

# FISHERIES OF THE WEST COAST OF INDIA

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## THE INDO-NORWEGIAN PROJECT

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THE sea is a source of food which is often neglected. It is found in many countries that the waters adjacent to the coast abound in fish and yet, only a fringe of it is used.

In India we find that many people don't know how large the country really is for they don't realize fully that the sea also, with its riches, belongs to it. Yet, there is reason to believe that in the present food situation in India, food returns from investment in fisheries development will compare favourably with investment in agriculture. But before the additional food supplies yielded by fisheries can be classified as substantial, a considerable effort in scientific research, training and experimentation must be made, for fisheries development is not an easy thing anywhere. When attempts are made to step away from ancient methods to modern techniques, so that the lot of the people may be improved, problems are bound to creep up.

This is the setting of the Indo-Norwegian Project, started in 1953 on the basis of a tripartite agreement between the United Nations, the Government of India and the Government of Norway. It is said, *inter alia*, that the Government of Norway will "assist the Government of India in carrying out a programme of development Projects to contribute to the furtherance of the economic and social welfare of the people of India . . . . ."

While the Project is designed and operated in the spirit of the United Nations it varies from the United Nations Technical Assistance—and supplements it—by making a considerable amount of capital equipment available to the experts. Also, the administration is unique in its attempts to blend Indian and Norwegian administrative experience. It is hoped that a pattern will emerge which can be useful now that the idea of Project administration is gaining momentum in international co-operation.

The original Project area of some 10 square miles includes villages Puthenthura, Neendakara and Sakthikulangara in the Quilon District, on both sides of the inlet to the Ashtamudi Lake. Fishing is the main source

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of livelihood. The people are poor but cheerful, intelligent and extremely co-operative. They take easily to mechanization.

When a wider area of the sea is to be exploited, mechanization is essential. The fishermen can go further and exploit the sea out to the edge of the continental shelf, some 50 miles from the coast, while local non-mechanized boat seldom go more than 5 to 10 miles away.

Where harbours are available such development is fairly easy, but in the Project area shelter can only be found by crossing the surf on the shallow sand-bar at the entrance to the Ashtamudi Lake. So the boats must be tailored to these conditions. The possibility of building a harbour in this area has been examined by the Project, but prospects of getting one within reasonable cost limits are not very bright.

First a small 22 feet boat was introduced and more than 60 were built in the Project. Young fishermen took them over on easy terms after 6 months training in the Project. With the boats they have been doing reasonably well and considerably better than the owners of small canoes. And yet it is found that results vary so much from one boat to another that it would be too early to draw firm conclusions.

It would also be a strange coincidence if the first boat we tried was a perfect one. The experiments must continue and a new type, developed in the Project, is now being built. With this boat which is known as the INP type the fishermen will be able to pass the threshold, as it were, not only to mechanized propulsion (which relieves them from rowing) but also new methods of fishing. Thus the second step toward successful mechanization has been made. The experimental programme with boats also includes trials with "Surf boats" which can be put on to the beach and launched from it. Some weeks ago an All-India seminar on such problems was held in the Project.

In the experimental fishing which is conducted by the Indian and Norwegian fishermen employed by the Project encouraging results with new gear and with modified local tackle have been achieved. Some of these will no doubt be assimilated here and become part of the new Indian fishing industry.

*Boat yard and Workshop*, situated inside the southern side of Neendakara Bridge by the Ashtamudi Lake, was inaugurated in July 1954, designed to build and maintain mechanized fishing boats and also to serve as part of the fishery education and gear development centre. About 70 people are employed, inclusive of two Norwegian advisers: one boat building and one mechanic.

The timber for the wooden boats is brought to the yard by backwater and sawed up by sawmen. The planks are brought into the adjacent

carpentry building containing circular saw, band saw, planing machine, right angle cutting machine and tool grinders. Here the parts for the wooden hulls are made ready for erection in the boat-building shed alongside. In this shed, eight 22 feet, or six 25 feet boats can be built simultaneously on either side of the centrally placed slipway leading into the Ashtamudi Lake.

Two boilers for steaming planks to be bent and for net preservation are fuelled by shavings and scrap wood.

Larger boats up to 40 feet length are built at the eastern waterfront corner of the yard under a temporary leaf-roof.

The mechanical workshop building accommodates the main switch board, a Diesel driven stand-by generating set (all machines are independently electrically driven), air compressor, battery charging equipment, smithy, hydraulic press, cylinder grinder, tool grinders, two drilling machines, lathe, shaping machine, a two ton overhead travelling crane and the usual work benches with vices, hand tools, etc., as well as engine and spare part store.

Repairing of boats is carried out on the slipway and at the western part of the yard, underneath the net drying and storage shed, where different types of fishing gear are mounted and repaired.

A quay covers the waterfront practically to the slipway.

So far, the following boats have been built:

63—22 feet and smaller boats,

2— larger boats (M-5 and M-6),

4—25 feet boats are completed up to April 1958.

*Refrigeration Plant.*—The Refrigeration Plant consists of an ice producing unit (capacity 25 tons in 24 hours), ice storage for 100 tons of ice, cold storage for 100 tons of fresh fish (which can then keep for 2 or 3 days), deep freezing unit of 6 tons capacity and storage for 100 tons of deep frozen fish. The temperature in the latter room is minus 20° to minus 30° C.

To operate this plant a small co-operative society of fishermen will be formed. The point here is that unless marketing problems are attended to simultaneous to expansions in fishing, prices will go down and the effect will be felt by all. Excess quantities must be transported to the inland area where demand is good. For this insulated vans are being provided. But the fish must also be brought to the customers at the right time and the cold rooms of the plant and the ice which it produces will, by halting if not arresting the bacterial growth, make it possible to retain the fish for some time and thus regulate marketing.

The by-laws of the Sales Organization are designed to suit existing legislation in Kerala but at the same time incorporate experience gained by Norwegian fishermen over the last 30 years or so in co-operative marketing efforts. The aim will be, therefore, to give the association a fairly autonomous status and reduce external influence to a minimum.

*The Health Centre.*—The object of the work at the Health Centre, with its Preventive and Curative sections, is to improve health and sanitary conditions among the fishermen in the area.

There are two Preventive Clinics where children and pregnant women are counselled regularly and treated when necessary. Medicines, vitamin preparations and milk powder are given in great quantities free of charge. The 7 beds in the Maternity Ward are always occupied. Whenever possible the people are given health education, especially through home visiting by the midwives and the Public Health Nurses. One midwife is advising on family planning. The children at the primary schools of the area are regularly examined. Vaccinations against small-pox and tuberculosis are performed.

The Sanitary Inspectors report on sanitary conditions in the villages and are in charge of the building of latrines, which are offered at a nominal price. So far, more than 1,200 latrines have been constructed in the villages.

The water-supply situation is not satisfactory. Some improvements have been made but only when the comprehensive water-supply scheme has been completed will there be water in abundance.

While much stress is laid on the prevention of diseases in the area, the sick people must get treatment and the need for medical help is considerable. Therefore, a Curative Clinic was started at the beginning of January 1957 and the number of patients has been very high. Medicines are given free. There is also a Tuberculosis Clinic with an X-Ray Unit. The tuberculosis patients are treated as out-patients with modern medicines.

*Pipe Factory.*—The Pipe Factory produces prestressed reinforced concrete pipes by the so-called Premo methods.

A concrete core pipe is first moulded. It has pre-tensioned longitudinal reinforcement. The core pipe is made in a centrifuge. When cured, the helical reinforcement is spun on under tension, adding transversal compressive tension to the pipe. The pipe is filled with water under sufficient pressure to reduce the pre-compression in the core pipe to zero, both longitudinally and transversely. The pipe is now given the outer layer of concrete, and

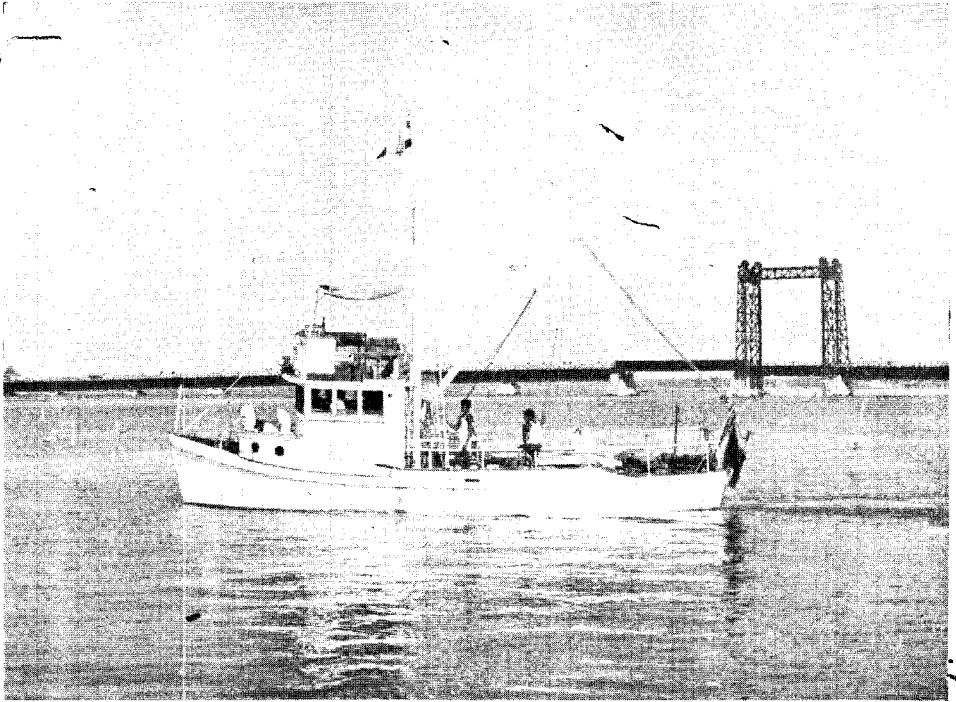
cured free from stress because of the internal water pressure. Finally the pipe ends are cut and the pipe taken to storage.

At present some 120 persons are employed in the factory which is operating with 2 shifts.

The production is at present nearly 7 pipes per shift, each pipe is nearly 17 feet long (5 metres) and 28 inches diameter (700 mm.). The weight of one pipe is just over  $1\frac{1}{2}$  tons.

The factory was erected in order to provide a water-supply line from Sasthamcottah Lake to Quilon, a distance of some 18 miles. This pipe production programme will be completed by the end of 1958 and the factory handed over to the Government of India.

*The Cochin Branch of the Project.*—Fishing from a harbour is much easier than from the beach but most fishermen in India live near the beach so it was only just that the Project should start in a beach area. But in 1955 work was also taken up in developing a balanced fishing industry with the Cochin harbour as a station. At the moment seven offshore fishing vessels are operated there by the Project. Five of these have now Indian skippers trained in the Project. In 1957 substantial quantities of fish and prawn were landed but the effort to map fishing grounds and test the economic feasibility of various types of boats must continue. In September 1957 one of the INP fishing schooners started on its first cruise as an oceanographic research vessel in collaboration with Government of India's Central Marine Fisheries Research Institute. Since then a considerable amount of information essential in studying the environment of the fishing has been collected and probably more than in any other equatorial waters. This endeavour is the first attempt to study scientifically, on the spot, the riches of the seas of Kerala. It will help in verifying—and, we hope, confirming that the food resources of the sea are substantial, renewable by nature, and thus an important although hitherto neglected wealth of the nation. Although this work was started recently most of it is now being taken over by Indian personnel. Plans are now being worked out for the construction of model shore facilities with slipway and workshop so that the boats may be properly serviced and thus become effective means in the national drive for more food for the people of Kerala.



A fishing trawler of the Indo-Norwegian Project



One of the mechanised fishing boats built by the Indo-Norwegian Project at Neendakara, Quilon