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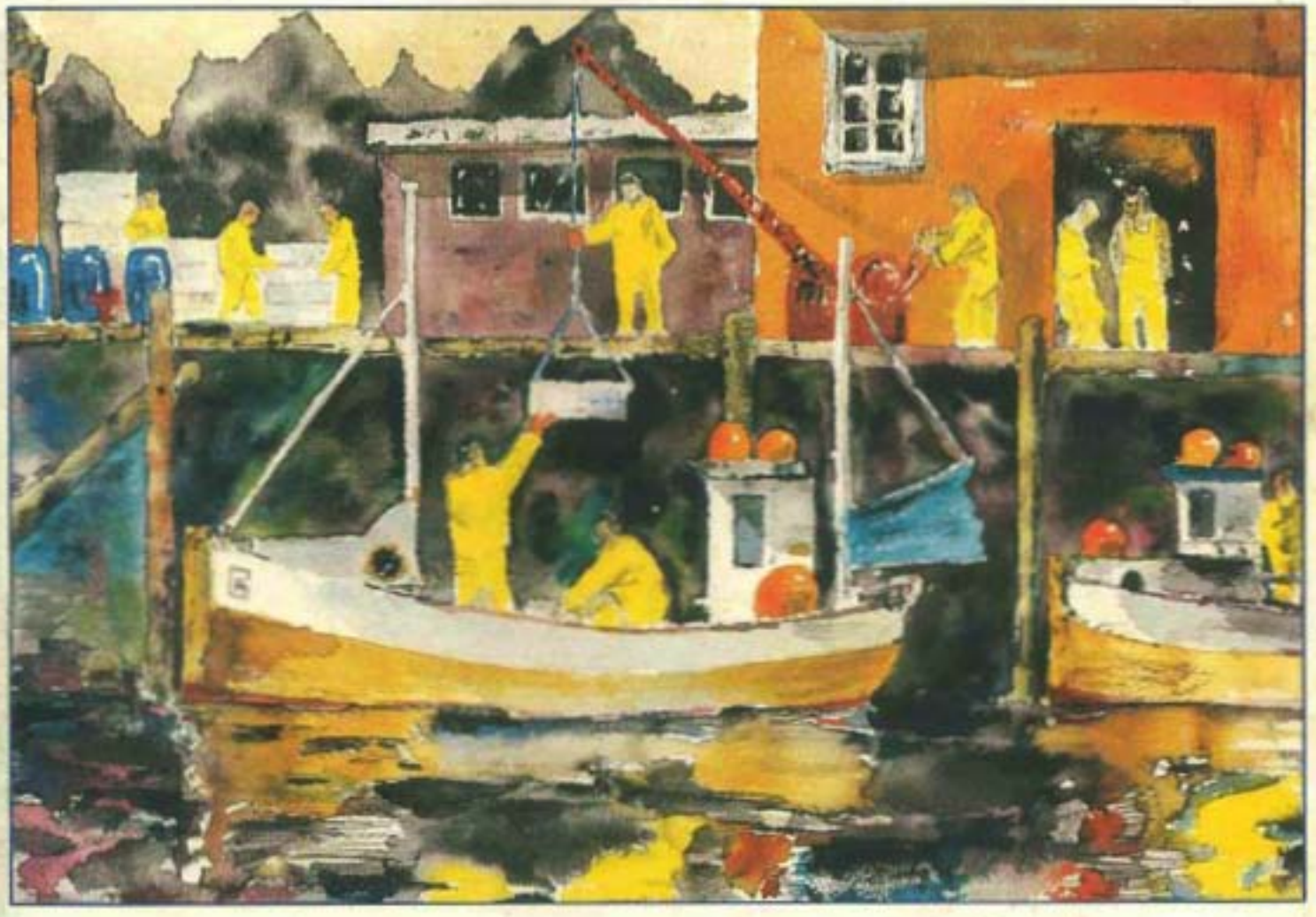

Artificial Reefs
Quota Management System
Guinea-Bissau's Barracuda Fishery
Workers on Distant-water Vessels
Problems with Shrimp Farming
Toxic Chemicals
After Apartheid
News Round-up

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Comment

A world of double standards

There are two possible perspectives on global fisheries: a pessimistic one and an optimistic one According to the pessimistic view, we live in a world of double standards, of virtuous yet empty rhetoric. While world leaders pontificate on responsibility and sustainability, industrial fishing fleets are encouraged to strip global fish stocks down to the last shoal, destroying fish habitats, ruining the coastal commons and causing the collapse of fishing communities world-wide.

The optimistic view, on the other hand, is one of a world in transition, where we are moving from an inherently unsustainable industrial model of fishery extraction, towards a new sustainable pattern of resource use and management.

In response to a worsening situation of world poverty, declining resource bases and environmental deterioration, the last decade has witnessed increasing efforts at the international level to establish a framework and a commitment towards sustainable development. Yet, at the same time, the forces of the free market and commercial interests are being allowed to undermine these efforts.

In 1983, the Brundtland Commission (the World Commission on Environment and Development) received a mandate from the UN General Assembly to formulate a global agenda for change. In their report of 1987, the Commission members were unanimous in their conviction that "the security, well-being, and very survival of the planet depends on a fundamental change towards sustainable development."

Nowhere else is such a change needed as in fisheries. And perhaps more than anywhere else in the world, it is in Europe that the fishery crisis is acute. It has become clear that the Common Fisheries Policy of the European Union (EU) is neither able to address this crisis nor direct the longer-term sustainable development of European fisheries.

The industrial fisheries model, which has sounded the death-knell of European fisheries is now being exported by the EU to the waters of other countries. The redeployment of the EU's surplus fleet capacity can neither be considered responsible nor in the interests of sustainable development.

In response to the Brundtland Commission Report and the Rio Declaration of UNCED, the EU has developed comprehensive policy objectives for development co-operation. Yet, the EU's Directorate General for Fisheries maintains that fisheries agreements are purely commercial in nature, and have nothing to do with development.

The export of destructive fishing practices should no longer be permitted under the guise of commercial interests. Development and commerce have a common future, but, if sustainable deelopment is the goal, policy and practice in both areas must be compatible.

Governments and international bodies must adopt a more integrated approach to economic and social development, and the forces of the free market must not be allowed to destroy the resource base that supports some of the world's poorest people, and the livelihoods that provide food and income to their communities.

Rio Grande de Buba

Dream or nightmare?

With little evidence of overfishing by artisanal fishermen, the ban on fishing for barracuda in Guinea-Bissau may be just an ecologist's dream

Until recently, the fisheries of Guinea-Bissau were largely regulated by a decree dating to 1986. However, since 1994, the Guinean government has been preparing a new set of regulations. For a country like Guinea-Bissau, regulating the fishery is certainly an important matter, perhaps more so for the country's economic development than for the protection of its natural resources.

On 7 June 1994, the Ministry of Fisheries introduced a new decree regulating fishing activities in the Rio Grande de Buba. On the whole, this regulation features standard restrictions. It, for example, defines the permissible mesh size of the nets, and the number of artisanal boats allowed in the fishery, among other stipulations.

However, one requirement deserves special attention. This is the one which forbids fishing with drift-nets between 31 July and 1 October each year. Such a ban specifically affects the fishing of barracudas (*Sphyraenidae*). The barracuda is actually a coastal fish. It enters the estuaries during the rainy season (July to October) to breed. Hence, at first sight the decision to protect it during this period seems logical.

But, to understand the practical consequences of such a decision, a few specificities of this fishing area should be noted. The first is the influence of the continental shelf in Guinea-Bissau. Extending far into the sea, it widely overlaps the industrial fishing area, which is between 12 and 200 nautical miles. So, on the one hand, barracuda fishing has been opened up on a larger scale to the industrial fleet in Guinea-Bissau. On the other hand, the decree almost exclusively affects the artisanal fishery.

The total catch by the international industrial fleet fishing in Guinean waters has diminished from 121,000 tonnes in 1990 to 38,400 tonnes in 1993. During the same period, the number of trawlers has dropped too, from 208 to 144. Although it is not possible to draw serious conclusions from the existing surveys and available estimates, these figures could be the first signs of a decline in productivity of the Guinean waters. If that were the case indeed, useful measures to protect the natural resource should be taken. But who should bear the brunt of such measures? And who are the fishers actually affected by this decree of 1994?

The populations living on the border of the Rio Grande do Buba are not really involved in fishing. For them, it is an occasional activity, their principal one being agriculture. The traditional fishers who are actually affected by the decree are *'Nhominca'*, originally from Bolama, but settled in Guinea-Bissau for several generations now. Also affected are the *'Bijagos'* from the island of Canhabaque. More recently, these few fishers have been joined by a few *'Soussou'* people from Guinea Conakry. According to our surveys, the total number of canoes was 12 in 1992 and 17 in 1993. The maximum annual production of these fishworkers amounts to 20 to 30 tonnes of barracuda.

Restricted level

According to the decree, the number of fishers active in the Rio Grande do Buba is not too high. The decree further limits their number to 15 boats, on an annual average. Since the fishers in the Rio fish there only during the rainy season, for four months a year, the number of boats operating each year is lower than the restricted level imposed by the decree. The real problem, however, is that the fishermen choose to enter the fishery

precisely during the time of year they are not allowed to fish with drift-nets.

During the rainy season, the estuary of the Rio is a naturally protected and safe area: On the other hand, at that time, the open sea is quite dangerous for small boats. Storms can rage rapidly, throwing fishermen into a hopeless situation before they can find any shelter.

In the middle and long term, such a ban short-circuits the organization of a professional artisanal fishery in the Bijagos archipelago. If the fishers wish to remain in the Rio, they have to resort to hook-and-line fishing. This is undoubtedly a more selective technique and may therefore be labelled more 'ecological'. But, for many fishermen, fishing for barracudas during the rainy season with a line rather than a net is quite a painful experience. Indeed, during the breeding period, the barracuda just does not take the bait.

Of course, there remains the possibility of fishing in the open sea, but, at that time of the year, the sea is rough and, moreover, artisanal fishery in Guinea-Bissau is only in its early developing stages yet. As for industrial fishing, the activity of the fishworkers in the Rio seems negligible. According to official statistics of the Ministry of Fisheries, industrial trawling caught 283 tonnes of barracuda in 1993. However, there are good reasons to consider these figures as underestimates. A more careful analysis of the statistics shows that while 83 per cent of the catch is declared by boats of the former Soviet Union, none is declared by the Koreans, the Spanish or the Portuguese.

What is also astonishing is that we received two different sets of statistics for 1993, both from the Ministry of Fisheries. The second one reported 465 tonnes of barracuda, of which 94 per cent were from the ex-Soviet fleet. In this case, it seemed that the Chinese, the Koreans and the Spanish did not catch any barracuda. At any rate, if any activity is altering the natural resource of barracuda, it seems to be industrial rather than artisanal fishing.

Discouragement

There is enough to discourage the novice fisherman in Guinea-Bissau from getting more professionally involved. Last year, for instance, he was informed at the very last moment (end-July) that the barracuda season he was anticipating stood cancelled. This year, the suspense is greater. Asked if the decree would be pursued, the National and Regional Directors of Fisheries of Guinea-Bissau termed the ban on net-fishing in the Rio as obsolete, even though the decree as such had not been modified.

Yet, In June 1995, the Minister of Fisheries confirmed the application of the decree "because IUCN (International Union for

Conservation of Nature) was insisting to have it extended." IUCN bases its recommendation for a ban on net-fishing in the Rio during August arid September on a survey of the size of barracudas caught by *Nhominca* fishermen. IUCN observes that for these months, 57 to 73 per cent of the catch is at least 1.20 m long, and that most of the barracuda are females.

But we have reservations with these findings. In addition to the fact that this survey has only lasted six months (from May to October 1993), we do not see its logical link with IUCN's recommendation. When sexually mature, a four-year old barracuda approaches 70 cm. Those, which have grown to 1.20 m or more have already reproduced many times. Fishing them would not jeopardize the resource base of the species. Rather, the more dangerous finding would large quantities of catch between 60 cm and 80 cm.

At first sight, the ban on net-fishing in the Rio during August and September may appear very 'ecological', but we do not believe it has any positive effects. Such a measure would have no serious effect on the protection of halieutic resources, which really depend mainly on the behaviour of the industrial fishery. Measures like defining the mesh size of the nets and limiting the number of boats are sufficient to regulate the artisanal fishery of Guinea-Bissau.

In this regard, the country cannot be compared to Senegal, for example. There is no overexploition by artisanal fishery. On the other hand, the current ban will simply make life more difficult for the fishers of the Rio who are urged to become more and more professional.

So why go to all this trouble? The Ministry of Fisheries, which we have consulted, does not seem to stand by this ban. It considers it as a request from IUCN. We understand that this demand seems to have been insisted on by Switzerland, which probably relates it to the repayment of a debt of US$6 million outstanding from Guinea-Bissau.

This article has been written by Hannes Stegemann and Philippe de Braconier of Iles de Paix, Belgium

Breton fishery

Neither fisher nor fish

Modernization and the compulsions of the global market economy threaten the survival of both the fishers and fish of Lower Brittany

On the night of 22 February 1993, several hundreds of French fishers and their families stormed the Rungis wholesale fish market, just south of Paris. In the ensuing mêlée, 800 tonnes of fish valued at over US$4 million were destroyed. Many of the demonstrators had come from the Breton ports of Le Guilvinec, Douarnenez and Concarneau where, earlier in the day, more than 9,000 people had participated in demonstrations against changes in the Common Fisheries Policy of the European Union (EU) that would cut quotas, force a reduction in the French fishing fleet by as much as 20 per cent, and liberalize regulations governing the import of non-EU fish.

The anger and strength of this protest, as well as subsequent ones, underline the extent of the crisis now rocking the French fishing industry.

Under conditions of ecological and social crisis, how have Breton fishers attempted to reproduce their fishing enterprises? And within the family, who gets pushed out, with what residual claims or contributions, and where do they go? How does differentiation within the community change? And in what way does integration within the EU shape local processes of differentiation? To analyze these questions, I would like to consider the area bounded by the *quarter maritime* of Le Guilvinec.

This administrative unit is roughly coterminous with the cantons of Pont L'Abbe and Le Guilvinec which together form the southernmost part of *le pays* Bigouden. Of the approximately 33,000 people living in the two cantons, about 2,000 are directly employed as commercial fishers. The fishing industry and its shore-based support industries are, by far, the most important aspect of the economy today. Agriculture, once predominant in this region, has been in decline since the 1960s. The third axis of the local economy is tourism, a somewhat unreliable industry that provides few high-paying jobs while simultaneously driving up living costs for local people.

Over the course of the last century, Breton fishers have created a prosperous industrial fishery. Ironically, it is their very success in exploiting the resource that now threatens to undermine them. Overfishing and a constantly expanding catching capacity has made it increasingly difficult for fish stocks to reproduce. To counter the looming ecological disaster, the EU has cut subsidies to fishers and plans to reduce the overall EU fishing fleet by as much as 20 per cent. These new policies threaten to make bankrupt nearly half of the fishing fleet based in Le Guilvinec.

Although fishing itself occurs in an almost exclusively male environment, no adequate analysis of social reproduction is possible without coming to terms with the gender relations of production on shore and within the family. Studies of fisherfolk have almost exclusively focused on the male-centred crew. Recent literature has, however, begun to redress this problem and see women not as adjuncts to the process of fishing but as integral to it.

Class relations

There are various ways in which local-level class relations (ownership of boats, shore-support facilities, marketing and processing facilities) structure, limit and facilitate small-scale fishers' ability to survive economically. Of particular interest is how these class relations have changed since the establishment of the

industrialized sardine fishery of the 1880s and after the escalation of technological change in this region.

My research in the *pays* Bigouden is as much a product of my own experience as a commercial fisherman in Canada as it is a product of my academic training as an anthropologist. I grew up in a coastal fishing port on the west coast of Canada and, for close to 20 years now, I have made my living as a fisherman. I have also studied and written about issues of resource allocation, social conflict in fishing communities, and fishing co-operatives in the Pacific north-west fishing industry. It is a long way from the deck of a north-west Pacific coast fishing boat to Le Guilvinec. Yet, underlying this physical distance is a fundamental similarity that allows us to communicate with one another in spite of the many differences of language or culture.

My family and I have been living in the *pays* Bigouden since November of last year. During this time, I have had the opportunity to meet many people connected with the fisherynot just those involved in administration, but also the men who work the boats and the members of their families.

The main focus of my work has been to describe and analyze the process of social reproduction within the Breton fishery under conditions of crisis, i.e. how do artisanal fishers organize their economic activities to maintain and / or expand their productive capacity? Further, how are severely diminishing economic opportunities in fishing being negotiated and expressed within the family and the wider community?

My work is anthropological. By this, I mean that jam most interested in listening to, and understanding, what the people directly involved in the fishing industry and the local community have to say about their lives.

As an anthropologist, I am interested in how people solve their everyday problems of survival. While the bio-economic approach popular with fisheries managers focuses strictly on measurable quantities such as fishing effort, rates of profit or maximum sustainable yield, the anthropological approach seeks to bring real people into the picture. For an Eurocrat in Brussels or a *fonctionaire* in Paris, manipulating statistics and adjusting regulations is just that: but in the fishing communities it could mean the loss of jobs, boats, and a way of life.

Inter-related processes

The difficulties experienced by the fishing communities during the past few years are the product of a series of inter-related processes: technological developments,

stock depletion, government attempts at regulation, and the internationalization of the market.

The post-Second World War modernization of the French fishing fleet resulted in a threefold expansion in the volume of fish landed. However, the number of active fishermen in the Breton fishing industry plummeted from 25,000 to 8,000. The catching capacity of today's capital-intensive and efficient fishing fleet greatly exceeds the reproductive capacity of the fish stocks.

In order to minimize social disruption among fishers, while simultaneously attempting to conserve fish stocks, government agencies have introduced a variety of restrictive policies that range from limiting access to fishing grounds, restricting types and sizes of fishing gear, controlling vessel size and power, to the establishment of regional and species quotas. However, these measures have only compounded the problems of those who fish. Breton fishers and their European co-workers face the likelihood of further fleet size reductions, continuously declining fish stocks, and the potential collapse of their way of life.

Since the end of the Second World War, both the value and the volume of fish landed in the Bigouden ports have increased. Overall catches levelled off during the mid-1980s and dropped significantly in the early 1990s. Initially, the drop in production was offset by continued increases in fish prices. However, as a result of changes in the structure of the international market and currency fluctuations, the prices of fish plummeted in the early 1990s, leading to the social protests that swept across Brittany in 1993 and 1994. Faced with a crisis of this sort, artisanal fishers have two basic options: reduce consumption or increase production. However, both these options have finite limits beyond which one can do very little.

The direct impact of this crisis on the fishing fleet is reflected in the day-to-day operations of boats in three very specific fashions: reductions in crew size; reductions in expenditures on maintenance of vessels; and an increase in fishing time.

For example, since 1989, the crew size at sea on a fleet of 24-in boats belonging to one local fishing company has declined from six to five. During the same period, many of the coastal draggers have gone from four to three men at sea. While technological changes (such as the switch from side-trawling to stern-trawling) has been at the root of downsizing of crews in the past, today the explanations are more economic. Fewer men translates directly into bigger crew shares.

Many boatowners have also cut back as much as possible on maintenance expenditures. Boats are taken up on the slipway less frequently than before. Gear and equipment which need to be replaced are made to last longer than had been the practice. Some of this economizing may, in the short term, improve the productivity of the vessels and hence increase the boatowners' revenue. These practices may also, again in the short term, maintain or at least slow down declining incomes. However, studies of fisheries elsewhere demonstrate that, ultimately, such measures normally lead to a deterioration of conditions of work and a worsening of shipboard safety.

Social and economic impact

The crisis also has a social and economic impact on the fishers' family. Most obviously, declining incomes force changes in patterns of consumption. Less

obvious and ultimately more crucial are the hidden processes of economizing that occur within the family.

Due to the nature of the regional economy and high levels of unemployment, it is difficult for fishing families to supplement their losses with income generated by other family members.

The level of state involvement in the French fishing industry is amazing. The French fishing industry has been encouraged by the national government with a seemingly constant and unending supply of money since the end of the Second World War. One need only look across to England to see what a difference government policy makes. In Newlyn harbour, the average age of the fishing fleet is close to 20 years. In Le Guilvinec, the average age is about half that. In the years immediately following the War, fishing provided jobs and much-needed food. In more recent years, however, the state-led modernization of the fleet has expanded catching capacity, while simultaneously destroying jobs.

The crisis that local fishing communities are facing in France is part of a global fishing crisis. The amount of fish caught from the world's oceans peaked in the 1980s and has been declining ever since. FAO has determined that of 17 world fisheries, four are in a state of commercial depletion and nine more are in serious decline. However, under the pressure of the market economy, fishing effort has only continued to increase.

Two particular aspects of the linkage between artisanal fishing industries and the logic of the market economy are noteworthy. First, the logic of the market economy propels fishing technologies to develop to a point where catching capacity exceeds the ability of fish stocks to successfully reproduce. This is clearly demonstrated by several instances world-wide, the most recent being the complete closure of the northern cod fishery of Newfoundland that has thrown close to 50,000 people out of work.

Second, the epicentre of economic growth in fisheries is located not in the areas where fishing is based, but rather in metropolitan centres far removed from the lives and communities of fisherfolk.

The unrelenting movement toward liberalized trade and the globalization of the market is making it increasingly difficult for communities to retain any real control over local development. In a world that is more and more becoming a global village, fishers must be careful not to ghettoize themselves. Fishing communities need to reach beyond their narrow regional or nationalist boundaries and form effective linkages that can intervene at a global level.

It is perhaps self-evidentbut necessary to statethat fisheries management schemes of the 20th century have not been oriented toward the social well-being of the fishing communities, but rather towards profits. Conservation efforts are only rearguard actions designed to maintain reasonable profits for the medium term. In this process, neither the fisher nor the fish benefits: both die out. It is time to think ahead to our grandchildren's grandchildren and to ask ourselves if there will be any fish left for them.

This piece is based on a research proposal for a historical ethnography of the fishing community of Le Guilvinec by Charles R. Menzes of Pont L'Abbe, France

This piece is by Hilda Salazar Ramirez, on environmental activist who works with the fishermen's union in Mexico

Artisanal fishers

Don't ignore us

Malaysia's new economic prowess does not seem to have encompassed the problems of its small-scale fishers

As Malaysia races to its new national goal of becoming the next Asian economic powerhouse, the country's coastal fisherpeople find themselves still immersed in chronicand growing problems.

Some of these issues were highlighted at the Malaysian Coastal Fishermen's Workshop from 25 to 27 July 1995 in Penang. Organized by Sahabat Alam Malaysia (SAM or Friends of the Earth, Malaysia), the workshop brought together 15 coastal fishermen's representatives from the States of Kedah, Penis, Ria and Johor.

During this workshop, numerous problems were raised and discussed. Most of these were the familiar ones encountered by countless numbers of artisanal fisherpeople around the world: pollution of rivers and coasts; encroachment into inshore waters by trawlers; dwindling catches; new ecological predicaments thrown up by aquaculture; and the absence of sound fishery management and enforcement policies.

One problem, particularly pronounced in Kuala Kurau in Perak and Kuala Tunjang in Kedah, is the tendency to convert mangrove swamps into crab and prawn breeding farms. This practice has destroyed the breeding ground of several species of fish. Further, the mangrove swamps served as a barrier to protect the shore from the fury of the waves. Once cleared, the result is erosion.

In Pulau Pangkor in Perak, Kuala Perlis in Perlis and Pontian in Johor, chemical and organic pollutants from factories, hotels and pig farms have also affected the catch of the local fishermen. S. M. Mohammed Idris, president of SAM, urged the Malaysian Fisheries Department and the Marine Police to enforce existing laws and arrest those who violated the laws.

He also suggested that seafood exports be reduced to prevent the export market from further commercializing Malaysia's fisheries and overexploiting marine resources.

The workshop formulated and adopted a resolution, which was presented to the authorities in the Malaysian government. The resolution urged the Department of Fisheries to enforce the relevant laws and to control and prevent incursions into the coastal waters by trawlers and Kenka boats ('apollo nets').

It requested the authorities to increase the number of the armed enforcement personnel to face the increasing incursions of trawlers into the coastal waters of Malaysia. It asked the State governments to notify in the official gazette mangrove forest areas as reserves for conservation purposesto maintain biodiversity, prevent erosion and conserve feeding, refuge and breeding grounds for fisheries.

The resolution called on State governments to be careful and meticulous in planning industrial developments nation-wide so that their implementation would neither result in marine pollution nor threaten the livelihoods of small-scale or coastal fishers.

Act effectively

The participants at the workshop requested the Department of Environment to act effectively to control, reduce and prevent marine and river pollution in Malaysia by effectively enforcing the amended Environmental Quality Act of 1974.

They also urged the government to carefully plan all development so that the benefits will be equitably distributed and in a manner that the coastal fishermen's livelihood are not threatened.

The resolution entreated the Department of Fisheries, Department of Environment and the Marine Department to co-operate and consolidate their forces to prevent the recurrence of the dumping of sludge by tankers in Malaysian coastal areas. Sludge dumping threatens marine resources and only exacerbates the coastal fishers' problems.

The workshop beseeched the Department of Fisheries to ban the shell-dredging boats, which are operating in the Perlis and Kedah coasts. It also requested the government to control, reduce and prevent the destruction of coral reefs, which are important in maintaining the fishery ecology.

On the question of poverty, the resolution urged the government to pay immediate attention to the issue and to take appropriate actions to alleviate the plight of the coastal fishers.

The participants called on the Malaysian Fisheries Development Board and the National Fishermen's Association to play their roles effectively to overcome the problems posed by profiteering middlemen in the marketing of fish catches.

This piece is based on material sent by Nora Ibrahim of Sahabat Alam Malaysia, whose Artisanal Fishermen's Network is co-ordinated by Zulkifli Yusuf

Artificial reefs

Re-greening the seas

Experiments in some fishing villages of south India reveal the economic, social and environmental advantages of artificial reefs

Deep down in the south of India, in the coastal State of Kerala, live about one million people who depend, either directly or indirectly, on small-scale fishing and related activities. In all, there are about 130,000 active fishermen working from the beaches of Kerala.

In recent years, the Trivandrum district of this State has seen attempts to regenerate the capacity of the seas. The work has focused mainly on three communities of about 500 fishing families and, to a lesser extent, on another eight communities.

Over the last three decades, the communities' fishing grounds have been severely depleted and the natural reefs, essential habitats for fish, destroyed. One reason for this is that in the early 1970s, with traditional distant-water fishing grounds being closed to them, the Japanese fishing industry began seeking supplies of fish and prawns. This increased demand encouraged investors in India to purchase shrimp trawlers, and develop export markets in Japan.

There are now plenty of these trawlers fishing in India's coastal waters, doing untold damage to fish stocks and the habitat, which supports them. More recently, as a result of liberalization policies, the Government of India has opened up the country's Exclusive Economic Zone to joint ventures between foreign and Indian companies.

It is said to have issued 170 licences, involving around 800 vessels, but it is not known how many have actually begun operations. While there seems little chance of an easy reversal of these decisions, no further licences are being issued, thanks to protests from the National Fishworkers' Forum (NFF).

Fishing communities in the south-west of India have witnessed this industrial revolution at first hand. The incursions of trawlers into the inshore waters have caused severe depletion of fish stocks and, more importantly for long-term sustainability, led to widespread destruction of the marine environment needed to replenish stocks through providing habitats, shelter, protection, food and breeding sites.

Local studies have shown that many natural reefs have been destroyed. Around 150 species of once common varieties, including 135 fin-fish species, are no longer caught by the artisanal fishermen, because they have been severely depleted by uncontrolled trawl fishing for highly priced prawns for export. During the 1970s, overall fish catches declined and the artisanal sectors catch fell to between 40 and 60 per cent of per-1970 levels.

Artisanal fishworkers in the region have responded to this threat in various ways, including organizing themselves into unions and campaigning for more equitable fisheries development policies, through, for example, the NFF.

Many have also adopted new technology, such as imported outboard motors (OBMs), to compete more effectively with the trawlers for both resource and space on the fishing grounds.

Modern technology

Artisanal fishworkers, however, are handicapped in areas such as access to capital, credit, technology, markets and so on. While the use of modem technology like OBMs may help increase productivity, they also incur significant costs. Often the use of such technologies cause fishermen to change from traditional, selective

techniques to more modem, industrial 'catch-all' methods.

There is also increasing competition from outside investors who see fisheries as a short-term investment opportunity, rather than as a long-term source of livelihood. Such competition can pressure traditional fishermen to adopt more intensive and less selective techniques. The challenge for small-scale and artisanal fisheries, therefore, is to become more productive, without undermining traditional nurturing management systems and depleting the resource base.

As a response to this, fishworkers from several villages in the two most south-westerly districts of India - Trivandrum in Kerala and Kanyakumari in Tamil Nadu - have been engaged in experimenting with ways of rejuvenating the seabed and providing for the *in situ* conservation of fish stocks. These experiments have their origins in the age-old practices of placing coconut fronds and rocks in near-shore waters to attract fish into areas fished by gear worked from the beach. They are also influenced by the traditional belief in the Goddess of the Ocean, who must be treated with respect to ensure she continues to bestow her favours. Local NGOs and external development agencies have been working with local fishing communities, and adding to their traditional knowledge with concepts and knowledge borrowed from other countries.

A recent experiment has been the construction of artificial fish habitats (AFHs). Such artisanal experimentation has a long history. For instance, fishermen operating shore seine nets traditionally used to dump rocks fastened with coconut fronds on the seabed to attract fish close to the shore.

More recently, fishermen using hooks-and-lines came to associate wrecks on the seabed with rich fishing. AFHs, especially Artificial Reefs (ARs), represent a "people's" technology. They form a social and technological response to a fishery crisis, and are based on the fishers' traditional knowledge and understanding of their marine environment.

Local materials

Over the 1980s, the fishermen of the area constructed 19 AFHs, using locally available materials such as concrete well rings, coconut fronds and tree stumps. The site selection and choice of materials were based on the customary and experiential knowledge of the fishworkers.

The early experiments demonstrated the vulnerability of AFHs to damage by the monsoon, and to burying in sand and silt. On the positive side, they also

demonstrated that the vegetation used in the construction decays and provides important nutrients.

In 1989, the Programme for Community Organization (PCO), a local Trivandrum-based NGO, initiated a joint project with representatives from three fishing communities, based on the lessons learned from the early experiments. While the economic costs of the earlier experiments had been nominal, levels of investment required for this joint project were substantially higher. The new experiments involved the construction of purpose-built AFH modules in bamboo and concrete, followed by their aggregation into artificial reefs. The objectives of the project were to establish three ARs around the villages of Puthiathura, Thumba and Adimalathura. The local NGO raised half the costs and fishworkers, the balance.

The ARs were established at sites selected by the fishers and lowered into position from aboard local *kattumaram* craft. Systematic studies of their effectiveness were undertaken by PCO in collaboration with the Intermediate Technology Development Group (ITDG). In each case, the reefs were found to act as fish aggregating devices, significantly enhancing catches. It was also found that there was rapid colonization of the ARs by resident fish varieties.

However, there is also a danger that when ARs are used as fishing grounds, increased pressure can be applied to already overexploited fish stocks. Indeed, for this reason, the International Centre for Living Aquatic Resources Management (ICLARM) has warned against using ARs as fishing grounds. A longer-term strategy, therefore, needs to be worked out on how ARs should be used in the future.

The studies also showed that the AFH modules were susceptible to 'gliding' in different directions as they were put in position. If ARs were to become anything more than mere aggregating devices, their concentration had to be increased. Thus a technique for lowering and accurately placing reef modules on to the seabed was devised, using a rope-and-pulley system.

In January 1995, a team of oceanographers from Southampton University visited south India at the invitation of the NGOs and the Government of Kerala. On filming and analyzing the ARs, they observed that these are stable and the modules' surfaces are well colonized by marine life, providing protection and food for reef-dwelling fish.

The variety of life forms is not as complex as that found on natural reefs, but, with time, as the surfaces of the ARs mature, a greater diversity is expected to develop.

Fishers, on seeing the video of the ARs carefully positioned on the seabed and surrounded by fish, have reinforced their impressions of the value of this technology. This experimentation will not, by itself, solve the problems of artisanal fishers in south India.

Marine reserves

If large enoughand they would need to be about 10 to 50 times biggerARs can serve as underwater barriers to prevent the encroachment into near-shore waters of destructive fishing gear such as bottom-trawls. They can also provide refuge for fish. Dispersed over wide areas, ARs may serve as marine reserves and important breeding and conservation areas.

ARs a stand-alone technology, ARs are unlikely to form the basis of a viable artisanal fishery in the future. In a

liberalized market, fishers have to cope with rising costs of fuel, motors and other equipment, all of which are now in common use as artisanal fishers struggle to compete with larger-scale operations. Consequently, ARs in themselves have a relatively low priority in fishing communities.

Nonetheless, the enthusiastic feedback from the fishers, and the interest shown by other communities, spurred other local NGOs to participate in further experiments. The South Indian Federation of Fishermen Societies (SIFFS), representing around 6,000 fishermen, also became interested.

The news of the success has spread and ARS have now been taken up by the Government of Kerala as instruments to involve fishing communities in rebuilding their depleted fishery. The scale of this work is now at least ten times greater than what was initially begun. Further, interest in these experiments has also been aroused internationally.

The challenge for the future is to enable more local communities of artisanal fishers, who are the true guardians of marine resources, to develop such technologies, using participatory approaches that are environmentally efficient in sustaining fish stocks. However, this alone will not do.

Also needed are economic tools to analyze social and environmental costs, and the development of management systems, which fully include community institutions as crucial stakeholders in the preservation of marine resources for the food security of all.

Such tools need to evaluate the economic costs and benefits of investing in certain fishing practices, while at the same time assessing the costs of degrading the ecosystem, the costs of lost opportunities for food production and livelihoods, and the costs of reduced amenities.

Evidently, artificial reefs can play a roleat the community and government levelsin fostering awareness of how to maintain the diversity of fish stocks and the need for sustainable fisheries management. ARS also provide a focus for the debate on issues of ownership and control of the coastal commons and on matters of ecosystem rehabilitation.

Furthermore, they have a potentially important role to play in demarcating exclusive community-controlled fishing zones, and thereby facilitating sustainable community-based management of fish stocks on the basis of 'harvesting' rather than 'hunting'.

This article is written by Brian O'Riordan of the Intermediate Technology Development Group, Rugby, UK

Individual Transferable Quotas

Ding dong, carry on

Northland fishermen feel that the quota management system of New Zealand has failed to deliver

As a conservation measure in fisheries, the system of Individual Transferable Quotas (ITQs) has received considerable attention and some advocacy. The ITQ system was the New Zealand government's response to pleas by independent owner-operators and small-scale commercial fishermen, through their Federation, to save the coastal fisheries. They wanted their fisheries conserved first, then only would their economic situation improve, they believed.

It may now be time to assess the situation. The present status of the fishery in Northland (the region of New Zealand north of Auckland) and the consequences for its independent fishermen and their communities provide a critical evaluation of the efficacy of ITQs. Northland has always been strongly dependent on fisheries. It is also one of the most economically depressed regions of New Zealand, notorious for high unemployment rates. Northland is significant as the only region for which any attempt was made to determine the socio-economic importance of commercial fishing for local communities before this Quota Management System was introduced.

More recently, the New Zealand Fishing Industry Board (FIB) did a survey to show the economic benefit of the seafood industry for the region. Significantly, while demonstrating the importance of the industry, this study did not make any comparisons with the pre-ITQ survey. Although categories differ, there appears to be a major decline in direct employment. Excluding aquaculture which was not considered in the earlier studyit appears that, in aggregate, direct employment in the fishing industry in Northland has been reduced from the 700 reported in the earlier study to 579 in the more recent one.

A recent two-week trip through Northland to obtain local perceptions of the impact of the ITQ system on the fisheries and communities introduces a more human dimension to the situation. In some cases, informants were old acquaintances and spokespersons for different fishery sectors. In other cases, they were new, sometimes opportune, contacts. Commercial fishermen at the wharves, always notoriously reticent with strangers, were, however, even more difficult to talk to than usual. They were possibly fearful of yet another undercover 'sting' by the Ministry of Agriculture and Fisheries Compliance. Not surprising, given the frequency of news reports of illegal fishing activities dragged to the courts.

The informants seemed convinced that without the restructuring that led to ITQs, the situation would be much worse than it is now, but the independent fishermen, who had been the system's strongest advocates, now talk of 'betrayal', apathy and disgust. Quotas have been aggregated, but there is still a lot of pressure on fishermen and the small companies to sell their quotas to the larger companies.

Downhill

One fishermen said, "1 have fished for 20 years. After 20 years, I had to sell my quota to get out of financial strife. The last five years have been downhill." Having to lease quotas now, his operation is even more marginal. Another stated, "Paying off the quota costs too much! You had to catch as much fish as you could. If it were cheaper, then you would not have had to fish so hard." This also means that wages for the crew are low. The net effect appears

to be a transfer of profits from the local community to company shareholders. Smaller companies recognize quota aggregation as a problem. "If you have quotas and are fishing, you have quotas and are fishing. That is the way it's always been here; ding dong carry on," said one fisherman.

The quota system has consequences for conservation. As one fisherman remarked, "You have got market forces at full force in the fishing industry. When you have market forces and yet want to conserve the fish, it can not be done." The reduced profits from leasing quotas, for example, increases the incentive to fish for high grade. This means bringing in only fish that meets the size and quality required by the high-value Japanese *'Iki jimi'* (ceremonial) snapper market. As an example, 95 per cent of fish landed by one Northland company is exported.

Other fish may be dumped and, therefore, wasted. "I never met a fisherman who liked dumping, putting good fish back," said a fisherman. But the deemed value (the surrender price for snapper caught over quota) was NZ$20 per kg, while the port price was NZ$4. Indeed, one recreational fisher reported seeing large numbers of fish, which he believes were discards from the commercial fishery, washed up on northern east coast beaches several times this season.

Alternatively, the fish could be landed for the black market. Many informants asserted that fishers traded *non-iki jimi* snapper in their local community. Indeed, there was even an admission that a quota broker had outlined a scam to avoid proper reporting. It was alleged that the fishing industry has taken out a High Court injunction preventing the release of a MAF report that documents the extent of the discrepancy between the fish caught and the fish actually landed at the sheds. There was certainly good anecdotal evidence that the informal economy was thriving.

Considering the poor state of the fisheries, the complexity of the system of quota balancing, by-catch trade-offs, deemed values, resource rentals and subsequent moves to 'user' pays, it is clear that fishermen regard the system as primarily a form of extra taxation. The fishermen see the quota management system as a source of revenue for the government that reduces their incomes and economic viability.

Fishers' voices

Listen to their utterances: "There is not a big future for the small guy, with 60 per cent of the fish going as taxes, lighthouse fees, MAF fees, you name it. And now DOC (the Department of Conservation) comes in for a piece too. For a guy that has got to lease snapper, he is not going to stay in. They are getting out. Taken over by the big

companies. MAF got millions from the surrender of overcaught fish last year". Or, "The catcher pays the price at the end of the day." Independent fishermen were being forced out not just by economic attrition but also because they were "tired of being treated like criminals."

For the general community, while most recreational fishers could get a 'feed', it was widely reported that much of the fish caught were undersized. The general scarcity of good fish, however, was such that good size and quality fish caught by recreational fishers could be traded in the community at a value matching world market prices. A good kingfish, for example, could be swopped with a farmer for a sheep. In most of the fish shops visited, there seemed to be relatively little fish on offer and that little amount was usually poorly presented and of relatively inferior quality.

Domestic consumers were certainly pessimistic, as this sampling of comments reveal:

"You know how hard it is to get fish here and you go to Sydney or Melbourne in Australia and all our beautiful fish are there, cheaper than we can get in New Zealand."

"I do not eat much. Who would at NZ$22 a kg?"

"I do not understand how, with the amount of fishing going on, there can be any fish left. It's a disappearing resource. With the amounts being caught, how do they think it can reproduce fast enough?"

At least one Maori group wanted to place a *rahiri* (closure) on their stretch of coastline to allow inshore stocks, their essential subsistence supplies, to rebuild.

Snapper is commercially the most important species for Northland, indeed one of the prime species the ITQ system was intended to save. Last year, fishermen opposed calls to reduce the Total Allowable Commercial Catch (TAC) from 4,900 tonnes to 4,000 tonnes, following the annual stock assessment. In a major campaign, they argued that their economic viability would be at stake.

Maori leaders, for their part, feared such cuts would force Maoris who had been encouraged to legalize their operations, back to the black market.

Finally, recreational catch limits were reduced and the minimum size of the catch increased. This year's call is to reduce the TAC to 1,600 tonnes or even 1,500 tonnes. If, in order to save the snapper, this is done, the larger, vertically integrated and diversified companies can probably hang on, but most of the remaining independent fishers, many already marginal, will face bankruptcy.

Clearly, the ITQ system has not saved the prime coastal fish species for which it was introduced in the first place nor has it realized the hopes of those who pushed hardest for restructuring the fisheries. In Northland, under the ITQ system, many in the local communities feel deprived. Both prime species of fish as well as independent fishers continue to become endangered.

This report by Leith Duncan of New Zealand was written after a short trip around Northland earlier this year

Treading on dangerous waters

Driven by poverty, many Filipinos brave inhuman conditions to work aboard distant-water vessels

Perhaps few fishworkers anywhere in the world have experienced the tribulations that Filipino men undergo aboard distant-water vessels (DWVs). Inhuman, often unsafe conditions of work and illegal methods of recruitment are still common, despite campaigns against this form of exploitation.

The Philippines Anti-illegal Recruitment Campaign Programme can be traced back to 1990. During the Bangkok Conference on 'Global Fisheries Trends and the Future of Fishworkers', ICSF responded to a request of the Taiwanese delegation for an exposure to a Philippine fishing village. This was expanded to include a three-day seminar and workshop with the theme 'The Conditions of Fishworkers on Distant-Water Vessels'.

While ICSF regarded this activity as significant, it nonetheless exercised caution in dealing with the issues related to fishworkers on distant-water vessels as it could not yet claim familiarity with this segment of fishworkers. At the conference, the testimonies of fishworkers who had worked on board Taiwanese fishing vessels gave a graphic description of the gravity of the problem. A follow-up conference was held in Mauritius in 1993 to explore the possibilities of putting up a Task Force that would monitor and study fishworkers on DWVs.

Challenged by the testimonies of seven Filipino fishworkers who had jumped ship in Mauritius, the Philippine delegates, along with Gilberto Orioli, an Italian priest based in Taiwan, convinced the Catholic Bishops Conference of the Philippines to call for a press conference to highlight this plight. The success of the press conference moved the Philippines President to send a mission to Taiwan to look into the reported abuses of Filipino fishworkers.

The accounts of the fishworkers and the results of international discussions and investigations held afterwards pointed to this common fact: most of those who end up in unfavourable conditions are victims of illegal recruitment.

Thus, on 17 July 1994, the National Anti-illegal Recruitment Consciousness Year Programme was launched in Manila at the Philippine International Convention Centre. The launch was as festive as it was solemn. It was put together by the programme's core group composed of the Apostleship of the Sea, Manila, the Asian Social Institute's Family Centre, the Free Legal Assistance Group, the Friends of Filipino Migrant Workers, the Philippine Research Foundation for Migration and the Secretariat for Social Action. It can be said that Proclamation No. 422 declaring 1994-1995 as National Anti-illegal Recruitment Year was the result of the core group's efforts to fight illegal recruitment.

The launch of the programme was designed to call the public's attention to the problem of illegal recruitment. His Eminence Jaime Cardinal Sin was the main celebrant of a concelebrated Mass. Justice Secretary Franklin Drilon and Secretary of the Department of Labour and Employment, Nieves Confessor, represented the government. Maritime schools, NGOs and some religious groups expressed support to the programme by sending sizeable delegations.

Commemorative stamps

On the launch day, the Bureau of Posts began issuing commemorative stamps bearing the logo and the slogan of the programme. One of the highlights of the

celebration was the presentation of a commemorative frame to the core group by the Postmaster General. The media took notice of the relevance of the programme and gave the launch extensive coverage.

After such a dramatic start, how is the campaign now? Dissemination to remote parts of the country through seminars, dialogues and media packages has been the joint responsibility of the Catholic parishes and the NGO5. This is being done through the concerted efforts of regional co-ordinators of social action centres in the country, supported by parish-level volunteers.

These initial efforts have encouraged victims of illegal recruitment to come forth to tell their stories. Local government officials, police and military personnel or their relatives have been linked with such illegal recruitment practices.

These findings have been the subject of news items in national media programmes. As a result of the campaign, at the regional level, several cases of illegal recruitment have been filed with the National Bureau of Investigation in different parts of the country. In order to expedite the solution of cases, a tie-up with the Department of Justice has been institutionalized.

For the government's part, the Department of Labour, along with the Philippine Overseas Employment Agency, launched its own campaign and subsequently, a crackdown on illegal recruiters. A bill is now before Congress seeking to declare illegal recruitment as a crime against the State. Another bill, which has been approved by Congress on third reading, provides for a 24-year prescriptive period for the crime of illegal recruitment, which is recognized as economic sabotage.

Undoubtedly, the programme has made some gains in terms of raising the consciousness of the people. Perhaps it has even encouraged the government to become serious in implementing the anti-illegal recruitment law. However, the real issue that underpins illegal recruitment has still to be addressed.

There is a Filipino saying which runs "Angtaong nagigipit, sa patalim man ay kakapit" (A person in extreme need is forced to tread on dangerous grounds). Such is the situation in our country today.

Social imbalance

The social imbalance in our structural system has reached a proportion where the great majority who are poor do not see a way out of the web of poverty except to get out and stay out of the country. This they would do, even at the risk of selling some *carabaos* and a piece of land, if only

Fishing with Ramos

In his State of the Nation address during the opening of the ninth session of Congress, President Fidel Ramos declared the Fisheries Code one of the priority bills that should be passed by the Legislative Body. Supporting the need for an effective community-based coastal resources management, he signed Executive Order No. 240 on 1 May 1995 which created the Fisheries and Aquatic Resources Management Council (FARMC) in the barangays, cities and municipalities.

FARMC aims to institutionalize the role of local fishers and other resource users in the community-based planning and implementation of policies and programmes for the management, conservation, development and protection of fisheries and aquatic resources of the municipal waters, as defined by the local development plan. The aim is an integration with the local plan.

FARMC will also recommend guidelines to local government units and special government agencies on how to develop and implement projects. To ensure limits on the use of resources, it will also lay out norms for the issue of permits and licences to exploit fishery and aquatic resources,

The Executive Order also instructs official bodies to extend technical assistance to FARMCS. The Philippine Coastguard and other enforcement agencies have been asked to take the lead in enforcing fishery and environmental laws, in collaboration with FARMCS. To help enforce the law, FARMC members will also be trained and deputed as fish wardens and environment and natural resource officers.

President Ramos has also ordered the District Attorney to submit to the House of Representatives for approval a harmonized bill on the proposed Fishery Code that will amend the old order. The Land Bank and other government financial institutions have been asked to speed up the flow of finances to the aquaculture and deep-sea fishing sectors. A new Act will open up an additional 100,000 ha of non-mangrove areas for cultivation. The president has also directed agencies to put into effect a fisheries management programme as proposed by the workshop on integrated ocean planning and management strategies held in November 1994.

- Specifically, he urged the workshop participants to:
- chart the countrys EEZ and negotiate for the resolution and delineation of boundaries in areas of disputes with neighbours;
- demarcate the country's fishing zones for ease of management; and
- conduct a rapid resource assessment of all traditional and new fishing grounds in Philippine waters to permit the establishment of fisheries management plans based on maximum sustainable yields.

The President has also urged fishery industry leaders and fishery-related agencies to prepare and submit to him a final draft of the Unified Fisheries Productivity Programme that will consolidate into one national programme the Medium-term Fisheries Management and Development Plan prepared in 1993, the Fishery Sector Programme of the District Attorney and the Science and Technology Agenda for National Development (STAND) Philippine 2000 of the Department of Science and Technology. Ramos also counselled a review of the Fishery Sector Programme now being implemented with funding from the Asian Development Bank and the Overseas Economic Co-operation Fund.

to pay the fee of a recruiter. Not even stem warnings about illegal recruitment and the possible inhuman treatment in foreign lands seem to dissuade them from leaving the country.

Then there is, of course, what we call fate or *'suwerte'*, a value, which is conveniently functional in such a situation of hopelessness. "Ang suwerte ni Juan ay hidi suwerte ni Pedro" (The fate of Juan is not the fate of Pedro), say Filipinos. Our whole value system is reflective of the labour export phenomenon.

It is mirrored in the family's aspirations, in the foreign and economic policies of government, in the curriculum of our educational system, in the advertisements by mass media and in the themes of the entertainment world such as television and cinema.

My personal experience with overseas workers and their predicament began in Mauritius in 1992. I was attending an international conference on 'The Conditions of Fishworkers on Distant-Water Vessels', sponsored by ICSF as a sequel to the Manila Conference of 1991.

At the Mauritius conference, we were confrontedin 'flesh and blood'with the problems of fishworkers aboard Taiwanese vessels. We listened to the shocking testimonies of seven Filipino fishworkers who had jumped ship in Port Louis. They had come to ask us to intervene as they wanted to go home but did not have tickets.

What were their stories about? They were about their quest for a better life for their families. And, here, 'better' means only the ability to meet their basic needs of three meals a day, decent clothing, a house to call their own and education for their children.

But the price they had to pay for this search was costly in terms of human dignity. They were beaten by officials of the vessel, kicked when they did not understand instructions and 'stoned' with huge tuna fish every time they began to feel sleepy. They could get only four hours of sleep. Food was insufficient. Drinking water was rationed and very limited. On top of these, they were short-changed in their salaries, if they were lucky enough to receive their pay envelopes at all.

What was common in their stories? All of them were illegally recruited. This situation had made them very vulnerable to all sorts of unjust and oppressive treatment. Apparently, in such a predicament, not even our government could give them protection,. much less fight for their human rights.

At this point, the role of the Church, NGOs and international organizations became very crucial. The Apostolate of the Sea (AOs) in Mauritius and in Taiwan succeeded in pressuring the Taiwanese vessel officers to give the workers their return passage tickets.

Soon after the Manila Conference, ICSF had rallied international organizations to send letters of protest to the Taiwanese government700 of them were sent.

Afraid of recruiters

In Manila, the Family Centre of the Asian Social Institute and the AOs tried to help the seven fishworkers get their salaries. Unfortunately, this was difficult as the recruiting agency was 'floating' and the fishworkers were very afraid to sue the Filipino recruiters. After some weeks and

months, we were informed that they had all gone back to work on other distant-water vessels.

Deep inside me, I felt very bad. But I could understand why they had to go back. I could still recall vividly our heart-to-heart talk at the AOs Centre in Mauritius where they temporarily sought shelter. To be able to pay the recruitment fee, all of them had to either borrow moneyranging from Peso 14,000 to Peso 24,000or sell some *carabaos* or mortgage their houses and land.

This dehumanization of the seven fishworkers really hit me hard. I told myself that we keep telling them to say 'No' to illegal recruitment, but what alternative can we offer them? Yes, what? We continue to denounce illegal recruiters, but what do we announce? Lest I be misunderstood, I do not mean to underestimate our anti-illegal recruitment consciousness programme. What I hope to emphasize here is this: alongside this campaign should be a long-range plan that would consist in re-directing our labour policy from export orientation to local entrepreneurship. It is about time that the government, the church, the NGO5 and people's organizations came up with a common agenda to resolve this complex issue of overseas contract workers.

This calls for a paradigm shift:

- from a materialistic view of potential contract workers as commodities to be 'given' to the highest bidder, to a more holistic view of them as persons endowed with tremendous potential to change themselves and their environment, if given the opportunities;

- from a palliative, 'cosmetic' approach in resolving our unemployment problem through labour export to a more integral and long-term approach in alleviating poverty and the sustainability of the environment;

- from a position of allowing our country to perpetuate the dominant paradigm of development which promotes unlimited GNP growth through industrialization and urbanization for which manpower is needed to a firm resolve to promote a development model that is technologically efficient, humane and sustainable;

- from a position of weakness in perpetuating a colonial mentality, which has been a great obstacle in freeing us from the bondage of the past, to a position of strength in asserting our nationhood through a policy of local entrepreneurship and the promotion of a 'Filipino first' mentality;

- from a passive approach in the practice of 'copying' imported products to pass off as 'imported', to an active approach of enhancing creativity by coming out with products that are authentic and reflective of our culture;

- from perpetuating the value of 'employee' of the world to one of self-esteem and pride in being a Filipino.

- By way of ending, it might help to ponder over the following questions: What is the good news for the poor? What are our options? As government officials, what is our duty? As social scientists, what is our mission?

This article is written by Nenita M. Cura, Director, Family Centre, Asian Social Institute, Manila

Shrimp culture

Expanding farms, shrinking lives

The trend in Bangladesh towards increasing the area under shrimp farms does not result in tangible local benefits

As a country with a large deltaic floodplain, Bangladesh has a long tradition of fishing and fish culture and enjoys enormous potential to produce all kinds of aquatic products. In recent decades, due to an increased demand in the international market, shrimp has become one of the most important export products. Seafood ranks third in export earnings, 85 per cent of which comes from shrimps.

The government has declared shrimp cultivation a priority industry and to boost its production, specific support programmes (both technical and financial) have been designed. However, there are many people who are critical of this policy of expanded shrimp cultivation. They are mainly concerned about the ecological and social impacts.

Shrimp cultivation is undertaken both inside and outside polders (areas protected by embankments from tidal inundation) in areas, which have access to saline water. Shrimp fields need to be protected with *bunds* (embankments, usually of earth). Once the *bunds* are ready, fields are flooded, and the water brings with it post-larval, juvenile shrimp and various fish species.

Cultivators used to depend completely on this natural intake of shrimp and fish. Nowadays, with a growing number of shrimp fields and prospects of greater profits, cultivators also buy post-larval and juvenile shrimp to increase stocking density in the fields.

This change in practice has opened up many new avenues for employment. Catching of shrimp larvae in the river with different types of nets is a common sight in the south-west of Bangladesh. Direct transactions between catchers and growers do not normally take place. Traders of shrimp fry, who often also trade in adult shrimp as *farias* (middlemen), have emerged. Various kinds of credit and patronage relations are involved within a hierarchy of catching, trading and cultivation of shrimp.

Depending on the species, shrimp culture starts at the end of April or early May and continues until October. The harvest starts around August and continues until December. The production cycle of shrimp interferes to a certain extent with the production cycle of paddy.

This has several important implications. In the area of this study, the first commercial shrimp field of around 55 acres was established in 1979. Since then, shrimp cultivation has continued to expand, taking over new polders. By 1993, about 3,750 acres of land, divided into 70 fields, had been brought under shrimp cultivation.

From 1986 onwards, there was a massive increase in the number of shrimp fields. By end 1986, the number of fields was more than four times the 1985 level. This increasing trend continued until 1989, after which it showed a gradual decline.

Rising demand

In terms of increase and decline of the number of prawn fields, the specific years of 1986 and 1989 are particularly relevant. The demand for shrimp in the world market rose sharply from 1985 onwards. The expansion of shrimp cultivation between 1985 and 1986 was more a result of this increased global demand than local factors.

The impact of shrimp cultivation has three dimensions: economic, social and environmental. Many people believe

shrimp cultivation to be highly profitable. It is also said to stimulate employment in related areas, for example, the catching of shrimp fry, and trading.

However, this narrow perspective only compares the profitability of shrimp cultivation to paddy cultivation. No account is taken of sustainability, the total household economy, or the farming system as a whole.

A more comprehensive cost-benefit analysis shows that, while shrimp farming brings fortunes to some, it incurs significant loss of opportunities for almost every household. The opportunities lost include those for rearing poultry and livestock, growing fruit trees, kitchen gardening, culturing fish in homestead ponds, availability of cow dung and firewood for fuel, and access to fresh drinking water.

The consequences of this for each individual household and for the society at large are far-reaching. For example, the loss of livestock has multiple effects: loss of draft power for tilling, threshing and transportation of goods, and a decrease in milk production.

In many areas, shrimp farms replace agricultural crops like jute, paddy, sesame, mungbean, and pumpkin. If all the benefits, which a peasant household derives from these sources (in terms of direct consumption, cash income and employment) are taken account of, then shrimp cultivation is far less profitable than is claimed.

There are also increased costs to health from a rise in certain water-borne skin diseases (resulting from stagnating and polluted saline water) and undernourishment due to the lower yield or total loss of the *aon* paddy (that grown during the dry season of September to December) because of delayed planting, and water salinity.

In shrimp culture, income distribution is heavily biased in favour of the owners or controllers of the field. Control over land is the crucial factor in cultivation of shrimp. According to a recent report, 70 per cent of the shrimp fields in the greater Khulna district are owned or controlled by outsiders, 20 per cent by local rich landowners and the remaining 10 per cent by small and marginal farmers.

Maximizing profits

Shrimp entrepreneurs tend to maximize profit by expanding, rather than intensifying, the area under cultivation. This is clearly reflected in low yields. Often expansion of shrimp farms is achieved through coercion of the poor. Not only do they lose their land (in exchange for very low rent), but they are also unable to find enough work for their

Getting women involved

Next to agriculture, aquaculture plays a very important role in the economy of Bangladesh. The country has 1.7 million ponds covering about 160,000 ha. About 1.3 million people are employed full-time in fisheries or related activities and another 10 million people work seasonally. Among the total persons employed, 10- 12 per cent are women.

Of Bangladesh's population of over 120 million people, women make up 48 per cent. Most of the rural women are engaged in different agricultural work in addition to their domestic responsibilities. But their participation in aquaculture activities is hampered by several constraints, mainly social and religious. The more important constraints are: the traditional thinking that aquaculture is a male-dominated work; difficulty for women to manage ponds far away from the house; unwillingness of the male-dominated society to accept the fact of women's involvement in income-generating activities; iliteracy; religious rules and cultural norms; and lack of access to funds and resources.

Yet, the fact is that pond fish culture needs less labour and involvement, which women can easily provide in addition to their family duties. The economic returns they get within a short period can help uplift them as well as empower them within the family and society.

Keeping this issue of women in mind, donors, several national and international NGOs and government agencies have come forward to eradicate poverty, create employment opportunities and associate rural women in the mainstream national economy through aquaculture practices.

The International Centre for Living Aquatic Resources Management (ICLARM) is executing a programme called Aquaculture Technology Transfer Through NGOs and Feedback to Research. Led by M .V Gupta, Senior Aquaculture Specialist and Team Leader of ICLARM, the project is in collaboration with the Fisheries Research Institute, Department of Fisheries, Bangladesh Agricultural Research Council (BARC).

Five national NGOs are implementing the programme, which covers 24 districts representing different agricultural parts of the country.

Under the programme, the participating NGOs demonstrate the technologies of fish culture in seasonal and perennial conditions. They also raise fry in 853 nursery ponds, covering an area of 93,908 ha. In the demonstration programme, 3,563 farmers are involved, of whom 54 per cent are women. ICLARM gives the technical support for implementing the programme and developing linkages between government organizations and NGOs.

The following are sketches of two women's groups, which have been participating in the technology transfer programme of the project:

RAHMA BEGUM, led by nine group members of TMSS, an NGO, operate a 0.12 ha pond. At the rate of 9,000/ha, they stocked fingerlings of catla, rohu, silver carp, mrigal, grass carp, common carp and thai sharputi during June 1994. After stocking, they fed the fingerlings daily with rice bran and agriculture by-products readily available from their homestead. They also applied cattle manure at the rate of 1,000 kg/ha/month and urea and TSP at the rate of 25 kg/ha, every 15 days. After five months, they started harvesting table-size fish, which they sold in the market. In nine months, they harvested 402.7 kg of fish from the pond (3,356 kg/ha) and earned a net profit.

Another womens group, ASHA MOHILA SOMITY of Banchte Shekha, consisting of 30 members operated five nursery ponds of 1.056 ha area. They started by stocking 15 kg five-day old carp hatchlings. After one month of rearing, they re-stocked the fry in separate ponds to produce fingerlings, which they started selling too. During the rearing period, they used a mixture of powdered rice bran and oil cake twice daily as feed. They supplemented this with cow dung. After a month of spawn stocking, they started selling the fry and, subsequently, fingerlings to hawkers and neighbouring fish farmers. In this way, they managed to take home a net profit as high as 280 per cent on the initial investment.

These two case studies show women's ability in carrying out all kinds of aquaculture operations by themselves.

—by Debashish Mazumder, Aquaculture Officer, International Centre for Living Aquatic Resources Management (ICLARM), Dhaka

family members. Compared to paddy cultivation, labour requirements for shrimp farming are low. Furthermore, most of the labour is hired from outside. Consequently, many (especially men) are forced to migrate to seek employment. This forced migration not only creates emotional tensions in the family, but also places additional responsibilities and burdens on women.

Shrimp cultivation also influences the process of social differentiation by directly affecting the land ownership pattern. Our study investigated the extent of land transfers among the villagers whose land is under shrimp cultivation, and found that for the period 1989-1990, almost 60 per cent of land sales were made by farmers owning less than three acres. A strong link was found between the sale of land by small-holder households and non-receipt of rent from the shrimp cultivators.

When fields are flooded with saline water, most of the vegetation begins to die, and salinity of the soil increases. Shrimp fields are under water for almost eight months. Consequently, the soil remains soft, and does not require tilling for planting. Over time, this increases the salt content of the soil, and replaces some of the nutrients. Monsoon rainfall and the reduced tillage are not sufficient to wash or work the salt out of the soil. Microbiological systems, which regenerate soil fertility through fixing nitrogen from the air can not function during the long inundation periods. This hampers the mineralization process and decreases the soil fertility significantly.

Long-term inundation destroys traditional fish populations in lakes and canals. This has a major impact on the incomes of the poor, whose livelihoods and subsistence depend on these common property water resources. Fish stocks are also depleted by the increased catching of shrimp fry in fine-meshed nets. This also creates ecological imbalances, affecting species composition, since only the shrimp larvae are retained. All the other species are discarded on the ground, dead.

Finally, the rapid expansion of shrimp culture has had a major impact on the mangrove ecosystem. Aerial photographs taken in 1975, 1981 and 1983 dramatically depicted the changes in the Chakaria Sundarban area. To offset some of these

Health Warning: Prawn Farming can Seriously Damage your Community and the Environment

Pak Phanang Bay is located on the eastern side of Thailand's southern isthmus. The region comprises a deltaic habitat with rich coastal resources. It is perhaps typical of Thailand's southern coastline, suffering from economic under development, with a per capita income-less than half that of the rest of the nation. In 1991 CORIN (Coastal Research Institute of the Prince of Songkhla University) made a study of the Pak Phanang region. Some of their findings are summarized below.

Rice had been the staple crop for centuries, but paddy production is no longer very profitable. Increasingly, farmers are switching to vegetable, fruit and shrimp farming. Deforestation due to rubber plantation development in the mountains, and increasing use of agrochemicals in intensive paddy cultivation, are straining fresh-water supplies.

In the past, the region was also very dependent on the fish economy. As much as 95 per cent of the population were dependent for their incomes on fishery-related activities. However, catch size and revenues have decreased drastically over the last 10 years. For example, a reasonable catch from a lift-net in 1980 was 10 kg for two to three hours work. In 1990, it could take a whole day to catch just two or three kg. It is claimed that the loss and degradation of the coastal environment, and of crucial habitats like mangrove areas and wetlands are major causes of declining fish production.

The rapidly expanding shrimp farming industry has brought with it much-needed jobs and wealth. However, it has also brought environmental and social problems, following as it does a cycle of boom and bust. In 1979, shrimp farms numbering 3,378 covered some 25,000 ha. By 1989, this had risen to 10,374 farms occupying 78,209 ha. Much of the land for shrimp farms was derived from rice paddy and mangroves. The intensive farming method and the nature of the environment mean that each pond has a profitable life of only fives years before its production is reduced by infection or other difficulties. These include market-related difficulties. Rapidly increasing supply has outstripped demand, bringing prices crashing down and rendering many shrimp farms unprofitable. After five years, ponds are generally abandoned, leaving salt-laden scars on the landscape.

The pollution caused by the shrimp farms is considerable. Shrimp farm effluent, consisting of toxic and organically loaded sludge, is released into the irrigation canals, polluting rice fields and the downstream coastal environment. Salt water is brought into the shrimp ponds by canals, and this has intruded into the fresh-water systems. Reduced river flows (brought about by siltation and increased irrigation) has facilitated salt-water intrusion through tidal effects. Drinking water now has to be collected from rainfall. In drought years, it has to be collected from an inland river.

The cycles of boom and bust, degradation of local resources and conflicting development objectives create many social and economic problems. Shrimp farmers, rice farmers, mangroves and urban settlements all compete for limited land and water resources, The end result is a depleted ecosystem, and a divided community in conflict.

— from Coastal Resource Management ***in Pak Phanang Bay, Thailand by*** *Somsak Boromthanarat, Bussabong Chaijaroenwatana and John Rowe*

negative impacts, the government and the donors have started to include NGOs in shrimp projects.

However, NGOs, while minimizing local conflicts through socio-economic activities, are not able to halt the process of environmental and socio-economic degradation.

This article by Anjan Datta is based on his paper presented at the European Network of Bangladesh Studies' Fourth Workshop In the Netherlands, 25 to 27 August 1994

Fisheries policy

The legacy of apartheid

In the post-apartheid era, South Africa is striving for a less insular and more equitable fisheries policy

The new South Africa, reborn after the harsh years of apartheid and oppression, has been swept by gusts of change in several areas of its economy and social fabric. One of the many encouraging signs of change is the way the fishing industry is approaching the inevitable restructuring of its institutions and patterns of operation and administration.

For many months before the election of the new democratic government, the fishery sector took the initiative for meaningful dialogue between representatives of all interested parties. This was done through a Fisheries Forum that brought together leaders of groups as disparate as trade unions, large companies, universities, administrators, researchers, politicians and coastal communities.

Some major companies had already instituted their own affirmative action programmes, and radical groups like the trade unions were producing well-reasoned documents advocating policies which would help maintain the profitability of the industry while simultaneously improving the conditions and prospects of its workforce.

This degree of goodwill and readiness to listen to one another are features that bode well for the future. This may surprise foreign observers who have become used to media accounts of tension and occasional violence in some parts of this large and populous country. Members of Parliament and trade unionists who had served time in jail for their political activities were sitting around the table with businessmen and bureaucrats who, if they had not actually supported apartheid, had definitely benefited from the regime. While views differed considerably, all sides displayed a very genuine interest and willingness to compromise in order to reach workable agreements for the long-term good of the fishing industry and its people.

It would be less than honest to gloss over differences or to play down the difficult and complex nature of the problems faced. Fundamental changes in policy and the sharing of wealth and power cannot come about without some pain or resistance. It is to the credit of the long-established fishing companies that they agree that some changes are necessary, but their view of appropriate change would not go as far or as deep as that of the trade unions or the African National Congress (ANC).

The new government is still debating its fishery policy, but, in its final shape, it is likely to be related to the four objectives the ANC saw for the fishery sector in the run-up to the elections. These were to:

- restructure the industry and its institutions to allow more equitable access to the resource and to introduce community participation, transparency and accountability in decision-making;
- review the system of quota allocation to promote security and stability in the industry;
- promote the management of stocks on a sustainable yield basis and the development of new species and techniques for harvesting and culture;
- improve the quality of life in fishing communities by increasing employment opportunities, and improving wages, health, safety and job security.

While the policy debate is continuing, the government and the industry are tackling some serious injustices being currently faced. Access to resources is a major concern for disadvantaged groups.

These include the coastal fishing communities, who believe that they have been excluded by past governments which favoured the large white-owned fishing companies. The Quota Board regularly granted large quotas to the big companies, and very little to the coastal fishermen.

Among the arguments used by the Quota Board was the one that coastal fishermen were not equipped to harvest offshore stocks. This was partly true since they lacked suitable boats, gear and fish-handling facilities. Coastal communities also felt that affluent, recreational fishermen were permitted too much access to lobster fishing around their villages.

One issue that crystallized much of the dissatisfaction was the ban on long-lining for hake. Most of the South African hake catch is taken by large bottom-trawlers. Small boats could catch some by using lines, but this was prohibited on the rationale that longlining would be harmful to the stock of both hake and kingklip. For readers unfamiliar with fishing techniques, it should be said that the claim sounded absurd to North Atlantic fishermen and scientists who would tend to say the reverselong-lining is a passive method of fishing, but bottom-trawling could be harmful to stocks if allowed without strict controls.

South Africa's small-scale fishermen (mostly black or coloured) felt that the ban on long-lining was just another form of discrimination which used fallacious arguments to give it an apparently scientific rationale.

Tuna pole-and-line fishermen were particularly hurt by the ban. They fished for seven months of the year for tuna, but had to tie up and lose income the rest of the year because they were not permitted to fish for hake.

Insignificant catch

Also, the amount of hake which the tuna boats could catch by long- lining would be insignificant, compared to the enormous hake catch taken by the trawler fleet. So, poor, hard-working fishermen were deprived of income for five months of each year in order to make trawling companies even more profitable.

So, one of the first interventions of the new government in the fishery sector was to authorize a feasibility study on long-lining for hake. This was agreed to, although there was enough external evidence from many other fishing

countries that the ban on long-lining was unjustified.

A Hake Long-lining Management Committee had been established in 1992, and the issue was discussed at a workshop in Stellenbosch in February 1994. Two areas of research were identified. One was on operations, headed by David Japp of the Sea Fisheries Research Institute, and Doug Butterworth of the University of Cape Town.

The other was on the economics, headed by Jacques van Zyl of Sea Fisheries. This group is now measuring and comparing the economic and socio-economic benefits of long-lining with trawling.

The Japp-Butterworth group has just completed its study of the selectivity of long-line operations, compared with trawling. This report will go to the Hake Long-lining Committee and into public forums for informed debate.

The feasibility study operations involved 40 tuna boats, which were allowed to catch up to 30 tonnes of hake each, and four large company boats which were allocated study quotas of up to 1,200 tonnes each.

To protect other species, particularly kingklip, a limit of 20 per cent by-catch was placed on the operations. Half of this was for kingklip and the other half for line-fish and shark.

Now that part of the total study is complete, it will be interesting to note the results of the feasibility trials, arid to obtain views and analyses from scientists and fishermen.

The assessment of foreign fishery scientists will also be useful to be placed alongside the rather insular views of those within South Africa who had little external contact with other fishery bodies during the apartheid years.

Hopefully, these and other approaches to fishery issues in South Africa will eventually result in the establishment of a more just and equitable administration of fisheries for the benefit of all of South Africa's peoples.

This article is written by David D. Thomson of Inter-ed Ltd. A UK-based consultancy

Women in fisheries

A good start

At a conference in Canada, women realized they are not alone in sharing the burden of problems in fisheries

The first Maritime Conference for Women and the Fishery was held in Charlottetown, Prince Edward Island (PEI), Canada on 28 and 29 March 1995. For a first-time effort, the turn-out was encouraging: 65 participants, including women from the three Maritime provinces of Canada as well as representatives from Labrador and the eastern United States.

The conference was organized by a regional committee, formed in the summer of 1994 and made up of women involved in the fishery in the three Maritime Provinces of Canada. This committee was given the mandate to organize a regional conference that would bring together women who are connected with the fishery in various ways: women who fish, women who work in processing, or women who are members of fishing households.

The organizational committee worked in collaboration with two regional organizations, the Cooper Institute of Prince Edward Island and Oxfam-Canada / Project Acadie of New Brunswick. Interestingly, this collaboration between these two Canadian organizations began when two of their representatives met at the ICSF conference in Cebu, Philippines in June 1994.

The Charlottetown conference was a bilingual one. This proved very helpful in allowing the full participation of both Anglophones and Francophones. The objective was to provide a forum to bring together women from various parts of the region so that they could share their experiences, concerns and hopes for the future of the inshore fishery. The conference gave them the opportunity to analyze their contribution to the fishery and to explore ways to raise the visibility of women in the fishery.

Traditionally, women have worked mostly in the processing industry. Now, increasingly, they are fishing with their husbands, especially in the lobster fishery, which is the main fishery in the Gulf of St. Lawrence.

But it is important to note that women contribute in many different ways to the survival of the inshore fishery, whether it be through wages for work outside the home, fishing with their husbands, or through unpaid work in the home such as bookkeeping, preparation of gear and running errands.

For various reasons, there is today a renewed interest in according greater visibility to women in the fishery. One is the fact that more women are working directly in the fishery and, as a result, are interested in sharing their experiences and learning more about the economics and politics of the fishery. Also, in the analysis of the recent crisis in the fishery in the Atlantic, there is a virtual silence about the effect of this crisis on women.

It is true that the crisis in the fishery does not affect all the regions to the same degree. In Newfoundland and some regions of Nova Scotia, for example, the destruction of the groundfishery has had dramatic consequences for fishers and plant workers and for the survival of coastal communities.

Not all affected

In other regions, where the lobster fishery is still healthy, fishers have not felt the crisis in the same way. However, the majority of inshore fishers have been affected in some way by the lack of groundfish and they are more conscious

of the fragility of the resource upon which they depend. The increasing dependence on lobster is a big concern as well.

Another trend in the region is a renewed interest in communities having more control over the inshore fisheries. Women have traditionally been very community minded and now they are using their energies to look at survival strategies for fishing communities, which will give more control to the communities themselves and diminish the hold of large companies.

The organizers hoped that, in the long term, conferences such as this will strengthen coastal communities and the organizations of fishers and plant workers.

The two-day conference began with a presentation on the fisheries in the various parts of the region. Ten women gave brief descriptions of the regional fisheries and the work of women in them. These regions were: Eastern PEI, Western PEI, South-west Nova Scotia and Bay St., United States. The presentations gave the participants a sense of both the similarities and differences in the Atlantic region.

In the section of the conference programme billed as 'Women and the Fishery: the present situation, the future, the strengths and challenges', the participants undertook an exercise divided into three stages: an examination of the current situation, a look into the future, and an identification of the strengths and challenges needed to bridge the gap between the present and the future.

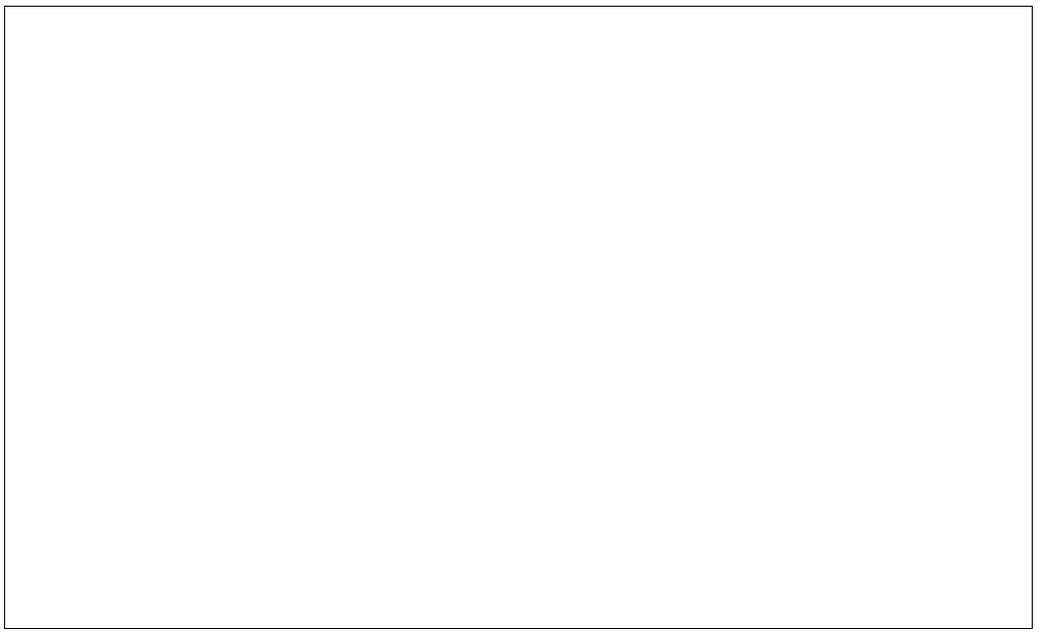
On the current situation, the women split up into small groups to discuss the following questions: What are the changes in the economy of the region, country or family, which affect women in coastal communities? Precisely how are they affected?

The first concern the women expressed was on the changes in the social programmes, in unemployment insurance, in particular. By removing their support from the fishery, which is a seasonal industry, and by reducing benefits to workers, many women wonder if the government is trying to push people out of the fishery and out of the region. "What about our future? Will we end up with ghost fishing villages?"these were the doubts uppermost in their minds.

Non-traditional activities

When women respond to changes in the economy by taking up non-traditional activities, they often face opposition. Many women felt that they have, at one time or another, faced sexism or discrimination.

This could be at the level of the family (sole responsibility for the care of the house and children, little support for involvement in outside activities), at the community level



(women who fish are not always accepted), in fishing organizations and through government regulations.

During the 1980s, women gained the right to collect unemployment insurance even when they were employed by their husbands. Before this, spouses of self-employed workers were not eligible for these benefits. This change in regulations opened the door for many women to get directly involved in fishing. However, many still face discrimination and harassment from official organizations. Often, they have to fight to recover the benefits that have been unjustly robbed from them.

Purely economic goals have resulted in overfishing and the use of destructive technology in the fisheries. These practices have depleted fish stocks, leading to changes in regulations, closure of certain fisheries and fish plants, freezing of licences, and loss of employment and income.

Fishing is a seasonal industry and thus, for its survival, it has been dependent on government support such as unemployment insurance. The cut-backs in the past few years have resulted in a negative image and low self-esteem both for women and for all those involved in seasonal industries like fishing.

The insecurity in the fishery has put more pressure on women who are often the ones who have to manage the stress both in their family and in the communities.

In the second part of the conference exercise, the women were invited to share their dreams for the future of the fishery and of coastal communities. They yearned for a healthy fishery, managed well by the communities themselves, which would allow them to transmit their values and culture to future generations. They called for an unpolluted environment, and the disappearance of high-tech destructive technology. They want a future where the inshore fishery is not controlled by large companies. They want governments to make decisions in consultation with the coastal communities.

In a world where there is plenty of fish and the processing takes place within fishing communities, there would be work for everyone, all year round, and fishers and plant workers could provide for their families without being dependent on unemployment insurance. The women's dreams also included a positive image of fishers, both women and men, which would create pride in coastal communities. They want to be recognized for their contribution and to be accepted as legitimate fisherwomen. They want equity in salaries and rights, and better access to day care and pensions, and the disappearance of family violence.

In the third stage of the conferenceon the challenges aheadthe participants looked at the present situation, on the one hand,

and the world of their dreams, on the other. Working in small groups, they identified the obstacles and the challenges, which make up the gap between these two worlds and also assessed the strengths of women, which would ensure the survival of coastal communities.

Among the main obstacles identified were sexism and a prejudice against the fishing community, which often results in lack of confidence and low self-esteem. Some women expressed a fear of speaking out to defend their rights. Another obstacle is the presence of large companies and international markets which dictate to governments how they should manage the resource. At times, these obstacles lead to a feeling of discouragement in coastal communities, especially for women, and a sense of loss of control over their own lives.

Nonetheless, faced with these obstacles, the women also identified their strengths. They have the ability to listen to their families and their communities, and they know their needs. They feel confident in their role as educators and organizers of their communities. They have proof of their tenacity and courage. They have a sense of reality. They adjust easily to changes and they are very creative in adapting to new situations. They know how to work together for their communities and are expressing their views more and more forcefully.

The conference allowed the women to get a better sense of their situation, of the problems they face and of their strengths. It also helped start a reflection on what women expect for the future of the fishery and of coastal communities. Four themes were selected for discussion by small groups at the workshop on what actions should be taken. The themes were:

- unemployment insurance and government policy;
- changing the image of the fishery;
- fishery and the environment; and
- working in networks and organizations.

Many women who were in the process of having their unemployment insurance claims investigated talked about their cases, sharing experiences and information. The following guidelines emerged from this discussion:

Ask for the rules of eligibility for unemployment insurance to be given in writing. Also, ask for the name of the staff person who gives them out. (The rules are often personal interpretations.)

- Ask the same questions to different staff people and compare their answers.
- Demand that the government clarify the rules and remove the question on the relationship with the empoyer, since that is discriminating.
- Never answer questions on the telephone. Demand that it be done in writing or before the staff person concerned. When going in person, always take someone along as a witness who will take down notes during the interview.
- Draw up a list of persons (men and women) and groups who can offer support. Ask for support from the fishermen's organizations.
- Gather and distribute information on cases won and lost in order to help those who are facing the same situation.
- If the case is not resolved, do not hesitate to go public with the information.

Pride in the fishery

The group, which discussed the problem of image stressed the importance of developing, among fishermen and fisherwomen, a pride in the fishery. Even though fishing is a seasonal industry, it is an important economic activity on which many Atlantic communities depend for their survival.

The money generated in the inshore fishery is spent in the local economy. This does not always happen in the case of the industrial fishery. The image of the fishery

also suffers from the crisis of the groundfishery, which has dramatically affected coastal communities in Newfoundland.

However, not all fisheries are in such a critical state. In other parts of the region, there are fisheries in better shape lobster, for example. However, the women stressed the need for vigilance in preserving them.

The group on fishery and the environment prepared a letter to be sent to the UN, which, around the same time, had organized a conference on highly migratory and straddling fish stocks. The letter, later adopted by the whole assembly, demanded that the UN put pressure on member countries to stop the use of destructive fishing gear, and put an end to overfishing.

The group on networking and organizational structures dealt with three points: women's fears of getting involved in organizations, identification of organizations of fishermen and women in each province, and a list of the kinds of activities that the women would be interested in organizing in the future.

These are some of the fears that women have of getting involved in organizations / networks:

- Many women are not used to working in networks and do not feel that their contribution is important. They feel the networks will continue whether they join or not.

- They would rather work more locally. Many women are already quite busy meeting the demands of their families and their communities.

- Some women find it difficult to get away from the house because of household and child-care responsibilities, or lack of support from their husbands.

- They do not have the confidence.

- Many women are nervous about travelling, especially in winter.

The group also identified the organizations of fishermen and women that are presently active in each province:

New Brunswick

- Maritime Fishermen's Union (MFU). Only women who fish with their husbands are eligible for membership. There are very few women active in the MFU.

- Botsford Professional Fishermen's Association. The meetings are open to crew members and to wives of fishermen. Women can be members and at present there are 12 women members.

- Informal community groups organized by Oxfam / Canada / Project Acadie.

- Bay of Fundy. There is very little activity for women. But the two participants from the area are interested in exploring options for organizing on a regional basis.

Nova Scotia

- Nova Scotia Women's Fishnet. It brings together all women interested in the fishery, whether they are directly involved in fishing or not. They publish a newsletter and are organizing workshops in different areas of the province.

- Eastern Fishermen's Federation (EFF). This is a federation of various associations in the region. It is primarily a men's organization, but there are a few women members.

- Maritime Fishermen's Union. A few women members, but women are not active in the union.

- Canadian Auto Workers Union (CAW). They are active in various fish plants in Nova Scotia.

- Coastal Communities Network (CAN). This network brings together various organizations fishers'organizations, municipalities, trade unions, churches, NGOs, universitiesall the

stakeholders in coastal communities in Nova Scotia.

Prince Edward Island

- Women in Support of Fishing. A group of women in Miminegash who have organized to improve the situation of Irish moss harvesters. They have recently formed a co-operative to explore -ways of marketing and promoting Irish Moss. The group operates a small cafe and interpretive centre in Miminegash.

- Women and the Fishery. A group of women in Eastern Kings who organize an annual workshop and some other activities for women involved in the fishery.

- PEI Fishermens Association (PEIFA). A member group of EFF. Some women who are wives of fishermen members are active in the organization.

Newfoundland and Labrador

- Newfoundland Women's Fishnet. A group similar to NS Womens Fishnet, with some women doing research in fishing communities, and providing a forum for women to come together.

- Fishermen, Food and Allied WorkersCAW, with both fishers and plant workers as members.

Eastern United States

- Groups of Fishermen's Wives

- Women and the Fishery National Networks

- Association of Maritime Women (west coast of us)

Quebec-Labrador Foundation

It was observed that, although it might appear that there are plenty of organizations, there are very few women from inshore fishing households involved in them.. The mainstream male organizations have little or no involvement of women.

The conference then focused on the international situation, specifically on women m the fishery in the countries of the South. Maureen Larkin of the Cooper Institute and Chantal Abord-Hugon of Oxfam-Canada / Project Acadie made a presentation on the situation of women in fishing communities in developing countries.

They showed slides of women in the fishery from various countries in Africa, India and other parts of Asia. These depicted them in harvesting, processing and marketing activities. It was followed by discussion and questions.

Maureen and Chantal shared their experiences of an international conference organized by ICSF in the Philippines in 1994.

It was interesting to note that inshore fishers and coastal communities in the North and the South have many common problems. Some examples: overfishing, conflicts between small-scale fishers and industrial fishery, tourist projects competing for space with inshore fisheries, and the effects of aquaculture on wild fishery.

Also, women face similar challenges such as adjusting to changes in the economy, looking for ways of increasing the family income, dealing with the stress in families due to loss of revenue, family violence and discrimination against women. The conference ended with the women meeting in provincial caucuses. The objective of this session was to discuss the follow-up to this conference. The women

expressed interest in having local and provincial conferences next year and a regional conference every second year. They nominated people from each province to serve as contacts for further information.

The women wished to continue publishing the newsletter that is presently being published by Nova Scotia Women's Fishnet. They agreed to support it by writing articles or paying for subscriptions. This was seen as a good way to maintain contact between the women of coastal communities throughout the Atlantic region.

The participants worked very hard at this conference, although for many it was the first time they were attending a meeting of this sort. But there was also some time for fun. One night the women organized an informal soirée where they demonstrated their many artistic talents.

The most important outcome of the conference was the chance to meet other women who were in the same situation. It was a way of breaking down isolation and sharing ideas, hopes and dreams. Many women said they were interested in getting involved at the local level, but they also wished to maintain links with other women in the region.

Thanks to the conference, the women have become more aware that they play an important role in the fishery and in the coastal communities. They realize that they are not alone when they are faced with situations of injustice. They are able to discuss and explore solutions together.In the long term, coastal communities and their organizations will only get strengthened when women participate in decision-making by looking at alter- natives for sustainable communities.

This report has been prepared by Maureen Larkin of the Cooper Institute and Chantal Abord-Hugon of Oxfam-Canada/Project Acadie

Fisheries agreements

Who gains?

Fisheries agreements between the ACP countries and the EU rarely take into account the needs of artisanal fishers

There seems to be two fundamental aspects, which feed on the current debate on co-operation in general and on co-operation in the fisheries sector, in particular. These revolve around the following questions:

- Must the ACP (African-Caribbean Pacific) countries continue or refuse to sign fisheries agreements with the Northern countries and particularly with the European Union (EU) countries?

- Can compensations remain the only main resource, which will determine the support given to ACP artisanal fisheries by the EU?

As for the first question, the response is 'maybe', depending on the state of the artisanal fisheries in the country concerned.

In fact, in some countries like Senegal, the artisanal fisheries sector is not only very dynamic but is also seeking to extend the zone which was traditionally reserved for it.

The Senegalese artisanal fisheries sector is extremely important for the country because, among other reasons, it supplies food for the population; it creates employment both at the harvest and post-harvest levels; and it contributes to more than two-thirds of fish landings.

Nowadays, the anarchic relocation of the excess fishing capacity of the Northern countries into the Southern countries is the source of serious problems for artisanal fishers from ACP countries.

In Senegal, for the past four to five years, Collectif National de Pecheurs Artisanaux de Senegal (CNPS) members have been constantly denouncing the impact of relocation of Northern fleets in Southern countries because they lead to:

- pillage of the fisheries resource;

- destruction by the industrial boats of passive gears belonging to artisanal fishers; and

- loss of human life following collisions between fishing boats and traditional pirogues.

The main reason for these problems is the fact that both the industrial and artisanal fleets are competing for the same stocks of fish.

Today the demand for an extension of their fishing zone is a claim, which is being increasingly articulated by several fishworkers' organizations at the international level. As an example, following its April 1994 Congress, CNPS has demanded an extension of the artisanal fishing zone from six miles to 12 miles. Fishermen give two reasons for this demand: the depletion of the resource forces the fishermen to venture beyond the six-mile limit; and, the allocation of zones needs to be revised to prevent human and material losses.

No real attention

Perhaps it is not possible to oppose fisheries agreements but it is imperative to take into account the needs of the artisanal fishery. The 'public servants' of ACP countries talk about the necessity of defending the artisanal fisheries only when it is needed to justify the existence of their EEZ. But, in fact, they do not pay much attention to the artisanal fishery.

Fisheries agreements should only be signed under certain conditions. First of

all, the needs of the artisanal fishery should be carefully assessed in terms of the available resource. Then, the needs of the local industrial fleet should be ascertained.

Finally, the agreements should be based only on the excess resource not fished by the artisanal and local industrial fishery.

- All this, of course, demands preliminary actions and monitoring such as:
- an objective evaluation of available resources;
- an assessment of the artisanal fishery's needs;
- a follow-up programme to monitor the artisanal fishery's pressure on the resource;
- decentralized research programmes which should benefit the communities themselves and promote a sustainable development; and
- training programmes for fishworkers' organizations on resource management.

As for the second question raised at the beginning, it is an extremely serious matter that the ACP countries lack imagination when, in order to support their artisanal fishery, they base all their expectations on compensation.

It is also very important to be creative in the search of funding for support to artisanal fisheries in the ACP countries. First of all, it is difficult to believe that scientists paid with money, which comes from fishing agreements can be completely objective in their research on stock assessment.

Secondly, the artisanal fisheries' share of the compensation funds is insignificant. In the case of Senegal, according to the terms of the 1994-96 agreements with the EU, the artisanal sector will receive only one per cent of the compensation amount. For these reasons, the ACP countries, where the artisanal fisheries play a major role, should put pressure to benefit from the Lome convention funds.

By doing so, the ACP countries will stop using the plea of 'support' to the fishery to sell away their resource. Only then will important projects be conducted with adequate funding. These could be, for example, an objective assessment of the resource or of the needs of the artisanal fishery; an analysis of the impact of artisanal fishery on the resource; tracing the evolution of the artisanal sector through socio-economic surveys; and training programmes for fishing communities.

Only when it is able to implement these funding programmes will the Lom) Convention become beneficial. It will then not only give better recognition to organizations but will also stop the marginalization of the artisanal fishery, which is neither considered a focus of development nor as a sector worth concentrating on.

These views were first expressed by Aliou Sall, Executive Secretary of CREDETIP, during the ACP-EU Joint assembly held In Dakar in January 1995

The jury's verdict

A unique public hearing in India on women in fisheries organized by the National Fishworkers' Forum came up with a judgement. Excerpts:

We, the four members of the Jury on the Public Hearing on Women's Struggle for Survival in Fisheries organized by the National Fishworkers' Forum and the Women in Fisheries programme, have heard the testimonies of women who are working in seafood processing factories in Goa, Tamil Nadu, Bombay. Calcutta and Kerala and also read detailed reports presented by the following people / groups:

- Report entitled "The Seafood Processing Industry and the Conditions of Women Migrant
- Workers" by Aleyamma Vijayan of NFF / WIF, Trivandrum
- Report entitled "Girls and Women Employed in Prawn Processing" by R. V. Mathias, Executive Secretary, CBCI Commission of Labour, New Delhi
- Report on conditions of women in fisheries by Albertina Almeida of Bailancho Saad, Goa
- A study of problems and prospects of migrant women workers in seafood industries at Veraval, Junagadh, Gujarat by the Department of Social Work, Diocese of Rajkot
- Report on the condition of women in fisheries in Calcutta by Minnie Joseph, freelance journalist and school teacher and Y. De Steen Hault, St. Lawrence High School, Calcutta

We also heard the testimony of representatives of the Government of Kerala's Labour Department.

Testimony after testimony by women between the ages of 17 and 60 gave us a vivid picture of the inhuman working and living conditions of women in fisheries. It is shocking to record that as the prices of shrimps and prawns go up, the price of human life is next to nothing.

The life of these mostly young women, capable of hard work, bearing great hardships, but who can still laugh and dream, is worth but a few rupees a month. If they challenge the system, they are thrown out of their jobs, far from home, vulnerable to exploitation. We heard at, least one account of how a young woman died under suspicious circumstances.

Women and girls told us how they are hired to jobs in shrimp factories by false promises by contractors, denied minimum wages, made to work for 10 to 12 hours in badly ventilated factories, inadequately protected from cold and ice, threatened by ammonia leaks, denied their rights to even drinking water and health insurance.

The living conditions of these women are shocking. These young workers live in crowded rooms, often 30 to 35 in a room, with just one or two bathrooms or toilets, and no privacy. The women are often not allowed to have even a day off or any holiday. The women suffer from numb, blistered fingers, back and leg pain, and are subjected to unhygienic conditions.

In fact, most of these women are used as forced labour and are in servitude. From the testimonies of the women and the written reports presented, we see that it is not only their young fingers that are frozen and numb but their souls are also benumbed. After hearing the testimonies of those who deposed at this public hearing, we are of the unanimous opinion that the provisions of the relevant labour laws are being totally violated. In particular, these have been totally violated:

- Contract Labour (Regulation and Abolition) Act, 1970
- Inter-state Migrant Workmen (Regulation and Employment) Act, 1979
- Bonded Labour (Abolition) Act, 1976
- Minimum Wages Act, 1948
- Factories Act
- Employee's State Insurance Act

We are satisfied that the violations of these laws have resulted in the denial of fundamental rights guaranteed in the Constitution of India, in particular:

- Article 14 (the right to equality)
- Article 19(1), Article 21 (right to life)
- Article 23 (prohibition of trafficking in labour and forced labour)
- Article 24 (prohibition of employment of children in factories) read with Article 42 (provision of just and human conditions of work)
- Article 47 (duty of the state to raise the level of nutrition and public health)

In addition to violating the Constitution of India and statutory laws, there is also a violation of international human rights and international labour standards specifically contained in the following articles of the Universal Declaration of Human Rights:

- Article 22: The right member of society security and the right of every to social to realize through national effort and international co-operation, in accordance with

the organization and resources of each state, the economic, social and cultural rights indispensable for the dignity and free development of personality

- Article 23: The right of free choice of employment and just and fair conditions of work

- Article 24: The right to leisure and holidays

The conditions of the women also violate Convention 122 of the International Labour Organization concerning employment policy of the ILO (1969) read with the Declaration on the Right to Development, 1986.

...We record that not even a single contractor has been registered in Kerala as required under the Inter-state Migrant Workmen (Regulation of Employment) Act, 1979. If labour laws were implemented, the sufferings and pain of these young women would be alleviated to a large extent. Whenever there has been pressure on factory owners by activists, governments or the local church leaders, the working and living conditions of women have improved.

...In the above-mentioned circumstances, we have the following suggestions to make:

a. Strengthen international solidarity among workers in all countries to ensure a non-selective enforcement of labour standards and indivisibility of human rights. We note that the National Fishworkers' Forum has taken steps in that direction and ensured the presence of delegates from Senegal and Canada at this hearing.

b. We call upon the Government of India to restructure its policies to ensure that the natural resources of the country are preserved for the people of the country and to ensure just and human-centred development based on principles of self-reliance.

c. We call upon all State governments to ensure that labour laws are implemented through the active intervention and action of the labour and law enforcement machinery.

While these recommendations can help to improve the working and living conditions of women in fisheries, the problem will not be solved...

We have to commit ourselves to a long struggle so that world production systems based on production for life, not production for profits, are evolved. We have to evolve a jurisprudence, which is based on the belief that each human being is a priceless asset.

We need to develop a resurgent jurisprudence to protect workers from exploitation so that we never have to hear such painful testimonies again. The new jurisprudence will help to convert the pain of these women to powerpower to fight this unjust system.

This verdict was proclaimed by Justices V.R.Krishna Iyer and Janaki Amma and advocated Indira Jaisingh and Nandita Haksar at Ernakulam, India on 23 June 1995

Washington Conference on Ocean Pollution

Ban toxic chemicals

To protect the world's waters, there is a clear and urgent need for a global ban on persistent organic pollutants

The health of the world's peoples is closely linked to the health of its water - the oceans, seas, lakes and rivers. Many of the persistent toxic pollutants that are now found in the world's oceans and waterways are also found in the bodies of virtually all peoples and other living creatures of the world. These pollutants have contaminated humans, fisheries and wildlife either directly or indirectly from polluted water.

Due to this threat, over 100 governments from around the world are expected to assemble in the United States for a two-week meeting to examine ways to eliminate human-made pollution that is rapidly degrading the world's oceans.

As part of the implementation of the Earth Summit's Agenda 21 formulated at Rio de Janeiro in June 1992, an Intergovernmental Conference on the Protection of the Marine Environment from Land-based Activities will take place in Washington DC from 23 October to 3 November 1995, hosted by the us government.

Delegates will review and adopt a Programme of Action, which principally addresses land-based sources of marine pollution at global, regional and national levels. A high-level segment of the Conference is also likely to adopt a Ministerial Declaration that addresses the priority issues.

At Washington, action will be needed in a number of areas. The most far-reaching centres around a proposal by certain governments for a global, legally binding agreement to ban persistent organic pollutantsusually abbreviated to POPs.

POPs are a group of mainly synthetic chemicals that are known to have a wide range of harmful effects on ecosystems and human health. The other defining, and very worrying, characteristic of POPs is that they can not easily be broken down by natural processesin other words, they are persistent. In some cases, when breakdown does occur, it creates chemicals that are even more hazardous than the original substances.

POPs include some naturally occurring substances such as polycyclic aromatic hydrocarbons (PAHs), but their inputs to the biosphere have dramatically increased as a result of human activities including oil and gas extraction, the combustion of fuel (including vehicles) and from the steel and non-ferrous metal industries.

However, the group of POPs that have attracted the greatest attention are synthetic organohalogens, i.e. carbon-based chemicals also containing chlorine, bromine, fluorine or iodine. Of these, the majority are organochlorines. The worlds largest chlorine 'producers include the chemical giants Akzo, Bayer, Dow, Enichem, Hoechst, ICI, Norsk Hydro, Occidental, Olin, PPG and Solvey.

Staggering amount

It is estimated that a staggering 11,000 organochlorines are now in use around the world. They include pesticides such as DDT, toxaphene, chlordane, heptachlor and the drins; solvents such as perchlorethylene, and chemicals with multiple uses, such as PCBs. There are also organochlorine by-products such as hexachlorines listed to be targeted for action by the UN in the context of the Convention on Long-Range Trans-boundary Air Pollution (LRTAP).

Some of the hazards of POPs have been known for many years, although our understanding of the threat they pose has

increased with time. POPs have been shown to cause serious immune and metabolic effects, neurological defects, reproductive anomalies and cancer in both humans and wildlife. Recent studies suggest that they have even more far-reaching effects than previously envisaged.

POPs can have deadly consequences for people who work in close proximity to these chemicals, such as agricultural workers, subsistence farmers, people in manufacturing industries, as well as those who depend on food from areas contaminated by POPs, including lakes and high-latitude seas.

More recently, there has been increasing evidence, which indicates that POPs may be causing widespread and insidious harm to entire populations. This is a result of their effects, at very low levels, on the endocrine system, for example, by affecting fertility.

POPs have also been shown to be responsible for similar adverse effects on marine life, and are causing particular concern for animals at the top of the marine food chain, including fish, seabirds and marine and arctic mammals.

Their persistent nature makes POPs a global problem. They can be transported for long distances by ocean currents. For example, toxaphene, used as a pesticide on cotton in the Caribbean and Central America, is conveyed all the way across the Atlantic by the Gulf Stream, to appear in significant amounts in the atmosphere towards polar environments where, in the cold conditions, they condense and are deposited. This mechanism is now believed to account for the surprisingly high concentrations of POPs present in arctic environments, and in the indigenous people who live there. Inuit women of northern Quebec carry in their breast milk some of the highest levels of organochlorines ever found in people. From arctic regions POPs can be returned by ocean currents to lower latitudes. As a result, local or regional action to control POPs will not solve the problem.

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Moreover, in an era of free trade agreements like GATT and NAFTA, binding international agreements to protect health and environment have become essential. Single countries, or even regions, are finding it increasingly difficult to phase out sources of POPs when such trade agreements inhibit necessary measures. Dirty industries may respond not by cleaning up, but by relocating elsewhere and then demanding the right to import the product.

Companies, which have accepted prohibitions or restrictions in some to market deadly products elsewhere, with little or no control. This is why the global action being considered for the Washington Conference is of such critical importance.

Many industrialized countries are formally committed to reducing the amount and toxicity of pesticides, and to increasing the proportion of organic farming. The conversion to organic farming can proceed far faster than at present without, as claimed by the agrochemical industry, causing insoluble problems.

For developing countries, too, a shift to organic farming has advantages, not just with the elimination of POPs, but also in reducing other problems, such as eutrophication and soil loss. Real market opportunities exist for clean, organic,

food. Greater research and development effort for organic farming would pay dividends for industrialized and developing countries alike.

PCBs, used in electrical transformers, as well as for other purposes, are an example of a problem that should have been resolved long ago. Many alternatives are available. Similarly, there is ample evidence that the use of POPs as solvents is unnecessary. There are also alternatives to chlorinated plastics such as PVC. And there is really no need for chlorine bleaching of paper and fibres.

Many experts have shown that if priority is given to the use and development of existing alternatives, the majority of POPs could be phased out relatively rapidly by alternatives that are economically viable, create less environmental damage, and provide numerous job opportunities.

The obligation to take global action on POPs stems from the 1992 Earth Summit. While there are global treaties to regulate deliberate dumping at sea (the London Dumping Convention, 1972) and the operational discharge of wastes from shipping (the MARPOL 73/78 Convention), these sources of pollution represent less than 20 per cent of total marine pollution.

On the other hand, the vast majority of marine pollution comes from land-based sources (LB5). These are understood to include point-source liquid discharges of wastes into riverine systems, estuaries and coastal waters; diffuse sources of pollution, such as from pesticides, fertilizers and storm water; and atmospheric emissions from both point and diffuse sources.

Only a few regional regulatory agreements exist for LBS. There is no global convention or mechanism to regulate them, to harmonize different approaches and to share experiences effectively.

To deal with this glaring omission, governments agreed at the Earth Summit to invite the United Nations Environment Programme (UNEP) to convene, as soon as practicable, an inter-governmental meeting on the protection of the marine environment from land-based activities (para. 17.26 of Agenda 21).

Preparatory meetings

The Washington Conference is the result of this commitment, and two preparatory meetings have already been held, at Montreal in June 1994 and at Reykjavik in March 1995.

Some industries and governments have maintained that land-based sources of pollution are too broad a problem to be addressed globally. Others, including Greenpeace, argue that, precisely because of the broad and overwhelming nature of

the problem, only global action will be effective. Such action will encourage the growth of clean production, and the phasing out world-wide of the dirtiest, most hazardous, industrial practices.

Specifically, the Earth Summit brought about the current discussion on POPS. Commitments were made in Agenda 21 on "eliminating the emissions and discharge of organohalogen compounds that threaten to accumulate to dangerous levels in the marine environment" and "reducing the emission or discharge of other synthetic compounds that threaten to accumulate to dangerous levels in the marine environment" (para. 17.28 (d) and (e).

The Washington Conference is where these good words must be put into effective action.

At UNEP's Governing Council in May 1995, a resolution (Decision 18/32) was agreed on the assessment of POPS and their alternatives. It asked the Inter-governmental Forum on Chemical Safety (IFCS) to lead the assessment and to report its conclusions to the next session of UNEP's Governing Council, scheduled for January 1997.

Those efforts as well as others at the regional and national levels, should make a significant contribution to the continuing development, marketing and use of cost-effective alternatives to pops. However, this important assessment process should not be used as an excuse to delay actions that are already justified, and which should be agreed at the Washington Conference. In particular, as far as UNEP's short list of prioritized POPS is concerned, an immediate phase-out and ban is needed.

Beyond the global UN setting, a growing number of governments have agreed on measures to phase out POPS. These, however, will only be of limited effectiveness unless a global agreement can be reached.

In North America, the joint US-Canadian Great Lakes Water Quality Agreement (GLWQA) has an explicit goal for the elimination of all persistent toxic substances. The Great Lakes have the misfortune of being one of the earliest arid most highly contaminated areas in the world. Unless action is taken soon, the rest of the world awaits a similar fate. The International Joint Commission (IJC) of GLWQA recently concluded in its Sixth Biennial Report of 1992:

...persistent toxic substances have caused widespread injury to the environment and to human health. As a society, we can no longer afford to tolerate their presence in our environment and in our bodies...

Hence, if a chemical or group of chemicals is persistent, toxic or bioaccumulative, we should immediately begin a process to eliminate it. Since it seems impossible to eliminate discharges of these chemicals through other means, a policy of banning or sunsetting *(sic)* their manufacture, distribution, storage, use and disposal seems to be the only alternative.

...In practice, the mix and exact nature of [organochlorine] compounds can not be precisely predicted or controlled in production processes. Thus, it is prudent, sensible and indeed necessary to treat these substances as a class rather than as a series of isolated, individual chemicals.

...We know that when chlorine is used as a feedstock in a manufacturing process, one can not necessarily predict or control which chlorinated organics will result, and in what quantity. Accordingly, the Commission concludes that the use of chlorine and its compounds should be avoided in the manufacturing process.

The rest of the world should not wait before taking similar action. The IJC's conclusions are indeed influencing wider North American policy. In 1993, the Clinton administration in the US undertook a special commitment to search for ways to reduce and eliminate the use of chlorine and chlorinated products.

Policy initiatives

In Europe, conclusions similar to those of the IJC have resulted in major policy initiatives. The Helsinki Convention (Baltic), the Paris Convention (North-east Atlantic) and the Barcelona Convention (Mediterranean) have all taken an increasingly restrictive attitude towards organohalogens.

In 1992, for example, the Ministerial Declaration of the Oslo and Paris Commissions dealing with the prevention of marine pollution in the North-east Atlantic stated that

> ..as a matter of principle for the whole Convention area, discharges and emissions of substances which are toxic, persistent and liable to bioaccumulate, in particular, organohalogen substances, and which could reach the marine environment should, regardless of their anthropogenic source, be reduced, by the year 2000, to levels that are not harmful to man or nature, with the aim of their elimination.

The most recent, and extremely significant, development came in June 1995 at the International Ministerial North Sea Conference. There, in the Fourth Ministerial Declaration, eight countries (plus the European Commission) re-oriented their guiding policy such that

> the objective is to ensure a sustainable, sound and healthy North Sea ecosystem. The guiding principle for achieving this objective is the precautionary principle.

This implies the prevention of pollution of the North Sea by continuously reducing discharges, emissions and losses of hazardous substances, thereby moving towards the target of their cessation within one generation (25 years), with the ultimate aim of concentrations in the environment near background levels for naturally occurring substances and close to zero concentrations for man-made synthetic substances.

The Declaration states that priority should be given to the development of environmentally sound products, taking into account the whole life cycle of substances or products; to substitute the use of hazardous substances by less, or preferably non-hazardous, substances; to pursue the development and use of clean technology for production processes; and to employ usage and practices that avoid losses of hazardous substances to the marine environment.

It also requires the development and use of treatment technology, which will be important for dealing with historic sources of pollution.

In effect, this represents the adoption of the principle of clean production, which has also been endorsed by UNEP's Governing Council, and which has received growing recognition in a wide range of international forums, including the Basel Convention. Zero-discharge, a key objective framed in the North Sea Ministerial Declaration, can and must be reached well within the 25 year time-frame.

This commitment to a total cessation of environmental contamination represents an important advance.

The North Sea Conference's goal for the cessation of all discharges, emissions and losses of hazardous substance "within 25

years" has been singled out as a formula, which lets industry implement alternatives effectively and in an orderly manner. It was made clear that within this overall goal, significant action is required in the next few years, for example, on organochlorines.

At the Washington Conference, it is important to adopt such goals at a global scale. Otherwise, there is a real risk that dirty industries will move from highly regulated regions to less-regulated areas of the world, instead of developing clean production processes.

Globally, the commitment to urgent action on organohalogens and other synthetic compounds has already been made in the Earth Summit's Agenda 21. The purpose of the Washington Conference is to establish the means by which this will be achieved.

The lead in developing an action programme to meet this commitment has been taken by the four Nordic States of Iceland, Denmark, Finland and Norway, supported by other countries, especially from the Pacific and Africa. As a result, the preparatory committee for the Washington Conference agreed to address organohalogen compounds and other organic contaminants under the broad heading of POPs.

It has become apparent that many States consider the establishment of a legally binding instrument to prohibit the use and production of POPs known or suspected of creating harm, as an essential goal for the Washington Conference.

However, some other States which appear to be a minority, albeit an active and important one have expressed at least doubts, and even outright opposition in a few instances, to the establishment of a legally binding instrument. The Final Meeting of the Preparatory Committee at Reykjavik adopted the draft Programme of Action, which contains the pivotal text (para 85) reflecting such agreements and disagreements~(the latter put between square brackets). The most important passage states:

There is agreement that international action is needed to initiate an expeditious [International Negotiating Committee] process for [considering] the development of a global, legally binding instrument for the reduction and/or elimination of emissions and discharges of certain POPs [e.g., PCBs, and such others as may be agreed] about which there is sufficient scientific knowledge [taking into account the precautionary principle].

From this it is clear that, depending on the fate of the text in square brackets, the outcome on this critical issue could range from an important advance to a major failure.

What cannot be seen from the draft text is the underlying political dynamic which leads countries to take a particular stance. Briefly summarized, those countries urging action on POPs are convinced that we already know or suspect enough to require urgent action, and that viable alternatives either already exist or must and can be developed. Moreover, given a poor track record of implementing previous agreements, a legally binding commitment is essential to galvanize action.

Those delegations opposing such measures have a variety of motives. In part, it may be a belief that alternatives are not available. Some are concerned about domestic industries involved in the production and use of POPs. Some are concerned about the financial arrangements for technology transfer.

There is also, amongst some of the delegates, a bureaucratic desire for an easy life, so that any global agreement should not go further, or depart from, national policy and legislation. And, in some cases, the technical experts either fail to comprehend the political necessity for rapid action or, at worst, actually subvert their government's stated policies.

More research needed?

During the Conference, and its attendant media briefings, it is certain that much time will be spent by some delegations arguing that much more research is needed on the effects of POPs before action can be contemplated.

But this hides the real argument, as insiders on both sides are well aware. We already know or suspect a great deal about the effects of POPs. If viable alternatives exist or can be developed, there is no reason not to take precautionary action now.

The real battle hinges upon groups in the shadows, such as the chlorine industry, who know that they are fighting a rearguard action for their very existence.

Their only chance of survival is to dupe governments and public alike into believing that the industry's interests are identical to the public and global good, and to try and downplay both the risks and the alternatives.

In the past, they have been remarkably successful. Their performance and tactics have been compared to those used by the tobacco industry since the 1950s.

But now their power is waning. At Washington, they must be stopped. As is clear from the draft text, some governments are still in their pockets, but they must not be allowed to again postpone action and stall the process.

The time for action on POPs is long overdue. Failure would be a disaster for UNEP and for the US government as host as well as for other governments when they return home to face a critical public. Most important of all, it would be a disaster for public health, the oceans and the environment in general.

However, there is a very real prospect that the Conference will mark a global turning point, finally consolidating some remarkable regional agreements within a global framework.

It will not be the end of the pollution story, but will mark the beginning of the endthe date when the world's political leaders finally state, loud and clear, what is obvious to most people: that it is neither sensible nor necessary to release persistent toxic pollutants into the environment.

For all the above reasons, ministers and other government officials from around the world need to commit to and agree on clear and decisive action on POPS at the Washington Conference in both the Ministerial Declaration and the detailed Programme of Action.

To achieve this objective, governments must agree to:

- commit resources to the adoption of a global, legally binding instrument which will provide for a phase-out and ban of POPs, including an immediate halt in production and use of the short list of 12 priority substances contained in UNEP's Governing Council Decision (18/32) of 25 May 1995; and

- commit to such a process now, rather than wait for the conclusion of the UNEP assessment, which will not occur until 1997.

This article is written by Clifton Curtis. Oceans/Biological Diversity Political Advisor, Greenpeace International

The Trollfjord is a narrow fjord in Lofoten, northern Norway, with a large seasonal cod fishery. In 1890, a steamer closed the opening of the fjord with a net and wanted to charge small-scale fishers a fee to enter. Enlarged, they attacked the steamer and broke through the net. This historic incident led to new regulations for the Lofoten fishery. The use of seines was banned and lift-nets limited to a few areas.

☛ ☛ ☛

The Battle in the Trollfjord

A ballad written by N.D. in April 1890

You hear from everywhere
that the fisheries are good:
But where there are big fish,
there are small ones as well.
Some have tried to catch the cod
by closing the fjord with a seine;
but there is nothing against that,
neither from the king nor the law.

And in the Trollfjord,
here the other day,
we got a taste of this;
but it ends as it usually does—
you stroke the cat until
you get scratched yourself.

Four ships were on guard
with chains and with ropes,
while half the fiord was covered in ice
and the fishery was drained.
And the price of entry
was to pay for a share.

This the fishers did not like
as catches were so low.
A war was thus declared
and a water hose used.
This was in the morning,
but by noon the steamers had
lowered their flags.

Which side was right
is really hard to tell
because feelings are mixed
on fencing in the cod. But if,
from land and out to the isle of Rost
the ocean was sealed with a net,
then I think our voice
would not bear a friendly tone

for, You know, our industry
here in the north is but fisheries
and if, for the good of all,
it should remain so,
it should certainly be done at sea.

* * *

The Trollfjord

by Cornelius Moe, written in 1939

There is a legend about the devil
being arrested by his great grandmother.
He was expelled from the comfort of home
to a cold place in the high north,
to a hole in the mountains of Lofoten,
to a cavern under stones and scree
where the icewater dripped down his neck
there sat His Highness, and froze.

His lodgings were far from regal.
As can be expected, time stood still
and he found he could do an awful lot
to make his abode less cramped.
At night, he ran and kicked and scratched
so hard that the mountain walls broke
and the mountain split up
out to the Raftsund;
Thus the sea came rolling in.

"So, the house has become agreeable,"
said the devil, as he stuffed his pipe.
"Now we have a comfortable mansion
for trolls and similar rabble."
And the trolls swarmed and crawled
into the midst of their mountain home
and grinned down into
the mirror of the fjord
and gave it its proper name.
A summer day
we stood on deck;
the boat glided easily
into a narrow chink.
We saw just a splinter of the blue sky
as a ribbon between
the mountain peaks,
a vertical wall cutting upwards
like the edge of a knife.

We didn't see much
as we slowly slipped in
through the trollcastle gate,
only a woman who, frightened and scared,
pointed her head to a loose pile of rocks,
and said, "God, if it fell, it would kill us like flies
crushed to atoms. That risk is too gross."
Then we were inside, in the basin of the fiord.
We stood there, spellbound, watching the scene
It must be so, for spirits and the riff-raff.
This is the work of the Devil!
The trollfence around, with peaks and glaciers,
giants frozen, mountain sides drenched,
icicles hanging
icerivers frowning
rockjaws grinning
and black, black cliffs.

Pieces of mountain in chaos
around dancing waterfalls
twisting and bending.

And under the peaks
and around their necks
a collar of glaciers
sparkling icegreen.

Words failed us
at the savagery of the place.
We stood there in a shudder.
What a cubistic panorama of creation!
A devilishly captivating disharmony...
Ugly or beautiful?
Terrifying? Impressive?
Well, at any rate, inspiring it was.

The castle of giants, oh yes, but a memory
of the struggles amongst men reached out to me
as we made our way out of the summer blue bay
and whistled farewell to the highest of mountains,
here, where the devil himself was the landlord,
here ensued the famous battle of the Trollflord.

I see them so clearly, through to this day:
A fishing fleet, coming by oar or by sail,
arrayed for battle, at the mouth' of the bay,
attacking like Vikings, bound to prevail.
And furious men in their old fishing garbs,
waving their oarsready to fight.
Now we should sock it to them,
the big, the rich and the mean,
and the man in the boat
should then claim his rights

For, at the mouth of the fjord, sprawled across,
was a steamer blocking the path
with purse-seines, winches and modern gear.
It whistled and people aboard began proclaiming,
"Away, this is our fiord.

We have closed the whole opening.
It is filled to the brim with the finest of cod.
No one will enter through this narrow opening.
We've got the power, and we've got the rights."

And there, beside the giants,
a battle was fought on this wintry morning:
skulls mercilessly battered,
amidst the waffles, broken necks.
But fiery it became when the captain
chose as the sharpest of weapons,
steam from his engine.
But the hose was cut,
and after a beastly fight,
the eager victors
flung him overboard.

Then the steamer was boarded
by hundreds of fishers
who slashed i:s ropes and sunk its nets
and into the Trollfjord they sailed,
fishing in peace until their boats were brimful.
But the steamer left, yearning
for its lost glory.
But what was it searching for?
The Trollfjord should be free—
like all other oceans.

The wind is whistling old stories
of the anguish of poor fishers,
forced to attack men with money,
showing no mercy.

And closing in behind us,
the gate of the Devil
grins at us,
as we are pushed to our places
at the railing.
And the Trollfjord glimmers,
disappearing behind us.

—free translation from the Norwegian by Gunnar Album

News Round-up

Deal sealed

After the fish war of March, it now seems to be time for peacemaking. Canada and the European Union (EU) have signed a deal over turbot fishing and has got it endorsed by the North-west Atlantic Fisheries Organization (NAFO).

The deal will allow EU fishermen, mostly Spanish, to catch 11,000 tonnes of turbot in a disputed zone off Newfoundland, outside Canada's territorial waters. To ensure there is no cheating, NAFO will use on-board observers as well as satellites to monitor the agreement.

Chinese zeal...

Monitoring its new venture is China's biggest fishing company, Dalian Ocean Fisheries, which hopes to use New Zealand as its base to explore deep-sea fishing opportunities in the South Pacific. Impressed by the technology available in **New Zealand**, the Chinese company has tied up with Seafresh Fisheries of Lower Hutt to develop new commercial deep-sea species. The Chinese firm thinks this joint venture may turn out to be the biggest of its operations outside China.

...keeps growing

But China's biggest existing foreign joint venture in fisheries is the Zhoushan Industrial Company Ltd, based in the island city of Zhoushan in the east China Sea off Zhejiang province. It was formed last December between the Thoushan No.2 Ocean Fisheries Company and the Maruha Corporation of Japan.

The new company is now racing to keep up with the ever-growing market demand abroad. During the first quarter of this year, it exported US$15 million worth of marine products to Japan, almost half of the company's total exports last year. Nearly 80 per cent of these comprised processed products such as shredded squid, fish meat sausages and fish slices.

Recently, businessmen from the US, Spain, New Zealand and Hong Kong have also come knocking on the Chinese company s doors for its products.

Flying out

Also on the joint venture route is Okinawa based Shonan Fishing Company, which specializes in tuna products. Along with the National Fisheries Corporation of **Micronesia**, it has launched a new company called Pacific Islands Airflight Corporation. This company will charter flights to transport tuna from Micronesia to Guam, where the tuna will be packaged for export to Japanese markets. The new operation is expected to cut transportation costs by almost 30 per cent.

Sorry, no fishing

To cut off chances of a further fall in fish stocks, **Mauritania** has banned all fishing in its waters during October. No fishing boats, not even local ones, are allowed to fish in Mauritanian territorial waters.

Half of Mauritania's export income comes from fishing, which makes up 10 per cent of the country's Gross Domestic Product. Total fish production mainly squid, octopus and shrimpsdropped from 479,824 tonnes in 1993 to 296,627 tonnes in 1994. This decline is due to dwindling fish stocks, say officials. To allow fish stocks a chance to recover, Mauritania imposes similar bans occasionally. This year the ban coincides with a row between Morocco and the EU about fish quotas.

Poisoned dead

A depletion of a different kind occurred in **Bulgaria** where two tonnes of dead fish were found floating on a 30-km stretch of the -Maritsa River last month.

An official at the Regional Environment Inspection Service suspected that the fish were poisoned by pollutants from Bulgaria's largest chemical fertilizer plant, Neochim.

Purses fatten

Getting larger in size is the **Philippines'** distant-water purse-seine fleet. There are now around 15 seiners in operation, mostly second-hand vessels from South Korea, Taiwan, Japan and Australia. Each of the three largest purse-seining companies, viz, RBL Fishing Company, RD Fishing Company and MAR Fishing Company, operates three or four 400-tonne class seiners.

With skipjack and tuna resources dwindling in the coastal waters of the Philippines, some companies have begun joint venture operations to fish in Indonesia waters.

Clashes at sea

Meanwhile, the cancellation of a fishing agreement between companies of **Burma** and **Thailand** have led to clashes at sea.

New Light of Burma, a Burmese English language daily, reported that two Burmese fishermen

were killed and 24 declared missing after a clash.

The paper claimed that the agreement between the fishing company and the military junta had been violated by the Thai fishing crew.

Tuna hunting

Also chasing stocks of tuna are purse-seiners from **Ecuador**. With the collapse of pelagic sardine resources, industrial fishermen have been lately buying tuna purse-seiners of up to 1200 tonnes capacity.

They use these to catch tuna stocks, which are then supplied to the country's leading canneries, like Bumble Bee and Star-Kist.

Greening fields

The government of **Cambodia** isn't buying the new craze for shrimp farms.

It feels that the country's dwindling mangrove forest ecosystem is being threatened by Thai-financed Cambodian shrimp farmers who wish to cash in on the growing appetite among Cambodians and Thais for shrimp.

A clutch of Thai businessmen recently began financing over 100 shrimp farms in Koh Kong, Cambodia's most southwesterly province, just 10 minutes by speedboat from Thailand.

Cambodia's environment minister said that an investigation by his ministry showed that the shrimp farms had expanded into the mangrove areas.

As a result, the government has ordered the Ministry of Agriculture to temporarily stop issuing licences for shrimp farming.

Massive study

After almost a decade of work, the first comprehensive inventory of the world's most biologically important marine sites is ready.

In the four-volume report, the World Bank, the World Conservation Union and the Great Barrier Reef Marine Park Authority of **Australia** concluded that marine resources are at risk world-wide.

They have called on international financing organizations and governments to fund a comprehensive plan to protect and manage marine sites.

The study identified 1,306 protection zones. Some of these are already subject to national or regional conservation efforts, but many are not. Of these, the study chose 155 as marine protection areas.

Fish for food

International understanding will hopefully be on display at Kyoto from 4 to 9 December when the Government of **Japan**, in collaboration with FAD, organizes the International Conference on the Sustainable Contribution of Fisheries to Food Security.

The official hope is that delegates will agree, possibly in the form of a declaration, on a set of policy options or strategies meant to ensure the sustainable contribution of fisheries to food security.

The conference will address ways in which all nations can co-operate to secure the supply of fish as food, while respecting cultural differences.

Ruling supreme

Respecting the sustained campaign against shrimp culture in the coastal areas of **India** was the country's Supreme Court.

It passed an order on 24 August asking all coastal states not to grant long-term licences or permits for aquaculture farms on agricultural land.

A couple of months ago the court had observed that the practice of drawing groundwater for aquafarming should not be allowed in these states, in order to make sure that villagers got enough drinking water.

The apex court's order comes in the wake of a long and forceful campaign. This was spearheaded by the People's Alliance Against Shrimp Industry, a loosely knit grouping of representatives of fishworkers, environmentalists and consumer activists.

Special edition

As a way of life, does fishing have a future? Everywhere, livelihoods that have sustained coastal communities for millennia are under threat from mismanagement, resource depletion, p0!-lution and population pressure.

To focus on these problems that confront poor producers in coastal and near-shore areas, ITDG's AT Journal has just brought out a special edition.

For copies, pcontact Kimberly Clarke at IT Publications,

London at Fax: ++ 44 (0)171 4362013 or e-mail: itpubs@gn.apc.org

Adopted

On 4 August over 100 countries finally adopted a path-breaking legal agreement to prevent international conflicts over fishing on the high seas and conserve fish stocks.

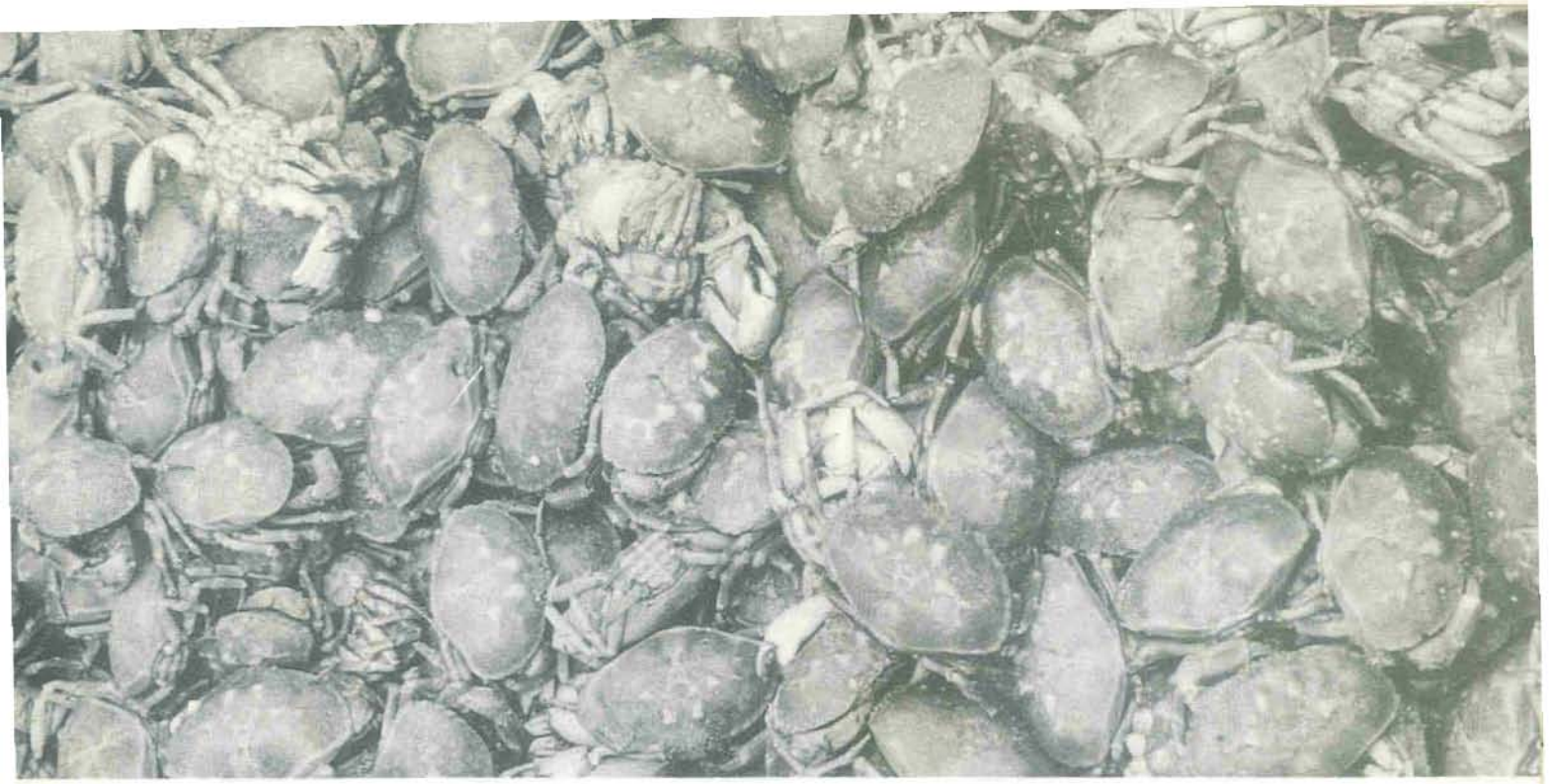
This was the culmination to the process of the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, which began in April 1993.

The agreement is expected to be opened for signing in early December.

It will come into force after it has been ratified by 30 countries, a process which could take around two years. In the meanwhile, several countries will possibly begin to implement the agreement provisionally, in particular its conservation and management measures.

Nature is a very careful accountant. Because evolution has built such a complex pathway for energy and materials to follow on their way through the food chain, every change in one part of an ecosystem sooner or later has some effect, however minute, on every other part. Human beings and their industries are no less part of the ecosystems in which they work than are the plants and animals they harvest.

— from **The Fisherman's Problem** by Arthur F. McEvoy, Cambridge University Press, 1986.



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Sebastian Mathew for
International Collective in Support of Fishworkers
27 College Road, Madras 600 006, India
Telephone (91) 44-827 5303 Facsimile (91) 44-825 4457
E-mail:madras.fishnet@axcess.net.in

ICSF Brussels Office:
65 Rue Grétry, B-1000 Brussels, Belgium
Telephone (32) 2 -218 1538 Facsimile (32) 2-217 8305

Edited by
SAMUDRA Editorial

Designed by
Satish Babu

Illustrated by
James S. Jairaj

Cartoons by
Gunnar Album

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