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The Sea-Food Industry in British Malabar (*c.*1880-1930): A Social History

Jineesh P.S
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The fishery practices of pre-independence India is generally construed as 'backward' and 'traditional'. The present paper investigates this historiographical notion of 'backwardness' with respect to the history of Malabar Fishery during 1880-1930. It specifically concentrates on the fish-curing practices and fish- oil production. This paper tries to argue, on the one hand, that the British essentially had a futuristic look while introducing certain structural changes, Fish-curing Yards and Fish-Oil Presses etc. in the Malabar Fishery. It also tries to posit that certain practices pursued by the 'traditional' fishermen of Malabar had some 'modern' science inherent in it, on the other. The practices in question are generally preservation techniques deployed on the fish intended for local consumption and export. And these techniques were to be viewed as the output of a social process, where combined operation of the fishers' experiences, State's preoccupations and market-needs took place. This paper also looks into the possible reasons that persuaded the British authorities to introduce certain structural changes in fishery sector of Malabar and why it became a success in this side of the Presidency. This is done by bringing out the interrelation among the historical actors like state, entrepreneurs, market and labour.

Key words: Fishery, Malabar, Francis day, Frederick Nicholson, Preservation Techniques

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Introduction

The two major attempts introduced by the British authorities-the fish-cuing yards (FCYs in 1873) and the fish-oil extracting presses (FOPs in 1908)-were noted for their novelty and commercial potential (Puthusseri, 2024). Francis Day (1829-1889) and Frederick Nicholson (1846-1936) were behind these attempts. But there are opinions that the British had not done anything beneficial for the development of fishery. For instance, in 1958, Dr. Jones say that '[F]isheries research is a comparatively recent development in the scientific research activities of the Nation….[scientific research in fisheries was] realised as [important] recently as during the Second World War when the whole country suffered very acute shortage of food….[E]xcept for the enactment of the "Indian Fisheries Act" in 1897 very little direct interest was displayed by the [British] Government of India for the next half a century for the development of Fisheries' (Jones, 1958). This was the complaint of the chief Research Officer, Central Marine Fisheries Research Station, Mandapam. Another study explains the features of the Indian fishery during British period thus, 'Prior to the 1950's, the Indian fishing industry was predominantly *an artisanal industry, subsistence-based, oriented to the domestic market and characterised by traditional, non-mechanised fishing fleet*, (emphasis added) mainly restricted to fishing along the shore' (Oudwater, p. 11).

It further contrasts the post-independence developments thus, 'From Independence onwards, the government perceived the fishery sector as one of the key areas that could support India's overall economic growth. Rapidly increasing international market prices for shrimps triggered a predominantly export centred strategy in which production growth through technology development (mechanisation of fish fleet, improved fishing gear), subsidies and improved infrastructure (ports, landing sites etc) was the key guiding principle' (Oudwater, p. 11). These two observations by the scholars are important to discuss because these are, the paper would argue, not 'historical' but historiographic notions. The complaint here is regarding the lack of 'scientific research', absence of state encouragement for mechanisation in capture fishery and that its production was oriented

to domestic market during colonial period. This paper will examine the validity of these concentrating on two initiatives of the British authorities – FCYs and FOPs. Instead of investigating the functioning of these two establishments, it tries to analyse two aspects, firstly, how the fish processing techniques were evolved in Malabar during the British period; and it poses the question were there any scientific basis for these techniques. Secondly, this paper will also try to locate the FCYs and FOPs in the contemporary history of India in general and Malabar in particular. The argument here is that in the evolution of the fish processing techniques of British Malabar, at least two actors, the State and the fishers participated and the processing practices were rooted in scientific principles which were theorized later, a process usual with the history of Science. Hence, even the 'traditional' practices are essentially scientific. Regarding the second question the paper hypothesises that the FCYs and FOPs were calculated endeavours from the British authorities to ensure and increase the food supply to tackle the problem of famine and poverty.

The British initiatives during the said period were subjected to study by scholars. One study points that there was no common policy for the whole of India and the British policy regarding fishery was different from presidency to Presidency (Reeves & et.al, 1996). Peter Reeves and his associates worked on the British efforts on Fish-Curing Yards of the West-Coast. They argued that fish-cuing yards brought radical alterations in the coastal society of Malabar (Reeves, 2014). A recent work on the Malabar Fishery during British period suggests that the British dispensations in general and Fish Curing Yards and the Fish Oil Factories in particular resulted in the 'fishery boom' during the period 1850-1930 (Puthusseri, 2024).

Early Efforts of the British to Change the Malabar Fishery

It was during the British rule that intense efforts were made to understand the fish wealth of India. The important scientific activity undertaken by the experts under the British rule was the identification, naming, recording of the behaviour, feeding habits, and spawning seasons of the different marine and inland fish varieties of India. Henry Sullivan Thomas, Hamilton Buchanan and Francis Talbot Day

etc. had made invaluable contributions to the development of Indian fishery. Francis Day made an exhaustive study of the 'Fishes of Malabar' (Day, 1865) . His other works (Day, 1873; 1888) also were significant in understanding the natural history of marine and inland fish wealth. Another British officer who extended the efforts of Francis Day much far was Sir Frederick Nicholson. The Madras Fishery Department was established in 1908 as a result of the persistent efforts of Mr. Nicholson. He was appointed as the first Honorary Director of the Department. An experimental station primarily aimed at fish-curing, canning of fish, pickling and pressing fish for oil and fish-guano production was established at Cannanore and later transferred to Tanur in 1911.

Here, one thing has to be made clear that the dominant mode of fish preservation on the Malabar coast was the common curing – curing with less salt and sun-drying; and unsalted sun-drying, perhaps even after the beginning of FCYs. They were also accustomed with a crude form of fish-oil preparation. Interestingly, in earlier periods, fat oil-sardines were not used for curing. Day refers to the opinion of Dussumier, his forerunner in this field, who had recorded in 1827 that the large share of the big oil sardines caught were not cured but used as manure in the rice fields and coconut plantations, and used as feed of pigs and poultry; and only small sprats were cured. (Day, 1865, p. viii). But in the curing methods recorded by V.V. Govindan in 1916, there are techniques to cure fat fishes including the fat oil sardine. Hence, we can imagine that the curing method and the fish selected for curing etc. has been constantly changing according to the time. The British intervention had made the cured fish appealing as a commodity so that it became a demanded item of trade and consumption. The fortunes it brought to the fisher community was further attested to by the official reports also. These reports point to the socio-economic changes brought by the introduction of the FoFs and the subsequent trade prospects it opened before the fishers of the Malabar Coast (MFDB, 1922, p. 199).

Evolution of different Fish-Curing Practices

Curing is the oldest and cheapest method of fish preservation and is still widely practiced in many parts of the World. The traditional methods of processing fish by salting, drying, smoking, pickling, marination and fermentation are collectively known as Curing. Nicholson found many problems with the process of preservation pursued in the West-coast. The first among them was that sun drying with or without salt was practiced and it was 'primitive, undiversified, and slow yet incomplete' (MFBB, 1915, p. 22). He complains that not enough time is given to the fishes in the salting trough and then soon spread on the open sand to the direct sunlight till it get fairly dried. He also emphasised the need to bring the fish afresh to the curing yards, use of enough crystal salt in curing, cleaning in the sea water, and then drying for a sufficient period (MFBB, 1915, p. 22). He further reiterated that the lean fishes are simply sun-dried without cleaned and salted and that fetched a product 'malodorous, non-edible [and] more fit for manure' (MFBB, 1915, p. 23).

The size of the fish, the amount of salt applied, and the days given to dry are the important factors to be considered in the curing process. Here, he observes, fish of all sizes from sardine to shark are salted and dried under the sun light. In a tropical region like Kerala, over exposure to sun light even during the gutting process might make the decay early and easy. This fact is attested to by experts in that field. One report says that, '[I]n a tropical country like India the ambient temperatures are very conductive for causing quick spoilage in fish' (Gopal, 2008, p. 128). Further, the open beach drying rendered the final product adhered by the sand and it will constitute 'even up to 40 percent of total weight' (MFBB, 1915, p. 105). Given these conditions of the contemporary state of the management of the fish resource, Nicholson asserts that the practices of preservation, especially curing should be *modernised* and improved by the aid of 'science, knowledge and capital, if the product is to be thoroughly wholesome and widely marketable.' (MFBB, 1915, p. 27).

The pertinent complaint made by Nicholson was that considerable time is lapsed between the gutting process and the actual

curing. The gutting under open sunlight significantly affected the mortem body of the fish (MFBB, 1916, p. 24). The above discussed were the characteristics of the curing operations prevalent in Malabar coast. There were some exceptions to this *common* (not *modern)* curing practice. Francis Day discussed a method of preparation of the Tamarind fish. He said, 'The fish is boiled, then its bones are removed; it is next cut into thick slices, and having been highly spiced, is left to soak for some days, and subsequently packed in jars. It is held in great estimation in the East' (Day, 1865, p. ix). Nicholson said it was the 'so called' tamarind fish (MFBB, 1915, p. 23). Actually, it was seer fish preserved in a mix of condiments. It was also demanded in the domestic markets.

To conclude, Nicholson says that the curing methods like 'smoking, pickling wet in salt, [and] canning' etc. prevalent in other maritime countries are not known/practiced in Malabar (MFBB, 1915, p. 23). The absence of these methods could be easily explained. In other words, this 'backwardness' was a rational choice of the fishers' community. Nicholson himself advertently pointed to the following reasons for this: in the background of the low availability of salt, complete drying is one of the best methods to de-moisturize the flesh; in sun-drying less salt is needed than in the wet methods; the nutritive value is retained in simple drying; complete drying will reduce the weight considerably so that the consignment of the commodity become more handy; not much capital is needed ((MFBB, 1915, p. 108). He added that now, in 1908, things were better than twenty years ago. The improvement according to him was the availability of duty free salt and the thatched yard for the fish-curing, better know as FCYs as suggested by Francis Day (MFBB, 1915, p. 37).

The supply of the duty-free salt to the FCYs was a money saving mechanism that helped the fishers to reduce their expenses on curing. If we closely read the British reports, we could find that it was not the beginning of FCYs in 1873, that changed the situation, but it was the continuous interference from the part of the British State and the responses from the part of the fishers that improvements were brought in the mode of curing and the quality of the product. For instance, V.V. Govindan, the deputy of F. Nicholson and himself

was an Araya, working as an interlocutor between the fishers and the State. He worked among the labourers and familiarised them with new methods of fishing, curing, manufacturing of oil and co-operation (MFBB, 1918, p. 32). Apart from the normal curing style followed by the local fishers, there were other two important methods. They are, Gangoli and Colombo method. From the above suggestions of Nicholson, it could be rightly assumed that these methods are being evolved through constant experiments and trial and error.

Gangoli Method of fish-curing

In Malabar Gangoli method is generally followed. This is a dry salting method. In Gangoli method, separate treatment was there for large, medium and small fishes. The large fish like seer, pomfrets, cat fish, small sharks, gogglers, palameen, etc., are split through the dorsal line up to the snout. This dorsal cut is important as the backbone could be taken out of the big varieties and the fish could be opened and spread apart (like butterflies) to facilitate the application of salt on the flesh. Before salting scores are made on it and then washed. Salt is rubbed on to it and arranged in layers in salting receptacles. Next day they are washed in the self-brine and put out in the sun for two days to dry on cadjan or coir mats (MFBB, 1916, p. 31). The medium/small fishes only the dorsal cut or the slit on the abdomen is made. Ribbon fish, Mackerel, pomfrets, Sardines etc. fall in this category. If split on the belly, such material was not considered in high esteem in the Ceylon market (MFBB, 1918, p. 14).

Pickling or the Colombo Method

Pickling, a practice unknown to the 'country' was experimented and took a concrete form during 1912. This was an upgraded form of the Gangoli (dry salting) method in the sense that more salt is used and the fish is allowed to be soaked in the self-brine. Here, the liquid extracted while the salt is penetrated in the fish muscle is not drained out. Mackerel and sardines are treated in this way. '[The fish] is packed wet in air-tight barrels with plenty of salt, and kept moist [in barrels]' (MFBB, 1918, p. 55). Mackerel for Ceylon markets are cured in this special way known as *Colombo method*. This type of curing needed special knowledge in the art. It reached

south canara very late at least by 1912 (MFBB, 1916, p. 33). Rainbow sardine and oil sardine also could be treated in this fashion (Pillai, 1958, p. 99).

Tamarind Fish

The preparation of Tamarind fish as explained by Nicholson was 'the fishes are split on the back, the guts are removed through an incision made in the abdomen and salt is stuffed in' (MFBB, 1916, p. 32). Then the fish are washed in the sea and salt with a small piece of Malabar tamarind (*Garginia cambogea*) is thrust in the abdomen of the fish. These fishes are then arranged in a barrel in layers with salt sprinkled and tamarind sandwiched between each layer. The barrel is then closed with a weight placed on it. In this way many barrels are prepared and after 3 or 4 days the fish is pressed down and that space is filled with fish from other barrels. The pressing is done with the hands or by a man standing on them. This stalking and re-stalking continued until the barrel is completely filled tightly. Then the barrel was kept upside down and the brine poured out of it will be filled back through the hole at the bottom and the hole is closed. Now this barrel is ready for consignment to Colombo. The Fish cured in this fashion could be kept for many months. The people of Ceylon especially the wage labourers of the plantations have a special liking for this product.

Though there were regulations that forbade the entry of bad fish (MFBB, 1915, p. 213), the poor labourers of Ceylon consumed 'poorly cured' fish because of its cheapness (MFBB, 1918, p. 25). A higher proportion of salt is used in this sort of curing. But this hard-cured material was 'unacceptable', according to Nicholson (MFBB, 1918, p. 124) because it reduces the nutritional quality. To remediate this draw back, another pickling experiment was tried in 1912– the use of vinegar instead of salt. Canning was also started in 1912.but these two experiments were not very successful because of the war conditions and the poor supply of fish.

Madhura Curing

It was the normal existing practice (simple curing) that smaller fish are simply rubbed with salt and sun-dried and the small varieties were sun-dried without salting (MFBB, 1916, p. 31). This curing was

generally known as 'madhura curing' intended for the East Coast (MFBB, 1918, p. 24). It was done at Tanur aiming the markets of the East Coast districts of 'Madura, Ramnad, and Tanjore, etc. It was cured after a long narrow cut on the back of medium fishes like Cat-fish. Then they are gutted, and packed with salt. Without washing or drying they are consigned in the very next day to the destination. Since the penetration of the salt was less than sufficient, it is liable to taint easily and develop a foul smell. This was happily consumed by the people of the East Coast perhaps because of its resemblance with the products of the pit curing of the East Coast. (MFBB, 1916, p.39).

The Gangoli and Colombo methods were the most successful preservation methods. In the Malabar coast proper (from Madayi to British Cochin), all the fishing hamlets used the Gangoli and the pickling style of fish-curing especially the centres north of Tanur. Tanur and the southern hamlets produced the inferior products. To be clearer, it was during 1910-1911, that experiments were made for the preparation of salt fish of superior quality like, pickling and lightly cured etc. The lightly cured fish (salted for 20 to 30 minutes) could be used as a substitute for the fresh fish if it reaches the distant destination within three to four days. Given the dearness of salt, experiments were also made to re-use the old brine procured after the salting of the big varieties to cure the small varieties. Later J. Hornell attests to that this practice had reduced the curing expenses considerably (MFDB, 1922, p. 10). Hence, after the 1910-11, the west coast curing practices were a mix of 'old' and the 'new'.

Fish-Curing: The Science

Curing is done to keep the fish protected from spoilage caused by bacteria and chemical or physical agencies. Salting and drying are the most cheap and oldest practices of fish preservation (Gopal, 2008, p. 130). Salting is the first step and then the salted fish will be either semidried, dried or extra dried. The presence of sufficient quantities of common salt (sodium chloride) in fish can prevent or drastically reduce bacterial action by desiccation of the tissues. Drying is to reduce the water content in the fish. 'In fish, water constitutes about 70-80% and since water is essential for the activity of all living organisms,

its removal will facilitate retardation of microbial and autolytic activity as well as oxidative changes and hence can be used as a method of preservation' (Parvathy, 2018). In the common sun-drying, the thermal energy of the sun is made use of. Salting and drying are two processes. so that the water content could be reduced and the salt content will be increased (Arason, 2014, pp. 132-137). The quality of the salt is important. The quality of salt used to produce salted fish is one of the most important factors affecting the salt-curing process and the quality of the final products. The amount of the salt needed for curing process is determined by the lipid content. The lean fishes need mild curing. The medium and large fishes need light to heavy salting.

In the aquaworld, the pelagic fishes have a strong lipid when compared to the demersal fishes they have light lipid (Arason, 2014). Hence, in theory, pelagic fishes need more salt than the demersal fishes. Hence, Sardine, Mackerel, Anchovies, horse mackerel, Tuna and sharks etc. need more salt for curing. Demersal fishes are, soles, silver bellies, pomfrets, catfish, ribbon-fish etc need less salt. Sometimes, salt is used to prevent the fish from becoming a toxic material. For instance, Mackerel tainted is poisonous. (Day, 1865, p. x). When salting is conducted, two developments are happening. One is the diffusion of salt into the muscles and second is the diffusion of water from the fish. The diffusion of water from the fish will result in the loss of weight. It is to remediate the loss of weight that brine salting is experimented by the fishers. The stalking and re-stalking in heavy salting are made to distribute the even pressure and curing (Arason, 2014). Rehydration is needed before heavily salted fish is cooked. This is achieved by soaking the heavily salted fish in fresh water to reduce the salt concentration to an acceptable level for human consumption

When Frederick Nicholson took over the charge of the Fisheries Department, sufficient attention was paid to the fish preservation aspect. The 'new' lessons of curing made the product more durable and demanding and, in this sense, this practice could be qualified as 'technology'. In the coming section, the answer is sought for two questions Firstly, what would have been the reason for the emphasis on the need to transform the fish into a clear and wholesome

product for consumption? Why were these suggestions accepted by the fishers and the curers of the West Coast?

The British State's intentions

The British administration might have planned the fish preservation initiatives out of many considerations. The concern over hygiene of the sea-food was one among them. The contagious diseases like cholera and influenza were wrecking coastal life. In the correspondence between Frederick Nicholson and the fisheries department, the need to keep hygiene in fish-preservation and the dwelling surroundings were given emphasis. The second concern might be the project of state-making i.e. the organisation of fishery as an avenue to generate more revenue and to bring the coastal area under an umbrella system of governance. The third reason, perhaps the most important, was the organization of fishery as a food industry in the wake of the contemporary state of weak food supply and the 'near famine' conditions existing in Malabar as well as the famine conditions in India as a whole.

In 1899 itself Frederick Nicholson says that 'The development of our fisheries is now absolutely essential in connection, whether direct or indirect, with our food-supply : when we despair of food independent of climate for a rapidly-increasing population, of industries for non-agriculturists, of manure for deteriorating soils, we may thank God that we have yet got the fisheries to develop' (MFBB, 1915, p.1). In this Presidency, where it has been recognized by Government that it [fisheries] will primarily be treated not as a source of revenue, but as a means of increasing the food-supply, the manurial resources, and the petty industries of the country, it is obviously the Agricultural Department which should deal with it (MFBB, 1915, p. 1) . The British dispensation in Malabar treated the fisheries as a source of food supply and fertilizers. The prospects of the fisheries in Madras presidency was thus approximated by Nicholson in 1899,

> Yet it is certain that the Indian seas swarm with valuable fish, the hauls obtained even by the coast fishermen show this. In the Madras coast line of about 1,750 miles (inclusive of Travancore and Cochin) there must be fishing grounds of above 30,000 square

> miles or 20,000,000 acres, the fish life of which in tons is incalculable. At one cwt. per acre per annum the produce would give 1,000,000 tons per annum or about the same as that —including shell fish—now brought annually into Great Britain… in this Presidency, where 90 per cent, of the population will eat meat and fish but are unable to obtain such diet in sufficient quantity, a supply of 1,000,000 tons would easily be consumed (MFBB, 1915, p. 2)

When we take the Indian condition, the last quarter of the nineteenth century was one of heated debate on the famines in India. The government appointed famine commissions to investigate the matter. Thus, the Report of the Famine Commission of 1880 (Richard Strachey Commission) 'emphasised the duty of the administration to take measures to prevent the famines...'. (Baber 1996, 213). It also recommended the creation of agricultural departments in each province and to find solutions for these tragedies with the help of science, technology and the starting of new industries (Baber 1996, 213-214). George Curzon came to India in 1898 immediately after a famine of 1897-98. He, out of his concerns over the famines, decided to intensify the research on agriculture. In 1902, a Board of Scientific Advice (BSA) was formed to 'coordinate and facilitate the application of science to problems relating to the economy and agriculture'. (Baber 1996, 216).

The BSA promoted research leading to "practical" applications and not "pure" science. The centres for agricultural research proliferated in every presidency. The augmentation of agricultural production, the new fertilisers, and new insecticides were experimented. In the case of Malabar, B A Prakash says that there was agricultural backwardness in Malabar during the British period and Malabar had experienced severe famine in 1865,1866, 1876, 1877, 1878 and 1890 (Prakash 1988). He went on to say that there was a severe scarcity of food grains in 1899. The famine of 1896-97 affected Madras, Bombay, Bengal, central Provinces and Hyderabad (Nand 2007, 1). The famine of 1899-1902 was the greatest famine ever and it shook the western, north-western and central India (Nand 2007, 1-2). If one reads the official bulletins of the Fishery department in this backdrop, the vocabulary of food security and cheap food supply used

by Sir Frederick Nicholson may sound more sensible. Right from the beginning, he was complaining of the lack of icing facilities and use of salt as preservatives. Arrangements were made to procure ice in the fishing boats and to beach the crafts with fish untainted.

There was an aversion to the unhygienic beach drying of the fishes and he was always interested in transforming the fish into edible form rather than to the fish-manure. The detailed description of the manurial value of the fish-guano (the by-product of fish-oil) is another glaring example. Fish guano was used for the production of cash-crops and grains. When we come to the fish-oil technology, the transfer took place from the USA fishery. Hence, we cannot brand it as 'the colonial' or one could call it 'extra-European'. It was systematically organised and put to practise for utility by the British administration. Apart from the State, why the fisher society accepted these changes is a crucial question. There could be many interrelated factors responsible for this. The factors like market, profit, and labour mobility and more wage were some among them.

The Market

Cured fish, the fish-oil and fish-guano were in great demand. Cured fish was in demand in the labour settlements of Ceylon, Malaya etc. Fish guano was an essential item for industrial agriculture. Fish-oil was used in the leather, paint, jute batching, and ammunition industries. Similarly, the fish-guano was a useful fertiliser. The importance of this fertilizer is explained thus, "Since it [the fish-guano] is obtained wholly from the sea it is purely an addition to the productivity of the soil; it is not merely a transfer as in the case of cattle manure, oil cakes etc., from the soil to plants and animals and then – and only to some extent – a retransfer to the soil, but an absolute and valuable augmentation of fertilising constituents; hence its importance to India and a strong reason for its retention within our own borders" (*MFDB* 1922, 182). This product was identified as having high phosphoric and nitrogen content. The eastern colonies like Japan, Ceylon and the Strait Settlements had come down on this. Even China imported fish-manure from Malabar. Salted fish was an effective protein supplement that could be consumed with the starchy

food- rice. It gave profit not only for the entrepreneurial class but also for the workers. The trade in these articles – salted fish, fish-oil and fish-guano was beneficial for the fishers too.

Labour Mobility

In the process discussed above, the fishermen resilience is very important. Nevertheless, we cannot see any kind of resistance from either of the elites of the fishing community including the bureaucrats like V. Govindan or the emerging entrepreneurs like M.C. Unichoyi, or the ordinary fishers. This aspect is crucial that this labour mobility[1] of the fishers on the west-coast had rendered the new projects possible. The American fish-oil technology was shaped to the purpose of the west-coast people and practised it. The new form of fish-oil production was less capital intensive but a labour-intensive industry. More labourers were enrolled in fish-oil production as well as in the fish-curing. Apart from the daily routines of fish-curing they were also flexible to the multiple tasks of fish-oil preparation. Taking fish from the boats, cleaning it, putting it into baskets, filling pan, boiling, stirring the pan filled with fish with wooden paddles, pressing the fish, and separating the guano everything was done manually. We find these new work patterns and the labour diversification acceptable for the fishers of Malabar. The fisher population of the west-coast had been into many forms of works like *palanquin* bearing, boat-making, fishing, salt making, teaching, entrepreneurship and high-profile bureaucratic assignments like that of V. Govindan. Hence one can presume a labour mobility in the coastal society of the west-coast as compared with that of the Coromandel coast. This mobility of the labour combined with the availability of different varieties of fish might have made the modernization efforts of the British, the fish-cuing yards and fish oil factories, a success.

Conclusion

Frederick Nicholson was not only trying to modernise the sector, but also to make it more specified and to ensure the purity and clarity of the product. Malabar coast and its defining population had their own knowledge of fish preservation. During the British period, the existing knowledge and techniques of fish preservation was

modified as a result of the interaction among the fishers who tried to constantly modify it on the one hand and with the State on the other. These newly evolved techniques were well supported by the scientific principles. The primary reason for invoking new methods by the British State was to find out ways to tackle the conditions of famine and to increase the food supply. Once the market favoured the cured products and fish-guano as a fertilizer produced in the west-coast, then the fishers and the indigenous entrepreneurs also wholeheartedly supported the initiatives of the British State. The labour mobility on the west coast was a historical reason that helped it at the point of execution. Hence, we can conclude that 'knowledge', and 'technology' pursued by the fishers were already 'modern'. And its 'enduring life' during the British rule has to be understood in the background of the dialectics among the State, labour, and market.

Endnotes:

1. This is defined as 'the responsiveness of labour to socially desirable voluntary change of position', Satya Prakash Singh, "A Note on Labour Mobility", in *IJIR,* Vol. 4, No.4 (Apr., 1969), pp.523-527.

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