

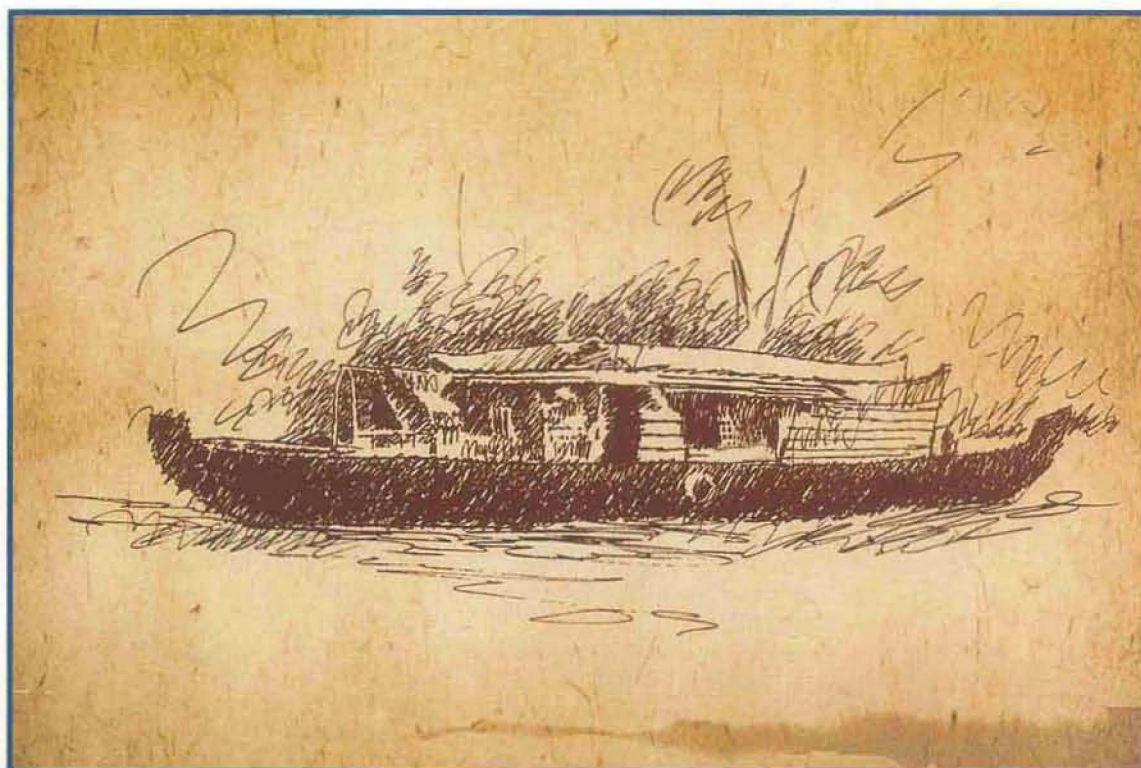
No. 35

July 2003

SAMUDRA

REPORT

INTERNATIONAL COLLECTIVE IN SUPPORT OF FISHWORKERS



BOATWORKERS OF GUJARAT

EU Policy in the Pacific

A Social Contract for Fisheries?

FISHERIES AND NEOCLASSICAL ECONOMICS

COMMUNITY-BASED FISHERIES MANAGEMENT

MINAMATA REVISITED

ILO LABOUR STANDARDS FOR FISHING

News Round-up

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Welcome labour

There are seven existing standards (five Conventions and two Recommendations) of the International Labour Organization (ILO) that were adopted in 1920, 1959 and 1966. Since then, as far as the world of fisheries is concerned, significant changes have occurred. The most important among them are the 1982 United Nations Convention on the Law of the Sea and the emergence of developing countries as the world's largest fish producers. There are now about 27 mn persons working solely in capture fisheries, worldwide.

The other significant development in the past two decades has been the emergence of small-scale fisheries as an important source of employment, income, nutritional security and foreign exchange in many coastal developing nations. Aided by new, miniaturized forms of propulsion, navigation and fish detection techniques, small-scale fishers are now fishing far beyond their traditional fishing grounds, sometimes extending to other exclusive economic zones (EEZs) and the high seas. A comprehensive standard on work is, therefore, a welcome development not only for industrial fisheries, but also for the small-scale fisheries, considering its changing profile all over the developing world.

The proposed agenda concerning a comprehensive standard on work in the fishing sector at the 92nd Session of the International Labour Conference in June 2004 (see page 46) envisages a total revision of the existing standards "in the light of the extension of fundamental principles and rights at work to all workers, as laid down in the ILO Declaration of Fundamental Principles and Rights at Work and its Follow-up." Two of the existing Conventions, for example, do not apply to the small-scale fishing vessels, namely, Competency Certificates Convention 1966 and Accommodation of Crews (Fishermen) Convention, 1966. Both are pertinent when we consider the changing seascape of small-scale fishing vessels.

Standards on occupational safety and health and social security will also be part of the proposed agenda. Under the proposed Convention and Recommendation, the ILO also intends to provide protection for persons working on both large and small fishing vessels. This is a welcome move, considering that the majority of the world's fishers work in small-scale fisheries.

ILO has circulated a questionnaire among governments, whose replies are to be prepared in consultation with the most representative of organizations of employers and workers. The most representative fishworker organizations should engage their national labour ministries to organize such consultations. That would be an excellent opportunity to participate in defining the scope of such a standard on work.

The fishing world is complex, and it is an onerous task to think of an all-encompassing standard on work in the fishing sector that applies to both industrial and small-scale fisheries. It is, however, important to have such a standard that will ensure that "fishermen, by virtue of their work, do not fall through the crack of social protection provided to other workers", as pointed out by the ILO Law and Practice report. The challenge will be to develop an inclusive standard. We believe such a standard will go a long way in protecting the interests of those who labour on fishing vessels, both large- and small-scale, especially in the EEZs of other countries and the high seas. Such a comprehensive standard on work can also be of great support to fishers in the event of capacity reduction or in situations of overfishing that could lead to displacement of fishers.

We see the proposed standard on work in the fishing sector as an important social instrument to complement fisheries conservation and management initiatives. We welcome this initiative of ILO.

Districts of Gujarat



For a few rupees more

The boatworkers of Veraval in the Indian State of Gujarat are a harried lot, facing a bleak future

It is just a mass of humanity—‘suppliers’ as they are called—scrambling over several boats to carry baskets of fish to the marketing shed, or crushing ice at the crushers on the landing site and carrying it off to the boats, or fetching water and stores for the boat. Some of them even look jolly, dressed up as if to go off to the cinema, for this is their only day at shore. Some look so young and should be in school or playing around rather than carrying heavy weights at the harbour.

In between all that movement, there are yells, shouts and commands, in a language that does not sound familiar—a large bunch of these workers do not speak Gujarati, the language of the place. Yes, it is quite a sight, and when one gets closer to these people, one is amazed by the stories they tell. They are the people on whom the fishing industry of Veraval depends, and not a single one of them—over 20,000 this season—has a space of his own in this town.

They hail from other parts of Gujarat, mainly from Valsad, the southernmost district of the State, and a large number of them come from across the country, from Andhra Pradesh on the east coast of India. Interestingly, none of the boatworkers are from Veraval itself.

Veraval is the largest fishing harbour of Gujarat, which was developed in the 1960s. Traditionally, too, it was a port but mainly for sailing vessels, large wooden *vahans* which carried grain, chilli, groundnut and, later, cement and soda ash to Rethnagiri in Maharashtra and Kozhikode in Kerala, and from there some of them took spices and terracotta tiles to the Middle East, sometimes bringing back dates to Gujarat. It was mainly the Kharwa community that was engaged in this

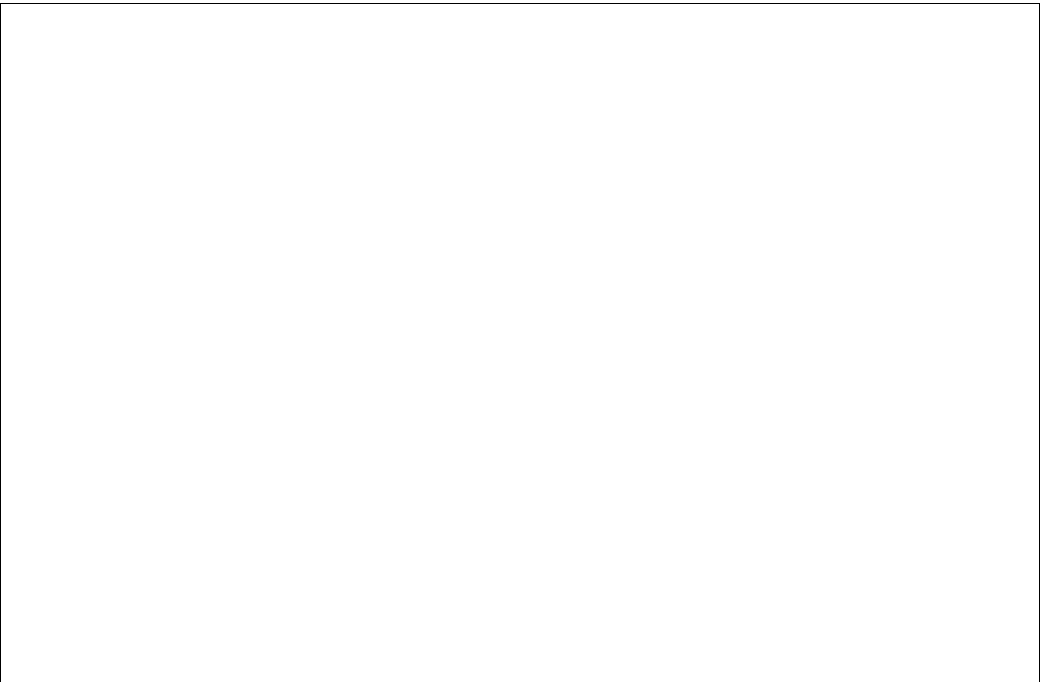
trade. The actual fishing—generally estuarine fishing—was done by the poorer Kharwas, using gillnets and smaller canoes, and by Muslim fishermen who were skilled hook-and-line and gillnet fishermen. There were a handful of Kharwas who used plank boats of fairly large size (up to 32 ft) and made multiday fishing trips with gillnets.

In the mid-1950s, the *vahans* began to get mechanized, and, by the mid-1970s, they began to decline with the development of roadways. Trawl fishing was launched by the Department of Fisheries in 1962 with the idea of demonstrating the technology.

By the mid-1960s, the government of Gujarat had realized the need to develop a fishing port at Veraval, as the potential of fish export was already being demonstrated by Maharashtra, its southern neighbour.

The Kharwas, whose *vahans* were becoming redundant, plunged their monies into the fishery, but not knowing much about fishing themselves, engaged the Valsad skippers and crew on their boats. With the completion of the port in 1978 and with the stimulus from the Fisheries Department and encouragement from one enterprising exporter of Kerala origin, who also happened to be in the Department, the gillnets were soon transformed into trawls, and shrimp was the main target.

Largely illiterate
Government subsidies were rooted through co-operatives and were meant only for the Kharwa community. The community, largely illiterate, was dependent on the Fisheries Department and some community leaders who were somewhat educated or had an economic standing from the seafaring trade.



Here too, it was the processor who took the lead in making advances to the boatowners and this is how the actual fishing for export commenced. It did not take long for a few enterprising Kharwas themselves to acquire trawlers and supply fish to the exporter. In the initial stages, these adventurous Kharwas acquired five to 10 trawlers, as business depended on the size of the turnover. They also set the tone of the industry—they were managers of their boats. They employed crew from other areas on a salaried basis and regarded it as a business. Trash fish, which easily made up half the catch, was also in demand. In the early years, much of it was dried and sent to the southern States of India and even to the northeast. By 1984, because of the presence of large ribbonfish, the high open-bottom trawl was introduced and Gujarat saw a new spurt in the fish catches.

During this phase, the poorer Kharwas went into the fishery, taking advantage of the government subsidies both for acquiring boats and for diesel. Some of these poorer Kharwas had worked on traditional craft before, but many had worked with the bigger Kharwar 'suppliers' as wage labour. Seeing the potential in the industry and the fact that others were making big profits, they put all they had into the industry. Instead of getting on to the boats themselves, they followed the others, engaging crew from

the outside, while they themselves turned into shore managers of their boats. Around 40 per cent of them acquired only one boat each, which they managed themselves or through their sons, and all they would do would be to wait for that boat to return after four days at sea. (This duration has become eight to nine days now, in 2003.)

The number of trawlers grew by leaps and bounds between 1986 and 1994. While in 1984-85, there were about 1,030 trawlers of 32-48 ft length in the district, by 1995-96 there were 4,191, which made up 58 per cent of the trawler fleet of Gujarat. This was also due to the liberalized export regulations and the fact that ribbonfish was in big demand in China at that time. Seeing the large profits in the business, several salaried Kharwas went into the industry and the number of boats increased. By 1999, there were 6,749 small trawlers in Gujarat. The southern States of India were already seeing the downward slump in the fishery. Fishworkers were in the dumps in other parts of the country and so this growing industry in Veraval was alluring to these workers who migrated there and were willing to work under very difficult conditions.

Total workers

At the peak time of the Veraval fishery, which was around 1998-1999, there were about 4,000 boats, each with six workers, which made a total of 24,000 workers

working for eight months of the year when the port was open. Since 1999, the catches have fallen, and several boats operate only for four to five months a season. But since around 2001, one-fifth of the fleet has not operated at all because the boats are either too old or because the catch per unit effort has declined so drastically that fishing is no longer viable. Kharwa owners who have other occupations—several have salaried jobs—do not find it profitable enough to spend time managing the boats. Some of them have also borrowed money from their employers, which they have to repay.

The boatworkers of Veraval range from 14 to 60 years of age. Some of them came as experienced fishermen but a lot of them have learnt the ropes on the job. Gurumurthy from Srikakulam in Andhra came to the Kandla port in Gujarat at the age of 13 to work as a casual labourer, loading and unloading goods at the harbour. He had completed his seventh standard at school, but had to go to work as there was no other income in his family and he had three sisters to look after. After working a couple of years there, an older fishermen took him on to a fishing boat, where he worked as a cook. While on the boat, he learnt the work on board and then became a boathand or *khalasi*. He remembers getting typhoid during his first boat trip, after which he had to go home. But he returned soon after he got well and continued to work. Some years later, he moved to Veraval and gradually became a *tandel*, the key person among the workers. Now, for the past six years, he has been regularly based at Veraval, bringing with him others from his district. Several of the deckhands tell the same story as Gurumurthy, many starting as cooks at very early ages and gradually graduating to higher positions.

Despite all the hardships, for boatworkers like Gurumurthy, life is more gainful here than back home. Most of those who come from Andhra are from fishing villages; often, hundreds come from a single fishing village. But in the case of those from Valsad, this need not always be the case. Several of the *tandels* and *khalasis* have come from an agricultural background, or had been wage workers in construction or other fields, and have

learnt the fishing work on the job. Those who have been traditional fishermen from the Valsad area are called *mota bhais* (big brothers), and they are probably the best-paid too. They also have the fortune to work on the better and bigger boats, while the Andhra *tandels* get the smaller and older boats—and lower salaries. Both the Valsad and Andhra skippers bring their teenage sons along, together with their brothers and other relatives.

The *tandel* is the key person among the workers. It is with him that the boatowner makes the deal for the next season. He is given an advance of around Rs60,000-80,000 at the end of one season in lieu of the next, which is four months off. It is his job to recruit the crew, which he does mainly from his own village, giving each of them a small advance as well. Most of the crew do not know exactly what they will get for the season, but it is generally around Rs2,000, while the *tandel* gets around Rs. 8,000-9,000 a month.

Once they take charge of a boat, this will be their home for the next eight months. The cabin room is the cleanest space on the boat. This is the room dedicated by the owner to God, and the place where the deckhands eat and sleep. There they have a clock and a calendar, with which they religiously keep track of the time.

They start right away, soon after the owner has supplied the boat with provisions to take care of the crew's food, and so on. The crew does all the loading and unloading of the material on board. Their fishing trips are generally of eight to nine days duration now. When they are back in the harbour, they get exactly 24 hours to offload, reload and get to a cinema if they can. While on the boat, they are not allowed to consume liquor. They use sea water to bathe and wash their clothes. They also have to sort the fish to some extent, to make sure the good varieties are well preserved. The boat is often decorated with lines on which they dry some of the fish too.

Sending money

The boatowner handles all the accounts. He also sends money to the families of the workers on their request. But settlements are made only at the end of the season, at which time they are at his mercy, as most



of them are illiterate. If they feel they have not been treated well, they do not work for the same owner the next year. Very few continue to work for the same owner for more than three years.

Some boatowners have been let down by *tandels* who collect their advances and do not return. It has also happened that *tandels* have not received their full settlement at the end of the season. Everything in the business runs on trust. A worker is allowed to go home once during the season. This is the only time he gets to communicate with his family and to take money home.

The Veraval harbour now has a modern toilet facility, which is a welcome change. The condition of the water in the harbour itself—a dirty blue-red and foul-smelling—could be the result of human waste. But the workers refute this conclusion, saying it is due to waste from the processing plants that is released into the harbour.

The Veraval fishery has been built on the sweat and toil of these boatworkers. But for them, the future is grim—they can see the boon gradually fading before their own eyes, as the unmanaged fishery spins into steady decline. ❧

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Establishing a foothold

The European Union has an increasingly important role in the tuna fishery of the western and central Pacific Ocean

Pacific island States conduct their fisheries policies through a number of channels—at the national, subregional and regional levels. The two key bodies for co-ordinating fisheries policy are the subregional Parties to the Nauru Agreement (PNA) and the regional South Pacific Forum Fisheries Agency (FFA). Also important in terms of providing scientific and technical advice (for example on stock assessments) is another regional body, the Secretariat of the Pacific Community.

In September 2000, Pacific island States and distant-water fishing nations concluded negotiations to establish an international management and conservation regime for the tuna fisheries of the western and central Pacific. Among other things, this regime (dubbed the Tuna Commission) will seek to establish a total allowable catch or level of fishing effort for the region’s tuna and other highly migratory fish stocks.

The tuna fishery of the western and central Pacific is primarily made up of industrial purse-seine, pole-and-line and longline operations. These occur both in the exclusive economic zones (EEZs) of Pacific States and on the high seas. The main species targeted by these fisheries are skipjack, yellowfin, bigeye and albacore tuna.

According to the Oceanic Fisheries Program of the Pacific Community, annual catches of the four main tuna species have increased significantly since 1998. The total tuna catch for 2000 was estimated at 1,862,269 tonnes. The purse-seine fishery accounted for 56 per cent of this total, followed by the pole-and-line fishery (19 per cent) and the longline fishery (12 per cent), with the remainder (13 per cent) taken by troll gear

and a variety of other artisanal gear, mostly in eastern Indonesia and the Philippines.

According to preliminary estimates, the purse-seine catch in 2001 was about 835,000 tonnes. Most of this was taken by distant-water fleets operating in the region, made up of 29 American, 41 Taiwanese, 35 Japanese, 27 Korean, 14 Spanish and 10 Filipino vessels—a total of 162 vessels. Domestically based purse-seine vessels in the Pacific island region accounted for an estimated 136,000 tonnes. The domestic fleet includes 19 vessels in Papua New Guinea (PNG), five in the Federated States of Micronesia (FSM), five in Marshall Islands, one in Kiribati, two in Vanuatu and three in New Zealand—former vessels of the United States (US) fleet. According to FFA, in 2001, the Spanish fleet recorded a catch of only 2,400 tonnes, a reduction of approximately 10,000 tonnes. Only ten vessels were licensed in 2001.

The tuna longline catch in 2000 was about 217,000 tonnes, which was a record catch for the region. Bigeye and yellowfin comprised 62 per cent of the catch, while albacore comprised 37 per cent. Most of this catch was taken by large-vessel distant-water fleets of Japan (216), Korea (166) and Taiwan (149). There were 108 Chinese longliners registered on the FFA Regional Register in the 2000-01 period. However, there has been a significant growth in the domestic and locally based longline fisheries in such countries as FSM, Fiji, Palau, PNG, Samoa, Solomon Islands and Tonga.

Japanese fleet

Much of the pole-and-line catch was taken by the Japanese distant-water fleet, comprising 40 vessels and accounting for about 65,000 tonnes. There are also

domestic pole-and-line fleets in Indonesia, Solomon Islands and French Polynesia. The general trend, especially for domestic operations, has been a gradual reduction in the number of vessels active in this fishery due to economic factors and technological advances in the purse-seine fishery. Pole-and-line fleets formerly operating in Palau, Kiribati and PNG are no longer active.

The following summary statements on the four key tuna species were adopted in August 2002 by the inaugural meeting of the Scientific Coordinating Group, which was formed to provide scientific advice to the Preparatory Conference for the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the western and central Pacific.

Skipjack tuna: appears to be capable of sustaining the current catch without adverse effects to the overall stock.

Yellowfin tuna: the stock is likely to be nearing full exploitation. Any increase in fishing mortality of juveniles is likely to move the yellowfin stock to an overfished state.

Bigeye tuna: indications are that the stock is nearing full exploitation. The catches and fishing mortality of juveniles have increased greatly over the past decade. Any increases in juvenile fishing mortality are likely to move the stock to an overfished state.

South Pacific albacore tuna: indications are that albacore appear to be only lightly exploited; therefore there are currently no concerns with respect to the status of the stock.

These summary statements are qualified, especially for yellowfin and bigeye tuna, by the issue of uncertainty. This follows, in particular, from the lack of monitoring of purse-seine catch of juvenile yellowfin and bigeye tuna, which tend to be confused with skipjack tuna. A further cause for uncertainty is the impact of climate change, in particular El Niño/Southern Oscillation events. This tends to affect catch distribution and stock abundance; however, the link

between climate variability and stock productivity is still unclear.

In addition to concerns about biological limits being reached, at least for bigeye and yellowfin, there are concerns about economic limits being exceeded. This is due to the problem of overcapacity and a global oversupply of tuna, especially in the canning market. As a result, some vessel operators have taken steps to reduce fishing effort in order to restrict the supply of canning raw material and raise prices.

The tuna canning market improved in 2001 after several years of record low prices for skipjack tuna. Prices recovered in the Southeast Asian, European, Latin American and African markets. This was also the case—although less marked—for yellowfin prices. However, prices for albacore for the canning market fell significantly. The price of pole-and-line caught skipjack landed in Japan increased during 2001.

Imports of fresh yellowfin into Japan from Pacific island countries totalled more than 5,000 tonnes in 2001, an increase of 34 per cent compared with 2000. This was mainly due to the growth in imports from PNG and Fiji. Japanese imports of fresh bigeye in 2001 also increased to about 4,000 tonnes.

Most assessments suggest that there are too many purse-seine vessels operating in the tuna fisheries of the western and central Pacific. The recent growth in purse-seine capacity is due to new entrants (such as the Spanish vessels) and to the introduction of larger vessels. There is also an increase in the number of locally based vessels, with the development of shore-based processing facilities. Restrictions on purse-seine operations in the eastern Pacific are thought to be responsible for the growth of Spanish interest in fishing in the western and central Pacific.

Excessive fleet

The number of purse-seine vessels active in the region is considered excessive from both a conservation and economic point of view. This is despite a regional arrangement to limit the number of purse-seine vessels licensed by Pacific

island States (the Palau Arrangement) and despite a steady reduction in the number of US vessels operating in the western Pacific. Studies to date have shown that the profitability of the purse-seine and longline fishery could be greatly increased by reducing purse-seine fishing effort. A 20 per cent reduction in purse-seine effort, for example, would double the profitability of the fishery by improving catch rates. The impact of purse-seine fishing through use of deeper nets and free-floating fish aggregating devices (FADs) is also considered responsible for the falling longline catch rates for bigeye tuna in the western and central Pacific.

There has recently been increased interest by offshore investors in establishing tuna loining plants in the region. Domestic or locally based vessels are expected to supply these plants. This may put more pressure on increasing the number of licenses available for such vessels and staying within the limits set under the Palau Arrangement. Member States of the Palau Arrangement are at present considering a proposal to limit purse-seine fishing days rather than allocate a certain number of licences to various flag States.

Japan is the largest distant-water fishing nation in the region (active in all three major fisheries). It also has the longest established fishing presence in the region. Japan has bilateral fishing agreements

with eight Pacific island States. These are predominantly rollover types of agreements comprising a head agreement between the governments and subsidiary government to industry agreements. It is the subsidiary agreements that determine the rate of return and other conditions of fishing. Access fees are paid on a per trip basis wholly by the Japanese fishing industry. However, the Japanese government provides fisheries grant aid and technical co-operation as an indirect subsidy (or top-up) to the access fee. The access fee is on average about 5 per cent of the catch value, using the previous three years catch to calculate the fee level. Almost all Japanese-caught tuna is landed in Japan.

Bilateral agreements also exist between Pacific island countries and fleets from Taiwan and Korea. Fees are based on the catch and prices for the previous year and by applying the target rate of return (five or six per cent of the value of the catch). Taiwan, which has the second largest fleet presence in the region, has diplomatic ties with only four Pacific island States (Solomon Islands, Tuvalu, Marshall Islands and Palau).

Access agreements

Thus, access agreements tend to be between the coastal State government and fisheries associations. Taiwan is the one distant-water fishing nation actively expanding its fleet, both longline and



purse-seine. However, it has been the most difficult fleet to control and regulate. Taiwanese and Korean fleets offload their purse-seine catch to canneries in Fiji and American Samoa. Other catch is transshipped at Pacific island ports for the fresh-and frozen-tuna markets.

The US is the only distant-water fishing nation to have a multilateral fisheries access arrangement in the region. This is between the US government and the member States of the FFA and was first concluded in 1987. Recent negotiations saw the extension of the treaty for an additional ten-year period (to June 2013). The US fleet (purse-seine only) lands almost all its catch in American Samoa for processing in the two US canneries located there.

In exchange for access, the US tuna industry pays US\$4 mn per year as licence fees (to the Pacific island parties). The US government provides US\$14 mn annually under an associated Economic Assistance Agreement. Of this total package, about 85 per cent is allocated to countries according to catch volume within various EEZs. The remaining 15 per cent is apportioned equally to all parties irrespective of catch in the form of project aid and technical assistance.

In July 2002, a bilateral agreement was concluded between the EU and Kiribati. This followed a bilateral agreement concluded in late 1999 between Kiribati and a Spanish industry group. It is expected that the European-flagged vessels operating under the industry agreement will in future operate under the EU agreement (since it provides generous concessions to the industry).

The agreement is initially for three years and allows purse-seine and longline vessels to operate in the Kiribati EEZ. For the immediate future, it is likely that only purse-seiners will fish under the agreement. The agreement is heavily subsidized by an EU financial contribution (set at Euro 546,000 for the first year, corresponding to 8,400 tonnes of tuna). Approximately 19 per cent of this contribution will be allocated to 'targeted measures' to support Kiribati

participation in fisheries organizations and its institutional capacity.

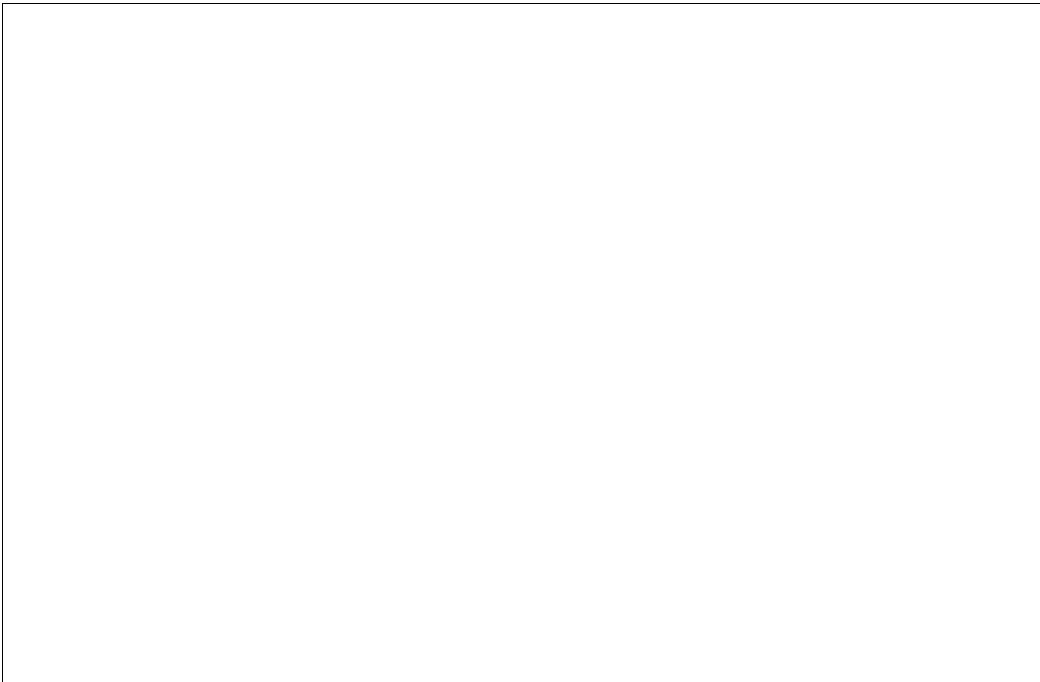
Until the mid-1990s, the only EU involvement in regional fisheries was through regional funding programmes, for example the South Pacific Marine Resources Development Programme funded under the European Development Fund. While the EU provided important assistance, the relationship was not without problems. For example, in 1996, differences between the EU and the member States of the FFA led to the termination of a financing agreement under which the EU was to have funded a regional surveillance programme and a position in the FFA.

The prospect of a fisheries agreement between the Pacific island States and the EU was first mooted in 1997. It was first discussed within the regional fisheries forums (FFA and PNA) in 1998. Two developments at that time are likely to have had an important influence on the timing. The first was the move taken in mid-1997 by Pacific island States and distant-water fishing nations to begin negotiations towards establishing a management regime for the region's tuna stocks, in line with recent developments in international law of the sea. This was known as the Multilateral High-Level Conference (or MHLC process). It is likely that the EU (particularly Spain) was keen to establish a foothold in the region and establish a 'real interest' in the Pacific's tuna fishery in anticipation of the fishery becoming subject to an international management and conservation regime.

The second development at that time was the beginning of negotiations for a successor to the Fourth Lomé Convention between the EU and the African, Caribbean and Pacific (ACP) group of nations. It seems that there was a view among Pacific island trade officials that a link should be drawn between fisheries access and post-Lomé trade and development co-operation.

Links rejected

Their strategy may have been to use the lure of fishing access to secure a more favorable outcome for the region in the negotiations with EU. However any link between fishing access and the post-Lomé



negotiations was emphatically rejected by Pacific island fisheries policymakers in their meetings in 1998 and 1999.

Much of the discussion on the EU fishing interests in the region by the Forum Fisheries Committee (FFC, the governing council of the FFA) centred on the possible impact of such an agreement on EU funding arrangements in the region.

Officials were especially concerned about possible linkage between fisheries access and the negotiations for a successor to the Lomé Convention. There were also questions raised about the EU’s commitment to the 1995 UN Fish Stocks Agreement, given that the EU had entered reservations regarding the high-seas boarding and inspection provisions.

Overall, there was a reluctance to enter into an access arrangement with the EU at this time as it would possibly provide a pretext for full participation of the EU in the MHLC process. Forum island countries were generally averse to opening up the MHLC process to newcomers who did not have an established fishing presence in the region.

They were also wary about the EU, given its reputed behavior in other regional fisheries management organizations and reputation for poor compliance in many fisheries arrangements.

At the fourth session of the MHLC process in Honolulu in February 1999, the EU was formally admitted as an observer. Meanwhile, the FFC succeeded in getting the MHLC to adopt a resolution “calling on all States and entities to exercise reasonable restraint in respect of any regional expansion of fishing effort and capacity”. This resolution was followed up at the fifth session of the MHLC in September 1999 by an even stronger stand. The Conference, “noting the advanced stage of negotiations towards a Convention...” decided not to increase the number of new participants in the MHLC process. Nor would new members be admitted until after the convention entered into force. This would preclude the EU from membership of the interim regime to be established following the adoption of the convention.

Despite these resolutions, Kiribati concluded an agreement with a Spanish fishing company OPAGAC—the first such agreement with a European fishing fleet. Under this agreement, 14 purse-seine vessels would have access to Kiribati waters for a period of 12 months from October 1999.

Interim regime
In the lead-up to the sixth and penultimate round of the MHLC in April 2000, the EU made a strong bid for full membership of the interim regime. It made its claim on the grounds that the EU was a full contracting

party of other regional fisheries organizations and that flag vessels of the EU were already fishing in the area to be covered by the convention.

The issue of EU membership of the interim regime provoked heated debate at both the sixth MHLC and the FFC meeting convened on the sidelines. In a strongly worded statement to the conference, the FFC group reaffirmed their support for the moratorium on new members that was adopted at the previous session.

The EU decided to abandon the idea of a multilateral approach to fisheries access in the Pacific region, deciding instead to pursue bilateral access agreements with certain island States.

Letters were sent in late 1999 to six FFA member States, seeking to formalize EU interest in bilateral fisheries access.

Positive responses were received by all (except Marshall Islands) and exploratory talks were held with Kiribati in late March 2000.

At the same time, France, through its territories, also pursued discussions with PNG and Solomon Islands on possible access arrangements and a Memorandum of Understanding establishing a framework for access was signed with PNG in mid-2000. This would

allow purse-seine vessels access to its waters.

At the seventh and final session of the MHLC process in September 2000, the Convention for the Conservation and Management of Highly Migratory Fish in the western and central Pacific was formally adopted. A resolution establishing a preparatory conference, to lay the groundwork for the new regime that would be established once the convention entered into force, was also adopted. As expected, this resolution restricted full membership to those States and entities that had participated as full members in the MHLC process. Perhaps as a sign of its disapproval, the EU was not present at this final session.

The first session of the Preparatory Conference (PrepCon 1) was convened in New Zealand in April 2001. In advance of this meeting, the EU again sought to participate as a full member. In requesting full membership, the EU stressed the contribution that it had made to regional tuna assessment programmes. Some FFC members (for example, Kiribati) were by now sympathetic to this EU request, and willing to support full EU membership. But there remained strong reservations from a number of others.

The second session of the PrepCon was convened by PNG in February 2002. This meeting was immediately preceded by an informal consultation on “mechanisms to promote participation”. The informal consultation spent most time addressing the issue of EU participation. Once again, the EU had written in advance of the meeting stating its case for admission as a full participant to the PrepCon process. Once again, it emphasized its support for the development of the Pacific island States, in fisheries and in other fields. According to the EU head of delegation, this support and commitment “distinguishes (the EU) from other potential aspirants for membership of the PrepCon”.

Issue debated

The issue of EU participation was debated at length in the FFC meeting held prior to PrepCon 2. The focus of discussion was a US proposal that would allow the EU a seat at the table of PrepCon (hence full rights

to contribute to the proceedings), while retaining its status as an observer. It would not be able to accede to the convention until its entry into force, nor have voting rights within the PrepCon.

While there remained reservations about setting a precedent for others to follow, there was also some support for the US proposal as it applied to the EU, especially as the EU had pledged in its letter to the PrepCon not to support a reopening of the convention text. On these grounds, the EU was allowed a seat at the table and it participated fully in the deliberations of PrepCon 2.


This development may be regarded as a political victory for the EU. It signalled a major elevation in its status within the PrepCon process. It also reflected an improvement in its relations with PrepCon members compared to the previous session, when it was viewed with some scepticism, if not suspicion especially by some members of the FFC.

The conclusion in July 2002 of an access agreement between Kiribati and the EU had immediate consequences for the allocation of purse-seine licences under the Palau Arrangement. The agreement provides for a minimum of six purse-seiners and a maximum of 11 purse-seiners. Given that the EU now has an allocation under the Palau Arrangement (albeit a very small one), it is possible for the EU to conclude access agreements with other Pacific island countries. However, it would be required to use the same vessels as licensed under the Kiribati agreement in order to comply with the Palau Arrangement. This may change if there is a further reduction of the US fleet (freeing up more licenses) or a shift to allocation by fishing days and not by flag.

There appears to be interest among a number of other Pacific island countries in concluding access agreements with the EU. This reflects a desire by countries to increase revenue from access fees but also to facilitate domestic industry development. The perception among some fisheries officials in the region is that the terms of the Kiribati agreement are better than those of other bilateral

partners, in terms of access fees and the potential for development of shore-based facilities and fishing capacity. The Kiribati agreement also provides for the employment of local seamen on the EU vessels.

The Kiribati access agreement has been hailed as a model fishing agreement by EU officials, as it is based on principles of sustainability and good governance. The agreement meets the various regional minimum terms and conditions of access (including observer coverage and use of a vessel monitoring system). It is also claimed that the Kiribati agreement has a strong scientific review base, using regional scientific advice and stock assessment.

Beyond these positive assessments, there are broader considerations that arise from the formal entry of the EU into the western and central Pacific fishery. This includes the economic impact of increased fleet capacity, especially of the purse-seine fleet. Any benefits that may have been derived from a reduction of the US purse-seine fleet have been offset by the EU vessels and other new entrants. This underscores the weakness of existing regional regimes to effectively control the size of the purse-seine fishery and the competing pressures on Pacific island States (to maximize revenue while conserving the stocks). The failure to negotiate a multilateral access agreement with the EU was in part due to competing national interests among Pacific island States and a reluctance to 'give up' potential benefits from bilateral agreements. Similarly, the failure to realize significant gains in domestic industry development in Pacific island States (and domestic basing of fleets) may, in part, be attributed to the incentives that island States continue to give foreign offshore fishing arrangements. 

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A social contract for fisheries?

The level of conflict among fishermen in Norway would seem to call for a social contract for the fishery

I come from an area in Norway—far north of the Arctic Circle—where the most important industry was always fisheries. We would not have been able to sustain ourselves and to live as comfortably as we did, if it hadn't been for the fishery and our marine resources. In fact, it is the riches of the ocean, combined with the free and easy access, that explain the dispersed settlement structure along the northern coast of Norway. What happened with the fishery had a crucial impact on our economy, on our communities and our way of life. Due to the Gulf Stream we are, in spite of the Arctic location, blessed with mild temperatures, and, due to the easily available fish resource, we never starved.

These days we exploit other things from our waters—oil, for example. But the oil is not what we eat. In the north, where I live, the oil industry does not provide many jobs either. During the last 25 years, salmon aquaculture has gained importance, but still, it cannot replace the capture fisheries; the cod, the herring, the shrimp, the saithe, the haddock, the capelin and the mackerel that we harvest, process, and—in the case of 95 per cent of the total catch—export. The expectation is, though, that aquaculture will become increasingly important for our regional and national economy. There is now also an enormous optimism with regard to the new marine biotech industry.

The optimism is only matched by the pessimism that for the time being reigns in the traditional capture fisheries, where one crisis somewhere in the system is followed by another crisis somewhere else. At present, we're down. Now it is the situation with the cod in the North Sea and the strong Norwegian currency that creates worries. In the early 1990s, we had a severe resource crisis with the cod in the

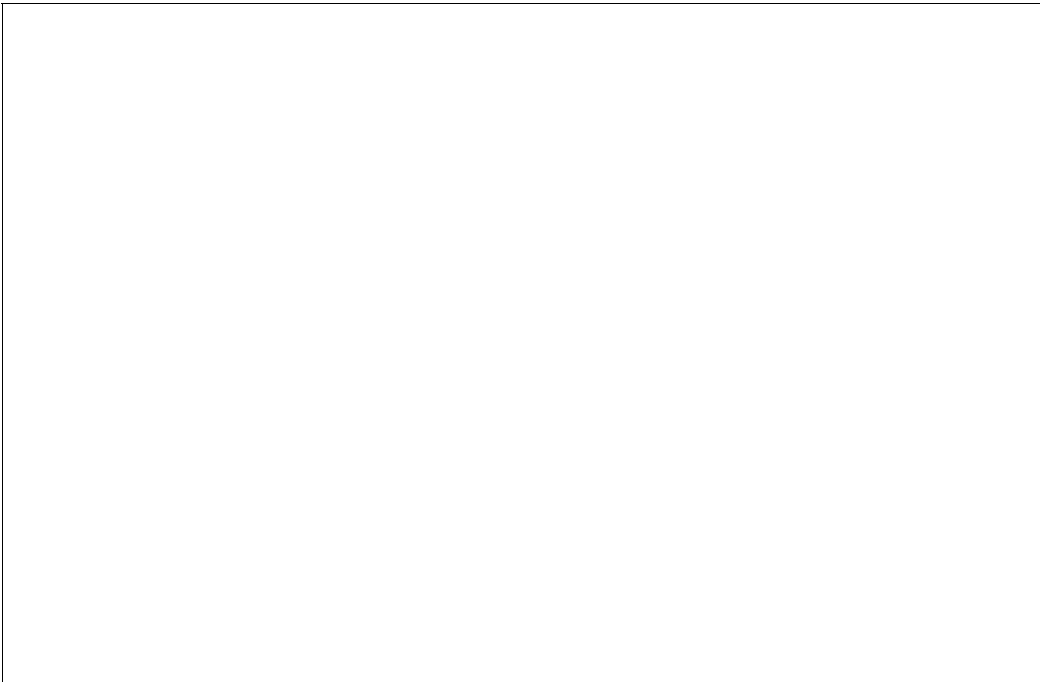
Barents Sea. Since then, there have been ups and downs.

Norway's fisheries have traditionally been free and open. It was possible for everyone to start a career in the fisheries. The crisis that hit the cod fishery in 1990 eliminated that freedom—probably forever. Before 1990, we had a quota and a licensing system for the offshore, large-scale fleet, whereas the inshore, small-scale fishery was subject to few restrictions. But in 1990, the government suddenly had a severe problem on its hands and had to do something rapidly and drastically. The coastal fisheries were transformed from open-access to closed. Today, 95 per cent of the fishery is subject to quota management. Now a young person, in order to establish himself as a fisherman (in Norway a fisher is almost always a he), must not only afford a boat, but he must also have the financial muscle to buy a quota. And quotas are currently very expensive, if indeed available at all.

These days a fisherman must also live with a heavy battery of rules and regulations that confront him every day he goes out to fish. He also faces a control and inspection system on the fishing grounds as well as when he lands his fish. This is a system that works on the assumption that he is a potential felon who would do everything he can to cheat. For a young fisherman, this has always been a fact of life.

Management system

For those who were recruited into the fishery in the 1970s and the 1980s, however, the change that has happened in the 1990s is breathtaking. The new management system was not introduced overnight. It has taken more than 10 years to build it. Gradually, new rules were added. Also, more and more resources



were spent on enforcement, which, of course, revealed more violations, or even triggered them. The outcome of this vicious circle is a management system so complex that fishermen complain that they risk breaking rules they never knew existed.

It should be added, though, that much of this management system was not imposed on the fishermen. In many instances, they asked for it. Rules pertaining to the fishing operations have resulted from demands from the fishermen themselves, often from one group of fishermen who wanted some form of protection against another group, for instance, a group that fish with a different type of gear. I am sure that this kind of dynamics is not unique to Norway. The quota system was controversial when it was introduced. It was accepted as a preliminary measure that would be abolished once the cod stock was back to normal. The cod stock recovered in the mid-1990s, but the quota system remained without much protest from the fishermen. Today, there are few in the industry who want to get rid of it. Changes, yes, but removal, no.

It is a notable fact that Norwegian fishermen, through their national association, are fairly well organized and are, therefore, also highly active and involved in fisheries policy-making including resource management. They are

in a position to influence the management system and rules put in place. Traditionally, fishermen in Norway were able to speak with one voice. Today, however, there is much more disagreement among them. The national fishermen’s association has, for some years now, been on the brink of collapse due to internal strife. The large-scale vessel-owners have repeatedly threatened to break out. Many small-scale fishermen, those that fish close to shore and with traditional gear, did so in the early 1990s, and formed their own association, The Norwegian Coastal Fishermen’s Association. Its membership has been growing ever since.

The national fishermen’s association is, in reality, a federation of suborganizations of different gear groups and regional associations. (The Coastal Fishermen’s Association does not belong here.) It used to be able to strike agreements and reach consensus on important political and legal issues. The quota system introduced in 1990 has changed all that. The fishermen as a group have, therefore, lost much of their power in Norwegian fisheries as compared to processing and aquaculture.

Fewer numbers

It has not helped Norway’s fishermen, of course, that they are getting fewer and fewer in numbers. In 1950, they were 100,000; today they are 14,000 and their number will most likely continue to drop.

This makes fishermen less of a force in Norwegian politics. One should perhaps expect that it would make them more—and not less—united. Instead, the level of conflict among fishermen has increased. The reason has much to do with the fish resources becoming increasingly scarce. I would argue, however, that the quota system itself must take much of the blame. When fish quotas become a privately held right—as is largely the case with the Norwegian system—unavoidably it creates a system of privilege. Winners will, of course, support the system, while the losers will condemn it.

In Norway, quotas are attached to the vessel; thus, the quota inflates the price of the vessel dramatically when it is sold. Since vessels are freely bought and sold, so also are quota rights. Such a system is bound to have an effect on the structure of the industry. In essence, this is also what the system aims at. But it benefits those who can muster enough capital. In our situation, the large-scale operators in the southwestern part of the county come out as winners, while smaller operators who dominate in the northern fishing communities are losing out. We see, therefore, a geographical concentration of fishing capacity and quota rights that is threatening the existence of many fisheries-dependent communities. Conflicts in Norwegian fisheries thus also have a regional dimension.

This is not a unique situation for Norway. It is happening everywhere where quotas are bought and sold. Iceland has gone farther than Norway and other Scandinavian countries in introducing a system that turns fishing quotas into a market commodity. This has changed the Icelandic fishery and has concentrated fishing rights in fewer hands. It has transformed the nature of fishing, the relations between fishermen, and between the fleet and the processing sector. It has altered the very meaning of being a fisherman. Some see this as not only inevitable, but also as commendable.

No doubt, there is too much fishing capacity out there. Many problems would have been solved if this capacity were reduced. Individual transferable

quotas (ITQs) may be a means of obtaining such a goal. But the downscaling also has social and cultural consequences that can be quite dramatic. Iceland is a good illustration, and Norway is not a bad one either. No wonder, therefore, that a quota system that allows the market to determine who will prevail in this industry is controversial. Currently, the issue is burning hot in Denmark.

In 1994, the Fishermen's Association agreed on an allocation key between the large-scale, ocean-going fishing fleet and the coastal, small-scale fishing fleet regarding the cod stock, leaving the former group with 35 per cent of the total allowable catch (TAC). It was also agreed that when the TAC is low, the coastal fleet should have a higher percentage than when it is high. Later, other species were included.

In 2001, a long-term allocation key for most species was agreed upon, which gives specific groups of vessels a fixed share of all TACs. In many ways, this is remarkable. First, it is a rather fragile compromise among groups of fishermen who have conflicting interests pertaining to quota allocation, but who share the view that it is their responsibility to arrive at a workable agreement. Second, the government has accepted the deal without objections.

In 2002, for example, the Fisheries Minister proclaimed that he would not alter the arrangement one iota but stick to the key agreed by the partners involved. He was heavily criticized in the media for abstaining to intervene in such an important issue of distribution. One may, of course, question whether that was a sensible thing to do for a fisheries minister who is ultimately responsible for all aspects of fisheries.

Greater trust

Nevertheless, it can be interpreted as a real devolution of management authority, signalling a great level of trust in the organization's ability to act responsibly. (There is, of course, a less flattering interpretation: the minister—and the political system—finds it politically convenient to leave controversial issues of public concern to the parties involved. Political opportunism, rather than

genuine devolution, is thus perhaps the name of the game.)

Whether the agreement will continue to receive support among the fishermen and the government in the future remains to be seen. If it does not survive, fishermen may become even more divided than they are today. If conflict cannot be avoided, it is better to have the fishermen fighting one another each time the allocation key is renegotiated than having them fighting all the time. Bringing fishermen into a responsible partnership may also allow them to break out of the role of the villain that the current management system places them in. No voluntary organization, such as the Norwegian Fishermen's Association, can survive conflicts that are never addressed and resolved in an orderly fashion.

Our management system depends on such an organization. Both the fishermen and the government need it. In fact, it was the government, which, in the late 1920s, took the initiative to form the organization. The government needed someone in the fishery to deal with who could speak on behalf of all the fishermen. The fact that the fishermen were able to unite has since then been an important precondition for their power in Norwegian fisheries. When the crisis hit in 1990, the government had a representative voice of the fishermen that it could listen

to and seek advice from. The apparatus for negotiation was already in place. The two parties did not first have to establish a working relationship before they could start to address the crisis.

Fisheries management cannot be focused on one thing only—for instance, economic efficiency. There are many other concerns involved and we need to address them in ways that do not alienate those who have most at stake—those whose lives are dependent on both healthy fish stocks and healthy fishing communities. The issues are of such a nature that we need to thoroughly debate what to do. When things are complex, diverse and dynamic, we need to be flexible. Our convictions are constantly challenged by new events, and we cannot be dogmatic as to solutions. Instead, our perspective must be broad and inclusive.

Importantly also, we must be able to learn from experience, to learn from each other and debate what we learn, because we never learn the same things from what we experience.

Different conclusions

In Norway, we still debate what we learned from the fisheries crisis of the early 1990s, and typically, people draw very different conclusions. There are those who argue that we didn't learn a thing. When the crisis was over, we went back to the old habits. Therefore, perhaps,

history is bound to repeat itself. This is something we can hardly afford. Norway certainly cannot permit a new decimation of the herring stock, as happened in the late 1960s. It took 30 years to rebuild it. Neither can we allow another Barents Sea cod crisis as we had in the early 1990s.

We have to learn to live with the fact that conditions in the fishery will remain unstable and that there will always be a crisis somewhere in the fishery. But if we ask ourselves what this means, what conclusions we can draw from this fact pertaining to fisheries management, what then would be our answer? How do we deal with all the complexities, diversity and dynamics that the fishing industry must somehow relate to? Do we build an equally complex, diverse and dynamic management system?

The Norwegian experience is that there are limits to complexity. We need to turn the trend around, and make the management system simpler. But how do we do it, given the fact that (a) the industry, and the environment in which it finds itself, is characterized by increasing globalization; and (b) that fisheries management must address several concerns that are frequently in conflict and cannot be easily reconciled.

There are no simple answers to these questions. But I do think the allocation key contract in the Norwegian fishery, negotiated among the fishermen themselves and with the government as facilitator, may provide some clues. Much would be gained if we could somehow arrive at a social contract for the fishery—a general agreement among those involved about what we, as a collective, want to accomplish and what we must avoid. Those for whom the fishery is a matter of life or death must be involved in deliberating and deciding on what such a social contract should contain. Today, the allocation key pertains only to quota shares between inshore and offshore. The contract should also be extended to include other contentious issues, such as the allocation between regions, and between onshore and offshore activities, and between existing and future generations. A contract should also specify who should

be considered as stakeholders with a legitimate claim to be represented in decision-making forums.

Importantly, a social contract for the fishery cannot be imposed from the top down. Instead, we must build on democratic principles, where all affected stakeholders must be allowed to voice their concerns. Only through such a contract can issues of social justice inform the decision-making process. Far too often, concerns of social justice are suppressed, while fisheries management is reduced to a technical fix. No wonder, therefore, that fisheries management continues to be among the most contentious areas of public policy, where lack of legitimacy is turning management into an increasingly repressive affair. **3**

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Hijacked by neoliberal economics

A fashionable neoclassical political-economic ideology has taken over the management of many fisheries

In the beginning, fish were aplenty and there were no rules upon the face of the deep, and the spirit of free access moved upon the waters. And the fishermen saw that it was good and fished as many fishes as they needed to feed their families and their neighbours. But people were multiplying and replenishing the earth, and more and more fishermen had to catch more and more fish to meet the demand of the ever-growing humanity. And governments said: let there be management, so that there would always be enough fish left in the seas to procreate. And they limited the gear, the vessels, the seasons, and the fishing areas, and they called it 'input regulation'. But, the fishermen kept fishing and their fleets kept growing, and the governments saw that it was bad. So they made licences, and their scientist thought up the maximum sustainable yield (MSY) and the total allowable catches (TACs). But the fishermen kept competing, and over-capitalizing, and the fish became scarce. And the economists said unto the governments: let there be property rights. And they spawned individual transferable quotas (ITQs). And they believed that it is good and said unto the fishermen: Behold, rights' privatization is your salvation. And the governments sent the ITQs upon waters to replenish the seas and subdue all fisheries. And it was good!

This is more or less the gospel, which prevails throughout fisheries administrations in many countries. It makes some people richer and they become its devoted believers and supporters, while the many made poorer—or afraid to become so—its adamant opponents. And the consequences in almost every single case are more or less gradual concentration of fishing rights in fewer and fewer hands, often enough in the hands of major

corporate interests, at the expense of small-scale, family- and skipper-owned fishing enterprises that operate one or two small or even medium-sized fishing vessels, each.

Fisheries management is supposed to look after the health of the fish resources exploited by fishermen. This requires knowledge of fishery biology and ecology, population dynamics, and historical data of the fishery and of environmental and associated stock fluctuations in its area. As fisheries management can only manage people, it entails negotiations, legislation, technology and enforcement. There is a whole catalogue of management systems and technical and administrative methods that managers can use to try to achieve their targets. The political attitude of the powers in charge determines the choice of the system and the manner in which it is applied through licensing, quotas allocation, or limits set on effort. The system chosen influences, through allocating benefits to the different stakeholders, the distribution of the benefits derived from the resource. For example, allocating fishing rights to a large number of small-scale fishermen would call for different management methods than allocating them to a large company.

Traditional knowledge

Old-type management by tribal and community leaders and local fisherfolk's organizations based on traditional knowledge of the resource and traditional justice, is now almost totally extinct. It has been replaced throughout most of the world by bureaucratic and technocratic mechanisms heavily influenced by political and economic considerations that, while interested in fish as marketable merchandise and a source of profits to the

operators, have only little to do with safeguarding the resource as a source of income to fishing people. Fisheries management has thus become a power play over benefits from the resource. Stakeholders are many, starting with fishing people and local interests in fishing communities, through recreational fishermen, environmental lobbies and coastal development interests, and ending with powerful corporations and market forces, whether local, national or multinational.

Neoclassical economics invaded the management of various commons and national resources as an extension of a paradigm dominant—though very much at issue—in the industrialized world. Its gospel is being spread over the world and its political, financial and academic institutions by troops of disciplined economists, rewarded for devotion, and punished for dissent. So, what is this neoliberal or neoclassical teaching in economics that has also impinged on fisheries? And on what basis are its devoted adherents preaching that theirs is the only way society can take to utilize its fish resources in a feasible and efficient manner?

The old 'classical' economic teaching introduced the belief in the 'invisible hand' driven by self-interest guiding rational individual decisions eventually into an optimum economy, in which free-market forces take care of all aspects of peoples' lives. An implied outcome of such 'free play' is that any financial profit derived from a common, fully, partly or quasi-privatized resource would somehow trickle down and redistribute itself all over the society. But this is a myth and a fallacious contention, if not an outright lie. It is common knowledge that, in most of the world's countries, a big share of such benefits indeed trickles down, but to various investments abroad, and to imported luxury products and services. The 'trickle-down' theory can approach the real situation only in a few rich countries, where profits feel secure and investments promise further accumulation of capital.

Recently, more and more economists and other social scientists have started casting

doubts on the neoclassical gospel, nicknamed by some as 'autistic economics'. Awarding the 2002 Nobel Prize in economics to two professors, one of them a psychologist, who refuted the theory that, as a rule, individuals make rational economic decisions, reflected this growing criticism. Economic determinism inherent in the neoliberal theory does not work; the markets' reaction to prices, the prices' reaction to the dynamics of supply and demand, and peoples' reactions and economic activities do not fit that theory's assumptions. Hence, its weakness in economic analysis and forecasting.

Some economists and other social scientists argue that, contrary to its pretense to a scientific, objective approach, neoclassical economics is, in fact, a social-political narrative and a methodology used by global economic and political interests to concentrate power in the hands of corporate national and multinational institutions. Thus, individual businessmen and small and medium-scale private enterprises, not to speak of wage earners, are losing their influence on socioeconomic decision making to powerful commercial-industrial centres and their collaborators in governments. This transfer of power is promoted, legislated, and executed through democratic processes occurring within the existing legal framework with the help of well-financed journalistic and media campaigns and more or less biased scientific publications, with the neoclassical economic narrative serving as a tool for achieving the explicit goals and hidden agendas of its promoters. Thus, the 'invisible hand' has been transformed from the sum of the multitude of individual decisions into the sum of the political and economic decisions of powerful interests.

Profit maximization

Neoclassical economics is supposed to aim at and produce maximization of social and national benefits, which, in fact, are dollar-equivalent measures of how economists value goods and services (including non-market goods and services). It preaches maximization of profits or rents often attained at the expense of heavy social costs. The big question is how these costs and benefits

are defined and calculated; since social costs are very difficult to estimate, any portrayal of economics as an absolute, scientific methodology is simply fallacious, and honest economists admit that they cannot adequately calculate all social benefits and all social costs.

It is obvious that losses incurred through forfeiture of alternative actions, and due to various social and other external costs, many of which cannot be evaluated in terms of dollars and cents, are a part and parcel of any economy. As long as we do not take into account all the costs and benefits from production and market fluctuations, various management steps, social, economic and cultural dislocations of people and their ramifications affecting coastal communities, as well as other 'externalities' difficult to express in monetary terms, we are unable to calculate the true net social costs and benefits.

Also, many people associate the term 'social benefits' with how national resources are distributed across society. They ask, for example, how many people make a living from a certain resource. A 'less efficient' small-scale fishery that employs many more people than an 'efficient' big-owner fleet, may feed less monies to the 'national purse', but, as a rule, is directly and effectively more beneficial to people and their

communities. Only an in-depth analysis can establish which option would produce truer benefits and values. Thus, it is quite consequential who defines national and social benefits, and how.

For example, calculation of net national benefits for an industrial shrimp fishery in a non-industrial country must include a deduction of the costs of all imports, such as expatriate manpower, fuel and lubricants, vessels, deck and propulsion machinery, processing and refrigeration equipment, and fishing gear, as well as insurance and maintenance costs incurred in foreign-currency. In some cases, the only net benefits from an industrial shrimp fishery in such countries are the revenues from licence fees and the employment of nationals, while the major share of the revenues as well as the product itself goes abroad.

Policy costs

Therefore, responsible economic theory must take into account also values that are non-financial/commercial, and the diverse peripheral socioeconomic, political and cultural costs, as well as the taxpayer's money spent on dealing with human problems resulting from management decisions. Only then would the society and its governments be informed of the *true costs* of any policy proposition, before their natural resources get transferred into the hands of a few. Nowadays, however, such transfer is

facilitated by governments' obsession with privatization as a panacea for all maladies of the economy.

The neoliberal gospel preaches that practically nothing can work efficiently, if it is not somebody's private or corporate property. The massive ideological privatization practised in some countries has embraced also such natural resources as water, forests and various energy sources as well as public transport. Even economically viable, and efficiently run national resources often fall victim to the privatization Moloch. How wrong this ideology can be has been recently well illustrated by a whole series of flops of some mammoth privatized and corporate companies, due to both, mismanagement and corruption, as well as by the rather disappointing results of the privatization of the British railway system. Swissair, PanAm, Enron and other recent bankrupt giants were not run by governments.

One consequence of the domination of neoclassical economics is the rather obscure struggle between *free enterprise* and *corporate interests*. In the past, the conception of capitalism and free markets used to emphasize private initiative. Nowadays, however, it isn't necessarily so. Neoclassical economics is leading to a regime in which major businesses and corporations are gradually displacing smaller-scale enterprises and businessmen, while being indifferent towards the social conditions of working people, whose role it reduces to selling their work power on the market. It is 'happy' when supply of labour exceeds demand, because unemployment depresses wages and improves profits.

Some time ago, after the demise of the Soviet system, one would think that free enterprise had won. One is not so sure nowadays. Like the Soviet monopolistic concerns, some of the giant companies of the 'capitalist' world are run by financial bureaucracies supported by ideological economists, who seem to consider small and family-owned enterprises a noise and a nuisance in their concept of 'economically efficient' world.

The invasion of fisheries by neoclassical economics has been a logical

consequence to its domination of the global, and many national economies. Like many historical invasions, it was partly invited from inside the fisheries by large-scale interests and their proxies in the management mechanisms, who gave it a friendly reception. Once in, it seems to be here to stay, especially in all those countries where, for various reasons, it is not met with strong opposition.

What brought this ideology into the fisheries is its claim that privatization is the most efficient, if not the only, mode of exploiting a resource. This, even if the resource belongs to the whole nation, as is the case with water, forests and, for that matter, fish in the sea.

When, following the Second World War, the spiralling growth of fisheries brought about the need for management, it was initially based on so-called 'input control'. This implies regulation of fishing effort through such means as limited access, fishing time and areas, as well as other regulations that try to follow the biological characteristics of the species involved. In some countries this management system still works well enough; in others it has been deemed, rightly or wrongly, inadequate. Fish population dynamics models have been used to estimate the biomass of fish populations and, consequently, the fixing of TACs. In some fisheries this led to highly competitive 'gold rush' fishing operations and investment in excessively strong and fast vessels. The next step was dividing the TAC into quotas that were allocated to vessels, usually, according to their fishing history. And this was the moment when the neoliberal economists stepped in with a new pattern: marketable fishing quotas (ITQs).

Property rights

They introduced the rather axiomatic theory that property rights are a must in fisheries for maximum benefit and efficiency, spelled out in financial terms and rational exploitation of the resource. Since property rights are characterized by (i) security, or quality of title; (ii) exclusivity; (iii) permanence; and (iv) transferability, their application in fisheries boils down to ITQs. Thus, mere 'fishing rights' have become 'private property rights'. Trade in fishing rights

eventually must hit the weaker stakeholder by allocating individual quotas too small to pay a vessel owner's way out of the red, on the one hand, and by pricing licences and quota entitlements above the value of his/her fishing boat and gear, on the other.

A licence gone from a fishing community is gone forever, together with all the associated jobs, services and income. If it were not for social opposition, a worldwide adoption of ITQs would have proceeded faster.

Since marketable quota systems favour the financially stronger, they invariably lead to a gradual displacement of small-scale individual or family-owned fishing enterprises, and, sooner or later, to the concentration of fishing rights in the hands of a few, either specialized fishing companies, or large holding corporations for whom fishing may be only one branch of a multifarious business. Such concentration would eventually occur even where there are legislative attempts at stipulating acquisition of quota by some maximum values. Hence, there is a growing concern of 'privatization by stealth'. It is incredible that managers introducing this system into small-scale or mixed fisheries would be unaware that its social, economic and political ramifications favour large-scale business at the expense of local fisheries and

processing industries, and small-scale operators, and threaten the survival of the small-scale fishing sector. ITQs tend to depress artisanal fishers and effectively exclude part-time participants in local fisheries, and favour the owners, while disregarding crew members. Hence, the selection of ITQ for such fisheries must reflect the political and social attitudes of the respective governments.

Green non-governmental organizations (NGOs) have willy-nilly contributed to the privatization trend. Although some of them, for example, Greenpeace, have joined protests against ITQs, there have been NGOs with often exaggerated and sometimes even fallacious alarmist publications on the state of fishery resources, painting the fishermen as the main culprits, which fueled the neoclassical economists' fires. ITQ advocates have claimed that privatization based on marketable fishing quotas would maintain fish stocks at sustainable levels.

Gold rush

Their main argument was: 'If fishing interests are allowed to invest in a permanent share of the TAC, so that they'd be sure of their relative share in the landings of the respective species from a given area, they wouldn't need to apply the 'gold-rush' mode of operation, and would be interested in maintaining the resource in an everlastingly sustainable

condition.’ On the other hand, ITQs are a rather peculiar sort of property rights: one pays, sometimes quite heavily, for the right to catch a certain amount of fish; one never knows whether one will be able to get it and at what operational cost, and one doesn’t really control the resource and doesn’t know whether by observing the rules and sticking to the quota one is not made a sucker by others.

Hence, the potential well-intended stewardship over the resources by quota-owners is, in fact, more than often frustrated by high grading, fish dumping and quota busting. While ITQs indeed mitigated the ‘gold-rush’ fishing, and their contribution to stock conservation might have happened in a few fisheries, it has been proved so only in a couple of them. At the same time, failures have been reported and documented.

The ITQ system would be socially and nationally justifiable where the resource is technically not accessible to small- and medium-scale operators based in coastal fishing communities, and where exploitation of the resource requires large-scale industrial fishing vessels and fleet logistics.

But where large numbers of small-scale operators traditionally exploit inshore and coastal resources, most of them consider marketable quotas socially and

also economically wrong. Harvesting methods that are most efficient in financial terms are often the ones with the worst collateral (including environmental) impact, while less capital-intensive and technologically and operationally sophisticated fishing methods normally allow wider and much more equitable access to benefits from the fishery, with less negative environmental and social impacts.

In Third World countries, for example, coastal fisheries operate under many stresses, the main one being invasion of larger-scale fisheries into waters and stocks accessible to, and fishable by, small-scale fishermen, often with official government support or high-circles’ well-paid ‘closing of the eye’.

But, in such areas, large-scale operations are less *efficient* than small-scale fishing. They consume several times more fuel per tonne of marketable fish than the small-boat fishery; capital investment in gear and vessels is higher; and they produce fewer *true national benefits*.

The same fish stock that can be fully and profitably exploited by 10 trawlers manned by 100 people, if allocated exclusively to coastal fisherfolk using nets, pots and hooks-and-lines, may provide a living to many hundreds, or maybe thousands of them, never mind how low their calculated profits are going to be.

In many areas, both recreational and small-scale commercial fisheries form the backbone of coastal communities whose economies revolve around fishing. It causes money to flow to equipment and bait, food and fuel suppliers, boatyards, and a variety of commercial and technical services in docks, harbours and marinas, as well as those sectors of the tourist industry that are centred on fishing communities.

Hidden agendas

No doubt, management decisions depend first of all on the prevailing policy objectives. Different governments and the powers that influence them may have different, above-board and hidden agendas. Hence, worldwide, there is no consensus on the objectives of fisheries

management. Some governments may believe that safeguarding the well-being of communities where fishery is an important contributor to the local and, thus, national economy is an important goal. 'Safeguarding the well-being' means creating and maintaining conditions that would enable the fishing industry to get an adequate return on investment, and fishing people, sufficient take-home incomes. It also may mean that in certain special circumstances, the State may have to intervene to help a community over a temporary hardship, as it would do for farmers hit by a drought year, or an industrial community hit by an earthquake. Isn't that what governments are for: collecting taxes, providing services, and helping in trouble?

But some governments, as well as most global, transnational and intergovernmental financial institutions are driven by the neoclassical ideology, especially when it comes to economic relations with developing nations. Undeniably, some of the conditions of economic co-operation and assistance imposed by those institutions stem from their wish to protect their investments from misconduct, corruption and mismanagement. But, only too often, under the hypocritical pretext of securing free markets and economic liberalization, their conditions are simply a tool of protectionism. And here we come to fisheries subsidies. The United States, the European Union (EU) and some other developed countries, in view of the heavy overcapitalization of their fishing fleets, came to the quite appropriate decision to stop subsidizing the construction of fishing vessels. They want, however, to have their new policies 'globalized' to cover also the developing world.

A number of developing countries too have had, for many years, large national fleets, and they should not subsidize overcapacity as well. Any international agreement involving fishery subsidies should take into account small-scale fishermen, who have to compete for the local fish resources with large-scale fishing fleets allowed to fish or poach on their native, traditional fishing grounds. Such fleets are subsidized, almost as a rule, whether directly or in a roundabout manner, as are the EU payments for access

to fishing grounds of Third World nations. Small-scale fisherfolk operating under such conditions deserve support both on the part of their own respective governments, as well as the international community. Would it be too much to ask the EU, and individual governments of countries whose fleets are out to exploit coastal fish stocks of their own or other countries, as well as the governments who allow such fleets into their coastal waters, to give them a fighting chance?

Fisherfolk in the small-and medium-scale sectors both, owners and hired hands, who do not want to be dislocated from their traditional fisheries by management systems based on marketable fishing rights, should recognize that their main adversaries are the standard bearers of neoclassical economics in national and transnational financial institutions and corporations, and their proxies in fisheries management. It is very difficult to resist such powerful interests in democratic societies without joining forces. For this purpose, provincial, national, and regional fishermen's associations should organize under common umbrellas. Also, international associations of fishing people should create a joint worldwide umbrella that wouldn't affect their individual structure and character, but would enable them to board the globalization train in weight and force. ♣

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Philippines

Empowering participation

The Community-based Coastal Resource Management Festival was a time to celebrate, reflect and ponder over strategies

The Community-based Coastal Resources Management (CBCRM) Festival was held between 2 and 4 June 2003 in Subic Bay, Zambales, Philippines. About 150 CBCRM practitioners, implementers, researchers and advocates from coastal communities, non-governmental organizations (NGOs), academic and research institutions, development organizations and government agencies in the Philippines and selected countries in East Asia, Europe and North America participated. The Festival critically analyzed the multifaceted achievements of CBCRM, while celebrating its gains, so as to learn lessons that will guide CBCRM practice into the future.

There was much to celebrate at the Festival, despite the fact that several fishers have been killed, while others remain in prison for conscientiously safeguarding their marine resources and apprehending illegal fishers.

The CBCRM movement could not have achieved this level of commitment but for a long and persistent process of interaction and collaboration among the coastal communities, NGOs, academics, scientists and funding agencies.

“Our involvement in CBCRM has not only changed our perspective about our fishery but it has continued to develop our views on the whole,” said Pedro Valparaiso at a creative panel discussion at the start of the festival.

“It was we women who moved first,” added Patricia Panaligan, chairperson of a local people’s organization (PO). “We decided to establish the fish sanctuaries and our men backed us up, assisting in demarcating it with buoys and bamboos.”

From the manner in which these fisherfolk spoke out at the festival, it was quite obvious that they were not only capable but also committed to the concept of CBCRM. This seemed to be the result of a dual process that has emerged as the crux of CBCRM, namely, a painstaking process of capacity-building of POs through very creative and genuine participatory rural appraisal (PRA), the motto being “participation that empowers, with equity as the guiding principal”.

This process that commenced in the Philippines more than a decade ago as an NGO initiative of partnership with coastal communities to build local, democratic organizations to conserve resources for sustainable livelihoods, gained legitimacy with the enactment of the new Fisheries Code in 1998. The Code delineated 15 km of the inshore waters as municipal waters, beyond which the ‘commercial’ fishers could operate. This Code also made mandatory the creation of Fisheries and Aquatic Resource Management Councils (FARMCS) at the local municipal level, based on the principles of co-management. The local governments could thereby enact suitable ordinances to apply the Code. But, as we all know, mere enactment of ordinances, even when they are very progressive, do not make them automatically applicable, unless there are active POs at the base. Sensing a top-down and manipulative approach, several of the earlier operative CBCRM groups were reluctant to get integrated into this initial process.

Budget allocation

While the dominant trend of the discussion during the Festival was that the POs should engage the government and the mainstream CBCRM process so that budget allotments could be made to carry the process ahead, one could not but be

impressed by the reports of the POs on how they collectively made their management plans, demarcated their sanctuaries, engaged in the regeneration of the mangroves, apprehended illegal fishers, developed paralegal skills, and created systems to sustain their efforts through contributing a percentage of their incomes for the labour of the fish wardens.

The CBCRM groups that create their own constitutions take on the responsibility of not only conserving the resources but also developing ways of transforming these efforts into means of livelihood. Several of them launch better fish marketing networks, make value-added products, diversify income generation and even create co-operatives and credit mechanisms for their members. In fact, an external evaluation conducted of the Oxfam-supported efforts notes how overburdened these POs are, taking on the responsibility of conserving, nurturing and policing the fish habitats as also the livelihood alternatives in the communities, even as most of the members of the POs struggle to make ends meet in their households.

Coming from India, which has a long contiguous coastline, I could not but appreciate how the geophysical formation of this island nation of the Philippines lends itself to such a programme of micro-ecosystem management. In a way,

the cultural context of the Philippines, which is far less hierarchical than in India, is more cohesive and defining, and the community does not seem to be as complex as it is in India. Certainly, there could be no absence of conflicting interests, but, I guess, the groups that were present at the Festival came from areas where the chief conflicts arose mainly between the legal and illegal fishers, and not with other contenders for the coastal resource.

The CBCRM movement also struck me as being a very feminist concept in fisheries, where life and livelihood are put centre stage, and caring and nurture become the responsibility of men as well in the public domain.

Similar strides have to be made in the private domain, although I did meet a couple of women who said they felt very supported by their husbands who now also take responsibility in household chores as they are required to be out in the community handling their responsibilities.

Reviewing challenges

True to the spirit of learning fostered at the Festival, there was also time for critical assessment and reviewing the challenges for the future. One of these was the need to widen the concept of management beyond the micro-ecosystem, which now focuses mainly on habitat conservation, to

creating alliances with other resource users in the watershed.

Several warnings were flagged regarding:

- the implications of communities demanding tenurial rights that will deny use by others;
- the ability of the POs to remain democratic so that 'empowerment' does not result in domination;
- the need to continue to strengthen support mechanisms as the NGOs withdraw and the POs come of age;
- establishing sustainable mechanisms within the POs that are transparent and accountable;
- creating an enabling policy environment so that the processes of co-management remain democratic;
- transforming the gains into tangible livelihood inputs; and
- further addressing the threats of globalization vis-à-vis markets and other terrestrial rights.

The challenge is to remain eternally vigilant.

It was indeed striking to hear people echo that CBCRM is not merely a management strategy but a way of life. Committed as they are to a process, it is also a challenge to the NGOs to practise what they preach to the POs, thereby making resource management a way of life and fostering communities of practice wherever they are. For the seven or so POs that collaborated in organizing the Festival, this is not a distant dream as they successfully managed to transcend differences among themselves and generate a creative atmosphere with tremendous energy.

This Festival was the third in a series of such celebrations, a way of collaborative learning, storytelling and documenting. In the words of Elmer Ferrer *et al*, "This process of learning and the relationships

between people that are established as a result of this process, generates social energy that advances and sustains the CBCRM process. Social energy becomes manifest when individuals and groups work together to achieve common aspirations."

This report has been filed by Nalini Nayak (tvm_nalinin@sancharnet.in), a Member of ICSF

Trading in fish as food

A new, ongoing study hopes to shed light on the impact and consequences of international trade in fish and fish products

The Food and Agriculture Organization of the United Nations (FAO) and the Ministry of Foreign Affairs (MFA) of Norway have got together to conduct a joint study on the impact of international trade in fishery products on food security.

International trade in fishery products has increased substantially since the mid-1980s. The total value of exports was valued at US \$20 bn in 1984. It rose sharply to US\$55 bn in 2000. Enhanced demand in the developed countries, cheaper methods of preservation and transportation were probably the main reasons for this increase. However, increases in production, the introduction of the 200-mile exclusive economic zones and lower tariffs also contributed to this development. The trade was largely between developed countries or from developing countries to the developed countries. About half the exports in value terms are from the developing countries. It is noteworthy that as much as 20 per cent of the value of exports come from the low-income food-deficit countries.

The varied impact of trade—at the macro-level, on the countries involved, and, at the micro-level, on the people—has become a matter of global concern and analysis. The formation of the World Trade Organization has brought a more formalized structure to international trade. The once-held conviction that trade should automatically increase the welfare of all the parties involved is now being questioned.

This study will analyze the growing international trade in fishery products, which is marked by diversity. By studying a variety of identifiable 'representative' cases from the overall global context, the study seeks to assess the impact that trade

has on people's food security—the physical and economic access to sufficient, safe and nutritious food at all times. The case studies will examine the positive and negative impacts that international trade has on fish availability and accessibility; employment and income generation; the fish stocks and the potential for hard foreign currency earnings. All these aspects have a direct or indirect bearing on food security.

The study will focus on fish producers, fishworkers and fish consumers in fish exporting and importing countries. By understanding the *modus operandi* of international fish trade, the study will try and identify the right circumstances, institutions and mechanisms, to facilitate "food security and development-enhancing" trade. The aim will be to understand the consequences of trade—who and what makes the gains and losses, and where and when they accrue.

The study, to be conducted and completed in 2003, will draw on the expertise of several internationally reputed experts in the realm of trade, fisheries and food security issues. The executing agency is the FAO with its vast technical expertise on all the above aspects. Within the FAO it is the Fish Utilization and Marketing Services of the Fisheries Department, which takes the responsibility for the overall conduct of the study. It will be ably assisted by the Ministry of Foreign Affairs of the Royal Norwegian Government that will follow the study closely and comment on its progress.

International experts

An International Reference Group (IRG) composed of a distinguished set of international experts and academicians will, in their personal capacities, give

overall guidance to the study from the perspective of achieving its goal of influencing trade policy formulation and suggesting strategies for food security-enhancing trade. The details of the study process will be overseen by an Expert Group (EG) composed of persons with first-hand knowledge of fish trade and food security issues, who, again in their personal capacities, will assist in the choice of case study centres and meet occasionally to review work progress. The day-to-day monitoring of the study will be undertaken by a Chief Consultant (CC) responsible to the FAO and the MFA, and who will play the key role in liaising with the IRG and EG.

The case studies will be undertaken by National Consultants (NC) who will be identified by the EG based on suggestions from the IRG and the numerous contacts that FAO has all over the world. The countries where case studies will be undertaken include: Brazil, Chile, Ghana, Kenya, Namibia, Nicaragua, Papua New Guinea, Philippines, Sri Lanka, Thailand and Vietnam.

For more details on the study and its current status, visit <http://www.tradefoodfish.org>

Ganging up

The experience of trawler fishermen of Chennai, India shows how user groups find it difficult to manage their fisheries

Traditionally, the fishermen from Chennai and Chengulput areas of Tamil Nadu, India used *madavalai* (traditional dip-net made of cotton), *thurivalai* (cotton drag-net), *edavalai* (nylon dip-net) and *periyavalai* (cotton shore seine) to fish both pelagic and demersal species. These fishing nets required more investment and their operations needed more than one *kattumaram* (catamaran) and more labour. Thus, each fishing hamlet had three or four nets of each type, which gave employment for all the fishermen of the village. All the villagers were involved in groups in fishing, living in harmony with neighbouring villagers. In earlier days, there was no individual fishing, except hook-and-line fishing, which was performed by one or two persons jointly in a single catamaran. Fish aggregating devices (FADs) were also very common in those days.

Since all the fishing operations required groups, each fisherman felt responsible for managing the fishery resources and there was no competition among fishermen. The benefit was shared equally among the fishermen who felt that the resource in the sea is for the common good. Also, each village observed a territorial limit for fishing operations. There was no overexploitation and no one poached the other's resources, thereby giving every hamlet an equal opportunity to benefit from the resources.

In the early 1950s, nylon gill-nets of different mesh sizes were introduced. These weighed little, cost less and could be easily handled by two or three persons. Individual fishermen started to buy these nets and employed two or three persons on a share basis. This paved the way for the erosion of group or community fishing, and encouraged individual fishing, leading to competition and

fishing during the night, resulting in the continuous disturbance of the sea.

In the 1960s, the government of Tamil Nadu introduced mechanized gill-nets with the help of Norway. The first boat introduced was a 26-ft bottom gill-netter. Such boats were given to fishermen's societies and community leaders. In 1965-66, 30-ft gill-netters and trawling boats were introduced. Simultaneously, the export markets were opened with the collaboration of Japan and the US. During this period, fishing operations with mechanized boats were carried out in the 40-km stretch between Ennore and Thiruvannmiyur. The maximum fuel they carried per day was 50 litres. The fishing was carried out during daytime, from 6 am to 2 pm. During this time, they did two hauls and got good catches. In 1969-70, 32-ft boats were introduced. In 1972-73, the area of operation was extended to Sriharikotta in the north and Mahabalipuram in the south, a stretch of about 120 km.

During this period, the shrimp catch was very good. The fishing was done both by gill-netters and trawl boats. Since the shrimp were caught in the shallow waters, all the boats were concentrated in the inshore areas where the traditional fishermen fished, resulting in a continuous ploughing of the fishing ground, which caused the resources to start depleting very fast.

Heavy losses

Also, the movement of boats in the inshore areas made the traditional fishing more vulnerable. Fishing operations by mechanized boats damaged the traditional craft and gear, and caused heavy losses to the traditional sectors in terms of resource and properties. This led to conflicts between mechanized and

traditional fishermen in 1977, when the catamaram fishermen started seizing boats operating in the shallow waters.

The government interfered and introduced some regulations on the mechanized sector, and also a territorial boundary between traditional and mechanized fishermen, which was patrolled by the Fisheries Department officials. This conflict led to the creation of the Federation of *Panchayat* Councils (in Tamil, *Aikkiya Panchayat Sabai*) in Royapuram.

Around 90 per cent of the boatowners lived in Royapuram and neighbouring villages, where they were attacked by the catamaran fishermen. To get support from the traditional fishermen, the boatowners conducted a meeting of about 10 villages in the Royapuram area and formed an *Aikkiya Panchayat*.

At the *panchayat* meeting, the boatowners promised to develop their village economically. They collected 25 paise per basket of fish sold and handed over the money to the *Aikkiya Panchayat*.

The money was spent for village needs. In this way, with the help of the *Aikkiya Panchayat*, the boatowners got immunity from attack by the catamaran fishermen. Fishing disputes between boatowners and catamaran fishermen were now cleared through the *panchayat*.

Until 1977, the maximum fuel carried on board a boat was 150 litres per trip. In the 1980s, the shrimp catch began declining and some of the trawlers started to fish finfish and squid in the deep sea, at about 40-42 fathoms, where some ridges (patches of rocks) are present. They caught about 100 baskets of fish per trip (around 2,500 kg). The fishing operation was between 3 am and 2 pm daily. By 1985-87, the fertile ground had become deserted by continuous trawling. Daily fishing became unprofitable and fishermen began to fish continuously throughout the night and the next day, and slowly long trips (stay fishing) became common. The boats now began to carry 200 litres of fuel per trip, along with some ice.

In 1987, the mechanized fishermen started to feel the depletion of fish resources in and around Chennai due to the continuous ploughing of the fishing grounds and changes in the bottom ecosystem. Most of the fertile grounds became unfertile. In order to stay out at sea longer, the fishermen built onboard fish-holds to store the fish with ice.

Two-day trips

They also carried one 140-kg block of ice with them, as well as extra fuel, stored in plastic containers. With these facilities, they started to go for two-three day trips between Kalpakkam and the northern part of Shriharikotta.

With this system, the fishermen caught more fish, saved fuel and spent more time fishing. At the same time, boat maintenance costs increased due to the continuous running of the engine. The fishermen also found that the Andhra Pradesh coast has greater potential, which can be easily exploited with better facilities like larger boats, bigger fish-holds and more fuel. They thus began to desire the big boats available in Mangalore in Karnataka. Some of the fishermen brought these 40-ft boats from there in 1987. These could carry 1000 litres of fuel and 10 to 15 blocks of ice to stay at sea for three or four days, fishing along the Nellore coast of Andhra. The catch increased per unit effort. Soon, every fisherman in Chennai wanted to follow this method. The fishermen started modifying their 32-ft boats into 40-ft boats with engine capacity of 120 hp.

In 1990, the Central government pumped money into the sector by giving 20 per cent subsidy for new boats through the National Bank for Agriculture and Rural Development (NABARD). This led to the sudden increase of 40-42-ft trawlers in a short time. The boats had fuel tanks with capacities of about 1,000-1,500 litres, and huge insulated fish-holds under the deck to hold about 2.5-3 tonnes of fish. Extra fuel was carried in plastic containers and about 3 tonnes of ice in the fish-holds. One important innovation was the fibre coating to the outer sides of the boats, which provided more buoyancy and added confidence to the fishermen. With these facilities, they started to go farther to northern Nellore and crossed Prakasam District in Andhra Pradesh.

The 1980s was the period when the trawl fishery progressed remarkably and attained peak production of 23,953 tonnes in 1989. The threefold rise in the annual fish production observed in 1985-89, compared to the previous five-year period, was due to the start of long-trip shrimp trawling operations off the Sriharikotta-Nellore coast, which resulted in greater catches and catch rates than the short-trip shrimp trawlers operating off the Chennai and adjacent coasts.

In the beginning, the Andhra fishermen did not give any problem to the Chennai

boats. But the Chennai boats violated the local fishery regulation by operating their trawlers in the shallow waters and damaging the craft and gear of the traditional fishermen, who were even assaulted at sea. This led the local catamaran fishermen to retaliate. They started to catch and detain the Chennai boats, offloaded their catches and collected fines. This resulted in regular law-and-order problems in the sea.

The Andhra fishermen claimed that the Tamil Nadu fishermen had no right to fish in their waters, particularly in the notified traditional fishermen's areas. But the Chennai fishermen claimed they were fishing in the deep sea beyond the traditional fishing areas and were not damaging the craft and gear.

The Chennai fishermen also argued that, as citizens of India, they are free to go anywhere to do business, and preventing them from fishing in Andhra waters was against fundamental rights guaranteed in the Indian Constitution.

From 1993, the Tamil Nadu government started a solatium fund by collecting money from the Chennai boatowners. Each boatowner would pay Rs500 per year to the government, who would give a compensation amount to any victims of clashes between the Chennai and Andhra fishermen. After a few years, the boatowners found it difficult to pay the amount, and so they requested the government to reduce it, which was done. They now pay Rs300 per year. This amount is meant only for those who are either injured or have lost their lives in clashes, and not for the penalties sought by Andhra fishermen who detain the Chennai boats.

As the conflicts usually occur in Nellore and Prakasam districts, the Chennai fishermen started to avoid these areas, even though the grounds are very fertile. They began to go further north and now reach up to the Kakinada coast, with basic equipment like echo sounders, compasses and global positioning systems (GPS).

Not seaworthy

Most of the boats are not certified for seaworthiness. Carrying about 2,000-3,000 litres of fuel and 40-45 blocks

of ice (weighing around 6,300 kg), they spend about 10-15 days at sea.

In the 1960s, only Pablo-type mechanized boats of 26 ft in length were introduced for bottom gill-nets, and in 1965, the preferred size became 30 ft. After that, fishermen started giving importance to trawlers rather than gill-netters because of good shrimp catches and good returns from the export markets. Trawlers became dominant between 1965 and 1990. In 1980, the number of gill-net boats had declined to about 10 to 15, compared with 500 trawlers. Before 1990, the gill-nets were operated between Mahabalipuram and Sriharikotta in the 20-50 m depth range throughout the year except during the northeast monsoon season. The main species caught were shark, ray, seer, carangid and tuna.

In 1990, seeing the improvement in trawlers with respect to size, catch and storage, the gill-net fishermen also started to convert their small boats into big size (42-ft or 12-m) boats and went for long-trip fishing in distant places off the Andhra coast and earned good profits. At the same time, the catch of the 42-ft trawlers started declining. Since gill-net fishing is not as risky as trawling and also giving good profit, the attention of the trawler fishermen was diverted to gill-net fishing. So in 1997-98, some of the trawler owners converted their big trawling boats into gill-net boats for better profits. All the big gill-net boats have insulated fish-holds as in trawlers and large fuel tanks to store 750–1,000 litres of fuel. They carry 30 blocks (4,200 kg) of ice, and use long gill-nets of about 150–300 fathoms length (450–900 m), weighing about 1–1.5 tonnes.

After the conversion to a larger size, the gill-net boats go up to Nizampatinam to catch shark, ray, seer, carangid, tuna and flying fish. They go into deeper waters of more than 100 fathoms (300 m), about 60-75 km from the shore. At present, more than 70 gill-netters are operating from the Chennai fishing harbour and nearly 20 trawlers are being converted to gill-net boats. Alongside the gill-nets are longlines with 200 hooks for shark, fished in the deeper rocky areas locally called *maadai*, where the trawlers also

operate for fin fish and squid. Since the trawler fishermen are in the majority, they banned longline fishing from gill-net boats.

At present, the trawlers operating from Chennai comprise four different overall length groups, 9.5-10 m, 11 m, 12 m and 13-14 m (the conventional 32-ft, 36-ft, 40-ft and 45-ft), with the horsepower varying between 90 and 120. The vessels of overall length 9.5-10 m and 11 m exclusively operate fish trawls northeast of Chennai in slightly deep waters of 30-40m adjacent to the rocky patches, whereas the 12-m and a few 11-m vessels conduct daily shrimp trawling trips in the coastal waters off Chennai at depths of 15-30 m. The trawlers with length range of 13-14 m and 120 hp engines are engaged in long-trip fish and shrimp trawling off Sriharikotta and Kakinada at depths of 15-30 m for durations of 15 days.

When mechanized boats were first introduced in Chennai, there was no union for mechanized boatowners. Later, they formed two associations and one co-operative society. Both long-trip gill-netters and trawler boatowners are members of the Chennai-Chengai Boatowners Association. The *madai* boatowners have formed an association called the Singaravelar Boatowners Association.

The Chennai Boatowners Association soon became the trumpet of the ruling political party. That is one reason why fishing regulations are not implemented properly along the Chennai coast. The other reason is that the Chennai fishing harbour is situated in the Royapuram legislative constituency, where the majority are fishermen working in the mechanized sector. Most of the Association rules favour its leaders and the other large boatowners.

That is why most boatowners are not interested in renewing their registration, paying berth charges or solatium funds and taking out insurance on their boats.

Fishing holidays

To replenish fishery resources, all coastal States in India have been implementing fishing holidays of 45 days every year for two years now. But artisanal fishermen

fish during this period with the knowledge of fisheries officials, who know that they are not doing any destructive fishing like trawling. In Tamil Nadu, the fishing holiday is declared every year from 1 May to 15 June. Though the boatowners realize it is good for the replenishment of resources, they are ready to go fishing if there is no legal action against violators. Evidently, the boatowners are not too bothered about managing the resources. They are now claiming compensation from the government for the holiday period.

In an effort at self-management, the Boatowners Association has banned midwater trawling and molluscan conch shell (*chank*) fishing. It banned longline fishing by gill-net boats, since they were operating in the same rocky grounds as bottom trawling. It banned outsiders other than Chennai, Chengai and Kanchipuram fishermen. It banned the addition of new boats. However, the Association has not banned shrimp trawling which is exclusively operated very near the coast, just opposite the river mouth, using very small-mesh nets (*semakker* net) and damaging the fishing ground more than any other nets. ♀

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Documentary

Under the sun

A film recently produced by ICSF documents the plight of the transient fisherfolk of Jambudwip island in West Bengal, India

Jambudwip is a 20-sq km island in the district of South 24-Parganas, in the Indian State of West Bengal, in the Sunderbans delta. Since at least 1955, Jambudwip has been used as a base for fishery operations and as a fish-drying site, mostly by small-scale, artisanal fishworkers. *Behundi jal* or stake-net fishery is the traditional activity practised in different parts of the Sunderbans delta. The largest stake-net fishing operation in the Sunderbans is based in Jambudwip.

However, this traditional source of livelihood and sustenance is now under serious threat. It is being alleged that the seasonal 'occupation' of the Jambudwip island by fishermen and the fish-drying activity is a non-forest activity that cannot be permitted under the Forest (Conservation) Act, 1980, without prior approval of the central government. The West Bengal government has been asked to remove all traces of 'encroachment' on Jambudwip island.

While the Fisheries Department of West Bengal has strongly defended the fishermen's claim to the seasonal use of the island for their fishery, the State's Forest Department is bitterly opposed. The fishermen are now living in the shadow of uncertainty. Will their two-generations old fishery be treated as an activity eligible for regularization or will they be summarily evicted when their fisheries are dismissed as ineligible for regularization?

These issues are dealt with in the documentary film, *Under the Sun*, produced by the International Collective in Support of Fishworkers (ICSF) and directed by Rita Banerji for Dusty Foot

Productions. The film tackles the issues involved in the stake-net fishery of Jambudwip. It traces the genesis of the standoff between the fishworkers and the government, and analyzes the processes that led to the government action against the traditional fishworkers. It also documents the response of the fishworkers, as well as the actions taken by the National Fishworkers' Forum to help them regain their rights to the fishery.

Copies of the film (format: CD-ROM; duration: 36 minutes; language: English) can be had from ICSF for a suggested contribution of US\$15 each. Please contact icsf@vsnl.com.



This notice comes from the ICSF Secretariat (icsf@vsnl.com)

Return us our healthy bodies

This excerpt recounts the harrowing tale of the methylmercury poisoning disease that struck Minamata in Japan nearly half a century ago

The next day in the library, I look for W. Eugene Smith’s 1975 photo essay, *Minamata: Words and Photos*, which he coauthored with his Japanese wife. The picture that Jeff can recall so clearly is spread across two pages. The lines are stark and classical. In the manner of Mary cradling the crucified body of Christ, a naked mother holds the body of her half-grown daughter in a Japanese bath. The mother’s upturned hand, which lifts the girl’s legs, is balanced by the daughter’s downturned hand, which just brushes the water’s surface. The mother looks at her daughter with adoration. The daughter’s eyes are rolled skyward—as if to God—but there is no light of awareness in them.

Suddenly, the viewer sees how the fingers touching the water are unnaturally bent, as are the rail-thin legs, and how in the centre of the girl’s naked chest, which floats in the centre of the photograph itself, there is a deep hole that is not a wound but some kind of terrible malformation.

The daughter’s name is Tomoko. She was born in 1956 and died two years after her portrait stunned the world, in 1977.

Minamata is an ancient city along the Shiranui Sea in southern Japan. Since feudal times it has been a fishing community, but now Minamata is mostly known as the birthplace of Minamata disease, which is not a disease at all but simply another name for methylmercury poisoning.

Mercury is an ancient element. Called quicksilver by Aristotle, it was named after the speedy planet by 6th Century alchemists who thought it possessed the power to turn base metals into gold. They were wrong. But mercury does have the

power to speed up certain chemical reactions. Which is how the city Minamata and the element mercury came to have a common destiny.

In the 1930s and 1940s, a factory in Minamata called Chisso began manufacturing acetaldehyde and vinyl chloride—both ingredients in plastics. To do so, it used metallic mercury as a catalyst, which was then dumped into the wastewater that entered Minamata Bay. In the spring of 1956, a five-year-old girl was brought to the factory hospital because her speech was slurred and her gait unsteady.

Not long after, her younger sister began exhibiting the same symptoms. Then four of her neighbors became delirious and started to stagger drunkenly. The director of the hospital, Dr Hajime Hosokawa, was alarmed. He reported to the authorities that “an unclarified disease of the central nervous systems has broken out.” Because of the clustering of affected families, Dr Hosokawa assumed he was dealing with a contagious illness—thus the label ‘Minamata disease’. An investigation soon uncovered 50 more cases.

But three clues emerged that argued against an infectious cause. Cats living in the homes of stricken families had mysteriously died. The affected families almost always had ties to the fishing industry. And the homes of the additional 50 cases were scattered over a wide area and not confined to any one neighborhood. What united the victims was a strikingly similar progression of maladies.

Black curtain
First the hands and feet began to tingle. Then there was difficulty holding

chopsticks. Words became “entangled and knotted” in the mouth. Eventually, hearing was muffled, and a black curtain fell over part of the visual field. In some, there was restlessness and a tendency towards shouting. Finally, general paralysis set in, the hands became gnarled, swallowing became difficult, and death soon followed.

Once the investigation was under way, observations previously reported but subsequently dismissed suddenly took on new meaning. For six years or more, fishermen had complained about dead seaweed and empty clam and oyster shells. There had been other ominous sightings, too. Floating fish. Seabirds that dropped from the sky while in flight. Paralyzed octopus. Dogs, pigs, and cats that were seen to whirl about violently and then die.

Looking at all the evidence together—both medical and environmental—the study group issued a report in the fall of 1956 concluding, correctly, that Minamata disease was not an infectious illness after all but was a form of heavy-metal poisoning caused from eating fish and shellfish from the bay. Some kind of heavy metal was getting into the waters of the bay, and the evidence pointed to Chisso.

The release of this report revealing the cause of the mysterious disease should have marked the end of a terrible story. Instead, it was only the beginning. The local government opposed the study group’s principal recommendation—a ban on fishing in the bay. At the same time, Chisso, the only possible culprit, refused to change its practices. Instead, it hired experts to refute the evidence and insist there was no proof to implicate the company’s actions as the reason for the problem. Meanwhile, a university research team announced it would study the problem further.

At the end of almost four more years of study, this is what the research team found: That cats fed fish from Minamata Bay developed symptoms of Minamata disease. That the Bay was highly contaminated with methylmercury. That the livers and kidneys of human victims

who died of Minamata disease contained high level of methylmercury. That the hair of living Minamata victims contained high levels of methylmercury. That workers exposed to methylmercury in a British factory had very similar symptoms to the people of Minamata.

Chisso responded that it used only metallic mercury, not methylmercury, and, therefore, its wastewater could not be source of the problem. What Chisso did not say was that its own hospital director, the same Dr Hosokawa who had first noticed the problem, had in 1959 induced Minamata disease in cats fed Chisso factory sludge. This information Chisso executives kept to themselves. Dr Hosokawa—unlike Dr Kelsey before him—kept quiet, too.

During those same four year that the research team toiled on and the company doctor held his tongue, the following events happened in Minamata: Chisso diverted some of its wastewater into a nearby river and spread the contamination further. Increasing number of babies began to be born in Minamata with what appeared to be cerebral palsy. And the local government began advising abortions for all pregnant women whose hair levels of methylmercury exceeded 50 parts per million.

The babies with cerebral palsy turned out to have congenital Minamata disease. Although they had never eaten fish from the bay, their mothers all had. Some of these babies were also blind or deaf. Some had unusually small heads and deformed teeth. Some had tremors and were prone to convulsions.

Autopsy reports showed that those born with Minamata disease had more extensive brain damage than those who contracted the disease after birth. Not counting these congenital cases, 29 per cent of the children born in the most contaminated areas between 1955 and 1959 showed signs of mental deficiencies.

Wastewater sludge

Then, in 1962, someone found a forgotten bottle of Chisso wastewater sludge sitting on a laboratory shelf, and researchers uncovered the critical missing link in their



painstakingly constructed chain of evidence.

The contents of the bottle tested positive for methylmercury. This finding proved beyond a doubt what many suspected all along; that the factory’s waste disposal practices were somehow converting elemental mercury, a weaker poison, into organic mercury, a formidable one.

But if the research team supposed that demonstration of absolute proof would trigger action, the joke was on them. Chisso blithely went on dumping methylmercury for six more years, stopping only in 1968 when its method of making plastic materials became outmoded and new technology was introduced.

In the end, it was citizen activism and photography, and not the slow accumulation of scientific knowledge that awakened awareness about the ecology of methylemercury. In 1969, 29 families filed a lawsuit against Chisso on behalf of the dead, dying and critically ill. Other families appealed to the government for action.

Still others began direct negotiations with the company, staging sit-ins outside its Tokyo offices. Protesters there were arrested and beaten, including Smith himself, who was on hand to document

their activities. His photographs went out anyway, including one that shows Tomoko being presented before a table of dark-suited officials from Chisso, while petitioners demanded that the men look at her and touch her body. Her face wears the same fixed expression it did in the bath.

In March 1973, the Kumamoto District Court ruled in favour of the families. It noted in its verdict that Chisso had failed both in its obligation to confirm safety “through researches and study” and in its obligation to provide preventive measures “if a case should arise where there be some doubt as to safety.” In the final analysis, the court ruled, “no plant can be permitted to infringe on and run at the sacrifice of the lives and the health of the regional residents.”

In 1998, I found a translated thesis in the library containing interviews with some of the original Minimata activists. Conducted many years after the trial’s conclusion and the payment of indemnity, they express continuing desire for a more profound kind of resolution.

Money nuisance

One said, “[W]e most ardently long to have the sea and the mountains returned to us as they were before pollution. Money is a nuisance, a troublemaker in the family and in the village...The other world in which we



used to live should be brought back to us here and now. Our hope, a very slight hope, is to bring the sea back...and an even slighter hope is to return to us our healthy bodies of bygone days.”

The most recent forecast is that mercury concentrations in the bay are expected to decline to background levels by the year 2011—more that a half century after Dr. Hosokawa first gave a name to Minamata disease and then fell silent. Fish and shellfish in Minamata Bay were declared safe for consumption in 1997. 3

This passage is excerpted from *Having Faith: An Ecologist Journey to Motherhood* by Sandra Steingraber, Perseus Publishing, Cambridge, Massachusetts, 2001

Hook, line and sinker

The small-scale fisheries sector in Nigeria is characterized by wide variety of fishing gear

Nigeria is situated on the west coast of Africa between longitudes 2° 29' and 14° 37' east and latitudes 4° 16' and 13° 52' north of the equator. It is endowed with large bodies of marine, brackish and freshwater systems.

Nigeria has a coastline of about 583 km, which borders the Atlantic Ocean in the Gulf of Guinea, a maritime area of 46,000 sq km up to 200-m depth and an exclusive economic zone (EEZ) of 210,910 sq km The narrow continental shelf, which is about 15 km wide in the west and 27.8 km wide in the east, covers an area of about 41,000 sq km.

The brackish water systems, including creeks, estuaries and lagoons, represent about 0.48 mn hectares (ha). The shallow maritime area covers 2.67 mn ha up to 50 m depth, within which many of the coastal small-scale artisanal fishermen operate.

The freshwater bodies include the rivers Niger and Benue, natural lakes like Chad, and manmade lakes like Kanji, Jiga and Bakokori, as well as reservoirs and flood plains. The total area of inland water bodies has been estimated at about 12 mn ha. The small-scale artisanal fishery sector remains the backbone of fish production in Nigeria, contributing a minimum of 70 per cent of the total fish production in the last decade. In 2000, a total of 101,101 fishing units operated by 283,292 fishermen produced 325,100 tonnes of fish.

The artisanal fisheries can be categorized into: (a) the brackish water or estuarine canoe fishery operating in lagoons, creeks and estuaries; (b) the coastal canoe fishery operating usually within 5 nautical miles of the coastline, which is a non-trawling zone statutorily reserved for small-scale fisheries. (Motorization allows some of

the operators to venture farther into the sea, up to 50-m depth.); (c) the freshwater canoe fisheries in lakes, major rivers and their tributaries, and streams.

The mono-hull wooden canoes include dugout canoes (3–7 m in length), planked canoes (4–12.5 m), and planked dugout or half-dugout canoes. The latter are dugout canoes built up with planks on the sides in order to increase the hull size and include the large Ghana canoes (16–18.5 m long), which are motorized with 40 hp outboard engines. The other wooden canoes are largely nonmotorized.

Apart from full-time fishermen, there are part-time fishers who engage in other activities such as farming. Thousands of Nigerian fisherfolk migrate seasonally from their villages to other fishing communities or settlements, both within and outside the country, including Cameroon and Gabon. Fisherfolk from other countries, like Ghana and Republic of Benin, have migrated and settled in a few coastal village since the early 19th Century. Fishermen migrations also occur in inland waters.

The artisanal fisherman's main wealth is in the fishing gear, which show a lot of variations from one location to the other. The many and various fishing gear types which are used or employed by the small-scale artisanal fishermen in Nigeria are highlighted below.

Wall of netting

The large or massive *watsa* net with, small mesh (10–50 mm), has enough length (500–1,000 m) and depth (up to 50 m) to surround the shoal/school of fish from all sides and from below. It is usually fitted with purse-rings and purse-lines to facilitate pursing/closing the bottom of the net. An impenetrable wall of netting is

allowed to sink rapidly around a shoal of fish, after which the bottom edge is closed.

The net is operated by a crew of 12-16 fishermen on board the large Ghana canoe to catch pelagic/surface or midwater fish species such as the *bonga* (*Ethmalosa fimbriata*) and sardines (*Sardinella aurita* and *S. maderensis*) in fairly deep coastal waters up to 75 m. The bottom of the net is closed, making sure it does not get entangled on the seabed, and the fish scooped bit by bit onto the deck of the boat.

This is perhaps the most efficient gear type. The net surrounds large quantities of pelagic fish, and the landings constitute high-grade quality fish suitable for canning. The gear's efficiency depends on the size of the net, the size of the fish shoal, the swimming speed of the fish, and the speed of the motorized canoe used during the fishing operation. Selectivity is very low (almost nil) as no fish is allowed to escape. Though the fishermen have the option to select the desired fish size and release juvenile, young and immature fish, that is rarely done.

A huge capital investment is required for nets and procurement of the large Ghana canoe. Great professional skills are also required for making nets and fishing operations. The purse-seine net is one of the most complicated nets to operate at sea because of its huge size. Many Ghanaian fishermen and a few Nigerians operate the *watsa* small-scale purse-seine nets in the coastal waters of Nigeria to catch *bonga* and sardines (called *sawa*).

The beach seine net is designed with two long wings and a cod end fitted at the centre or on one side of the wings. The head line ranges between a few metres (say, 200 m) to about 1 km or more in length. The net is operated in shallow waters (5-25 m depth) and very close to the shore or beach. It is designed with enough depth such that the bottom/lead line touches the sea bed, in order to prevent fish from escaping underneath. It is set in a semicircle in the water and manually pulled or dragged with the aid of the towing rope attached to each of the wings. In the process, the cod end is

gradually drawn close to the shore and is finally hauled out of water on to the beach.

Coastal beach seine nets are set during the day only. They are also operated from wooden canoes 9-12 m in length. In over 70 per cent of the operations, no outboard engine is used. The net targets mainly the demersal fish species, including croakers (*Pseudotolithus* spp.), sole (*Cynoglossus* spp.), jackfish (*Caranx* spp.), shiny nose (*Galeoides decadactylus*), barracuda (*Sphyraena* spp.), moonfish (*Selene dorsalis*) and grunTERS (*Pomadour jubelini*). Beach seine nets without bags (50-120 m long and 3-8 m deep) are operated from the beach or on board the canoe midwater or within a relatively calm body of water such as a lagoon, creek, estuary, lake or any other water reservoir.

While many live fish specimens are caught, a few are in a semicomatose or unconscious state, and some are dead either due to entanglement in the mesh of the wings or crushed by the weight of fish herded into the cod end. The efficiency of operations depends on the mesh size of the net and the size of the water body.

Lift-nets are rectangular or circular implements which are lifted vertically out of the water from a submerged position to catch fish or crab that get attracted above the net. The water is strained in the process.

The rectangular *atalla* lift-net is usually constructed with a 10-25 mm mesh size. It is highly selective for the pelagic fish *Pellonula ionensiis* in rivers and lakes.

The circular crab gear (called *garawa*), which is baited with fish or chicken parts, is used extensively in the lagoons, creeks and estuaries. In some areas the crab gear is made of small conical bags to improve catching efficiency.

Varying mesh size

Cast-nets are conical falling nets with lead weights attached at regular intervals along the perimeter of the cone. The netting material is monofilament or multifilament nylon with twine thickness and mesh sizes varying between 12 mm and 100 mm. For each net used in streams, rivers with shallow depths and in the Lagos lagoon, the total stretched height of

the cone varies between 3 m and 6 m. However, in estuaries and rivers with deeper waters (over 9 m), the cone height varies between 5 m and 8 m. A typical cast-net has a retrieving line of 4-10 m in length and is attached to the apical portion. In some cast-nets, the lead line is tucked underneath and attached at intervals to the inner side of the net to form pockets for trapping fish.

For a good fishing operation, the physique of the fisherman has to match the size of the cast-net. The net is thrown on sighting a shoal of fish in such a way that it opens and unfolds to cover the greatest possible area of the water surface. Simultaneously, the net is allowed to sink to the bottom of the water, trapping some of the fish species and catching others in the pockets. The net is left in that position for three to five minutes before it is gently, but skillfully, drawn into the canoe with the retrieving line.

Cast-nets are also used by fishermen who wade in shallow waters of 0.5-1.2 m depth. Group cast-netting is also practised in the Lagos lagoon mainly by the migrant Beninois fishermen. Eight to 15 canoes, each manned by at least two men, form a circle. The nets are cast simultaneously in either a clockwise or anticlockwise direction. In a few instances, two lines of fishermen face each other and cast their nets into the area between them, starting

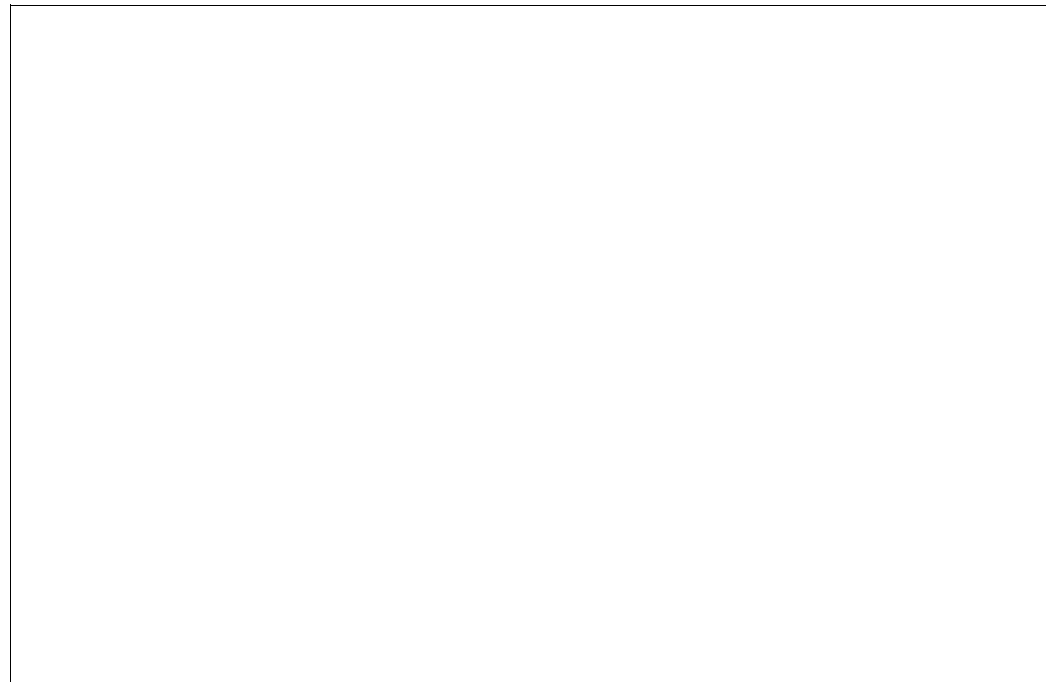
from one end to the other. In such an operation, the catches are shared equally among the fishermen.

Another type of gear is the conical net thrown/operated from the shore/canoe to cover an area of the water surface and allowed to sink and close in on the fish. The symmetrical net is constructed with either rectangular panels or a big rectangular panel is joined diagonally to form a cone.

The efficiency of this gear depends on (i) the size/area and volume of the net, which should match the physique of the fisherman; (ii) whether the design incorporates pockets or not; and (iii) the sinking speed of the net. The falling gear are often used both intensively and extensively in calm waters for a rapid sampling of the fish population.

Gill-nets constitute the most abundant small-scale fishing gear in Nigeria. They include the monofilament and multifilament set gill-nets for demersal fish species in the coastal waters or inland water bodies; drift gill-nets for sardines and *bonga* and shark, as well as the encircling gill-nets for sardines and *bonga*. (Trammel nets, which belong to the group, are rare; not only are they not sustainable but they are also costly.)

Traps occur in various shapes and forms—pot-like, rectangular or



cylindrical basket cages made of bamboo, netting material, cane or wire gauze.

The *gura* trap made of synthetic netting material is cylindrical in shape. However, its lower surface is wider than the upper surface. Each trap is provided with a mouth opening or entrance (with or without a non-return valve) and chamber(s) for fish collection, irrespective of the shape or the design or the material used in the construction.

Catch efficiency depends on the size, mouth opening, bait type and leaching time, tidal current and other factors. Such gear retains the high quality of fish caught. The pots or the closely knit basket traps do not allow small fish to escape.

The stow-net is a conical bag made of multifilament nylon netting used in the sea, estuaries and lagoons to catch shrimp and small fish as well as brackish water eel (*Ophichthus ophis*). It is known as *nkoto* (in Kalabari), *esik* (in Ibibio), *asuwe* (in Yoruba) and *asu* (in Itsekiri).

The trap has a rectangular mouth that tapers to the bag. The netting material surrounding the mouth has a bigger stretched mesh size (100 mm), with thicker twine. The netting material and stretched meshes are progressively reduced in size towards the bag, which has 3–10 mm mesh sizes and are made of R300 tex twine thickness.

A very big stow-net, 30.5 m long with a mouth opening 15 m wide and 4 m high, has been observed. The gear is fixed against the tide by means of anchors or stakes. When anchors are used, the gear is inspected once a day for shrimp caught, since the mouth and body of the gear are automatically reversed with the changes of tide. However, when stakes are used, the trap has to be harvested just at the change of tide, and the mouth of gear manually reversed. Occasionally, the smaller size of this gear can be towed by two fishers either wading in the shallow (1.5-m deep) water or operating from two canoes. The stow-net is operated throughout the year but the best fishing season is between November-December and April-May.

At sea, the *nkoto* filter net is attached to a motorized plank canoe (7–11 m long and 1.7 m wide) and towed by a 8–15 hp outboard engine. The operation of the filter net in the nearshore coastal water conflicts with other small-scale fishing gear, which are damaged. Commercial fish species, including shiny nose, are also greatly impaired.

Barrier nets

The barrier-net, in its simplest form, is a fence of bamboo and palm fronds erected across the channel connecting the swamp with the river at high tide, in order to cordon off the fish. At low tide, the fish are stranded and picked up by hand or

collected in a basket from the mud. V-shape fences also form barriers across rivers, streams or creeks and are fitted with one large *iganna* trap at the centre of the narrow opening for collecting the fish.

In hook-and-line fishing, a hook is fixed to a line only or to a line attached to a pole. Many hooks fixed to many secondary lines (snoods) are attached to the main line. The longlines include the set longlines and the drifting longlines, which are used in the coastal waters, rivers, lakes and creeks.

Efficiency depends on size (hooks vary in size and are numbered from 1 to 20, with No. 20 being the smallest), quantity and shape of bait (artificial lure or natural bait), soak time and other factors. A positive correlation obtains between hook and fish size.

Efficiency is also highly associated with the feeding pattern of the fish and the type of food as well as seasonal and diurnal variations in feeding behaviour. Hooking without bait also occurs when the fish get hooked by their scales, gills, fins or other appendages. Hausa fishermen use unbaited bottom-set *marimari* or *mamari* longlines to catch soft and scaleless fish such as *Clarias* spp.

Spears are used mostly in rivers and creeks for killing, wounding or grappling with fish. They have metallic heads and are used extensively at night with torches, flares and hunters' carbide lamps to catch large fishes, such as *Lates niloticus*, *Gymnarchus* sp. and *Chrysichthys nigrodigitatus*. In some cases, spears, matchets and axes are used along with other types of fishing gear, such as lines, gill-nets and traps. They are used throughout the year but mostly in the dry season between November and April.


The other miscellaneous fishing gear and methods used in Nigeria include scoop-nets used to scoop up mechanically stunned fish; gathering by hand; using chemicals and ichthyotoxic plant poisons; and using hand grenades/bombs and locally made dynamites, which are generally prohibited in Nigeria. The latter may result in accidental loss of lives, while the former taint the fish and contaminate the water bodies. In both cases, the fish,

including juvenile, immature specimens, are killed.

The artisanal fishing gear types with small meshes (25–45 mm) catch juvenile immature fish and thereby inflict a great toll on the populations of commercial fish like the catfish (*Chrysichthys nigrodigitatus*). A minimum of 50-mm mesh size is thereby recommended in order to mitigate against overexploitation of the resources.

Some of the gear types are used throughout the year, while others are seasonal. The gear performance and efficiency are influenced by environmental factors, including tidal current and the lunar cycle, as well as the behaviour of the target species.

The fishing practices or operational methods in the sector tend to be labour-intensive, with low technological applications or minimal mechanical assistance. The canoes are mainly non-motorized. The total investment in fishing gear, canoe and other accessories is generally low, compared to the industrial sector. In other words, the small-scale fishery sector is characterized by low capital outlay and low operational costs, with variable and low fishing productivity, which generates low revenues.

The high costs of some fishing inputs, lack of subsidy or credit facilities plus high interest rates have had a negative impact on the sector. 

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Fishing for labour standards

The International Labour Organization is seeking views of revising standards on work in the fishing sector

At its 283rd Session, held in March 2002, the Governing Body of the International Labour Organization (ILO) placed on the agenda of the 92nd Session of the International Labour Conference in June 2004 at Geneva, an item concerning a comprehensive standard on work in the fishing sector.

This is within the context of revising ILO Conventions (binding for countries that ratify them) and Recommendations (not binding, but providing guidance) adopted before 1985, in order to update and strengthen the standards-setting system of ILO. The ILO Conventions of relevance to fishing were adopted in 1959 and 1966, while the Recommendations pertinent to fishing were adopted in 1920 and 1966.

The 93rd Session of the International Labour Conference in 2005 is expected to adopt the revised standards in the fishing sector. It is proposed that the new standard(s) would revise the existing seven ILO instruments—five Conventions and two Recommendations that apply to persons working on fishing vessels. The existing Conventions concern minimum age, medical examination, articles of agreement, accommodation and competency certificates, while the existing Recommendations relate to vocational training and hours of work.

As a comprehensive standard, issues hitherto not addressed in relation to persons working on board fishing vessels would be taken up, namely, occupational safety and health, and social security. The ILO also intends to provide protection for persons working on both large and small fishing vessels. The ILO believes that the objectives of the new instruments should be to extend coverage to reach as many

persons working on board fishing vessels as possible; minimize obstacles to ratification; provide a better chance for wide ratification; enable the provisions to be implemented into practice; and minimize the risk of the Convention becoming outdated in a short period of time.

The new standard would take into account the provisions of the 1995 FAO Code of Conduct for Responsible Fisheries and it would try to integrate the work of the ILO with that of other international organizations concerned with fisheries and the operation of fishing vessels. This, the ILO believes, would result in the standard being clearly understood and to be found more acceptable not only by ministries responsible for labour issues but also by those responsible for fisheries management and vessel safety, as well as fishing vessel owners and those working on fishing vessels.

The ILO is circulating a questionnaire among member countries to elicit views on the content of a comprehensive standard. Governments have been requested to consult with the most representative organizations of employers and workers before finalizing their replies to the questionnaire. They have been especially asked to contribute to an internationally shared sense of what should or should not be addressed in the proposed new Convention and Recommendation.

Maritime fishing

According to ILO, the seven existing ILO instruments concerning work on board fishing vessels set out their scope in different ways. Generally, they provide that they apply to vessels engaged in maritime fishing in salt waters. Several



provide exceptions or exemptions for certain categories of fishing vessels (those engaged in whaling or recreational fishing, or those primarily propelled by sail) or for fishing vessels operating in certain areas (like ports, harbours and estuaries of rivers). Some provide that the instrument applies, in whole or in part, to fishing vessels of a certain size (measured as vessel length in feet and metres, or tonnage) or engine power.

For the purpose of the proposed Convention, the term ‘fishing vessel’ is defined as any vessel used or intended for use in the commercial exploitation of living marine resources, including mother ships and any other vessels directly engaged in fishing operations.

Many States regulate some aspects of conditions of work on board fishing vessels according to the area of operation of the vessel. Rather than depend on nebulous categories like ‘coastal’, ‘inshore’, ‘offshore’, ‘small-scale’ and ‘artisanal’ to delimit the area of operations, the ILO is trying to improve clarity in the use of terms concerning the area of operation. In its questionnaire it proposes five areas of operation: (a) vessels engaged in fishing operations in the high seas and in waters other than those of the flag State; (b) vessels engaged in fishing operations up to the limits of the exclusive economic zone (EEZ) of the flag

State; (c) vessels engaged in fishing operations up to the limits of the territorial waters of the flag State; (d) vessels engaged in fishing operations up to three miles from the baseline; and (e) vessels engaged in fishing operations in rivers and inland waters. It then seeks to know if the Convention should apply to fishing vessels in all these areas of operation or whether it should consider the possibility of excluding fishing vessels within, and below, the territorial limits.

If ‘areas of operation’ would not be an appropriate method of delimiting the scope of the Convention, the questionnaire seeks the views on using different categories such as ‘fishing vessel length’, ‘tonnage’, and ‘time fishing vessel spends at sea’. It also includes questions on whether the Convention should apply to all persons working on board fishing vessels, irrespective of nationality.

Views sought

The questionnaire seeks views on provisions concerning the minimum age for work on board fishing vessels and whether or not there should be exemptions. It also seeks to know if certain fishing vessels and certain types and conditions of work on fishing vessels should be prohibited for persons under the age of 18 years. Under the category of ‘medical examination’, the questionnaire seeks to know if the Convention should

provide that persons working on board fishing vessels should undergo initial and subsequent periodic medical examinations, and whether the Convention should provide for exemptions from this requirement.

If medical examination is required, it seeks to know if a person should hold a medical certificate attesting to fitness for the work for which he or she is to be employed at sea.

The questionnaire section on medical care at sea seeks to know if fishing vessels should be required to carry appropriate medical supplies and whether the fishing vessel should have on board a person qualified or trained in first aid or other forms of medical care. It also asks if certain fishing vessels should be excluded from this requirement.

Under 'contracts for work', the questionnaire seeks to know if every person working on board a fishing vessel should have a written contract or articles of agreement. It seeks to clarify the categories of persons working on board fishing vessels who could be exempted from the provisions concerning written contracts. It also seeks to know whether or not persons working on board a fishing vessel should have access to appropriate mechanisms for the settlement of disputes concerning their contract or article of agreement.

Under 'accommodation and provisions on board fishing vessels', the questionnaire seeks to know if all fishing vessels should have appropriate accommodation and sufficient food and drinking water for the service of the fishing vessel and if there is any need for exemptions. Under 'crewing of fishing vessels', it seeks to know if States should take measures to ensure that fishing vessels have sufficient and competent crew for safe navigation and fishing operations in accordance with international standards.

The views on the need for a provision for minimum periods of rest on board fishing vessels, in accordance with national laws and regulations, is also sought. The questionnaire asks whether occupational safety and health provisions should cover persons working on board fishing vessels. More specifically, it seeks to know if it should be an extension of general occupational safety and health provisions, or an extension of maritime occupational safety and health provisions, or specific provisions for work on board fishing vessels, or a combination of any of these.

Social security

Under 'social security', the questionnaire seeks to know if all persons working on board fishing vessels should be entitled to the social security benefits applicable to other workers, and if the Convention should provide for the possible exemption

of certain categories of persons working on board fishing vessels.


The questionnaire seeks to know if the Convention should provide that persons working on board the high seas and distant-water fishing vessels should have labour conditions which are no less favourable than those provided to seafarers engaged in commercial maritime transport, and if such provision should cover persons working on board other fishing vessels. It also seeks to obtain views on having provisions for recruitment and placement, identity documents and repatriation.

Regarding 'enforcement', the questionnaire seeks to know if the Convention should provide that States should adopt measures to verify compliance with the provisions of the Convention and whether or not any category of fishing vessels should be exempted from this requirement. Views of representative organizations are also sought on including a provision on port State control. The questionnaire also seeks the views of respondents on the need for including a provision in the Convention for consultation with representative employers and workers organizations, as well as representative organizations of persons working on board fishing vessels in the development and implementation of national laws and regulations concerning conditions of work on board fishing vessels.

The questionnaire seeks to know if the proposed Recommendation should provide guidance on (a) the types of work or fishing vessels that should not be employing persons under the age of 18; (b) the content of the medical certificate and the medical procedures to be followed for issuing it; (c) the content of the medicine chest and the type of medical equipment or first-aid kit required to be carried on board fishing vessels; (d) the content of contracts or articles of agreement for work on board fishing vessels; (e) specification of insurance coverage for persons working on board fishing vessels in the event of injury, illness or death; (f) contracts or articles of agreements for work on board fishing vessels; and (g) systems of remuneration, including those based on a share of the catch.

The questionnaire also seeks to know if the Recommendation should provide that States should have national laws and regulations concerning planning and control of crew accommodation on board fishing vessels; on providing guidance concerning standards of accommodation, food and drinking water. It also seeks to know if the guidance on accommodation and provisions on board fishing vessels should make distinctions based on fishing vessel length, operating area, tonnage and time spent at sea. Views on guidance concerning hours of work or rest periods are sought, including the limits of working hours or provisions for minimum rest periods.

Regarding 'occupational safety and health', the questionnaire asks if the Recommendation should address the inclusion of fishing occupational safety and health issues in an integrated national policy on occupational safety and health. The questionnaire also seeks to know if the Recommendation should include guidance on social security provisions for persons working on board fishing vessels.

Views are sought on the Recommendation including provisions concerning maintenance by the competent authority of a register of persons working on board fishing vessels. Lastly, the questionnaire seeks to know if the Recommendation should provide that coastal States should require, when they grant licences for fishing in their EEZs, that fishing vessels conform with the standards of this Convention. 

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News Round-up

Stock meet

The Second Informal Meeting of the States Parties to the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks will be held from 23 to 25 July 2003 at United Nations Headquarters in New York.



The meeting is expected to review the implementation of the UN Fish Stocks Agreement, including the establishment of the Assistance Fund to assist developing States Parties.

Licensed to fish

Three East African countries—Kenya, Uganda and Tanzania—have started issuing licences in Lake Victoria to end the

current crossborder fishing conflicts.

According to Caroline Mukasa, a senior economist with the Lake Victoria Fisheries Organization (LVFO), districts along the borders have been mandated to issue the fishing licences.

A report presented to the East African Legislative Assembly by Osienalla, a Kenyan-based NGO, shows that about 115 Kenyans have to date been arrested for illegal fishing in neighbouring countries.

The World Conservation (IUCN) says the conflicts have been sparked by competition for the Nile Perch, which is in high demand.

Meanwhile, the LVFO has helped Kenyan fishermen living around Lake Victoria to patent their commercial lifeline, the Nile Perch.

Subsidy proposed

A local delegation in Chile belonging to the "Friends of Fish" group has presented a new proposal on possible approaches to improved disciplines on fisheries subsidies to the Negotiating

Group on Rules of the World Trade Organization (WTO).

Members of the "Friends of Fish" group include the US, Argentina, Iceland, New Zealand, Norway and Peru, as well as Chile.

After considering previous submissions of the US and the EU,



the Chilean paper proposes a "red box" of banned fisheries subsidies, and an "amber box" of conditional subsidies.

All subsidies that promote overcapacity and overfishing would be included in the "red box".

The "amber box" would include all other subsidies that do not cause injury to other Members, and would only occur after other Members receive notification.

EU in Mauritania

The president of Mauritania has ratified a fisheries access agreement with Spain. The agreement signed

with the European Union gives Spanish, French, Portuguese, Italian, and British vessels access to fish tuna in Mauritanian waters.

The agreement, promoted by the Spanish government, allows 39 vessels belonging to the national fleet to operate in Mauritanian fishing grounds and will remain in force until 2 December 2003.

Under the terms of the agreement, the EU will help to set up scientific and technical aspects of the fisheries, including surveillance, to be funded out of the EU 420,000 annual budget supplied by the EU.

Trawl ban

The environmental agency of Brazil, Ibama, has banned coastal trawling in the northeastern States of Piauí, Ceará, Rio Grande do Norte and Pernambuco.

The regulations aim to reduce catches of undersized fish through indiscriminate use of trawl nets.

They should also help to protect manatees that inhabit the northeast coast and to reduce the incidence of disputes between fishermen using manual trawls and those using motorized trawl gear.

Fines of BRL70,000-100,000 (US\$24,750-35,350) will be imposed for any breach in regulations, depending on the severity of the offence.

Fishy warning

Local fish stocks contaminated with toxins and a perilous drop in shellfish catches are signalling to millions of Japanese that their favourite food is in danger. The per capita consumption of seafood in Japan is around 70 kg, among the highest in the world.

Fears of mercury poisoning have led to warnings about consuming popular species, including the bright-red sea bream called *kinmedai* (alfonsin) and swordfish, both of which are expensive delicacies.

The other species that are the subjects of the warning include cheaper tuna and shark, and sperm whale.

The official warning is that the mercury content in the fish, at 0.44 parts per million (ppm), can harm fetuses.

Mercury poisoning, in the form of methylmercury, affects the nervous system and the symptoms and condition are similar to those found in Minamata, Japan's

worst case of industrial pollution.

Can that duty

The canning industry in **Spain** is up in arms over the EU cuts in import duty on canned tuna from Thailand, Philippines and Indonesia.

Backed by their



French, Portuguese and Italian counterparts, representatives are calling on the European Parliament for support to protect the industry from measures that offer advantages to third-country imports.

The European Council's decision allows 25,000 tonnes of cans from Thailand, Philippines and Indonesia to enter the EU with a 12 per cent tariff, from 1 July onwards. The previous tariff rate was 24 per cent. The Council's ruling also allows a 12 per cent increase in the amount of imports in 2004.

Some canners believe the Council's decision will open the floodgates for more countries to seek the same privileges for their canned production.

Pacific tuna

The European Union has just announced that three European countries have won the right to fish for tuna off the Pacific State of Kiribati.

Up to 23 Spanish, Portuguese and French vessels will receive a licence to fish for tuna in the Kiribati fisheries zone, an area covering 3.5 mn sq km, following an agreement between the EU and the island republic.

The European vessels will join the 1,200 other vessels already fishing in the area for 30 years, from Japan, Korea, China, Taiwan, the Philippines and the US, reports Associated Press.

With half the world's canned tuna supply coming from the central and western Pacific, this ocean offers an annual catch of around 1 mn tonnes of tuna, valued at US\$2 bn.



Kiribati earns several million dollars each year from fishing licenses from Asian countries, and will receive US\$600,000 from the EU for the

new licences for the first year of fishing.

The EU is also investigating further potential deals with other Pacific Island States, such as the Marshall Islands, Solomon Islands, Micronesia and Papua New Guinea.

Precious lives

Owners of fishing boats in **South Africa** will have to insure the lives of their crew, under a new law that is currently being drafted by the South African Maritime Safety Authority (Samsa).

The move follows a spate of drownings off the South African coast this year.



So far this year 16 fishermen have lost their lives, while, last year, 51 commercial fishermen who put out in small craft drowned.

Owners who do not comply with the law will face heavy penalties. The proposed law requires documentation that shows a level of basic training, and will also stipulate that insurance policies should cover casual workers.

*The river is within us, the sea is all about us;
The sea is the land's edge also, the granite
Into which it reaches, the beaches where it tosses
Its hints of earlier and other creation:
The starfish, the horseshoe crab, the whale's backbone;
The pools where it offers to our curiosity
The more delicate algae and the sea anemone.
It tosses up our losses, the torn seine,
The shattered lobsterpot, the broken oar
And the gear of foreign dead men.
The sea has many voices,
Many gods and many voices.*

— from *Dry Salvages, Four Quartets* by T S Eliot



ICSF is an international NGO working on issues that concern fishworkers the world over. It is in status with the Economic and Social Council of the UN and is on ILO's Special List of Non-Governmental International Organizations. It also has Liaison Status with FAO. Registered in Geneva, ICSF has offices in Chennai, India and Brussels, Belgium. As a global network of community organizers, teachers, technicians, researchers and scientists, ICSF's activities encompass monitoring and research, exchange and training, campaigns and action, as well as communications. SAMUDRA REPORT invites contributions and responses. Correspondence should be addressed to the Chennai office.

The opinions and positions expressed in the articles are those of the authors concerned and do not necessarily represent the official views of ICSF.

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