

BAY OF BENGAL



DECEMBER 1981

A PUBLICATION OF THE
BAY OF BENGAL PROGRAMME

PHOTO EXHIBITION ON SMALL-SCALE FISHERIES CHARMS VISITORS

A four-day photo exhibition on small-scale fisheries held in Madras on the occasion of World Food Day by the Bay of Bengal Programme drew more than a thousand visitors.

Titled "Glimpses into small-scale fisheries in the Bay of Bengal", the exhibition was Inaugurated on October 16 at Hotel Taj Coromandel in Madras by Tamil Nadu's Minister for Finance and Fisheries, Dr. V.R. Nedunchezian. The state's Secretary for Forests and Fisheries, Mr. F.J. Vaz, presided. The exhibition remained open from October 17 through 20.

On view at the exhibition were 100 photographs. They related mainly to India, Sri Lanka and Bangladesh; there

were a few photographs from Malaysia and Thailand.

Inaugurating the exhibition, Minister Nedunchezian described as laudable the objectives of World Food Day. He cited FAO Director General Edouard Saouma's statement that World Food Day should not become yet another slogan but must express itself in concrete forms of cooperation that removed barriers between the poor and the development process. He said World Food Day "mobilizes the minds of the haves in the service of the have-nots, among whom are the small-scale fisherfolk of the Bay of Bengal region".

Dr. Nedunchezian said that the work of the fisherfolk, "their joys and sorrows,

their lifestyle, their communion with nature — all this constitutes first-rate dramatic material, and a photo exhibition that captures even a few of these characteristics will make a poignant social statement".

Referring to Tamil Nadu's plans for small-scale fisheries, the Minister said that the state proposed to raise marine fish production from 227,000 tonnes to 300,000 tonnes per annum by the end of 1985. The state government was supplying nylon net webbings to fisherfolk with a 20% subsidy. It proposed to supply outboard motors for kattumarams, and inboard engines for fibreglass boats, at 20% subsidy. The state was also mobilizing assistance from the National Cooperative Development Corporation for cooperatives of fishermen in Tamil Nadu.

The Minister briefly referred to BOBP's projects in Tamil Nadu — beachcraft development, high opening bottom trawling with one and two boats, fish-

This is how the photo exhibition looked. A wide-angle view of the exhibition at Taj Coromandel Hotel in Madras.



cum-shrimp trawling, and coastal aquaculture – and thanked the BOBP for its support to small fisherfolk through these projects.

In a brief speech, Mr. F. J. Vaz said that though the eclipse of the printed word predicted by certain experts was not likely in India, it was obvious that the photographic and electronic media were becoming more prominent and pervasive than ever before. He noted that Tamil Nadu's fisheries extension wing was making increasing use of graphics and audio-visual techniques in its work. He complimented the BOBP on organizing a photo exhibition to inform its audiences about small-scale fisheries. Welcoming the guests, BOBP director L. O. Engvall said that World Food Day "should encourage urbanites such as all of us to think more about the primary producers of food in rural areas". On the international front, World Food Day could catalyze cooperation to reduce hunger and malnutrition.

Mr. Engvall said that World Food Day was being observed in different ways in different places by institutions big and small. There were seminars, agricultural fairs and contests, market displays, harvest festivals, religious services, awards schemes, and the issue of stamps, coins and medals. The BOBP was organizing a photo exhibition on small-scale fisheries. Mr. Engvall hoped that it would inform fisheries experts and administrators, educate lay professionals and the public and stimulate the media. "I would welcome greater press and media interest in fisheries, resulting in well-informed debate".

The Exhibition and the Exhibits

The exhibition photographs were divided into five sections – fishing craft used in the Bay of Bengal region; fishing gear and methods; the conditions of fishing communities; fish utilization and distribution; and BOBP projects. The photographs were generally of three sizes – 22" X 17 1/2"; 15" X 12"; and 12" X 12".

The section on craft showed raft kattumarams in Madras and boat kattumarams in Kanyakumari, the Tuticorin uallam, and the Andhra Pradesh nava, the balam and chandi of Bangladesh and the on of Sri Lanka.

There were pictures of gear handling and hauling in the sea and of net braiding, mending and drying on shore. Two highlights of the section on gear were striking pictures of beach seining at the Manna in Madras and of several young women operating a shore seine in Sri Lanka. There was a sweeping panoramic wide-angle shot of scores of nets hung out to dry over rooftops in Kanyakumari.

In the area of utilization, the exhibition showed salting, fish drying on the shore, the handling, sorting and processing of catch, various methods of transport (by headload, cycle, cycle-rickshaw, and insulated van) and sale (on pavements, bazars, and beaches).

Some of the most fascinating pictures at the exhibition dealt with fishing communities. There were some striking portraits: an ancient-looking fisherwoman in Chittagong, a heavily bearded

fierce-looking fisherman in Cox's Bazar. There were pictures of young Sri Lankan women fishing in lakes, fish merchants pausing to rest by a lake in Adhiramapattinam. There was an outstanding shot of two tall women in Kakinada, anklets adorning their legs, carrying catch ashore from a Nava through shallow sea water.

Photographs of BOBP projects showed the new boats developed for Tamil Nadu, Andhra Pradesh and Sri Lanka crossing the surf; hefty catches from high opening bottom trawls in Tuticorin, Tamil Nadu; shrimp culture projects in Bangladesh, Malaysia, Sri Lanka and Thailand.

Visitors' Reactions

An invitational audience of 200 people attended the inaugural: mainly fisheries officials, media representatives, BOBP consultants, contractors and suppliers. There was a steady stream of visitors on all the exhibit days. Predictably, fisheries officials and photographers came to the exhibition; but there were also politicians, businessmen, lawyers, lecturers, journalists, students, housewives, inmates of the Taj and visitors to the Taj. Trainees from the Fisheries Training Centre made copious notes.

The exhibition drew many compliments, and the visitors' book was replete with adjectives, some of them hyperbolic. Many found the exhibition "expressive" and "realistic" (One lecturer wrote: Your photographs speak; the legends are superfluous). Amateur and professional photographers who visited the exhibition expressed interest in the mounting and panelling of exhibition pictures. Many wanted to buy the pictures.

Critical comments: Some suggested that colour prints should have been included in the exhibit. An oceanographer felt there should have been some pictures of deep sea fisheries. One visitor questioned the exhibition's "five-star" surroundings, while another felt that the exhibition lacked "focus" and a central theme.

On all counts, the exhibition succeeded in its aim of informing and educating a variety of audiences about small-scale fisheries in the Bay of Bengal region. The exhibition is being held in Colombo December 4 to 7 in conjunction with the sixth meeting of BOBP's Advisory Committee and the first session of the Bay of Bengal Committee for Fisheries Development and Management.

Viewing the exhibits on World Food Day. From Left: Minister V.R. Nedunchezian, Fisheries Secretary F.J. Vaz, BOBP Director L. O. Engvall, Tamil Nadu Director of Fisheries C. Chellappan, BOBP Information Officer S.R. Madhu.



A Letter from the Publisher

The BOBP has at the end of this year some 15 small fishing craft undergoing commercial fishing trials in Bangladesh, India and Sri Lanka, while another half a dozen will shortly begin trials. They are prototypes which, after initial trials, have been given to groups of fishermen on loan for further testing of technical and economic feasibility. The operations are monitored by Government counterparts. They assist the fishermen in solving day-to-day problems, opening savings accounts (so that the fishermen may eventually purchase the boats if they are found acceptable) and in collecting all relevant data on costs and earnings to assess the performance of the boats.

Similarly, in our work on fishing gear development, we have about 15 boats engaged at any time in testing new and modified methods and gear. Most of these boats are privately owned; a few have been provided by the agencies cooperating with us in our experiments. the gear used with the boats is usually loaned by us to the operators.

Sometimes we guarantee the fishermen – who have interrupted their normal operations. to take part in our experimental work-a minimum revenue, in other cases we pay a charter fee. Some operators have bought the gear at cost from us after receiving assistance in their use. These trials are also monitored by counterpart staff.

This sort of experimental work in cooperation with fishermen and private and government agencies is of course not unique, but I believe that BOBP has put it into effect more regularly than other development programmes. Our experience has been, on the whole, very positive and I therefore wish to mention it for others to try out more extensively. There is one precaution to be observed, though. The new technology must be within the practical reach of target groups. Inappropriate solutions tested in this way may cause a setback rather than an advance.

The positive experience relates to both quantitative and qualitative aspects. For instance, our beachlanding boats in Uppada (*Bay of Bengal News*, September 1981) have during the past year fished for 250 days, which is very good by an small-scale fisheries standard. All the operations, although they differ in intensity depending on seasonal variations and other factors, have yielded valuable data. Qualitatively, the feedback from the fishermen is invaluable for technology development, and facilitates wider application of successful results.

The designers of the BOBP have made it possible for us to work partly outside the normal bureaucratic channels,

and FAO and the participating Government have given their blessings to this approach. There is no doubt that the usual approach – the use of only government boats for instance – would have provided only a fraction of the information and experience gathered in the same period: We believe that the BOBP approach to craft and gear development has, in a small, but for us significant way, enabled us to reach the fisherfolk more quickly and more directly.

There are many other areas in which the bureaucracy, of Governments as well as of implementing and funding agencies, becomes a stumbling block in the development process – but let me revert to this some other time.

* * *

This issue of *Bay of Bengal News* devotes special attention to Sri Lanka with several articles. The famous fishing village Negombo as also Sri Lanka's fisherwomen are brought closer to you by Neville D'Silva and Mallika Wanigasundara. Vernon Pietersz, Development Adviser of the BOBP who has nearly 25 years of experience in Sri Lanka as fishery administrator, replies to questions about the fisheries of his country. George de Bruin, who has recently retired as Director of Fisheries Research, shares his knowledge and love for marine life with readers. His description of the island's fishes needs no multicolour illustrations.

This issue also contains an interview with the Director of the Swedish International Development Authority (SIDA), Mr. Adders Forsse. SIDA, which is the sponsor of BOBP, is along with other Scandinavian agencies, a world leader in development cooperation. Sweden was the first country to achieve the development assistance target of 0.7% of the GNP (suggested by the U.N.) and has on many development issues, been a forerunner and trendsetter. Mr. Forsse's views are therefore of special interest and significance.

— Lars O. Engvall

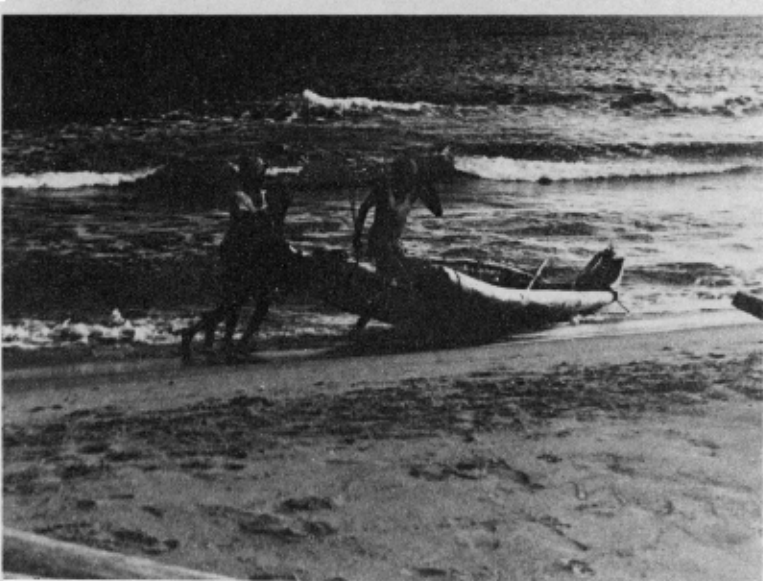


Glimpses into Small-Scale Fisheries in The Bay of Bengal

We present a sampling of photographs from the recent exhibition held by BOBP in Madras on the occasion of World Food Day (see report on pages 1 - 2).

1. *Anklets jingle as two fisherwomen in Kakinada, Andhra Pradesh, carry catch ashore from a traditional Nava boat.*





2



3

2. Kattumaram fishermen in Kovalam, Tamil Nadu, hurry ashore after the day's operations on a stormy evening.

3. These young women from a fishing community in Negombo, Sri Lanka, spend their spare time fishing in a lake.

4. Fishermen aboard the traditional Sri Lankan craft the Oru.

4





6

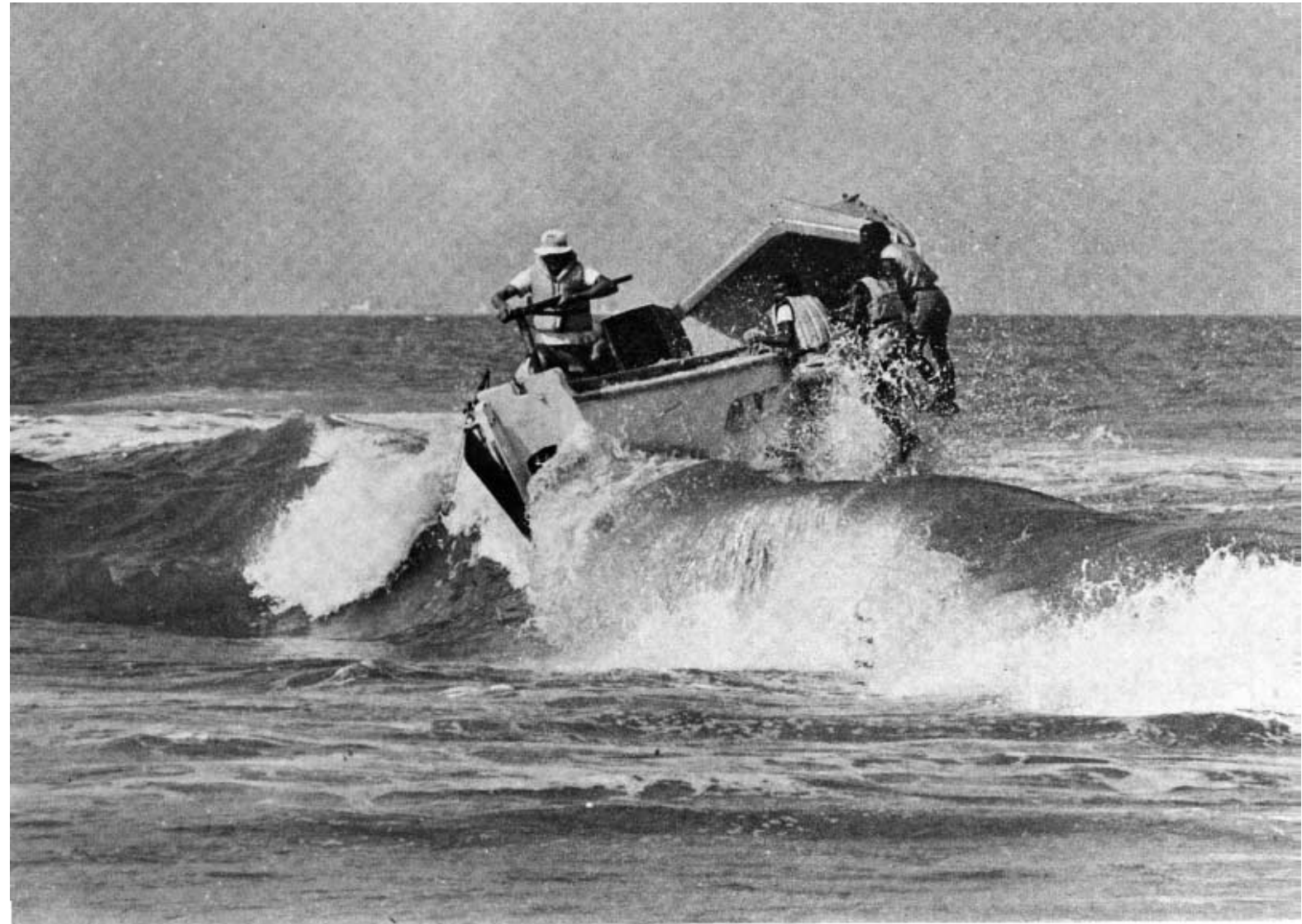
5. Inside view of an insulated fish van transporting iced fish in Sri Lanka.

6. The homes of traditional fishesfolk in Ban Methok, Malaysia, stand on stilts. Entrance and exit is by stepladder. A fisherwoman is seen descending from her home with her daughter.

7. Mending of large-mesh driftnets in Chittagong, Bangladesh.

7





8. A BOBP beachlanding boat built for Sri Lanka is being surf-tested at the Marina in Madras.

9. A proud crew watches ample catch from BOBP's two-boat high opening bottom trawl operation in Tuticorin, Tamil Nadu



glimpses into BOBP projects

Motorizing the Chandi

Can the traditional hilsa-fishing Chandi boat of Bhola island in Bansal district of Bangladesh be motorized? The BOBP has been trying to do so, and results so far offer high promise.

Between December 1980 and July 1981, the BOBP organized experimental fishing in Amanibazar town, 10 miles from Bhola, with four chandi boats selected by the BDFC (Bangladesh Fisheries Development Corporation). Two were motorized with low-horse-power diesel engines using a "longtail" drive, and comparative trials with two non-motorized boats were monitored by two BFDC officials.

The motorized boats earned nearly twice as much as the non-motorized boats during the trials. (The average daily earnings of the motorized boats were 450 taka as against 250 taka for the non-motorized boat). Why did the motorized boats catch more? Mainly because of their ability to move against wind and current and reach good grounds and the longer fishing time made possible by greater speed.

Says R. Ravikumar, BOBP fishing craft expert, "The longtail, used mainly to transport cargo or human traffic, is a very popular method of propulsion in Thailand; "water taxis" of Bangkok that go at great speed use long tail engines. "The long-tail engines can be installed on the chandi boats without any major structural modifications to the boats. It can be done by the fishermen themselves; the low running cost of the engines makes the investment on them attractive."

What is the next step? The results of the Amanibazar trials have already begun to tell. Several boat-owners in Bhola want to buy the long-tail engines and are prepared to pay one-third of the cost immediately, the balance in

instalments. The BOBP has submitted "guidelines" to the Bangladesh Fisheries Development Corporation for introducing about 50 motorized boats at Bhola.

The chandi motorization project began in 1979 when Ravikumar, accompanied by consultant Tong Nadgratok, toured Bangladesh for a few weeks, studied the traditional craft of various regions, and the feasibility and advisability of increasing their catch through motorization. Bhola island was chosen because it was a major centre of the chandi, one of the important traditional craft.

The motorized Chandi tried out at Amanibazar, Bangladesh.





SRL 11, BOBP's beachboat for Sri Lanka, under sail in Negombo.

A new Beachboat for Sri Lanka.

The BOBP has built a 26-foot sail-cum-engine boat to provide a beach-landing alternative to Sri Lanka's ubiquitous harbour-based 28-footer. The BOBP boat, labelled SRL-11, is built of marine plywood, sheathed with fibreglass, and fitted with a Deutz 12.5 HP air-cooled inboard engine; it is also equipped with a bermuda rig including main sail, jib and genoa, set on 'an aluminium pipe mast in two sections. Shipped to Colombo from Madras late July, SRL-11 is being tested for seafaring ability and fishing capability in offshore waters in a variety of weather conditions.

During the first phase of trials, from August, it has been fishing off Negombo on the west coast with gillnets. Fisherman Adley Fernando, the skipper, has reason to be pleased: In August 1981, daily incomes ranged from a low of Sri Lankan Rs. 300 to a high of Rs. 1,900. Yellow fin tuna, skipjack, seer and other pelagic species were captured. Fuel consumption was low, from one to three gallons per trip. During September the boat made 12 trips with an average net income per trip of Sri Lankan Rs. 950.

In September beachlanding trials were held under the supervision of Geoff Gowing, BOBP surf consultant from

Australia, in a variety of surf conditions — moderate, mild, medium and difficult. Says Gowing: "The fourth and final trial was conducted in the most difficult conditions. As a result of squalls and high wind conditions the surf had built up to a consistent 3 metres. The trials were conducted late in the afternoon and the tide was high ... A total of four runs were made with the craft performing exceptionally on each occasion ... At no stage during this trial was I not confident that the craft could handle the conditions as they were. I am sure that it could be subjected to rougher seas without fear of loss of the craft in a roll over Throughout the trials the craft, engine and stern gear assembly and crew performed within expectations and I am sure that the SRL 11 is a true surf crossing beachlanding and departure craft."

BOBP fisheries engineer Mid Overa, who designed the boat, is optimistic about its potential. "Other fishing methods — longlines, handlining, trolling lines etc. will also be tried with SRL 11," he said. "We have experienced some breakdowns with the engine due to its poor assembly at the factory. Apart from that, no problems have been encountered."

BOBP in Sri Lanka

The main activities of the Bay of Bengal Programme in Sri Lanka have concerned technology development in respect of fishing craft, fishing gear and methods. In the latter area, technical expertise and operational expenses have been provided:

To develop fishing gear and methods for harvesting unexploited demersal resources.

To improve large mesh drift gill nets by demonstrating the techno-economic efficacy of nets of cheaper thinner twine; and by developing low cost floatation materials.

In the area of fishing craft similar assistance has been provided in the development of beachlanding craft (see item above)

Other activities

A project to develop the supplementary income of coastal fishing families; study tours and training for fish farmers and fishery officials; sponsorship of a Tarnil Nadu TCDC team to assist the Inland Fisheries Division in coastal aquaculture development; and a feasibility study of trawling operations.

SRI LANKAN FISHERIES

Where is it Now?
Where is it Going?

by V.L.C. PIETERSZ



1

How significant is the role of marine fisheries in Sri Lanka as compared to inland fisheries? How important is the small-scale traditional sector as compared to the large?

The Sri Lankan fishery was traditionally entirely a marine fishery which included, as it does today, fishing operations in the lagoons and estuaries. There was no inland fishery. The latter dates back only to the 1950s – when with the

introduction of certain exotic species of freshwater fish, particularly *Tilapia mossambica* into the irrigation reservoirs, an inland fishery gradually started developing.

Today, from the standpoint of fish landings, fishermen, fishing craft, fish trade, fish consumption and consumer preference, the marine fisheries continue to enjoy a predominant role. With the growth of population, the increase of pressure on the marine resources, and rising energy costs however, the inland fishery is becoming more important: the inland fishery resources are being developed and their exploitation is being improved; there is increased consumption; and there seems to be potential for at least doubling the present catch (of about 20,000 tons or 11% of the country's total fish catch). In Lankan fisheries, both marine and inland, are almost entirely small-scale fisheries. Except for a very limited fishing effort in offshore waters by a few larger vessels belonging to state-sponsored agencies and private companies, the bulk of the fishing effort is confined to the coastal fishery (i.e. within about 20-30 miles from shore) and is exercised by individually owned or operated fishing craft of the small-scale sector. Within this sector, about 44% of the craft are motorized, traditional or introduced craft generally within the 32' size range: these account for about 68% of the marine catch. The inland catch is landed almost entirely by small non-motorized traditional craft.

2

What is Sri Lanka's marine fish production? What are the main commercially important species of fish?

Sri Lanka's marine fish production in 1980 was estimated at 164,775 tons of which over 98% came from the coastal fishery.

The composition was roughly 26% large pelagics, 47% small pelagics and 27% demersal and semi-demersal species.

For the domestic market the high-value species are spanish mackerel, horse mackerel, trevally, tunas and tuna-like species. There is a heavy consumption of lower-value species such as shark, and small pelagics such as sardines, herrings, anchovies and Indian mackerel. Most varieties of demersal fish, commonly categorised as 'mullet' or 'rock fish' enjoy lower consumer preference, though they are regionally preferred to pelagic species e.g., in the northern districts.

For the export market the important species are prawns, beche de mer and shark (for shark fins) but the quantity exported is only about 2 to 3% of the total marine production.

3

What are the traditional craft in Sri Lanka? What gear do they use? Where do they operate?

Sri Lanka's traditional craft consist of dugouts with and without outriggers, log rafts and planked craft.

The dugouts with outriggers (called Oru, Kulla) come in a variety of sizes within a range of 12-40 ft. The smallest craft fish in lagoons or close inshore: rod and line or cast nets being the fishing method. Larger craft are regionally used for hand lining, drift gill netting, trolling, trawling, pole and line

fishing and for beach seining and may – depending on size, season and fishing method – fish up to the edge of the continental shelf.

Dugouts without outriggers (called vallam orthoni) are mainly small craft used in lagoons or close inshore mainly for rod and line, cast net fishing and small mesh driftnetting. In a few areas larger dugouts without outriggers are used for beach seining.

The log rafts (called teppam or kattumaram) are of various sizes: roughly 12-18' for the teppam and 14-30' for the kattumaram. They are generally used within 10 miles from shore and use small mesh drift gill nets.

The planked craft are pam, pathai, padahu and vallam. The first three are beamy flat bottomed stitched planked boats of 30-40' used for beach seining within a distance of about a mile from the shore. The planked vallam is a rather narrow craft constructed like a conventional boat with keel and frames. Sizes may range from 25' to 40'. They are used for hand lining and drift gill netting within about 10 miles from shore and also for stake net fishing.



Could you give an Idea of the status of small-scale fisherfolk In Sri Lanka ? Do they live in penury? Are they reasonably well off? Are there many government schemes to assist them?

Up-to-date socio-economic data on small scale fisher-folk is not available, and it is difficult to generalise about a population of 250,000 (inclusive of dependants). According to a 1969-70 socio-economic survey, the average monthly income of a fisherfolk household was estimated at Rs. 338 – a figure which was about twice that of a household in the agricultural sector. Fish prices have kept pace with the prices of other commodities, and in spite of increasing costs of production, relative income levels today are probably similar or have improved.

Depending on factors such as fishing method, type of fishing craft, ownership of craft and gear, area of residence,

A shark being chopped up on the shore : Negombo.



remuneration by wage or catch share, there would be a wide range in income levels. For instance, two high-low extremes would be the income of the owner-operator of a 17-18' FRP small mesh driftnetter in some areas of the west coast (about Rs. 22,000 per annum) and that of a cast net Veddah (aborigine) fishermen in the east coast (about Rs. 2000 per annum). There would be many income levels in between, but in most fishing centres one gets the impression that fisher-folk with very low incomes are a minority.

There is a variety of government schemes to assist fishermen. They relate to low cost permanent housing, community centres for fishing villages, drinking water supply, an experimental bus service in some areas (to transport fishermen and fishing gear between their residences and fish landing centres), and a non-contributory state financed accident compensation scheme.

There are also several subsidy schemes under which subsidies of 35% to 50% are available for the purchase of fishing boats and engines. A newly introduced subsidy scheme attempts to take note of the energy problem by giving a subsidy of 75% for sails. Another scheme seeks to promote inland fishing by a subsidy of 90% on inland fishing boats. The subsidy schemes are supplemented by specially designed soft loan schemes operated by the state banks. A notable feature of these loan schemes is the acceptance of an inter-se guarantee by a group of fishermen as security for loans.



What are the main problems of Sri Lankan fisheries? Are fish resources adequate? Is technology lacking? Are funds short?

Sri Lanka's fish production is inadequate to meet the demand for fish by a population with a high propensity for fish consumption.

A natural limitation on the marine fishery resources is imposed by a rather narrow continental shelf. The annual sustainable yield for the coastal fishery is estimated at about 250,000 tons. Reliable estimates are not available of the deep sea and off shore resources which are certainly much smaller. The inland fishery resources are small and relatively undeveloped. At full exploitation and development these resources may be adequate to meet the demand for fish at a satisfactory rate of per caput consumption.

Among the main constraints to full exploitation of the coastal fishery resources are: maldistribution of fishing effort, with too many boats in certain areas and too few in others; heavy exploitation of pelagic species and inadequate exploitation of demersal and semi-demersal species; inadequate utilisation of the existing fishing fleet; lack of protected landing facilities in some areas and the non-availability of alternatives such as suitable fishing craft with beachlanding and surf crossing capability; inadequate beach-level technical support to fishermen due to lack of a satisfactory extension service; the inhibiting effect of high fossil fuel costs and the lack of an adequate system of catch/effort monitoring. Lack of knowledge of the resources, lack of technology and trained manpower for exploitation, and the high capital and operating costs of fishing units, are constraints to exploitation of the deep sea and off shore resources.

In the inland fishery, the absence of a tradition of aquaculture, lack of technological know-how, consumer preference constraints and limitation in the availability of suitable land inhibit development.

The dearth of technical expertise in practically every area and particularly in fishing and fishing craft technology, marine and refrigeration engineering, utilisation and marketing, and the lack of research capability (see 9) are major problems facing Sri Lankan fisheries. There is also a significant infrastructural gap – inadequate ice making plants and short-term fish holding facilities.

The funds available today to the fisheries sector are more than those available during most of the seventies. The master plan provides for a high level of investment (see 6) but shortfalls are probable in public sector investment due to government cutbacks in expenditure and in private sector investment due to factors such as the termination of some incentives, possible cutbacks in subsidies, a credit squeeze and rising interest rates.

6 One hears much about Sri Lanka's master plan for fisheries development. What are its goals and main components? How are these goals sought to be achieved?

Sri Lanka's master plan is an indicative plan for fisheries development during the period 1979-83. It is a comprehensive plan embracing all aspects of the fishing industry. It sets out clear objectives, enunciates the policies and strategies to

to the development of inland fisheries from which a major increase in production is expected; promotion of development of the offshore sector through local companies or individuals and financed mainly under a number of foreign-aided projects; the exploitation of the deep sea fishery resources through foreign collaboration.

Some of the main targets: a per caput consumption of 44 lbs by 1983; a total fish production increase of 146,000 tons by 1983; a production of 50,000 tons from the inland fishery by 1983; introduction of 1,950 28-32' motorised boats, 2400 17-23' motorised boats and 8850 outboard engines into the coastal fishery; the introduction of four 50' boats and 230 33-34' boats into the offshore fishery; investment for fish handling and distribution in 58 fish holding rooms, a cold storage complex, 69 ice plants, 4 mobile ice plants and 22 refrigerated trucks; construction of 10,800 houses and 1,350 wells for small scale fishermen; construction of 50 miles of new fishery roads and repair of 80 miles of existing roads.

The Master Plan gives the details of the indicative capital costs of the investment programme. The total cost is estimated at Rs. 1898.7 million of which 66% is foreign exchange and 24% is local currency cost. Of the total investment 32% is expected to come from the Ministry of Fisheries, 20% from the two Fisheries Corporations and 48% from the



Fishermen, nets and palm trees : Wadduwa, south of Colombo.

be followed and the targets to be met and relates the objectives, strategies and targets to an investment programme.

The objectives of the fisheries development programme are to step up production of fish and to raise per capita consumption; to raise the income and standard of living of the fishermen; and to maximise employment opportunities in the fisheries sector.

The policies and strategies enunciated are – the assignment of a major role in the future development of the fisheries sector to private enterprise; limitation of the role of the state sector to providing infrastructure and institutional support as well as incentives and subsidies to promote investment; allocation of the highest priority among the sub-sectors to the development of the coastal fishery and the reservation of this fishery for local fishermen with preference being given to small scale fishermen; the allocation of high priority

private sector. 25% of the Ministry expenditure and 31% of the private sector expenditure are expected to be financed by external aid.

7 How do agencies like the FAO and its programmes assist Sri Lankan fisheries? What has been their contribution so far to fisheries development in the island?

The best way to answer this question is perhaps to give some specific examples.

In the later 1950s and the early '60s, during the initial stages of the government's mechanisation programme, the FAO provided development support by making available the services of a naval architect and a marine engineer. The former was responsible for the design of the now ubiquitous 3^{1/2} ton boat and for the successful outboard mechanisation

of kattumarams. The latter — the marine engineer — attended to the initial teething troubles with the newly introduced engines and helped to establish and operate mobile repair facilities. He trained mechanics, fishermen and extension officers in the repair, maintenance and operation of engines through a continuous wide-ranging training programme and produced simple operation and maintenance manuals.

In the early 1970's, FAO undertook a survey project to identify live bait resources for the pole and line skipjack fishery, which later dovetailed into a general fishery development project which explored skipjack, tuna and small pelagic resources and among other things developed small boat purse seining for the latter. The FAO also, during this period, helped establish a SIDA-funded Fish Technology Institute in Colombo.

During the late 1970s, the Indian Ocean Programme of the FAO was responsible for several development support measures such as: assistance in identifying the policies and strategies to be adopted for the development of offshore and deep sea fisheries; drafting of legislation governing foreign fishing in the then newly proclaimed EEZ; drafting of a legislative framework for national fisheries exploitation and management; assessment of the requirements for local manufacture of synthetic fishing gear; and the preparation of the Northwest Coast Fishery Development project which is financed by the Abu Dhabi Fund.

Assistance provided by the regional planning and programming project that preceded BOBP — Development of Small Scale Fisheries in South West Asia — and BOBP's sister project, Small Scale Fisheries Promotion in South Asia, included documentation of the country's small-scale marine fisheries and assessment of its problems and needs; participation in the preparation and active promotion of the East Coast Fishery Development Project which is now financed by the Netherlands; preparation of several other projects — The South East Coast Fishery Development project, The Establishment of a Fishing Technology Unit, Reorganisation and Management of Fisheries Training, Sponsorship of a TCDC mission from Thailand to assess the prospects for development of coastal aquaculture in Sri Lanka and commissioning of a study of fish marketing in Hambantota district were other activities.



Does Sri Lanka have any Indigenous research capability In fisheries?

There is a serious dearth of experienced research staff in Sri Lanka. In the 1950s a process of building up an indigenous research capability was started with Canadian assistance, with the recruitment and training of a small cadre of fisheries research officers. Cadre expansion during the 60s and 70s was limited due to funding problems. The loss of the initial recruits due to retirement, 'brain drain' and so on has led to a generation gap in research capability which cannot be easily bridged.



What role does coastal aquaculture play In Sri Lankan fisheries? What are the major efforts In this direction?

Sri Lanka does not have a tradition of coastal aquaculture or indeed of any form of aquaculture. Coastal aquaculture is not practised on a commercial scale in Sri Lanka. There are

a couple of small private prawn farms which are yet experimental.

A government brackishwater fisheries station has been in existence since the 1960s at which experimental culture of *Chanos Chanos* was carried out with some degree of success and prawn culture was attempted but without much success. Mother station has been recently set up. The development of coastal aquaculture is one of the functions of a newly established Inland Fisheries Division in the Ministry of Fisheries, which is presently training staff in coastal aquaculture and exploring the possibilities of obtaining foreign technical assistance for its development.

The existence of some 300,000 acres of brackishwaters — lagoons, swamps and estuaries — indicate a potential for development of coastal aquaculture; but a great deal of basic work has to be done in identification of suitable areas, adaptive research, technical training, and the solution of techno-economic problems such as those arising from a very low tidal amplitude.



What are the major externally funded development projects In Sri Lanka?

Sri Lanka's first major externally funded development project in recent years was the Sri Lanka fisheries project which was completed a short time ago. The project was financed by a \$3.1 m loan from the Asian Development Bank: It was designed to augment the exploitation of the coastal and off-shore fish resources by the introduction of 200 boats of the existing 3 ton type and thirty 38' gillnetters of a new type. These inputs were supplemented by facilities for boat repair/maintenance and fish marketing.

The Northwest Coast Fishery Development Project is an ongoing activity, which is financed by a loan of \$4.5 million from the Abu Dhabi Fund. This project seeks to increase fish production by introducing ninety 34' fishing vessels using different types of fishing gear with capability for exploiting the off-shore resources and to introduce two 50' vessels for exploratory fishing. It also provides for the establishment of shore facilities at a fishing centre of the northwest coast.

The East Coast Fishery Development Project is another ongoing development project financed by a \$ 2.5 m grant-cum-loan from the Netherlands. It seeks to increase fish production and employment in the Batticaloa district. The project provides for the construction of shore facilities at one of the main anchorages in the East Coast—Valaichenai — and also for the introduction of 100 24.5' boats of a new type specially designed for east coast operations.

A second Asian Development Bank financed project involving a loan of about \$ 14.5 m is currently in the pipeline. Its main objectives are to increase the efficiency of existing fishing vessels and to increase the exploitation of off-shore fishery resources. It envisages the introduction of 475 boats of 28' and 34' and the retrofitting of sails and propeller nozzles on existing boats. A shore facility component and personnel training are also included.

About the Author: Formerly Secretary for Fisheries in Sri Lanka, Mr. V.L.C. Pietersz is at present Development Adviser with the Bay of Bengal Programme in Madras.

NEGOMBO

Yesterday, Today and Tomorrow

Close-knit and religious, fun-loving and easy-spending, hardy and resilient – these are the people of Negombo. Journalist Neville de Silva describes the lifestyle of this famous fishing community.

A little over 20 miles north of Colombo lies the coastal town of Negombo, a flourishing tourist resort. On a narrow stretch of land between Lewis Road and the Indian Ocean-lapped north vast coast is Negombo's hotel strip.

But long before a burgeoning tourist trade began catering to lovers of sun and sea, Negombo was renowned for its fishing industry. Fishing still goes on in Negombo. But now there is a conflict of interests between the requirements of modern tourism and the traditional needs of the fishing industry.

The off-shore and near-shore coastal land was the traditional location of all fishery activity. These stretches served as parking areas for the fishing craft, for

the mending of nets and other gear, for drying fish, for housing and recreation. In fact the fishermen's entire life seemed to revolve round the coast, the centre of their concerns.

But the rapidly growing tourist industry with its concern for clean, uncluttered beaches, has edged Negombo's fishing community out of its traditional home grounds and now it is concentrated in a few areas such as Kuttiduwa and Lellama.

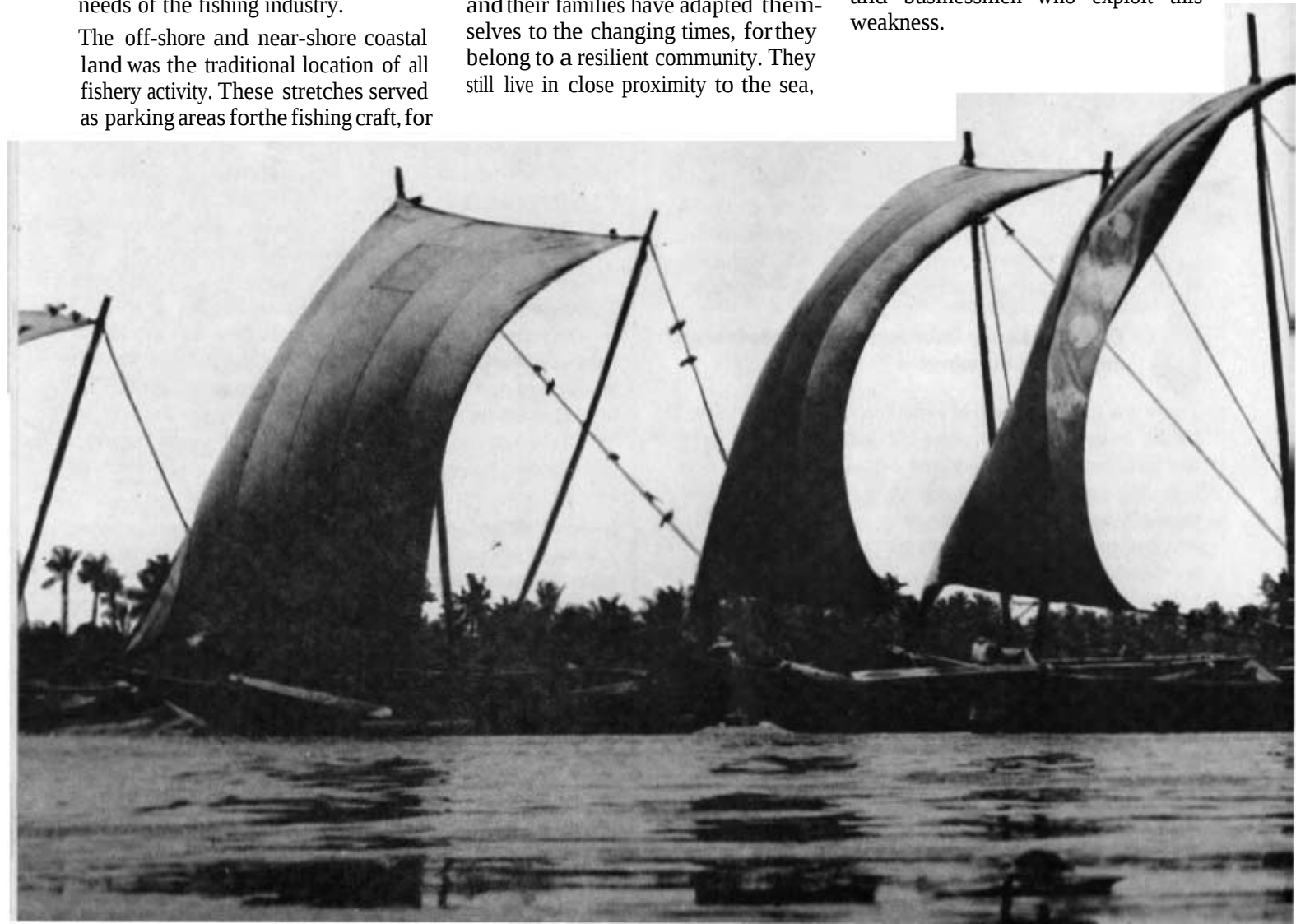
Despite these tribulations, the fishermen and their families have adapted themselves to the changing times, for they belong to a resilient community. They still live in close proximity to the sea,

their source of life, generally on the beach in temporary houses covered with cadjan, the woven leaves of the coconut palm.

By and large they are Roman Catholics by religious persuasion. Their disputes and their squabbles, be they within the family or between families, are taken to the local parish priest for arbitration. He is their counsellor, their judge.

Most of Negombo's fishermen are dropouts from the nearby Catholic schools. At an early age the children are engaged by their parents to help out in fishery activities. After they receive their first Holy Communion at Grade 2 or 3, some of them drop out from school. So those who started life by helping their parents take to the trade themselves in later years, continuing the family tradition as the elders gradually withdraw from the rigours of life at sea.

But not having gone beyond the first stages of formal education, they are generally illiterate as a community and are easily duped by avaricious traders and businessmen who exploit this weakness.



Negombo's fishing community is close-knit and religious. Sunday to them is the Sabbath and so they do not go out fishing on Saturday night. Faithfully they attend church services on Sunday. To them life is a day-to-day existence in more than one sense. Even if attempts have been made to instil in them the idea of planning for the future, of such simple concepts as saving, they have not borne fruit. The money they earn slips through their fingers as easily as the fine sand on Negombo's beaches.

The present government's liberal import policies have brought previously unobtainable "goodies" into the hands of this fishing community. The young fishermen have become a part of the 'cassette-ocracy', the new generation carrying their portable cassette recorders blaring forth songs of love in different languages. Talk to the people of

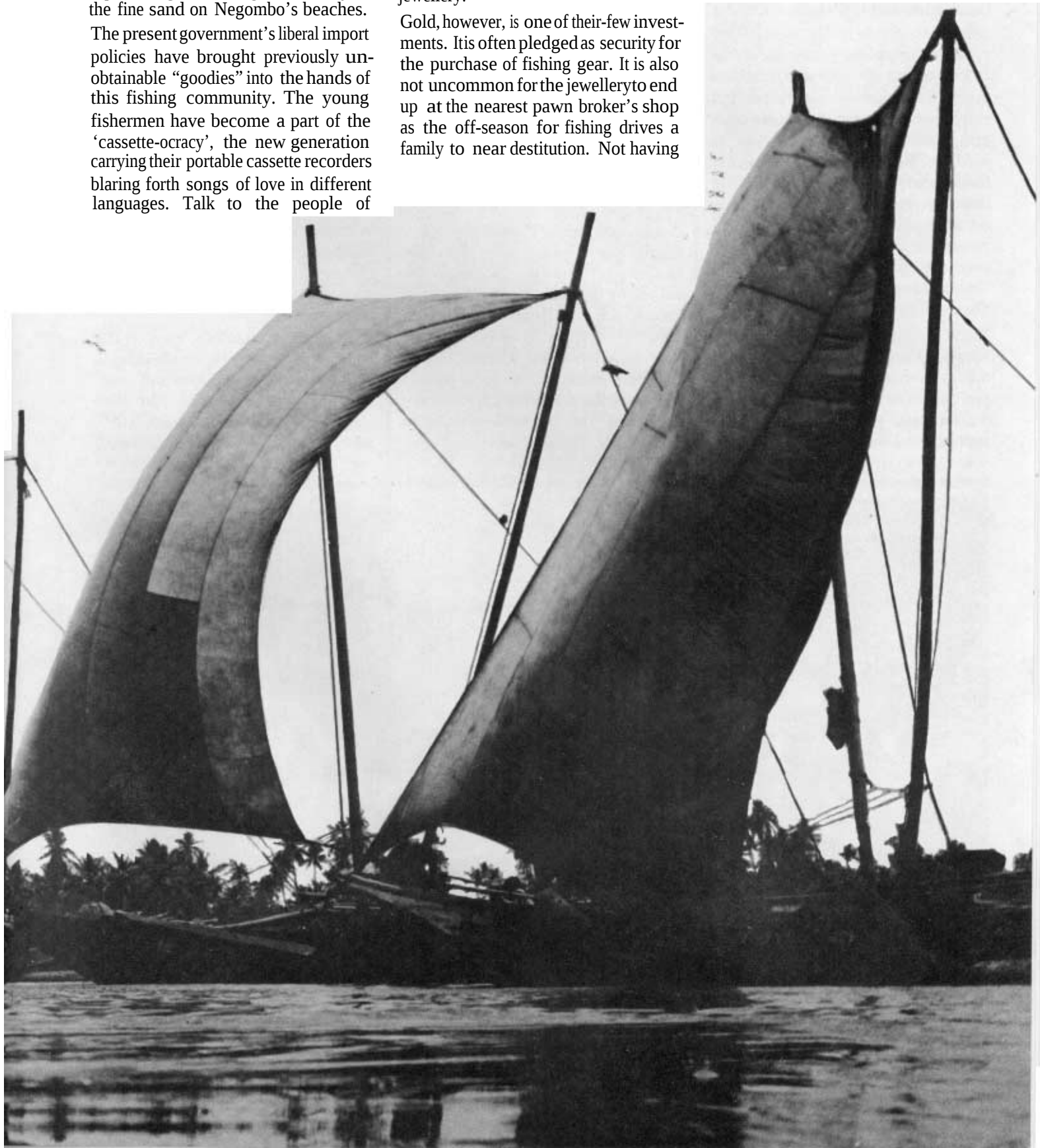
Negombo and they tell you that some of these sophisticated music machines cost them more than the sparsely built houses they live in.

The comment itself might be hyperbolic, but it is an indication of the changing lifestyle of Negombo's fisher-folk. Relative to persons in other trades with comparative incomes, this fishing community is regarded as one of lavish spenders. Wives and children often sport gold jewellery.

Gold, however, is one of their few investments. It is often pledged as security for the purchase of fishing gear. It is also not uncommon for the jewellery to end up at the nearest pawn broker's shop as the off-season for fishing drives a family to near destitution. Not having

saved during times of affluence they dig into their only resource during days of deprivation.

"That is our life," says Catherina Fernando, the wife of a young fisherman, stoically. "But we always pull through. Our men lead a dangerous and uncertain life. So they like to spend what they earn and enjoy themselves. But we somehow survive the difficult days."



As Anthony Fernando, the fisheries inspector attached to the Negombo District Fisheries Extension Office, points out, the untutored fishermen are easily duped by unscrupulous traders who quote highly inflated prices for goods. If the price is high then the article is good — that is the simple philosophy of these simple people. Exploiting this to the fullest, traders often quote double the price and articles and money change hands. The fisherman returns to his beach abode, the proud owner of a cassette recorder.

Kurukulasuriya Leo Fernando, a seafaring veteran of yesteryear, now has the time to relax in his armchair and compare the fishing methods then and now. In the bygone days the fishermen used the “theppam” and the “oru”, the former carrying two persons and the latter carrying four. Oil price hikes did not worry them as does the modern generation using fuel-driven craft. They used gillnets for small fish on trolling lines and hardlines for big fish such as the seer.

The older generation of fishermen continue to use the traditional theppam and oru, a major reason being the prohibitive cost of fuel. But their modern counterparts have turned to more sophisticated vessels — the 3½ tonner

powered by a diesel engine, the 18 ft fibreglass boat fitted with an outboard motor. The latter are mostly petrol-fuelled Evinrudes or Johnsons or Japanese Yamahas which are run on kerosene. The Japanese engine is becoming popular with the Negombo fishermen because of the cost factor. The 8 and 15 horsepower Yamaha is cheaper to operate as it uses kerosene instead of petrol.

Statistics maintained by the Negombo Extension Office show that there are nearly 2700 registered craft in the area. This includes 385 3½ tonners, 1142 17½ ft fibreglass boats and 154 mechanised theppams. In short over 60 per cent of the registered craft are now mechanised.

Many of the fishermen prefer to use nylon fishing nets made in Japan, South Korea and Taiwan. No one now uses cotton nets. Even though there has been this perceptible modernisation in use of craft and gear, some of the techniques used are perhaps as old as fishing itself. The Negombo fishermen

carry no compass. They do not have echo-sounders for fish finding. Nor do they have equipment for radio contact or making distress signals. Like the three wise men who followed the star to Bethlehem, these fishermen still

depend on the stars to guide them to their destination.

It is not merely the fishermen who at times use antiquated methods. The sampling technique used daily by officials to assess fish production is hardly a scientifically accurate one. In these circumstances the monthly production figures might not be entirely reliable. However according to the statistics maintained by the Extension Office the total catch for the area last year was 15,820 tons. This shows a drop in production compared with 1979 when total output was recorded as 16,445 tons. In February this year production was said to be 1200 tons which is three times the output recorded for the corresponding month in 1980.

The Negombo-based extension office does not cater for the Negombo area alone. It covers seven areas including Wattala and has 16 fisheries societies attached to it. According to the Divisional Fisheries Inspector Francis Perera there are nearly 1000 fishermen in and around Negombo.

A struggling community such as this cannot survive without external assistance. To sustain the community and make fishing a viable industry the State offers subsidies and financial handouts. A 35½ subsidy is provided by the State for the

Typical scene at crowded Negombo market. There are nearly 1,000 fishermen in and around Negombo.





Negombo fisherman pulls ashore a shark caught by a 28 ft. fibreglass boat

purchase of engines. For the purchase of sail cloth the subsidy is as much as 75%. There is also provision for banks to grant loans under a self-employment scheme.

Recently the Minister of Fisheries, Mr. Festus Perera, presented the Negombo fisheries societies with mechanised boats to the value of Rs. 360,000. Negombo may also benefit from a loan given by the Abu Dhabi Fund for Arab Economic Development. The Ministry of Fisheries will introduce eight 34' gillnetters / longliners and ten 34' class fishing trawlers for use off the north-west coast. These boats will be sold to individual fishermen, fisheries cooperatives and other organisations engaged in fishery activity. The boats, which will be fully equipped with engines, fishing gear, radio telephones and even fish finders on the trawlers, will cost Rs. 900,000. Apart from various tax benefits, the State will provide a 35% subsidy on these well-equipped vessels, which will also be provided with facilities to run on sails.

The State has also provided the Negombo fishing community with several low-cost housing schemes. Each house has a floor area of 340 square feet and consists of a verandah, living room, bed room, a water-sealed toilet and a place for storing fishing gear. The monthly rent is Rs. 80 and a family

which pays rent continuously will own the house after 30 years.

As 38-year old fisherman Vincent Thamel of Poratota says, the government's decision to permit free imports has benefited the fishing community. The tight import controls in force earlier made it difficult for fishermen to obtain their necessities. The scarcity of engines and gear led to thefts which left fishermen high and dry. But the liberal import policy pursued by the present

Exploring Sri Lanka's Underwater World

(Continued from page 20)

brown above, paler below and has yellow fins. The yellow round-head snapper is purplish-blue, a wide brilliant yellow longitudinal band on the upper side; the dark round-head snapper has a body uniformly dark purplish-brown and fins reddish-brown; the ruby snapper has a body uniformly crimson and silvery below, the long tail snapper has a scarlet body and a tail fin brilliant red.

Are these colours a freak of nature tending to serve no function at all or are they a part of camouflage? Is the vision of these deep-sea dwellers different from ours? Why

Choice of Fishing Methods: What do we do if we have a choice of different methods of fishing these bottom-dwelling

government has not only greatly diminished such thefts but also given them a choice of gear which they did not have previously.

However, things are by no means easy for Negombo fishermen. True — a flourishing tourist industry has pushed up the price of fish in the area and future looks good for fishery activity. But the problem appears to be that the benefits of higher prices do not necessarily filter down to those who actually perform the arduous task — the fishermen. The trade is still in the hands of middle-men and private businessmen who rake in much of the profits accruing from higher prices.

This seems to be one of the persistent complaints of those who go to sea. Are we getting the fruits of our labour, they ask. If the fishermen have complaints so do their wives. 40-year-old Mary Fernando, a mother of five children, gets Rs. 130 per month under the Government's food stamp scheme to feed her family, in addition to whatever her husband earns. "But the high cost of fuel is making our life very difficult." For the last three months she has not paid her monthly house rent of Rs. 80. Will she eventually be able to own the house she now lives in? There is no doubt that state assistance has perceptibly helped ameliorate the living conditions of Negombo's fishing community. But much remains to be done.

About the Author: Neville de Sika is Deputy Editor of Ceylon Daily News, Colombo.

creatures? Do we use nets at the bottom to entangle them and leave them to rot? Do we lose these nets in our greed and decimate the population around the "ghost net"? Do we drag a net with a high powered expensive boat and catch them all — fathers, mothers, Sons and daughters? Do we finish them all in one go and assert our own superiority? Or, like the traditional Sn Lankan, do we fish them one by one, or with a long-line, with forbearance and humility, sparing the infants and the adolescents?

The choice lies with the fisherman.

About the Author: Dr. G.H.P. de Bruin was till recently Director of Research in the Ministry of Fisheries, Sri Lanka. During 1980-81 he was a consultant to the BOBP in a project to explore Sri Lanka's resources of demersal fish.

EXPLORING SRI LANKA'S UNDERWATER WORLD

What fish do you find ? What do they do ? How do they behave?

by G.H.P. DEBRUIN



Pomacanthodes annularis



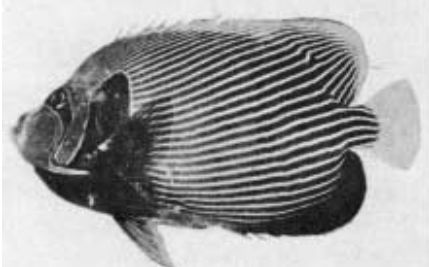
Coris gaimardi



Lutianus kasmira



Lutianus decassatus



Pomacanthodes imperator

Man's first concern is food and shelter. Nature with unerring instinct has arranged the combination so effectively that creatures live in close proximity to their food.

This is particularly true of fish in the sea. Nature has so ordained that some shall roam the surface or mid waters (the pelagic fish) while others shall linger at or close to the bottom (the demersal fish). Another category has a choice of living off both environments and food resources (the semi-demersal).

The Pelagic Species

The tunas, the bill-fish and the sharks circumnavigate the great oceans, keeping to an oxygen-enriched water column called the mixed layer. The incessant lashing of the winds across the sea's surface and photosynthesis by marine plants ensure that the water column is always rich in life-giving oxygen at depths which vary from 35-150 metres. Below this is the thermocline — a cold forbidding suffocating region.

The tunas are nomadic, fated to be eternally on the move on account of their great hunger. If they ever stopped they would certainly die. Not only would they suffocate for lack of oxygen but would sink to the depths of the sea because they are heavier than the water in which they live,

Around Sri Lanka, the tunas are those common to the tropical region — the skip-jack and yellow-fin are the greatest in numbers. They are followed by the frigate and bullet-mackerel, the big eye tuna, the long-tail and the dog-tooth. The last named has the slender shape, agility and speed of the others but is not so fond of travelling. It keeps close to distant reefs such as the Great Reef which lies 12 miles away from the coast of Kinnda in the South Coast. Visit this reef during the calm seasons of the year in April or November. You will always be rewarded by the appearance of this friendly creature which moves

about gracefully — singly, in pairs, or in groups of three or four. Dive down deeper towards the reef-bottom and the dog-tooth moves towards you inquisitively, its open jaw slung down exposing menacing dog-like teeth. Do not take a gun with you: the sight of it makes it move away in ever-increasing concentric circles.

Tunas swim around the world entering Sri Lanka's waters from time to time. They are followed by the striped marlin, the short-billed spear-fish, the sail-fish, the mako shark and the sword-fish. Among these vast migratory schools are the thresher sharks — the tail as long as the body. Till quite recently they were abundant right round the island at the onset of the south-west

monsoon or a little later. Today their appearance seems delayed by a month or two; they are first seen in abundance in July.

The Semi-Demersal Species

The close cousins of the tunas explore the waters at a similar depth. Sometimes generally at sunrise or towards sunset they forsake the middle layers for the bottom. This they do quite often, when they miss their accustomed prey. They form one great group called the *Carangidae* — a family of horse-mackerel, trevally, queen-fish and king-fish. They constitute a not insignificant fraction of the marine fauna of this island.

The Demersal Species

The majority of the demersal species live a close communal life, especially among the luxuriant *Acropora* coral reefs which flourish in the north-western and eastern sectors of the island. The palm-like fronds of these coral formations afford ample protection for the smaller members of the coral communities. In a day-time dive, you will see hundreds of them swimming a few feet above the coral, pecking at minute animals and plants — the plankton. There are the many varieties and multi-coloured damsel-fishes which form

closely-knit groups according to their identity. Quite common among the reef formations are also the red-breasted gold-tailed fusiliers or wreck-fish which aggregate densely over the coral fronds.

Living close to the bottom, almost hugging the ground and very often quite still, is the greasy grouper. It lives in pairs or, at the most, in threes or fours. So well camouflaged is it that you may often miss seeing it until your shadow quickens it. The grouper is the chief predator and king and keeps the numbers of planktonic and vegetative forms under control. Should it die and not be replaced by another, the coral community is in danger. The prey species multiply unchecked and in time run short of food and die out

Forms larger than the damselfish and the fusiliers are the vegetarian grazers, the spine-fee and the unicorn fish which feed primarily on seaweeds growing on the surface of dead coral. They comprise many species, some brilliantly coloured and others an unattractive grey. Small predatory fishes are in great number around the coral net-work – the yellow-lined snapper, the yellow-bodied blue-lined snapper, the black-blotched rusty-lined snapper and the two-spot snapper. They feed voraciously on any of the prawns and shrimp that come out of hiding at night Others which share the coral home are the painted lobsters, omatus, and versicolor. If unwary they quickly fall prey to the king of the reef – the great greasy grouper.

It is the quantity of light, more so than anything else, which fosters coral growth, and dense formations appear less than 60 feet from the sea's surface. In between coral reefs are patches of arid sand which give little protection to anything living. Demersal fish are seldom found here but one which ekes out an existence on this desert is the brush-toothed lizard fish which, if hooked, warns you that you are on arid ground.

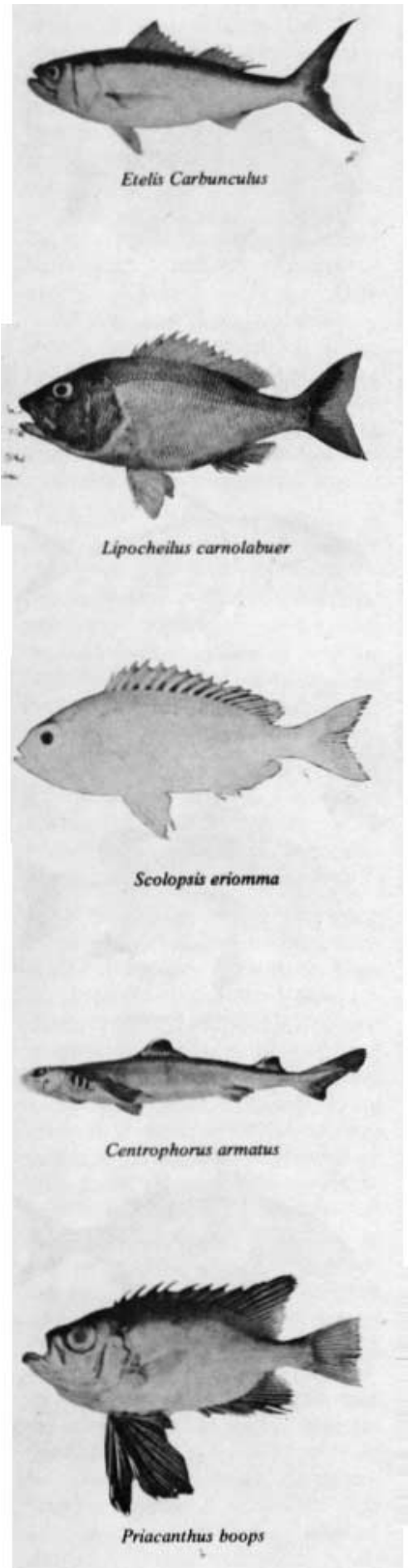
In very shallow reefs, the painted sweet-lip – striped ochre and black and with heavy thick lips – is bound to occur. It is a scavenger but also feeds on bi-valve shell or marine worms which thrive in the sandy waste. You will also meet the juvenile mangrove snapper which takes on a golden hue in certain reefs of the island. The pearl spot snapper also lingers around in its youth

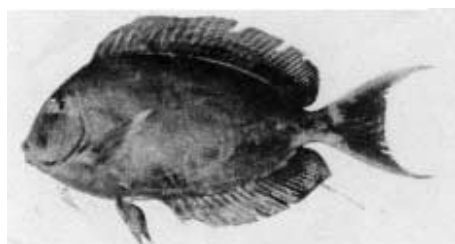
but moves away to greater depths when mature. Red snappers appear so similar that they confuse the taxonomist but in such large numbers as to be of commercial concern. Adding a great deal of warmth and colour to the coral community and very often enmeshed to rot and die in bottom set-nets are the pennant coral fish or bannerfishes, the saddle-backed butterfly fish, the blue ringed angel fish, the emperor angel fish, the unicorn tang and the soldier fishes. They feed on plankton, sea-weeds or morsels left over by the larger predators. They are always of interest to the aquarists (aquarium dealers or keepers) and shipped away in their thousands to the richer regions of the world. Very often when you are on coral reefs, you will be reminded that some one else has been around – the net fisherman who has gone home much poorer leaving his net behind, the "ghost net" which continues to take a toll of the coral fishes until debris and algal growth makes it fall flat on the bottom of the sea and then a nuisance to lobsters and other crawling creatures.

So unlike the pelagic fishes – blue on top and silvery below – are the demersal. They sport a myriad patterns and hues and display strange and interesting behaviour patterns. If you are lucky you will see an eel-like banded form entering and leaving the great mouth of a grouper – the cleaner wrasse, the barber of the reef – which lives on parasites within the mouth of the grouper.

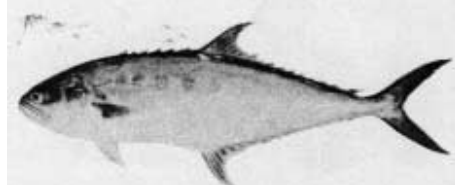
Of nearly 600 or more species of demersal fish in Sri Lanka, at least a hundred are found in sufficient numbers to be of commercial importance. Vegetarians like some of the parrot fish, the unicorn fish and spine-feet are impossible to catch with hook and line and they do not feed on fish or take dead bait They are diurnal in habit In the night, parrot fish sleep in the crevices of coral and the spine-feet even in the open in undulations of the reef plateau. They enter traps and are caught in large numbers in traps of the Arab arrow-head design. Fish caught in traps continue to live for long periods without food and the Arab arrow-head, which is made of plant material, decays if it is lost.

These varieties of fish move about in dense schools during the day, especially over sand-stone reefs where there are





Acanthurus matoides



Scomberoides Commersonianus



Lutianus rivulatus



Lethrinus conchylatus

prolific growths of sea-weed. Fish caught in traps are alive when brought ashore but net-caught fish are invariably partially decomposed on account of the long hours they remain after death in the nets. Traps appear to be a favourable means of catching them, but traps drift during a ground-swell and are difficult to locate and recover.

By far the largest percentage of demersal and semi-demersal fish are predators or scavengers. Ingenious methods of capturing them have been developed by the Sri Lankan fishermen. Live bait – prawn or red bait – is used to entice the more fastidious feeders such as the horse mackerel and trevally. A wicker cone is fixed to a hollow made of lead. The live bait is introduced into the hollow of the cone and swiftly sent down to the bottom of the sea. A baited hook on a line follows soon after. As soon as the hook reaches the bottom, the cone is lifted, liberating the live bait. A passing horse-mackerel or trevally lunges at the darting prawn and in its frenzy attacks the baited hook as well – a smile on the face of the fisherman.

Handlining with live or dead bait has been in vogue in Sri Lanka for hundreds of years and fishing goes on at all depths up to a 100 fathoms or more.

In the shallower regions the fish are small and consist of species whose adults do not grow beyond a foot in length. The juveniles of larger species also occur here and to this day hundred of out-rigger canoes exploit them.

At intermediate depths, from 15 to 60 fathoms, are the larger predatory species – the groupers, the long-nose pigface bream, the starry pigface bream, the crimson snappers, the blue-spotted sea perch and the honey-comb fin rock cod. At greater depths are the long finned bulls-eye, the red axil pig face bream, the rosy monocle bream, the Mossambique large-eye bream, the long-tail snapper, the ruby snapper, the yellow-lined fusiform snapper, the rusty small-toothed job-fish and Tang's snapper. Several of these fish are new additions to Sri Lanka's recorded fauna. They are fished intensively using hand-lines or long-lines off certain parts of the coast

Fishing season: One would imagine that handlining or longlining can be successful at all times of the day or the year. In rough weather it is difficult for

boats to remain anchored on grounds which are rocky and uneven and invariably abound in demersal fish. Demersal fishing is therefore restricted to the calmer seasons – during the south-west monsoon on the east coast and during the north-east monsoon on the west and south-west.

Even in the calm seasons it is difficult to fish them, especially if there is a strong bottom current. Fish react instinctively to a current by first facing it and then frantically swimming against it, a reflex action known as rheotaxis. The response is not to the current itself. It is a visual response which aims at maintaining its field of vision constant – for blinded fish do not manifest such a response under artificially induced currents. If the current continues, the fish soon tires and drifts until it reaches a region of less turbulence or hides, hugging a ledge, if one is available close by. Under these conditions the fish do not feed and this probably accounts for the failures recently encountered in experimental operations. **Feeding Times:** Do fishes feed continuously or at certain set times of the day or night? There is reason to believe that the truly demersal varieties feed all through the night seeking out their prey by smell or acoustic means. These same varieties could also be caught just before sunrise, at mid day or towards sunset.

The semi-demersal species, like the horse mackerel, trevally and queen fish, are primarily day-time feeders. Like the cobra, which is diurnal in habit, do diurnal fishes have eyes with a high cone-rod ratio in their retinæ? Or like vipers, do nocturnal fishes have a high rod-cone ratio which enables them to see in dim-lit conditions? Unlike the bottom dwelling fishes at intermediate depths, those living beyond 6' fathoms (the demersal species) feed all times of the day. Sight here does not seem to matter. Do these creatures seek their food primarily by smell? If that is so what function does the relatively larger goggle-eye play?

Research has yet to yield answers.

Colour Vision: And what about colour? The deep-dwelling species sport vivid colours, that cannot be distinguished by us in the dim light, 60-100 fathoms below the sea's surface. The Tang's snapper is brilliant yellow-
(continued on page 17)

"THE INTERNATIONAL COMMUNITY MUST BE BASED ON SOLIDARITY"

(Continued from page 28)

project in terms of what it can do for the receiving country?

Ideally, Swedish development aid should benefit the poorest people in the country concerned. This is in accordance with the objective of contributing to a more equal distribution of resources. It is often, however, difficult to reach these groups. We have to content ourselves with directing our support to relatively poor people, often "small holders". I believe in projects and programmes directed towards those groups. They mainly live in rural areas. The keyword is integrated rural development including among other things new seeds, credit facilities, planting of trees and soil conservation, provision of water and primary health, adult education, rural roads. In other words activities which will eventually help people to increase their own productivity.

Q. *What has been SIDA's experience with funding UN. executed programmes? Do you think there will be an expansion or decline in such programmes?*

A. In principle the specialized agencies of the United Nations should execute programmes approved by their respective governing bodies rather than projects funded by individual member countries. Notwithstanding this principle SIDA has funded bilaterally projects executed by U.N. agencies – FAO, ILO, UNICEF, WHO, UNESCO. Experiences vary, from positive to somewhat negative. On the whole, such arrangements are not likely to expand in the future.

Q. *What is your candid assessment of the performance of the Bay of Bengal Programme so far?*

A. On my proposal the SIDA Board of Governors recently approved unanimously continued support to the Bay of Bengal Programme. This illustrates the high opinion of the Board as to the performance of the Programme so far.

Q. *The Bay of Bengal Programme (BOBP) has been active in sponsoring TCDC (technical cooperation among developing countries). A report on TCDC based on a survey organized by*

the BOBP has been widely distributed. The BOBP also has agreements with several national institutions in the region for implementing some of its activities on daily basis. Do you welcome this aspect of the BOBP's functioning? Does it fit in with SIDA's policy?

A. SIDA sponsors systematically technical cooperation among developing countries. As an illustration of this attitude, SIDA has financed throughout the years international courses and seminars in various professional fields in the belief that they provided excellent opportunities for experts from different developing countries and regions to meet and to compare and exchange experiences.

With regard to BOBP it should be noted that several countries participating are Sweden's partners in development cooperation.

"Swedish workers like to fee! that they contribute in their daily job to meeting deep-felt needs in poorer countries."

Q. *Could you describe SIDA's mechanism for monitoring and evaluating programmes funded by you?*

A. According to the Swedish view, the main responsibility for evaluating the results of a project or a programme should rest with the authorities of the recipient countries. This does not relieve SIDA from an obligation to evaluate its own role in the activities. SIDA tries to do so, but has not been very good at it so far. Therefore, we are now paying increased attention to evaluation measures. We are aware that successful evaluation presupposes well-defined objectives from the outset and good reporting from the project! programme in the course of implementation.

Q. *How do you view the future of Swedish development assistance? To put this differently, what is SIDA's role going to be tomorrow? What future directions do you envisage in SIDA's work and style of functioning?*

A. To meet fully the objectives of development cooperation as set up by the Swedish Parliament we must direct our efforts even more than in the past

towards the poor rural population in the recipient countries. The demand for Swedish goods and services resulting from this kind of development aid will in all likelihood be fairly modest. However, development aid of considerable magnitude will also be directed towards industrial and infra-structural projects and programmes, where Swedish producers should be internationally competitive. In the economic situation which we now face in our own country we have to take into consideration factors such as balance of payments and employment at home. Also, Swedish workers like to feel that they contribute in their daily job to meeting deep-felt needs in poorer countries. We have to pay great attention to the importance of maintaining public support for international development cooperation at its present high level.

Having said this I wish to emphasize, in conclusion, that the basic motive for our participation in international development co-operation is solidarity with people outside our own boundaries. We built our own society on solidarity. The international community must also be based on solidarity between human beings and between peoples.

Q. *Finally, do you have a message for the Bay of Bengal region – particularly the small fisherfolk whose lot BOBP seeks to ameliorate in cooperation with its member-governments?*

A. What Sweden wishes to provide in the field of development cooperation is support towards self-reliance. Ours is not the charity domain – although charity certainly has its place in situations of emergency. In the longer run, however, every region or country, every nation or population group, every professional category will have to pay its way, in cooperation and interchange with others. Therefore, what is important is productivity, the individual productivity of the fisherman, of his wife, and family members, of the groups that they form in order to increase the sum of individual achievements. Productivity in the sense of ability and eagerness to produce more and better, for one's own needs and for those of the market. I should like to know that Swedish support to the BOBP actually helps fishermen, especially the poorer ones, to improve their lives through their own individual and collective efforts.

Women in Sri Lankan fisheries

Their role is many-faceted but their rewards are few, says reporter Mallika Wanigasundara, who studied survey reports and met fisherwomen at beaches and markets in and around Colombo.

The din raised by women's voices can be heard over the hum and buzz of the Negombo fish market. When you look around it is the women who predominate. This particular market seems to be a place for women.

Buxom matrons exhibiting wide expanses of midriff squat inside and outside this small market; dark-skinned lasses giggle as they haggle and wizened old women who have been fish vendors for half a life-time raise their strident voices.

The overpowering smell of fish and fierce-looking knives provide the backdrop as the women bicker and wheedle, cajole and woo the buyers. Outside the market the small fry among the women fish vendors display the smaller, cheaper varieties of fish like the saiyas, sundayas and the halmassas. Inside, the women sit at low tables on which the ten-pounders glisten and the big luscious prawns catch your eye from heaped-up baskets. Vendors and buyers slop through the watery floors, the one

waiting to make a kill, the other hoping for a good bargain. If you walk on to the Negombo beaches during the height of the fishing season from June to about September or October, you will see again the many women who converge onto the shorelines as boats come in.

Some come in search of casual work, while others come to buy fish to sell. During a good catch the women who find work can make something like Rs25 to 30 per day. They bring order to the mass of mixed-up fish that the nets throw up. They pick the fish from the nets, sort them out and count them.

But the scene you may witness on the Negombo beaches could mislead you about the "general picture" of women in Sri Lankan fisheries.

The fisherwomen of Negombo are the most active in every aspect of the fishing industry. Not only do they perform every kind of activity connected with fishing (except actually going out to sea), they are also the most adventurous. They are flexible in their attitude towards work related to the fishing industry and they are willing to work alongside their men. But these women constitute a minority.

A recent field survey conducted by the Women's Bureau of Sri Lanka in eight

Negombo fisherwomen: spare-time avocations include poultry.

The camera amuses these cheerful pavement sellers.



fishing villages showed that only 8 per cent of women from fishing families did any work connected with the fishing industry, or for that matter any income-generating work at all.

The bulk of the women from these communities just stayed home and were content or compelled to be plain and simple housewives and mothers. According to the fisheries census taken in 1972 there were about 43,000 households engaged in fishing. The total number of persons worked out to about 350,000. Of these 42 per cent were women. The numbers would be larger now,

Like the plantation workers the fisherfolk belong to some of the poorest segments of society. The sea is their economic life; but it spells uncertainty, insecurity and sometimes death.

With rise of a wave or the loss of a foothold tragedy can strike the lives of these women. And with it extreme poverty and deprivation,

So it was with Selin (40) and her seven children whom I met in a hut on the Negombo beach. Two years ago Selin's husband was seized with a heart attack and fell overboard.

It left the family destitute and Selin had to sell her only two pieces of jewellery to keep the family going. She also had to sell the family's most prized possession — a radio,

In this 12 X 12 foot hut — with see-through plaited coconut fronds for walls and roof — standing unsteadily on the beach, 11 people live huddled together. This includes a son-in-law and a grandmother.

Selin sells fish and one son-in-law who is a migrant fisherman in Mannar sends a meagre Rs. 100 every three or four months. The family eats one meal in the evening; at lunch time they exist on tea, a substitute for the mid-day meal. Selin's 23-year-old daughter Mallika too lost her husband to the sea. She and her child live with the mother. She earns

Rs. 11 a day by wrapping beedies. Sometimes it is less.

The family has one big bonanza. Soon they will occupy a government-built house on the beach; they will eventually own it.

Selin is illiterate. But her daughters and sons have gone to school. After the primary level they dropped out. They are a somewhat strange phenomenon, common to the Negombo fishing area. They are of Sinhala origin, they speak Sinhala and Tamil. The children go to Tamil schools and they can read only Tamil

Wimalawathie (32) was another woman who had come on to the beach in search of work. She was pregnant and mother of four children. She had heard about family planning but nobody had told her what she could do to prevent children.

May is not a good month for fishing in Negombo. When the catch is small,

Wimalawathie finds no work such as sorting and counting fish. During the off season her husband works as a labourer to keep the family going. When the catch is good she makes about Rs. 25 a day.

By the looks of her Matilda (36) seemed less poverty-stricken. Her husband owned a boat jointly with other fishermen. When the catch was good they could make Rs. 200-300 a day. But during the off season they often got into debt

Along the southern coastline, women from fisher families are usually engaged in occupations, if at all, other than those connected with fishing. Some of them are engaged in the coconut fibre industry. They soak the coconut husks, beat them and twist them into rope.

Others make lace, handicrafts and ornaments which they sell to tourists. The women from the extreme south do hardly any work other than house-keeping. In fact they are better off than their sisters in Negombo, Kalpitiya, Mannar, Trincomalee, Batticaloa etc. Their husbands in some instances own small plots of land and the houses they live in.

The Negombo fisherwomen are quite different. They migrate with the men to other fishing grounds such as Kalpitiya, Mannar and the eastern coast. Something of a holiday or picnic atmosphere takes over when the migrant fishermen pack their wives and children, clothes, bedding, pots and pans and provisions and migrate. They generally travel in lorries and vans.

Women operate beach seines at Sinnapadu, north of Colombo.



The women help to put up the huts; they cook for their husbands, sort the fish and the prawns and help with the making of dried fish. In the sparsely populated areas such as Mannar and Kalpitiya the potential for marketing fish within the area is limited. Women also help in the mending of nets.

The fish is either sent down to Colombo or it is made into dried fish which Sri Lankans relish,

Often in a place like Kalpitiya there are more women than men. They may even start small enterprises like boutiques which sell tea and eats. The children find the migrant life of their families great fun and they even go to school for a few months in the areas into which they have moved,

They do household chores, accept an inferior role, tolerate spouses' heavy drinking, and the ups and downs of an uncertain existence."

According to the Women's Bureau survey, 66 per cent of the women do nothing else except cooking and looking

after the children,

While the fisherwomen are notoriously sharp-tongued and aggressive it has been found that within the family they play a secondary role to their husbands.

They perform all the household chores, accept an inferior role, tolerate their spouses' heavy drinking in many cases and the ups and downs of an uncertain existence.

In a country where the two-or-three children family is becoming the norm, the fisherwomen produce large families. While about 78 per cent have heard of family planning, only about 24 per cent have ever used some form of birth control. Only 11 per cent of them have been sterilised.

This could be attributed to their high rates of illiteracy. As a community they have some of the lowest literacy rates when compared to the national average which is 80 per cent. 20.17 had no schooling at all according to the Women's Bureau survey. Only about 1.68 per cent reached GCE O/Level while 47.48 reached primary school level.

Their fertility rate is high and the majority of these women (87 per cent) belong

to the reproductive group. The family planning message does not seem to have reached them. And perhaps like all struggling, weak communities they may feel it an advantage to have more children in the family to help with the fishing.

Most families do not have the money to buy newspapers and on the radio what they like to listen to are the popular songs and music.

Many families live in appalling conditions – in beachside huts, without proper sanitation or safe drinking water. Their water comes from brackish wells or standpipes and their toilets are the wide open beaches.

Because of the low level of education of the younger set they need to be trained for some occupation, given direction and guidance. The Women's Bureau is trying to help them earn more money by encouraging them to take to the drying of fish, processing of prawns, fishing in inland waters. It hopes to encourage them to engage in poultry and dairy farming, gardening etc.

Among these women you do get a small proportion who are fairly well off. They are part-owners of boats, they hire out nets which they own in addition

to marketing the fish themselves.

But women do not go to sea.

Why not? Asked a hardened fisherman. Oh, no, he said. It's too tough a job.

You cannot take a woman in a boat. The going is very heavy. This division of labour extends only to fishing out at sea.

A new category of women are entering the fishing industry. They are the young girls, small in numbers yet, who are

working in the Sri Lanka Fisheries Corporation.

They work in groups under a contract system which enables them to receive a fair wage at the end of the month.

They pack fish into polythene bags, fillet varieties like sole and pack them for sale in the local market. They also

process prawns for export. The crushed, damaged fish is cut up, salted and dried by some of them. They also make

Maldivian fish, which is a form of dried fish used for the seasoning of curries.

These girls from the predominantly fishing areas in Colombo such as Mattukuliya and Mutwal are mainly school drop-outs. A few of them have passed the GCE O/Level. Their families have had connections with the fishing industry in years gone by, though it is not so now.

They are a floating population, in the sense that the Fisheries Corporation calls in more of them during the fishing season on the western coast, and fewer when fishing tails off.

Almost no programmes or projects have been started up to now to improve the status of women in the fisheries industry.

Now the Women's Bureau and the welfare division of the Fisheries Ministry are trying to improve their lot.

It is felt that the quality of their life, be it in the matter of housing, schooling,

recreational facilities, water and sanitation, insurance, needs drastic improvement. Specific programmes have to be directed

at them as a target group, to raise the incomes of women and to improve their living standards.

About the Author: Mallika Wanigasundara is on the editorial staff of Ceylon Daily News, Colombo.

A fisherwoman with her large family in a small beachside hut.

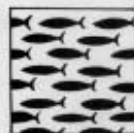


Fact Sheet of Sri Lankan Fisheries



Geographical Data

Coastline	1760 km.
Shelf area (upto 180 m depth)	30,000 sq. km.
Area of brackishwaters	300,000 acres
Area of inland reservoirs, tanks etc.	344,000 acres



Fish Production

Marine	164,775 t
Inland	19,947 t
Potential annual yield	250,000 t



Craft

Non mechanised traditional craft	15,765
Planked	3,521
Outriggers	5,598
Dugouts	230
Log rafts	4,951
Beach seine craft	1,465
Mechanized traditional craft	3,915
Other mechanized craft	8,808



Gears (1977)

Gillnet Units (1980)	20,340
Beach seines	1,500
Cast nets	7,000
Handlines	2,000
Pole and line units	500
Set nets, trap nets, etc.	2,500



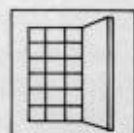
Fisherfolk (1981)

Fisherfolk population	308,200
Active fishermen	72,413



Infrastructure

Landing centres	500
Harbour/Jetties	8
Boatyards	68
Ice plants	55
Private	32
Public	18
Total capacity	593.45 t/day
Cold storage total capacity	6,390 t/day
Net making units	4



Major Marine Fish Species

	Production in tons
Spanish mackerel	6,142
Tuna & tuna like fish	27,830
Shark	8,321
Horse mackerel	10,080
Skate	5,931
Rock fish	16,641
"Shore seine" varieties	81,685
Prawns	3,251
Lobsters	201
Others	4,693
Total	164,775



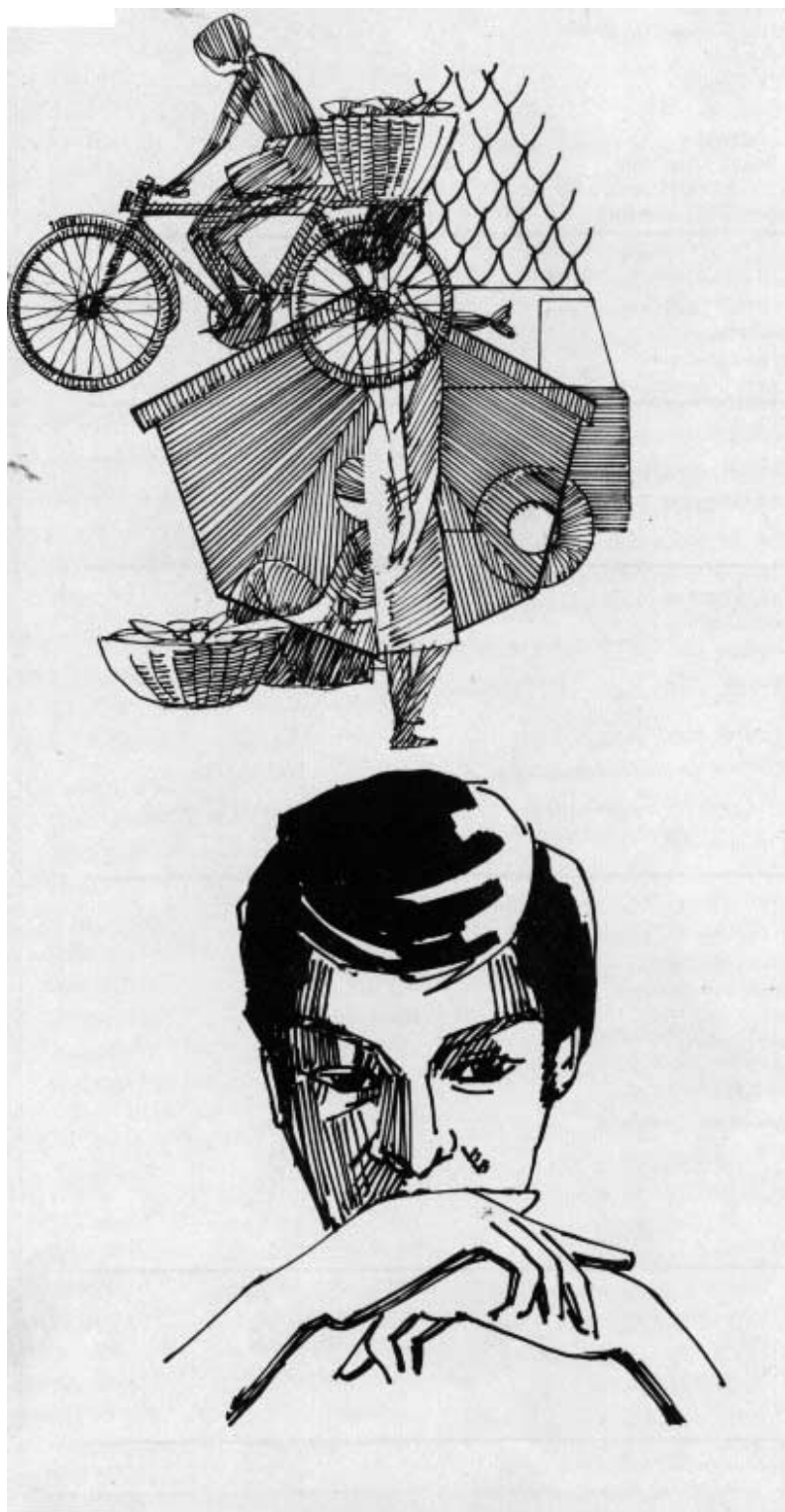
Exports and Imports

Exports	Rs. 249 m
Imports	Rs. 298 m

Note : All figures refer to 1980, unless otherwise stated.

Does Training Help Job Performance?

Yes and no, says BOBP socio-economist Uwe Tietze, who interviewed the participants of two fish marketing training courses several months after the courses. Adequate follow-up to such courses – such as advisory services – is essential to meet the real goals of training, he says.



To what extent can training influence the professional performance of the trainee? Is it possible to anticipate impact while designing and planning a course? What factors should be taken into consideration in planning the course? These are important questions, very relevant to the success of training course.

Normally very little information is available in developing countries about the impact of training on professional performance. Systematic and thorough evaluations of the conditions that further or hinder impact do not exist. One may argue that evaluations are not worthwhile, as they are too costly and time-consuming, and because the future field of work of trainees is often not known. However, most courses are designed to be repeated many times with little modification. The cost of evaluation per course therefore, may be relatively small. Even though the professional prospects of trainees are not predictable, it is still necessary to design the training for a particular professional environment; it is necessary to try to improve our knowledge of that environment and the chances that we may influence it by training. We should also examine whether our concept of training is adequate and whether the traditional residential course without follow-up activities meets the goals of training.

These thoughts are inspired by a two-week fish marketing management training course conducted by BOBP in 1979 for marketing officers of the Tamil Nadu Fisheries Development Corporation (TNFDC), and a similar course in 1980 for marketing officers of the Andhra Pradesh Fisheries Corporation (APFC). Both courses emphasized an integrated planning/management approach towards the procurement, handling, processing, distribution,

promotion and sales of fish to achieve the objectives of TNFDC and APFC — such as increasing the incomes of fishermen and supplying larger quantities of fish at cheaper rates to less developed sections of society to meet their nutritional needs. A so-called business game served as a major training tool. During the game participants formed small groups, each representing a fish marketing corporation. The various corporations simulated real-life fish marketing businesses competing with each other in the processing, distribution and sale of fish. The accounts of their operations were evaluated after each period of the game. To provide background knowledge, lectures were given on accounting, management, fish handling and processing, marketing research, socio-economics of fishing villages, local consumer preferences, and the marketing strategies of TNFDC and APFC. In 1981, an evaluation was carried out of the impact of training. The author visited course participants at their duty stations, investigated their job descriptions and daily tasks and tried to find out how well they could remember and use what they had learned in the training course.

The impact of this training may be considered vis-a-vis three discrete components. One component concerns **basic general skills and knowledge** related to accounting, use of cold storage and transport facilities, icing/packing of fish and socio-economic conditions of fishermen. Here, the course's impact on the professional performance of participants was positive. Accounting forms used by the corporations had been revised, simplified and made more efficient. Spoilage of fish during transport had been reduced by improving icing and packing methods. A better understanding of the socio-economic conditions of fishermen had led the marketing officers to look for ways of weaning fishermen away from the influence of middlemen, ways to raise their procurement rates.

Another component concerns **specific skills and knowledge related to local conditions and problems**. For example, how to handle transport and storage when landing sites are scattered and inaccessible, landings irregular, quantities of fish small, and there are many different species with different sales potential. Or again, how to use freezing and storage facilities when power cuts

were frequent. The impact of the courses on participants' handling of such problems was negligible. The courses made their least impact in *increasing the trainees' ability to apply the integrated management and planning methods practised in the 'business game'* which constituted the heart of the training courses. True enough, the participants appreciated the game, and it improved their planning, management and accounting ability. The game also created positive, ambitious attitudes in support of aggressive overall marketing strategies to be adopted by the fish marketing corporations. But the practical impact of the course on the real-life work of the participants was poor. This is mainly because of organizational constraints in the corporations themselves; they lacked overall integrated marketing strategies. In one case the procurement side was highly underdeveloped; fish had to be bought from middlemen at relatively high rates, thereby shackling the sales system and jeopardizing the corporation's objectives. In another case, the procurement side was fairly well organized but the sales side was not — with the result that fish had to be sold to middlemen or via consignment at rates that did not even cover the expenses.

These shortcomings and constraints, primarily caused by lack of technical **competence** in the corporation managements and by frequent changes in their senior staff, led to a sense of frustration among the ex-course participants. They found themselves denied the opportunity to apply the abilities and attitudes acquired in the training courses. How can the impact of training on the professional performance of the trainees be maximised?

As far as basic general knowledge and skills are concerned, a single residential course can be adequate.

As regards specific skills and knowledge related to local conditions and problems, it is advisable to follow up the training with a temporary advisory service. This will help *the* trainees to apply the course knowledge to problems encountered in actual practice. A second short residential course may be held to enable

exchange of experiences and insights by participants in applying their knowledge to local conditions.

As for the third category of impact — on knowledge concerning overall planning and management — it seems

to be necessary to integrate **the course** training with activities to improve the planning and management structure of the trainees' organization so that the trainees can contribute meaningfully to management activities.

Normally trainees are not in a position to modify the planning and management structure of the organization they are working with. Management training in such a context only breeds frustration. Here again, a second follow-up course to exchange experiences would be valuable.

On the whole, the evaluation indicated

clearly that to achieve the real goals of training it is necessary to supplement residential courses with a variety of long-term measures — such as advisory services, follow-up courses and organizational improvements.



INFOFISH — New FAO Fish Marketing Service

An FAO project funded by Norway has been set up in Kuala Lumpur to promote trade in fish products within and beyond the Asian/Pacific region and to provide marketing intelligence and advisory services.

INFOFISH is part of a global network of fish marketing information services being created through the FAO. Fish producers and traders in the Asian/Pacific region can tap this network to secure better prices and wider markets for their products and find high quality imports at competitive prices.

INFOFISH will bring together exporters and producers from the Asian-Pacific region and potential buyers in other regions. It will seek markets for species not commonly marketed now but available in great abundance in the area.

The FAO project will inform member countries about market trends through a fortnightly trade newsletter. It will publish a bi-monthly magazine, INFOFISH Marketing Digest (picture above), which will report on technical developments and market studies.

"THE INTERNATIONAL COMMUNITY MUST BE BASED ON SOLIDARITY"

The Swedish International Development Authority (SIDA) now provides annual assistance worth several hundred million dollars to projects in developing countries. One of the projects funded by SIDA is the BOBP. In this interview, Mr. Anders Forsse, Director General of SIDA throws light on Sweden's aid philosophy, the kind of results Sweden would like from development aid, and SIDA's assessment of BOBP. Mr. Forsse was interviewed in Stockholm by *Bay of Bengal News*.

Q. Sweden is *the first country that surpassed the goal of 0.7 per cent of the GNP suggested by the United Nations as assistance for developing countries by the developed. And one notices a deep and sincere concern for the world's under-privileged in Sweden – more so than in other developed countries. What do ascribe this to? Are there any historical or philosophical factors behind this?*

A. Swedish people of my age have a lively impression of a rapid social and economic development in our own country. If I go back another generation, to that of my parents, it is clear that when they were young, Sweden was an agrarian society, very little industrialized. Since then the country has changed enormously. Thus we know that development is possible, through joint action by the state and free enterprise promoting both growth and an equal distribution of growth and of existing resources.

In the field of international cooperation Sweden pursues a policy of non-alignment in peace time aiming at neutrality in wartime. This policy has placed us outside the political blocs connected with the super powers. In the deliberations within the United Nations we have most often found ourselves on the same side as other non-aligned countries, many of which are developing countries. We believe firmly that the most important function of the United Nations is to contribute to creating and safeguarding peace. The best method of promoting peace, we believe, is to strive towards economic and social development and towards social justice, between as well as within the nations.

Given the high material standard in Sweden we could afford to pay for the volume of international development cooperation that we advocated internationally. Since one or two years the



Born in 1924, Mr. Anders Forsse is a graduate in economics and a career diplomat who has been posted in Washington, Paris and Algiers.

From 1963 he has been with the Swedish Development Agency (which in 1965 became the Swedish International Development Authority) except for a stint in Tanzania during 1974-1978. In 1979 he was appointed Director General of SIDA.

Swedish economic situation is deteriorating. Nevertheless, it has so far proved possible to maintain internal political consensus with respect to the one per cent target, i.e. to devote one per cent of the gross national income to international development cooperation.

Q. *Is all Swedish development aid channelled through SIDA?*

A. Nearly one third of the total Swedish appropriations for development aid is given as voluntary contribution to various development programmes of the United Nations family, through the Ministry for Foreign Affairs. The major part of the remaining two thirds is channelled directly to some 20 countries through SIDA.

Q. *What are the criteria SIDA uses for development aid? Which geographical areas and areas of activity does SIDA focus on at present? Is there a special emphasis on agriculture for instance?*

A. The Swedish Government and Parliament have set up four goals concerning the design and direction of development aid. It should promote:

- growth of resources
- economic and social equality
- economic and political
- independence
- the democratic development of society

In selecting partner countries in development co-operation Sweden pays attention to whether countries pursue policies aimed at promoting these goals. Most of our present partners were selected because their political and economic independence was being and is being seriously threatened. This is true for a number of countries in Southern Africa, e.g. Mozambique, Angola, Guinea-Bissau, Cape Verde and Zimbabwe; and also Zambia, Botswana, Lesotho and Swaziland.

Generally speaking there is a concentration of Swedish aid to Southern

Africa and Eastern Africa (including Ethiopia, Kenya and Tanzania), and secondly to Southern and Eastern Asia (India, Bangladesh, Sri Lanka; also Vietnam and Laos).

A basic principle of the Swedish aid

programme is the country programming method. This implies that our partner countries have a lot to say about how to use Swedish aid, including the fields in which it is given. But we also have our preferences. As a result of the continuous dialogue with our partners, SIDA focuses at present on all aspects of rural development, which includes not only agriculture but, equally important, primary health, primary and adult education, animal husbandry, forestry, industrial projects, and so on.

Q. *Would you like to spell out your ideas of the ideal SIDA-funded project? What are your expectations of such a*
(Continued on page 21)