservation and distribution in most communities in the interior is still little changed from that of several hundred years ago. Fish is distributed on arrival at the beach and a sizeable proportion of the catch retained for consumption by the fishermen's and jangada owner's families. The remainder is gutted and preserved either by cooking it over a coconut husk brazier or by salting and drying it. On market day the entrepreneurs carry the fish on a mule, bicycle or occasionally a lorry hired as a general bus, to sell in the local town. Less frequently residents of the town come to the beach to collect fish, but normally members of the fishing community are also responsible for selling it in the interior.

Ice is still almost unknown. Only on one or two of the larger beaches where communications to one of the major cities are good, has ice recently been introduced to preserve and transport the fish. In many places it is only stored in blocks of crushed ice brought down from the city, as there is no refrigeration plant. The quantity of fish sold in this way is very small, but even if it merited refrigerated lorries, few roads are in a state for them to pass.

Naturally on the larger motor vessels refrigeration is used: when the fish is landed it is sold untreated directly to the city markets, and only a little sees its way into the interior. Almost all the fish sold in the cities even the limited amount from the interior, is frozen, very little salted or cooked. However, perhaps as supplies of untreated fish are insufficient to meet demand, no fish is yet sold in packets, cleaned and filleted.

This almost ubiquitous shortage of fish has two causes: not enough fish is being caught and what there is, owing to the poor system of distribution, is sold only along the coast. The rivers and lakes inland do not

generally have enough fish for them to be caught on a commercial scale or to meet potential demand. Only on a few of the larger artificial lakes is it possible. On one day in the year, Good Friday, fish is eaten universally, but in order to do this people will go to great lengths covering huge distances to buy a small quantity for a highly inflated price.

Two federal organisations are responsible for the development of fishing along the northeast littoral. One of these is a division of SUDENE with a team of marine biologists trying to discover **how much fish there is** in this part of the Atlantic, working on the breeding cycles of several species, and carrying out surveys at sea, albeit with distressingly little equipment, to discover what types of catch can best be made with particular types of gear. Another group is helping to build up the infrastructure on land, and a third is trying to interest industrialists in building boats and increase the deep sea fleet. This division of SUDENE, although understaffed and under-financed, which leads to frequent frustration, has some very capable people who are making slow headway.

The other organisation, SUDEPE was set up with responsibility for fishing throughout Brazil. The northeast section, with its headquarters in Recife runs the colonies for inshore fishermen both in the cities and along the littoral: this they do with staggeringly little interest and efficiency. Almost all these colonies exist only in name. The organisation is also supposed to interest industrialists in fishing and sell motors and gear to individual small fishermen on easy terms. Many of their functions overlap with those of SUDENE, but throughout Brazil the organisation has a reputation, not without reason, for idleness and lack of discipline among its employees. The effective research and innovations are being carried out by SUDENE.

There is a strong case to be made for developing the sea fishing industry along the northeast coast. Firstly, for the reason mentioned above, that more protein supplies are badly needed to feed an undernourished population, and secondly in order to raise the living standards and skills of the fifty thousand fishermen and their families who are not at present making full use of their environmental resources. Nobody involved with fishing in this country would argue about this, but planners adopt two crudely distinguishable approaches to the problem.

One line of argument favours the development of a deep-sea fishing industry based on the major cities in order to maximize the amount of fish caught for the capital invested. The prime concern in this case is raising the quantity of fish for sale, with little importance attached to the means of doing so. Such a line is generally adopted by the American aid teams and favoured by the USAID men in Recife. The other line of argument maintains that such a scheme completely ignores the human element, and would do very little to help the men involved in catching the fish. They would prefer to develop inshore fishing by providing the fishermen along the coast with vessels and equipment more efficient than jangadas.

In the short run the greater tonnage of fish would undoubtedly be obtained by concentrating all available funds on developing the industry in the cities through a few large companies. The advantages of such a scheme are numerous. The administrative costs would be low since borrowers would be few. The infrastructure necessary is already being developed in most of the cities. The ports are large enough to accomodate the vessels, there is

no problem of preserving the fish, the labour supply is always super-abundant and since most if not all the fish would be sold in the town where it was landed there would be no problem of distribution. Furthermore, it is only on deep sea fishing boats that men can be trained to use complex gear and modern fishing aids.

However, although the advantages of such a scheme are many and the return on capital invested would be high, the development in human terms would be limited. The consumer would gain from the extra fish, the company owners and some of the crew would no doubt be better off, but these latter two groups constitute a very small proportion of the total fishing population. The fishermen outside the cities would gain nothing, possibly even the reverse. If enough fish were caught for the price to be reduced, those near the cities would also have to bring their prices down. A few would probably desert their families and work on board the large vessels in order to earn more, but such vacancies would inevitably be very limited.

A large company here would in all probability do little to help the crews of their vessels. Even if their earnings were higher, they would not be likely to improve their living conditions on land or their responsibility, since they would be working for a large impersonal organisation. The tendency for company owners to keep all the profits and treat a concern simply as a exploitative mechanism is demonstrated all too often in the Northeast. Those arguing against this type of priority maintain that human resources would not improve as quickly with company organisation as with a system aimed at directly improving the lot of individual fishermen.

Some planners feel that while the deep sea fleet must certainly be built up and that a company structure is the best way of going about this, the plight of the inshore fishermen should be given equally high priority in any development. The improvement of the situation of these carries far more risks and would probably increase the total catch by less than if the money were to be invested in large vessels. On the other hand, intelligent investment in this sector has a good chance of bettering the living conditions of a great many wretchedly poor fishermen and their families, who are at present responsible for catching eighty five per cent of all the fish landed in the Northeast.

The great majority of the fishermen living outside the major towns have no capital resources whatsoever, and live in a world bounded by the sea, the community and the local market town. Few are literate and even fewer have ever done anything other than fish in jangadas. Yet they are far from unaware of their limitations and, had they the means, would dearly like to fish with more advanced equipment. There is a popular concept of the jangada fisherman as an extremely conservative individual who is neither willing nor able to accept a different type of boat or equipment even if it were offered to him. My own impression, however, after living for a year among them, is that what passes for conservatism is really pessimism about their chances of improvement; they see no conceivable way of obtaining boats or better gear for themselves.

The great advantage of a scheme to buy motor boats for the more isolated fishermen is that it would maximize the human benefits derived from the capital invested. It would also result in more fish being sold in the towns of the interior. The needs of the fishing communities are already met by the existing supplies, so that any extra would be sold elsewhere. Providing this was a reasonable quantity, middlemen would find it worthwhile to bring down

lorries to collect the fish either frozen in blocks of crushed ice or preserved in one of the more traditional ways to sell in the inland market towns. With motorized transport extending the radius of the market, there would be little or no danger of flooding it.

Those opposed to such a plan point out that administrative costs would inevitably be high since it would involve a great number of small schemes rather than one or two large ones, and being more numerous, **some would be more likely to fail**. In many places the infrastructure would be **inadequate**: supplies of fuel for the motors would have to be arranged, and the problem of refrigeration in places without electricity would have to be overcome. Yet neither of these difficulties is insuperable, and any improvement of the infrastructure in the interior would almost certainly have wider ramifications.

The ideal solution to me would be a combination of the two plans, and to let one complement the other. The larger company owned boats would fish for fifteen to thirty day periods in deep water, while the smaller, individually owned motor boats, **would fish the shallower waters of the continental shelf**.

Whatever type of fishing investments are made, one serious problem which has to be faced is the danger of overfishing in both the waters above and beyond the continental shelf. While, up to now most species of fish have been able to breed through not being fished intensively, there have already been two examples in the Northeast where the effects of overfishing have been **severe**. During the past seven or eight years Brazil has been making the most of the excellent market for lobsters throughout the world and has been exploiting it to the full. Fleets were built up to catch them, foreigners entered with their own boats, and the lobster industry boomed. In the past three years, however, it has become clear from the ever diminishing catches that the lobsters have been overfished. Now there is real cause for alarm, and SUDENE biologists are trying to persuade fishermen to leave them alone to let the stocks build up again.

Some of the deep sea boats also fished albacore intensively for a few seasons, thus seriously depleting stocks: they then turned to other species. Unfortunately the waters off this coast are poor in plankton and although it is not yet known with any certainty exactly what the position is, it is more than likely that the fishing of commercial species will have to be controlled.

After he had lived in the fishing community of Pôrto de Galinhas for some months Simon, my husband, **designed** an extremely simple plan with the intention of submitting it to SUDENE and SUDEPE for consideration. He suggested that the plan should be tried in Pôrto de Galinhas, and if successful, might well serve as a prototype which could be applied to numerous other beaches in the Northeast.

From the various schemes already tried by SUDENE it seems clear that those involving the setting up of cooperatives on a large scale with more advanced equipment and boats, have not been successful. The administrative costs get out of hand and rise as unexpected snags **erog** up. The fishermen, being given little **initial** responsibility feel that they are simply pawns in a larger scheme, and therefore sit back and watch the government get itself into trouble. They are inadequately prepared, and in training schemes insufficient allowance is often made for their conceptual limitations.

Since all the efforts at complex development have gone wrong, the answer seemed to be to go back yet one step further, and to deal with the inshore fisherman himself in a direct way, giving him the tools to improve his condition. The plan would be simpler and ensure that the fisherman became personally involved from the start, receiving a motor boat for which he assumed full responsibility. With the money drawn from the working profits of the boat he would have to make a monthly payment towards the cost. The surety of the body providing the boats would be the vessels themselves: if any man failed to pay his dues at any time he would immediately forfeit the boat, and at the same time lose all the money that he had put into it. On the assumption that the men paid for the boats at cost price, the only financial loss to the loaning body would be the interest which they could have earned by investing the money elsewhere.

For the plan to be a success, the initial steps in administration would be extremely important as they could make or break the whole scheme. The beaches most suitable would be those large enough to provide a reasonable nucleus of men with the capacity to run a motor boat. This would reduce the administrative costs and the problem of finding enough men to serve as crews. For, although the owner of the boat would earn a great deal more than those working on jangadas, the customary division of the catch would have to be altered after payment so that the crew benefitted from more equal shares. During the payment they would earn little more than jangada fishermen.

The choice of men presents a problem. Any local opinion is bound to be strongly biased. The only satisfactory way to select the men would be for a sensitive observer to live in the community for a short time watching and asking discreet questions. Very often those most anxious to have boats would not be the most responsible or hard working while others, more suitable, would initially be nervous and afraid of being unable to pay their monthly dues.

Some raft fishermen have had limited experience with motors; all of them know what they can do and have some idea of basic maintenance. A mechanic would only have to spend a couple of weeks training future owners to use the particular type of motor. After this a man would have to be sent down to the beach once a month to collect payments and see that all was well, with a local man chosen to inform the loaning body of any difficulties or requests from the owners.

Fuel would not be a great problem, as a pump could be set up in the community with a local man in charge. Preservation and marketing of the extra catch would be solved by interested middlemen entering the field of their own accord. The important point that would need explaining to the boat owners would be the danger of becoming subject to middlemen, especially if one were in a monopolistic position. **From my experience in Brazil, the power of the middleman over the peasant producer is a danger which cannot be exaggerated.**

The advantages of such a scheme are several, but perhaps the most important is that it takes into account the present mentality of the raft fishermen, their individualism and incapacity to unite for their mutual benefit. It is one positive step in the direction of a cooperative, but does not require an army of technicians to supervise the plan, nor an outsider permanently cajoling and interfering. If it were successful the men, through

fear of losing their boats would learn to fish every day, and even if only for a short time, to save money. When the debt had been paid back they would, with the present division of catch, be earning five or six times as much as the jangada fishermen. In addition, after the payments had been completed, each man would have the capital asset of the motor boat itself.

One of the unknowns is to what extent fishermen, once they are no longer obliged to work hard, will revert to their old habits. It is impossible to know whether regular work will become a custom and ambitions be raised in the process, or whether owners and crews will prefer to remain poor, earning only enough for basic living expenses. In either case, however, the quantity of fish caught would be much higher than it is at present.

With such a scheme in mind, Simon submitted a detailed plan to SUDENE, hoping that if they liked it they would implement it rapidly so that he could observe the results on the spot. SUDENE suggested that SUDEPE would be more suitable for this type of development. This latter body received the plan enthusiastically saying that they would like to take it on, and that money would be no problem. A series of meetings was arranged, but every time Simon appeared at the marked hour and was told that the relevant officials were occupied elsewhere. After no less than four of these abortive attempts, he suggested that they send technicians down to the beach. This they agreed to do, but on three occasions again they failed to appear. Finally, after four or five months of futile procrastination, he was told by a technician that although they liked the plan it would be bureaucratically too difficult to obtain the money from Rio.

Again Simon approached SUDENE. This time, perhaps through inter-organisational rivalry, they displayed great interest, but action was once more delayed through technicians travelling outside the country. By this time he had come to know well several SUDENE people, and after persuading them to visit the beach, finally got matters moving. Money was found, SUDEPE agreed to supply motors, the boats were designed, and the estimate of a builder's yard accepted. None of this would have been achieved without the personal friendships established, but the plan at this stage looked certain and only needed the formal signature of the superintendent of SUDENE for the work to go ahead.

Then a completely unforeseen hitch occurred. Against the wishes of the SUDENE personnel and the state governors of the Northeast, the new President of Brazil insisted on changing the head of SUDENE and appointing a general. This new superintendent, without talking to any specialist in the division, decided to contract the fishing division, remove its autonomy and subordinate it to another department. New teams of men were appointed and new programmes drawn up. To implement the plan would mean going through all these new channels: it is now too late for this.

The failure of one small fishing plan is, in itself, unimportant; what is more disturbing is the way it failed. Though SUDENE has been building up a team of fishing experts, very little has changed on the Northeast beaches or in deep sea fishing since it was founded. Innumerable plans are thought up by both SUDENE and SUDEPE, there is much talk, but despite the pressing social and economic needs, almost nothing happens on the ground. Complex bureaucracy, lack of motivation and lack of continuity arising from political changes are among the factors which have dogged progress for a long time. The situation improves a little, but progress is painfully slow.

Yours sincerely,

Fanny Mitchell

Fanny Mitchell.