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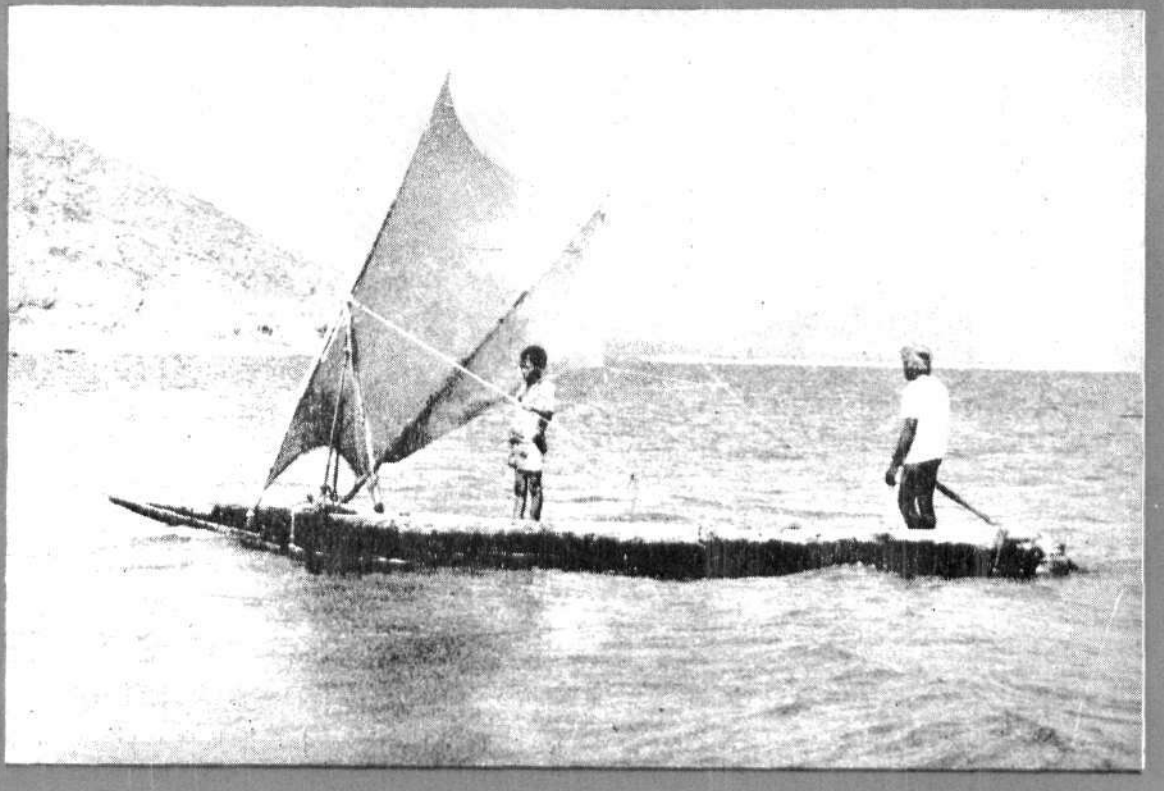

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SOME OBSERVATIONS ON THE FOOD CONSUMPTION PATTERN AND NUTRITIONAL STATUS OF A MARINE FISHERMEN COMMUNITY

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Introduction

Nutritional status is an indicator of socio-economic well being of a community. Extensive diet surveys carried out in the country have shown that a good proportion of the population which belongs to low income group is not able to fulfil the requirements of nutrients including the major ones like calories and protein. To understand the food consumption pattern and nutrient intake of artisanal fishermen community, an investigation was carried out in Vypeenkara, Cochin during 1982–'83 and the findings are reported here.

Methodology

A survey was conducted selecting 150 households to find out the weekly food consumption pattern. The total quantity of food bought every week and the frequency of consumption by the surveyed households were recorded through personal interviews with housewives, with the help of an interview schedule. To study the nutritional status of pre-school children, weight of 100 children were collected from the school health records and compared with the UNICEF standard used in Integrated Child Development Scheme (ICDS). Personal discussions were held with the school teachers, extension officer for women and child welfare at the local C.D. Block and the medical officer in charge of the primary health centre of the area to find out the general pattern of nutrition and nutritional disorders.

Occupation, income, educational status and family size

Among the households selected for the study, 57% was engaged in marine fishing as labourers, 38.5 % using own fishing equipment and the rest engaged in other fishery related activities like trading and post harvest operations. The household income ranged from Rs. 5–10 in the case of fishing labourers, Rs. 10–25 in the case of fishermen owning craft/gear and Rs. 25–30 in the case of traders (Table 1). The educational status of the heads of household is given in Table 2. The percentage of men, women and children in the sample was 37.5, 36.0 and 26.5 respectively with the average family size of 5.6.

Food consumption pattern

Table 3 gives the food consumption pattern in the selected households. It is seen that the diets consist mainly of rice and fish which meet only 75% of the calories and 50% of the protein needs. The quantity and frequency of consumption of other protein foods such as egg, meat and milk are considerably less. The foods like vegetables which form the major source of vitamin and iron are rarely included in the diet. Hence these have not been taken into account for computing nutrient in-take. Table 4 gives the average nutrient intake of the fishermen households. The average intake of 'CU' (consumption unit) for calories has been worked out at the rate of 2,400 for adult, though it is felt that an active sea-going fisherman requires the allowance of 3,900 calories, the type of activity being heavy work with considerable environmental stress.

Table 1. *Estimated percentage of occupation and income range of the marine fishermen community*

Occupation	% Families engaged	Income (Rs./day)
Fishing labour	57.0	5–10
Fishing using own craft/gear	38.5	10–25
Fish trading	4.5	20–30

Table 2. *Educational status of heads of households of marine fishermen community*

Education	% Individuals
< Primary	46
Primary	39
Secondary	14
> Secondary	1

Table 3. *Average per capita intake of food stuff by marine fishermen community*

Food	Quantity	Frequency of consumption (days/week)	Recommended daily allowance	Average in take for rural Kerala*
Cereals	260	7	475	369
Pulses	10	2–3	6–5	23
Vegetables	50	2–3	75	56
Leafy vegetables	100	1	125	7
Fruits	50	1	30	25
Roots and tubers	200	1	100	80
Fish	100	7	30	54
Other flesh food	30	1	30	12
Milk & buttermilk	50	1	200	79
Sugar	15	7	40	22
Fats & oils	10	7	40	6

* ICMR, 1982

Table 4. *Nutrient intake of fishermen community*

Nutrient	Average intake	Average intake for low income groups in Kerala*	Recommended daily allowance**
Calories	1,827	1,688	2,400–2,800
Protein (g)	27.35	34.58	55
Calcium (mg)	417.3	413.6	400–500
Iron (mg)	11.75	16.68	24.00
Riboflavin (mg)	0.54	0.642	1.4
Thiamine (mg)	0.28	0.588	1.2
Niacin (mg)	318	8.96	755
Vitamin C (mg)	—	75.2	4.0

*Rajammal, 1978.
**ICMR 1981, *Recommended dietary intake for Indians.*

Food habits and meal pattern

A balanced meal is rare in most of the households excepting during peak season in fishery. Breakfast is seldom prepared and food prepared in the previous night, if left over, is used in the morning. Difficulty in providing breakfast was identified as a reason for children dropping out from schools.

In households which own fishing crafts and where men leave for fishing in the early hours, breakfast is prepared, usually consisting of *ada* and *unda* made of rice flour/wheat flour, plantain and jaggery and black tea. In such households it is customary to serve breakfast for other crew men who accompany the craft owners. Of late sea shore tea shops coming up in increasing numbers have taken up the job and fishermen consume breakfast from these shops before or after fishing trips. *Puttu* made of rice flour and coconut, Bengal gram curry, *pakora* made of bread and Bengal gram flour, *aval* (rice flakes) and banana fry are the items of breakfast generally served in these shops. A Rs. 2 worth breakfast could provide 150 g *puttu* and 100 g Bengal gram curry and 1 cup tea with milk and sugar. The advantage for fishermen with these tea shops is that they can eat food on credit and pay when they get money. Fishermen prefer to carry rice-cooked plain or in the form of *kanji* (gruel) and *chammandi* (chutny) on their fishing trips as they think that such diet prevents them from getting thirsty and reduces the demand on water which is to be carried with them. During longer fishing trips food is often cooked onboard.

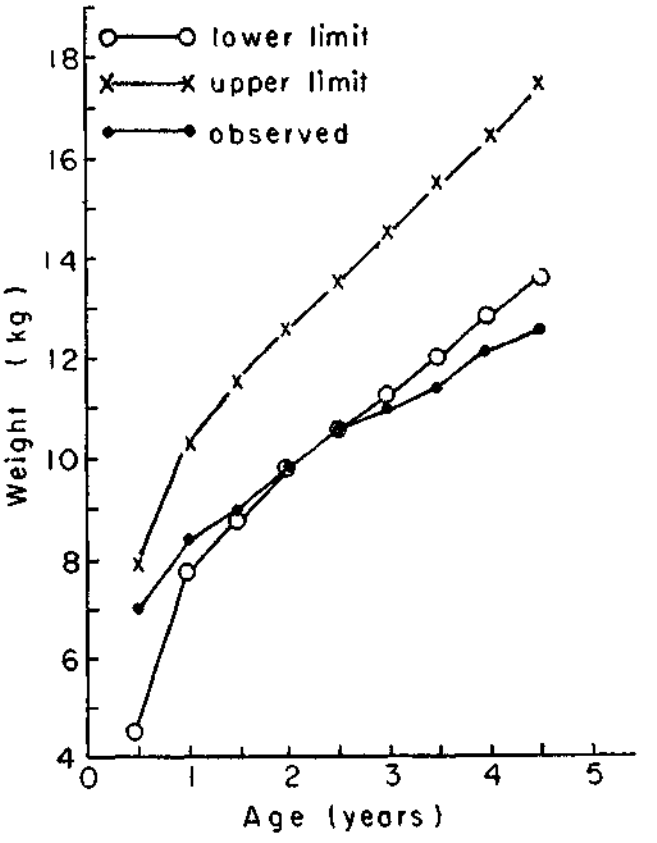

Fig. 1. Graph showing weight of school children plotted against the standard UNICEF curve.

Fig. 2. Food being prepared in a fisherman's hut.

Fig. 4. Fishermen taking food from sea shore tea shop.

The lunch mainly consists of rice, fish curry and fish fry made of oil sardine and other fish. Vegetables and buttermilk find a place in the diet rarely. Milk is not included in the diet excepting in the case of pre-school children. Meat is cooked once a month or during festivals. Men make it a point to bring a portion of the daily catch of fish for the family. The first cereal to be introduced in the diets of infants is usually ragi. By the time the child completes first year it is introduced to all foods consumed by the family.

Food is scarce during lean fishing season. Women bear the consequence of food scarcity which occurs four or five times a year. Even during such hard times neighbours extend mutual help and exchange small quantities of rice so that some *kanji* can be prepared. The welfare programmes of government include free ration for fishermen during adversities but no information was collected on the utilization of the same. The assets including ration cards are pledged during lean season to buy food and medicine. Another difficulty faced by them is buying of weekly ration by paying ready cash. Hence there is a tendency to buy food at higher price from open market on credit. Firewood and coconut husk and shell are used for cooking which have to be bought on price.

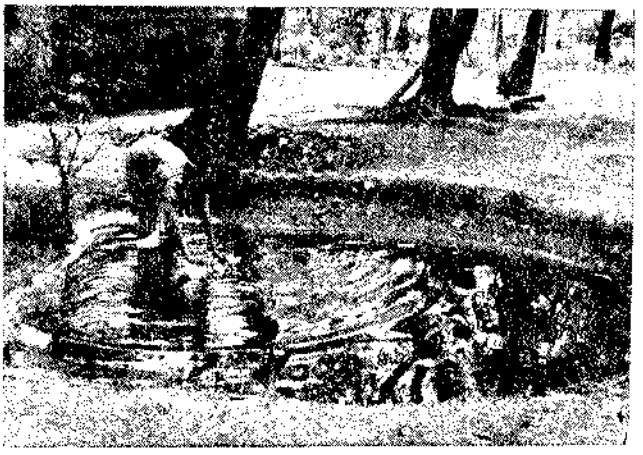

Fig. 3. A woman collecting rain water from a stagnant pool during rainy season.

The houses, generally small huts have some space set apart for preparation of food and is kept clean. Earthern and aluminium wares are used for cooking. A few stainless steel and glass wares are kept aside for the use of guests. The women are in the habit of listening women's programmes over the radio and try to understand the importance of nutrition but it is difficult for them to practice the knowledge because of low income. The local C. D. Block has been encouraging kitchen gardening through free supply of vegetable seed. There are also programmes for goat keeping and poultry. But it is difficult to grow vegetables in the coastal areas especially during summer due to high soil salinity and scarcity of fresh water. Coconut and seasonal paddy called 'pokkali' are the major crops in the island. Among vegetables cowpea is the most commonly cultivated one along the bunds of prawn fields. Corporation taps on the main road are the major source of drinking water and women have to spend a good portion of their time in fetching potable water. Water in small pools stagnated in the homesteads is used for washing during monsoon.

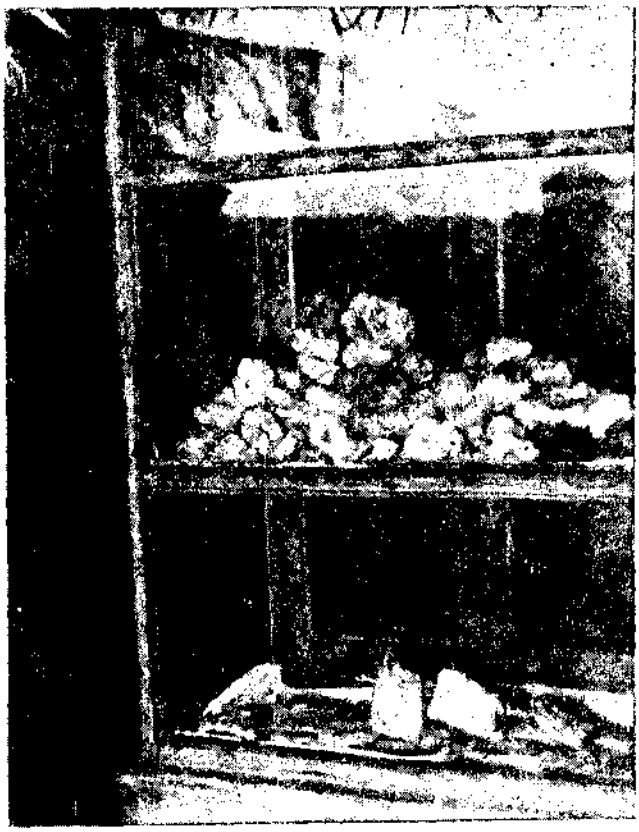

Fig. 5. 'Savala vada' and bread 'pakora' in a sea shore tea shop.

Nutritional status of pre-school children

The weight of 100 school children collected from two *balawadis* plotted against the standard UNICEF curve for Indian children is presented (Fig. 1). Nearly upto the age of three years the weights are found to be within the standards and then show a decline. Allergic bronchitis, asthma due to coastal climate, worm infestation, anaemia and dental caries are the health disorders commonly found among children. The coastal villages fall victim to gastro-enterites during monsoon due to lack of adequate sanitation.

Remarks

One of the major problems encountered in the development of fishermen community has been their low nutrient intake. Rajammal and Nirmala (*Proc. Seminar on Small-scale Fish. and Coastal Aquacul. in Inte. Rural Development*, CMFRI, 63–68, 1978) observed that there was conspicous gap in the vital data about the nutritional status of the fishing community. However, the information available on district averages show that the nutritional intake of low income groups in coastal Kerala and the anthrapometric measurements of fishermen children are found to be below the required standards. The present study on food consumption pattern and nutritional status of artisanal fishermen community in Vypeen also confirms the above findings.

The average nutrient intake for coastal Kerala (Rajammal and Nirmala, 1978 *(op. cit.)* and the rural Kerala (National Nutrition Monitoring Bureau, ICMR, Hyderabad, 1984) has indicated adequate intake of calcium and vitamin C coming from food stuffs like millets and vegetables. But in the present study the intake of vitamin C is found to be low since vegetables and fruits are almost absent in the diets of fishermen in this area. The high incidence of malnutrition of this particular community can mainly be attributed to two factors namely low purchasing power and non-availability of protective foods like leafy and other vegetables in the coastal areas. Lack of alternative sources of protein mainly results from low purchasing power. The major reason contributing to low purchasing power is uneven distribution of income over the year due to high seasonality of occupation. The fishermen are caught in a vicious circle of borrowing and paying back money which results in low savings and heavy debts. The most important step in the upliftment of the community is to increase the purchasing power by increasing the income from fisheries and introducing supplementary occupations, so that at least the requirements for protein and calories are met.

Another step in mitigating malnutrition will be increasing the production of animal protein and pro-

Fig. 6. Mobile tea shops managed by women are popular in the sea shore. Tea and snacks are served here.

tective foods in the coastal villages which will help in adding variety to the daily diets. Efforts may be intensified to find out suitable varieties of vegetables, especially leafy and also encourage poultry, piggery, duckery and dairy farming. Integrating these systems of farming with prawn and fish culture and utilization of the products and by-products will help the population to produce and consume more. An open question put to the women of the area showed that they in general had favourable attitude towards small family norm and some measure or other is being followed by them to limit the family size. Efforts may also be intensified to educate the fishermen on these lines so that doubts and superstitions prevalent among them are cleared.