

Towards A New Agenda
For Sustainable
Small-Scale Fisheries
Development

John Kurien

TOWARDS A NEW AGENDA FOR SUSTAINABLE SMALL-SCALE FISHERIES DEVELOPMENT

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Chapter V

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Fisheries Development**

by John Kurien

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FOREWORD

Artisanal fisheries have been playing an increasing role in the food and livelihood security of a large majority of the world's population. However, increasing pressure on resources from industrialized and artisanal fishing fleets, the use of over-efficient and destructive fishing technologies, degradation of the coastal environment and lack of adequate management and regulatory measures threaten the survival of the artisanal fisheries around the world.

In India, artisanal fisheries provide livelihood to communities of several hundred thousand fishers and their families. Considering that these communities are among the most deprived communities in the region, and the fact that they enjoy very little occupational mobility, it is important to ensure that their spaces be preserved. The processes that act on the fishery, if not checked, may transform members of these communities into refugees thrown up by development, with particularly vulnerable groups such as women losing out even more.

It is therefore important to come up with alternative development paradigms that restore the first claim that artisanal fishing communities have on the fishery. The role played by these communities in ensuring the sustainability of the fishery through eco-friendly and appropriate fishing technologies should be highlighted and reinforced by such a framework. Thus, it follows that in order to ensure sustainability of the fishery, fishworkers' communities would have to be empowered to take a more active role in any decision-making process that affects it. It is also clear that fishworker organizations-co-operatives, trade unions, and other forms-will play a major role in this process of empowerment.

It is in this context that John Kurien's work on defining a new set of priorities for development of artisanal fisheries sector becomes important. This work is the outcome of a research project of the UN Department for Policy Co-ordination and Sustainable Development. The author has long been associated with SIFFS in the capacities of adviser and Board Member. As a fishworker organization, SIFFS is pleased to highlight this work as an important tool for understanding and thus ensuring the future sustainability of small-scale and artisanal fisheries around the world.

Satish Babu
Chief Executive

EXECUTIVE SUMMARY

The concern for small-scale fisheries has now moved from the periphery to the core of fisheries development. It will be an area of increasing attention in the future. This will call for new approaches that take into account the special conditions and characteristics of the sector.

Every small-scale fishery has evolved in time and space from specific ecological and changing socio-economic and cultural contexts marked by diversity rather than homogeneity. Attempting to define the small-scale fishery is therefore an exercise in futility because each such fishery is unique.

However, it is possible to cull out a number of broad characteristics that provide a means of delineating and identifying some attributes which are common to small-scale fisheries in different contexts. They include: the use of relatively small craft; skill-intensive operations; an intuitive understanding of the aquatic milieu; decentralised spatial settlement pattern; being a household enterprise undertaken as a source of livelihood; and the incumbents being, in general, socially and economically disadvantaged.

These characteristics are not static. They were conditioned by the patterns of fisheries development adopted in the different countries and continue to evolve. Consequently, an understanding of the fishery development process, to assess what happened to the small-scale fishery during the course of its history, becomes important both to comprehend the realities of the present and to chart out an agenda for the future.

In the "initial conditions" of both the developed and developing countries, the marine fishery was essentially small in scale. In the developed countries the overall expansion of the economy due to growing markets, new technology and enhanced income spurred the growth of the fisheries sector also. The adoption of new technologies reduced the uncertainty associated with fishing, raised the productivity of the fish catching operations and increased the shelf life of fish. All of this together lead to a better life for fishing communities at large. In the developing countries, there were, however, essential differences between the planned socialist and the free market economies as regards what happened to their respective small-scale fisheries.

In the socialist countries, given that the ideological metaphor was in favour of a transition from the small to large-scale technology and from individual to collective ownership, the small-scale fishery was actively discouraged. In the free market economies, on the other hand, the small-scale sector initially flourished. This was short-lived. Capitalist development brought new economic agents into the sea. They were in search of quick profits and introduced a large-scale, capital-intensive form of industrial fisheries development under corporate control. These investments expanded rapidly. The fish was harvested quickly and the fishing season got shorter. This led to overfishing and soon a crisis developed due to the disappearance of several fish species. The resource crisis affected the fishing industry in general and the small-scale sector in particular. In many developed countries, this led to the demise of the small-scale sector; in others, it resulted in social upheaval among the coastal fishing communities which prompted the state to intervene to protect them.

In most developing countries, marine fishing was initially undertaken by a community/tribe/caste, often socially and culturally separate from mainstream society. When these countries got political independence, they began to blindly imitate the developed countries, particularly with regard to technology. As a result, the artisanal, small-scale fisheries which were so well adapted to the tropical marine ecosystem were totally neglected. New capital-intensive investments were promoted by the state into the fishery sector. They were inappropriate to the tropical ecosystem and the economy. As a result, within a span of two or three decades the fishery resource and the economy were in crisis just as in the developed countries half a century ago. Despite this, the small-scale fisheries were not wiped out. They continued as the backbone of the fish economy. However, though on the aggregate, they were "large" and "ever present", at the individual level, they were "weak" and "merely surviving".

The small-scale fishing communities in these countries suffered this neglect for a while but soon rose up in opposition to it. In the 1970s and the early 1980s, a widely reported phenomenon in Asian countries was the conflict between the small-scale fishworkers operating small fishing vessels and fishermen operating small and medium-sized trawlers and purse-seiners introduced by the state and private individuals as part of the fisheries development programmes. In some countries of Africa and Latin America too, the small-scale fishermen did express their dissent, using less confrontational methods of collective action. Such social movements emanating from these coastal communities provided the backdrop for redirecting attention on to the small-scale fishery. These moves were also

supported by the findings of social scientists who highlighted the economic and socio-political rationale for such action. An international conference of small-scale fishworkers and their supporters in 1984 clearly articulated the ecological, technical, economic and organisational reasons which made support to the small-scale sector the most viable proposition for developing countries. Basically, it was a plea for moving to measures of support which were based on an empathetic appreciation of the strengths of the sector rather than sympathetic reactions about its weaknesses.

This provides the rationale for the fourteen inter-related measures sketched out in the paper. They attempt to move towards a new agenda for sustainable small-scale fisheries development which will ensure greater justice, more effective participation and foster self-reliance. These measures cover a wide vista. Prime among them are the call for aquarian reforms which will provide small-scale fishworkers with greater effective control over the coastal fishery resources and the primary activities of the fish economy. Reinstating and reinforcing the knowledge systems and technologies of these communities acquired over centuries of learning-through-labour are another realm calling for committed action. Empowering the organisations of small-scale fishworkers to strive for resource co-management and enhancing the role of women in these efforts is another important set of measures. Outside the realm of fisheries, but related to it, are the measures for promoting community development action, alternative employment prospects and multi-sectoral ecological action. Efforts in the direction of obtaining widespread support for these measures include getting transnational consumer support, solidarity from civil society and international organisations. Generating a reliable database is a pre-requisite for undertaking support-oriented participatory research for spelling out and modifying the agenda over time.

The overriding evidence from developing countries point encouragingly to a deep consciousness and awakening from within the small-scale fishing communities in support of such measures. With the commitment of the state and other sections of society such a new agenda can become a reality.

OVERVIEW

A global review of the literature on fisheries development issues in the post -1970 period points unmistakably to the fact that the concern for small-scale fisheries has moved from the periphery to the centre. Many experts and expert committees have reiterated the primary role played by this sector and stressed the need to recognise and rehabilitate it to its original stature as the backbone of the fish economy. These profound pronouncements of the past have only on rare occasions led to demonstrable public action by the state for redressal of the bleak situation confronted by most small-scale fishing communities.

There is now a fresh search for ways and means of creating and fostering measures which can provide a new basis for engendering greater opportunity and participation for small-scale fishing communities in the future of fisheries development and management.

A recent and widely endorsed inter-agency report entitled "A Study of International Fisheries Research (SIFR)

"identifies the small-scale sector as an area of increasing concern for the future, one that requires new approaches in management and development that take into account its special conditions and characteristics." (World Bank, 1992:8)

Against this backdrop, the attempt in this paper will be to articulate on a broad canvass, the manner in which the concerns of the state and civil society, clubbed together with the strengths of the small-scale fishing communities, can be woven into a fabric of measures to achieve enhanced opportunity and effective participation for accelerated and sustainable economic, social and cultural development.

There is a widely held opinion that small-scale fisheries are largely restricted to the developing countries with a maritime tradition. This is not true. In fact, small-scale fisheries flourish in the marine, riverine or lacustrine ecosystems of many developed and developing countries with a fishery tradition worthy of mention. They can be found in the inshore sea of Atlantic Canada, the Amazonian floodplain of Brazil, the fjords of Northern Norway, the Mediterranean waters of Spain, the lakes of the eastern African

countries, the backwaters of India, the rivers of China, the bays of the Philippines, and in the lagoons of the Pacific islands. While recognising the global presence of small-scale fisheries, in this paper we will focus our attention on the **small-scale fisheries sector in the inshore marine ecosystem of the developing countries.**

The paper is divided into five parts. We first embark on an attempt to move from defining what a small-scale fishery is to describing some of its characteristics. This is followed by a generalised historical narrative of the process of development which resulted in the neglect of the small-scale fishery, both in the developed and the developing countries. The post-1970 "rediscovery" of the sector, as well as their own post-1980 assertion of themselves, is portrayed in the third part of the paper which advocates for a shift from sympathy to empathy. An interrelated agenda of measures which require committed action from "above" and "below" to ensure that small-scale fishing communities move towards a just, participatory, self-reliant and sustainable development is sketched out in the fourth part. This is followed by a brief summary and conclusion.

Chapter I

CHARACTERISING THE SMALL-SCALE FISHERY

Problem of Definition

In the literature and the practice of fisheries development and management, one sector of the fish economy which is alluded to by a variety of appellations is the small-scale fishery. The adjectives "subsistence", "traditional", "peasant", "artisanal", "inshore", seem to be the most widely used, either singly or in combination.¹ While each of these adjectives highlight a certain characteristic of the small-scale fishery, none of them can lay claim to being adequate to define it fully. There is also another unsettled issue: how small (or big?) is small?

The SIFR initiative which had a working group on critical factors affecting small-scale fisheries states that:

"Definitions are not universally applicable and that which may be called small-scale in one situation may be large-scale in another. It was felt that distinctions were not necessary for the purposes of discussion. With regard to any particular project, however, researchers may need to make precise definitions suitable to the situation." (World Bank, 1991)

The reason for these ambiguities regarding character and scale can be attributed to the fact that small-scale fisheries world over have evolved in time and space from specific ecological, and changing socio-economic and cultural contexts which are marked by diversity rather than homogeneity. Any discussion on small-scale fisheries must therefore reckon with the fact that there is a definitional problem, which despite the prolific nature of the literature on the subject, has not been sorted out.

Consequently, excessive generalising about the nature of small-scale fisheries from a "sample" of a few countries or regions, can never provide a basis for a definition of the "population". We need to recognise and admit that such an exercise is by its very nature futile. Indeed, the first step to recognising the

existence of a small-scale fishery in a country, and taking measures to support and rehabilitate it, *is to explicitly acknowledge its uniqueness.*

Moving from Definitions to Characterisation

That being said, one must hasten to add that while it is generally agreed that no universally applicable definition of a small-scale fishery sector is possible, it is necessary to cull out a range of characteristics which are useful to gain a broad understanding of this sector within the fishery of a country.

A review of some of the vast amount of literature available today on small-scale fisheries the world over (See Bibliography) provides us with a starting point to propose broad characterisations of the small-scale fishery. Based on this we may say that a small-scale fishery is one which is likely to have some of the following attributes:

- Use of small craft and simple gear (though not necessarily simple techniques) of relatively low capital intensity
- The fishing operations are skill-intensive
- Operators have an intuitive understanding of the coastal aquatic milieu and the fishery resources in it
- The knowledge and skills are passed down from generation to generation
- Incumbents largely work as share-workers or owner-operators of their fishing units
- Marked by a decentralised and scattered settlement pattern with relatively high population density
- Fish close to their home communities in relatively near-shore waters in single day/night operations
- Resources fished are largely in open access regimes but with certain notional customary right claims

- Integrally linked to locally oriented hinterland market networks though also catering to export market demand
- Considerable financial dependence on middlemen and those who buy their harvest
- Household enterprise undertaken in pursuit of a livelihood leading to a culturally conditioned way of life
- Compared with other sections of society, relatively socially and economically disadvantaged with low employment mobility out of fishing

These characteristics however do not preclude either the absence of any of the above, or the presence of any other attributes, which are specific to particular small-scale fishing communities. Moreover these are not static characteristics. They are in the process of a dynamic evolution which has been greatly influenced by the patterns of fisheries development adopted in the different countries of the globe. Examining this history is integral for understanding the scope and the possibilities for charting out a new agenda for small-scale fisheries development.

Chapter II

FISHERIES DEVELOPMENT AND THE SMALL-SCALE FISHERY

In the initial state of the fish economies of both the developed and the developing countries, the marine fishery was essentially small in scale. The participants in the fish economy were largely in secure command of the activities which they undertook for earning their livelihood - almost fully in the realm of harvesting, very significantly in the processing activity but perhaps less so in the trading. The productive processes were highly labour intensive and depended for their successful use on the accumulated traditional wisdom, cultural knowledge and artifacts evolved by the incumbents - be they fishermen, fish processors or fish traders. Their economy was socially, economically and culturally closeknit and of limited extension. Fish essentially had use value as a food and fisheries was a source of livelihood for different sections of *fishworkers*².

The change from this rather low productive, but relatively steady-state situation, to what has come to be known as the fisheries development phase, can be traced back to different points in history in the developed and developing maritime countries.

In the Developed Countries

In the developed maritime states the fisheries development phase had set in at the early part of the last century and continued with varying degrees of success for six to seven decades. This expansionary phase was due to a multiplicity of factors: increases in population; the steady increase in incomes and the growing demand for protein foods. Steam, and later mechanical power, provided the basis for more powerful fishing vessels. Instruments developed as part of the technology of warfare had their spill over effect into the fish economy. For example, the uncertainty associated with fish harvesting in marine waters was reduced by using variations of the submarine detecting sonar instruments for perfecting fish finding echo sounders. Bottom dwelling species were more easily trapped using the bottom trawls which were adaptations of the seabed mine sweeping nets. Monitoring of shore prices and weather at sea became possible with the new communication devices. The breakthrough in ice making and freezing

technology elongated the shelf life of fish. The use of new chemicals helped to improve the quality of cured and dried fish. This overall increase in capital intensity and technological sophistication raised the overall productivity in the fish economy. Fewer persons could now accomplish far higher levels of output. This vastly altered technological scenario induced different paths of fisheries development in the developed market economies and the developed socialist economies of the North.

In the planned socialist economies, the means of production of the economy as a whole were considerably under state control. The decision to expand the fishing fleet was based on a centrally planned, rather than market determined, resource allocation methodology. According to this the production of fish from the sea would use about half as much capital investment, one-third of the production costs and one-quarter of the labour requirements compared with those required for the production of an equivalent amount of meat on land. (FAO, 1993:12) The marine fishery was thus targeted as the primary source of animal protein. This is what provided the rationale for the huge investment made by the erstwhile socialist countries (with the USSR leading the way) into marine fisheries. They took the form of a massive deep sea fishing fleet marked by its large-sized vessels which included mammoth factory ships which sourced the world's open oceans. They harvested, processed and stored the fish on board. More than half the world's distant water fishing fleet capacity in 1970 flew USSR flags. The fish harvested found its way into the public food distribution system of the USSR. Some of it was also used as feed additives in the huge livestock economy. The literature on the traditional small-scale fishing activity of these socialist economies is very scanty and consequently an understanding of what happened to it during the planned fisheries development phase is not well known. However, if the fate of small-scale peasant agriculture is any indication, we can safely conclude that the ideological metaphor of the state - which strongly favoured a technological progression from small to the large, and an ownership profile from individual to collective - gave little opportunity for survival of any semblance of small-scale (peasant-oriented) fisheries, bearing the characteristics which we enumerated earlier.

In the free market economies, the overall growth of the economy, the expansion of the market for fish, the opportunities opened up by the basic technological developments and the open access to the fishery resource,

substantially raised the profit possibilities from investment in the fishery. The ensuing private investment initiatives were supported by the state in the form of subsidies and long gestation investment in infrastructure development. The expanding market and profitable investment climate led to an all-round development of the sector. The income and overall socio-economic conditions of the fishworkers as a whole greatly increased. In some countries, the promotion of institutional initiatives such as cooperatives and the regulation of the fish marketing and processing activities also contributed significantly to the development.

The benefits of technological and institutional change pervaded throughout the fishery sector in the developed countries. By the first quarter of the twentieth century, in countries which had a strong maritime tradition (like Canada, United Kingdom, Norway, France, Spain and Japan, to name a few), the family-based coastal fishery also gradually modernised but retained its strong cultural moorings as a way of livelihood. The "non-disappearance" of this small-scale fishery gave genesis to a form of dualism.

Parallel with the slowly modernising small-scale sector, new economic agents began to enter the fishery sector. They promoted large-scale, industrial fisheries development targeting the vast fishery resources beyond the coastal waters as a commodity to be mined for making a quick profit. They introduced a fair degree of very capital-intensive, centralised, vertically integrated, highly non-renewable energy consuming investments in the fishery. All of this was largely under corporate-control. The implications of this capitalist domination, for both the future of the fishery resource and the coastal small-scale fishing communities, were soon evident. As the fleet size and capacity of the large-scale industrial sector increased, the fish was harvested quicker and the fishing season got shorter. The initial quantum jump in the fish harvests were followed by a fall in yield and profits. This resulted in the smaller investors going bankrupt and the larger ones bringing into the fishery bigger and faster boats with more sophisticated fish-finding equipment and gear. Soon a crisis developed. Several fish species began to "disappear" following their excessive over-exploitation using the array of "efficient" fish harvesting techniques. Gradually the limits to fisheries development, seen as a mere expansion of volume and value of output, were strongly perceived. In response to this came a variety of initiatives - national, regional and international - to regulate, control and manage the fishery. The social upheaval of the coastal

small-scale fishing communities against this socio-economic and ecological crisis, as early as the pre-World War II period, is well documented in countries like Norway.³

In the Developing Countries

In the developing countries the "natural" state of the fisheries sector was relatively undisturbed until around the middle of this century. Marine fishing was normally a subsistence activity undertaken by a community/tribe/caste often socially and culturally separate from the mainstream society. When these countries began to get and wrest their political independence they started on various paths of "planned modernisation and development." With a few exceptions, this basically meant taking after the patterns of economic activity they saw happening in the developed countries. As a keen observer of this process has reminded us,

"Around the beginning of the First Development Decade, it was widely and optimistically assumed that modern science and technology could serve as a powerful force in stimulating and sustaining development in the countries of Africa, Asia and Latin America" (Evans, 1976: 379-80).

Fisheries development in the developing countries, during the 1950s and 1960s, followed much the same path. To achieve it, a considerable amount of blind imitation, particularly of craft and gear technology of the developed countries (which were evolved in the context of temperate water ecosystem conditions) was perceived as inevitable. This was mainly due to the fact that policy makers at the helm of affairs in many of these countries characterised the existing, artisanal fishery to be "primitive and inefficient" thus unsuitable for the lofty goals of modernisation and westernisation.⁴ In this process a rich heritage of endogenous technology, evolved over the centuries to suit ecosystem and community, was thrown overboard. Some of the traditional conservationist values, resource use principles and adaptive strategies long employed to manage and conserve the fishery resources were construed as "barriers" to development. Raising production and productivity were seen to be the sole requisite for alleviating fishermen's poverty. Communal ownership over the fishery resources and sometimes over the means of production, were seen as contrary to the individualistic, entrepreneurial ethic required to maximise economic growth by raising the throughput from the marine ecosystem. Abandoning the "small" in pursuit

of large-scale operations, extension of the boundaries of the fish economy, and the need to link it through trade and aid to the developed countries were portrayed as inevitable if the development process was to be a continuous and dynamic one.

As Platteau points out,

"the ideological ground was thus laid to transform these traditional agents from active into passive actors of their own destiny; that is, to encourage their entry into the modern sector in a subordinate position where they would be deprived of the possibility of taking any genuine initiative on their own" (Platteau, 1989a :578).

However, fisheries development did not merely become a change of artifacts (from the canoe to the trawler), physical processes (curing and drying to freezing), and expansion of the market (local consumption to export orientation). Instead it resulted in a process of incorporation and transformation which brought about far-reaching changes in the social, economic and cultural structures and values of the small-scale fishing communities. This expansionist, capital and non-renewable energy-intensive growth which was oriented significantly to the export market was premised on exploiting what came to be considered "a freely accessible renewable resource" and spurred primarily by the lure of quick profits. It resulted in three major consequences:

- First, the new craft-gear technologies, spurred by high monetary benefit/cost possibilities, such as the export of shrimp to the us and Japan, were largely outside the ownership control of the working small-scale fishermen and thus created a wide disparity in the access-capability to the fishery resource⁵. It created the effect of an "enclosure movement"⁶ resulting in conflict over space and product in the coastal waters. A certain negative unidirectional externality was imposed on fishing communities who had customary historical rights of access to these coastal commons.
- Secondly, due to the higher "efficiency" of the new harvesting and processing technologies, there was an initial quantum jump in the physical output and its value. However, unlike what happened in the developed countries, the distribution of this

enlarged "fish-pie", and also its control, was hardly tilted in favour of the artisanal, small-scale fishing communities in these countries. This economic marginalisation meant that the autonomy of action, the range of opportunity and the scope for participation of small-scale fishing communities in the emerging new structure of the fish economy was minimal.

- Thirdly, having adopted almost *in toto* the same model of development followed by the developed countries, it was only natural that the resource-crisis potential inherent in this model of development was also duly inherited. The initial "growth phase" of the new development strategies soon gave way to the "crisis phase." Though the harvest from the sea initially increased, they dropped to levels close to those obtained in the "pre-development" period in many countries. The zenith and nadir of this cycle was best dramatised by the humble Peruvian anchovy.⁷ Other less publicised examples had equally harsh bearings on the ecological and socio-economic underpinnings of local fish economies. (Bailey, 1984; Kurien, 1991) There was crisis in the coastal commons. But the tragedy fell on the commoners - the small-scale fishermen, fish traders and the rural consumers offish.

An often heard opinion in the developing maritime countries has been that the above breed of modern day fisheries development was largely divorced from fishworkers' development. This view is aptly summarised by Prof. Gerhardsen, who in Norway used to be called the "grandfather of small-scale fisheries":

"So far in the second half of the twentieth century, general fisheries expansion and development has brought significant benefits to but a small percentage of the world's fishermen. The great majority of fishermen still exploit the fish resources in much the same manner as did their forefathers. They do not have the opportunity to expand their fishery, for they have neither the incentives, nor the proper means of production, nor the structures through which to unite on problems of common interest. For the majority, productivity and incomes remain critically low, and there is an urgent need to improve their working and home conditions." (Gerhardsen, 1977)

Hence if the fishworkers in these countries, particularly those in the small-scale fishing communities, have continued to survive, it is a tribute to their innovativeness, resilience, and flexibility given the most adverse circumstances.

The best proof of their survival can be found in the fact that in many developing countries small-scale fishing and related activities did not receded into the background but actually made an important contribution to the growth of fish production and fish exports - not to speak of their contribution to employment. Examining the data available on one of these aspects - the relative product contribution of the small-scale fisheries sector in a number of developing countries - we notice this continued dominance of the small-scale fishery even after a decade or two of modern, planned fisheries development.(See Table 1)

Table 1: Relative Contribution of Small-Scale Fisheries (SSF) in a Few Developing Countries

Country	Year	SSF Share in marine harvest *	Marine Harvest # (in tonnes)
Brazil	1976	50	517000
Tanzania	1975	100	35 200
Turkey	1977	50	138000
India	1976	80	1375 000
Indonesia	1977	98	1 157700
Philippines	1975	55	1228 900

Sources: * Selected from (Platteau, 1989a:569)
FAO Fisheries Statistics

Though their shares in the total harvest from the sea seemed considerable, given the fact that they account for a large population, the per capita outputs were often only in the order of 1.5 to 2.5 tonnes per annum - more often too low to obtain a level of earnings commensurate to the investments made and the costs incurred. So while the small-scale fishery was still "large" and "ever present" it was "weak" and "merely surviving".

Chapter III

REINSTATING THE SMALL-SCALE FISHERY

In the late 1970s most developing countries found themselves in a dilemma. On the one hand, arising from the discussions at the UN Law of the Sea Conference, and largely as a pre-emptive step, they had to declare exclusive economic rights over vast territories of ocean in the name of initiating nationally controlled exploitation of marine resources in the future. On the other hand, since planned fisheries development had not yielded the desired results, they had to renew the emphasis on their small-scale fisheries which basically operated in the shallow inshore waters. The latter became all the more pressing given that in many developing countries the small-scale fishing communities had begun to become restive due to the deteriorating resource and socio-economic conditions experienced by them. They squarely attributed this to the wrong choices of technology, the excessive export orientation and the free entry of investors from other sector of the economy. This led to waves of protest by small-scale fishing communities against the adverse impacts of planned fisheries development. They were asserting their rights to a decent livelihood and secure future. These socio-ecological movements made the state and civil society aware of the social, cultural, economic and political role played by scale-scale fishing communities in many developing countries.⁸

International development organisations and financing institutions which played the key role in promoting the fisheries development strategies of the 1960s and 1970s also began to accept their follies. Measures to revive and reinstate the "traditional", "artisanal", small-scale fishery sector became priority items on their fishery development agenda.

The Initial Basis

The pressure to reinstate the small-scale fishery thus came from both within the countries and from the development agencies outside. The initial basis to promote small-scale fisheries in developing countries was premised on some of its socio-economic merits when compared with the medium and large scale fishery sectors. These factors were observed by a host of social scientists (Alexander, 1975; Robinson, 1976; Evans, 1976; Lockwood and Ruddle, 1977; Gerhardsen, 1977; Lawson, 1977; Smith, 1977; Kurien, 1978;

Christensen, 1978; Smith, 1979; Panayotou, 1980; Thompson, 1980; Emmerson, 1980; Johannes, 1981; Kurien & Willmann, 1982; Panayotou, 1983; Weber & Fontana, 1983).

Some facets of the relative socio-economic comparisons between the small, medium and the large-scale operations are highlighted using a variety of measures as shown in Table 2 below:

Table : 2 Comparison of Different Scales of Operation in Fishing

Consumption	Large Scale	Medium Scale	Small Scale
No.employed (mill)	0.2 to 0.3	0.9 to 1.0	14 to 20
Jobs per US\$ mill invested	1 to 5	5 to 15	60 to 3000
Earnings per fisher/ annum (US \$)	15000	8000	500 to 1500
Fish harvested for human consumption (mill tonnes)	15 to 20	15 to 20	20 to 30
Fish harvested for fish meal (mill tonnes)	10 to 20	10 to 20	Negligible
Untargeted by-catch (mill tonnes)	5 to 15	5 to 15	Negligible
Annual fuel consumption (mill tonnes)	8	13	26
Fish per tonne fuel (tonnes)	3 to 4	2 to 3	1 to 2

Source: Adapted from (Weber, 1994:33)

Based on such comparative analyses, the initial attempts to correct the large-scale bias of fisheries development strategies in developing countries took the form of earmarking greater social welfare attention to small-scale fishing communities. It was posited that by providing a variety of forms of

"positive discrimination" (subsidies, easier access to credit, scaled down technology, establishment of cooperatives) the "weaknesses" which prevented them from making the transition to modern fishing could be got over more easily. It was still not based on any genuine appreciation of the inherent benefits of the small-scale fishery *in its own capacity and right*.

That apart, most of these attempts were also conceived by the policy makers and handed down to the communities in rather paternalistic fashion. Many of these "good intentioned" initiatives undertaken in Africa and the Asia-Pacific region failed resulting in considerable wastage of finances and resulting in very little meaningful change in the socio-economic conditions of the small-scale fishing communities (Chauveau and Samba, 1989; Tvedten & Hersoug, 1992; Kurien & Mathew, 1982; Emmerson, 1980)

The Nature Bias

A more permanent basis and long-run rationale for developing the small-scale fishery rests on a different plane. It is related to two permanent facts of nature fairly well apparent in the tropics. First, the diversity of the physical geography and oceanographic conditions. Secondly, certain special characteristics of the tropical marine living resources: (a) the fact that over 70 percent of these resources are concentrated in the near-shore coastal zone; (b) that there are thousands of species widely dispersed in this zone, each with short life spans and with very varied sizes at maturity, available in small quantities and with a great degree of inter-species interaction.⁹ These two factors taken together add up to nature's inherent bias for a small scale fishery. Other factors apart, this nature-bias clearly manifested itself in traditional, artisanal small-scale fishing communities in two important ways: in the diversity of boat designs and the greater diversity and intricacy of fishing gear and tackle construction, particularly for use in the most resource-abundant coastal waters. A concomitant compulsion of this nature-bias was also the clearly observable spatially dispersion of small-scale fishing communities along the coast.

This nature-bias for small-scalism needs to be more prominently highlighted. It provides the rationale for more manageable control over the means of production. It also greatly contributes to fostering a more equitable distribution - socially and spatially - of employment and income. When harvesting activity is small-scale and decentralised, processing activities

tend to follow suit. The trade loops resulting therefrom also tend to be shorter and more labour-intensive and hence cheaper. This makes fish more accessible and responsive to the food entitlement of rural populations which is normally backed by lower purchasing power. By implication, a food policy in developing countries which envisages "fish for consumption by the masses" will largely materialise only if that "fish is produced by the masses."

Moving from Sympathy to Empathy

The above discussion points inevitably to the need to approach small-scale fisheries from a new perspective. One in which the specifics of the resource and the community - *as viewed by the participants in the sector* - will form the core of the strategy. In short, a perspective with empathy rather than sympathy (Kurien, 1987).

An international gathering of small-scale fishworkers held in 1984 articulated this perspective in the following manner:

The small-scale fishery is labour and local-skill intensive; it is capital and fuel-saving (particularly with the option of multiple energy use). Its technology and mode of organisation and management are well mastered by local fishing communities and give rise to a decentralised settlement pattern. It does not promote large income disparities.

Small-scale fishery operations are well adapted to the specifics of tropical aquatic ecosystems. When its techniques are capable of destroying fishing grounds, local fishing communities frequently possess built-in mechanisms and rules for preventing overfishing.

The small-scale fishery, far from being a stagnant one, has amply demonstrated in the past that it is innovative and easily amenable to efficient improvements. It is characterised by a high degree of flexibility.

The sector is also well integrated into small-scale marketing channels which are low-cost, highly efficient and catering to local food needs. These are managed in many countries by women from the community.

Thus the desirability of small-scale fisheries and fishing communities should be advocated for economic, ecological, technical, organisational as well as social reasons.

(Extracts from: Report of the International Conference of Fishworkers and their Supporters held in Rome in July 1984 parallel to the FAO World Conference on Fisheries Management and Development)

While the objective rationale for empathising with the small-scale fishery is well articulated above, the fact remains that in most developing countries, though the small-scale fishery is still large and dominant when numerically aggregated, it is in a state of social and economic disarray and lacking a sense of cohesion and community.¹⁰

Consequently a new agenda for fisheries development in developing countries which aims at providing new opportunity and space for effective participation of small-scale fishing communities, must first initiate measures to reunite, strengthen and rebuild the sense of community among them (Kurien, 1994a). Such measures will also ensure a just, participatory, self-reliant and sustainable development for the sector.

Chapter IV

MEASURES TO ENSURE A JUST, PARTICIPATORY, SELF-RELIANT AND SUSTAINABLE DEVELOPMENT FOR THE SMALL-SCALE FISHERY

There is now a growing sense of awareness that while the global move towards free trade, market economies and modern technologies has brought rapid economic growth and many benefits, it has also been responsible for sowing the seeds of economic, technological and social imbalance world over. Redressing this imbalance will require radical changes in our present mind-set and policy frameworks. The state and all other sections of civil society must engender a new paradigm of values which will ensure an ethos of greater sharing and cooperation. The system of incentives and penalties through which economic actions are motivated must be made up of a scheme that encourages a transition towards environmentally, socially and economically sustainable development models. At the core of such models must be the tenets of justice, greater self-reliance and participation.

It is against this background that an attempt is made here to articulate a series of fourteen interrelated measures, which have local as well as global implications and ramifications. These measures will enhance the opportunities and ensure the participation of small-scale fishing communities in deciding their own future destiny with the solidarity and support of others. Basically it is an approach to development with people at its centre. A development process that not only generates growth but distributes it equitably; that regenerates rather than destroys the environment; that empowers rather than impoverishes people; that fosters interrelationships which create self-reliance rather than perpetuate dependence.

1. IMPLEMENTING AQUARIAN REFORM

Any government wishing to genuinely strengthen the small-scale fishery sector as an integral part of a fisheries and rural development strategy must implement an aquarian reform legislation.

Fishing Assets to the Fishworkers

First, the right of ownership to fishing assets for use in coastal waters should be restricted exclusively to those who fish.¹¹ With this, the breed of "absentee, gentlemen fishermen", largely a creation of the fisheries development decades, will be pushed out of the fishery. Where necessary their crafts may have to be "bought back" thus making a significant reduction in the excessive fishing effort in the coastal waters.¹² The salutary effect of this measure will go a long way to enhance the ecological productivity of this fishing zone and thus raise the economic productivity of the active, small-scale fishermen. Secondly, there should be a ceiling on the number and the scale of the assets which can be owned and certain restraints on transfer rights. Thirdly, a "territorial use right for fishing" (TURF) must be created (an exclusive fishing zone) for these small-scale fishworkers in which the rights and the responsibilities for development and management be theirs.¹³(Christy,1982)

Rights Over First Sale of Fish

If rights of access to the sea are to become fully effective they must extend to rights over the produce of labour at sea. The legal right to decide on the mode, structure and the price of the *first* sale transaction of their fish (on the beach or the landing centre) should rest exclusively with the above defined class of owner-worker, small-scale fishermen.¹⁴ This legal confirmation of right will provide the foundation for them to organise the forms of producer control appropriate to their respective contexts. In the face of pressures from trade interests - whose track record in many countries with respect to fair dealings with small-scale fishing communities is hardly commendable - this legal entitlement will be a great boon. It will provide a basis for more zealous unity of action on the part of small-scale fishworkers, to form their own organisations, at their own pace, for dealing with the sale of their fish, wherever and whenever it becomes necessary. Provision of state support to form such economic organisations will become more meaningful and effective against the backdrop of this legal measure.¹⁵

Greater Social Control Over Export

An excessive preoccupation with export-oriented fishery development models has been an important factor in the socio-economic and technological marginalisation of small-scale fishing communities. The initiating of a free market-oriented export drive, within the context of "open

access" to the coastal waters, resulted in a rapid increase in the investments in boats and nets especially oriented to catching exportable species. The most widespread example of this has been the introduction of large mechanised boats for operating bottom trawl nets to harvest shrimp. Over time this has led to the very significant displacement of the shrimp harvesting techniques of the small-scale fisheries.¹⁶ This was accompanied by investments in the export processing sector. The initial increase in shrimp harvest resulting from the use of the "more efficient" trawl nets got quickly dissipated away due to the anarchic and imbalanced increase in their numbers. Contemporaneously, the rapid formation of excess capacity in the processing sector created a feedback in the form of greater demand for shrimp, spurring further investment in harvesting.

To break this vicious circle of investment which is most often than not indulged in by investors from outside the fishing sector (but using a workforce drawn from fishing communities) calls for a greater degree of social control over the export sector. Assuming that harvesting capacity is under a management regime, it must be ensured that the overall processing capacity is attuned to this level. Adopting a middle-line between nationalisation of the sector and permitting its anarchic development would augur well to ensure its balanced growth. Forms of collective community management need to be considered with the state playing a facilitating role.

2. REINSTATING ARTISANAL KNOWLEDGE

Small-scale fishing communities world over have a time-honoured fund of unwritten knowledge accumulated over centuries of learning-through-labour. The artisanal, small-scale fishworkers' ability to catch fish, rests inseparably on their comprehension of the "natural processes" with which they interact as also on their intricate and ecologically benign artifacts. This provides them with a holistic grasp of the nuances of their ecosystem and an understanding of the behaviour of their "prey-in-context". This is what distinguishes small-scale fishworkers' fishing for a livelihood from that of modern fishing ventures which base their activity on technological sophistication alone in their pursuit of making quick profits from the resources of the sea.

The greatest tragedy which occurred with the neglect of small-scale fishing during the "development decades" has been the slow demise of this knowledge and related skills. Resurrecting something that has been shunned by strong social forces is itself a herculean task. Giving it new respectability will be an even greater challenge which needs to be taken up by social and physical scientists in active collaboration with small-scale fishing communities. We are only just beginning to see a trickle of literature highlighting the rationality of many of these traditional practices and skills. (Ruddle & Johannes, 1985; Kurien, 1988a; Fernandez, 1994).

A serious attempt to verbalise and systematize this artisanal knowledge - basically a people's science - will fulfill two missions at once: firstly, it will contribute to strengthening this knowledge and place it at par with what is considered today as "scientific"; secondly, it will recreate for small-scale fishing communities a renewed confidence in themselves and their abilities. The latter is an important pre-requisite for participation, understood as empowerment.¹⁷

3. BLENDING AND TRANSFERRING TECHNOLOGIES

There is a great need to devote scientific and technical effort to developing technology which would be suitable for small-scale fisheries development. The best starting point for this pursuit should be a careful examination of the artifacts and the techniques currently in use in the small-scale fishery with the prime objective of understanding how they have evolved and the rationale behind their form and operation. The most important of these relate to fishing gear. They are distinguished by the fact of being: selective of the species of fish they can be used to harvest, passive in operation and seasonal in use. These are the features which make artisanal fishing nets low in productivity but high in retaining marine ecosystem biodiversity.

Knowledge of such nuances gives the flexibility needed for technology blending - to take from the strengths of traditional technology and merge with the elements of modern technology- to provide artifacts and processes that can be both economically and ecologically sustainable. The aim should be to evolve convivial technologies which are appropriable by the user and that do not deskil. Tailoring and adapting rather than mere wholesale transfer provides a sounder basis for technology diffusion in such communities. Only such a process permits one to take the concrete socio-

economic and ecological interrelations into consideration. That such technology blending is successful and viable have been proved beyond doubt (Gillet, 1985; Kurien, 1994c).

There is also considerable scope for greater South-South and people-to-people cooperation in regard to technology transfer. The limited experience along these lines point encouragingly to the potentials.¹⁸ Interestingly socio-cultural aspects are the least barriers in achieving such technology transfers between small-scale fishing communities across countries. They have the common culture of the sea and language of fishing. Issues of paramount importance for successful transfer are however, a proper understanding of the details of the techno-ecological circumstances of the "recipient" and "donor" communities to ensure compatibility and the right tempo of facilitation of such cooperation. A "scaling down" of the initiatives under the Technical Cooperation among Developing Countries(TCDC) programs and more structured participation of fishworkers organisations and non-governmental organisations will provide rich dividends in such an endeavour.

4. EMPOWERING FISHWORKERS' ORGANISATIONS

There is now increasing evidence that a new genre of fishworkers' organisations is emerging in the developing countries which have a dominant small-scale fishery sector. These are not cooperatives or welfare societies but organisations formed more along the lines of trade associations or unions. Their primary interest has been to protect the livelihood and survival rights of small-scale fishworkers as an occupational grouping and promote the cause of coastal environmental protection (Kurien, 1988b).

The initiatives from Chile, Brazil, Senegal, India, Philippines point undoubtedly to the fact that if participation is to move from mere consultation to effective empowerment, the medium of a structured organisation - of, by and for the small-scale fishworkers - becomes imperative.¹⁹ In all the countries mentioned above, the fishworkers organisations have jealously retained their autonomy - from the state and from the organised political parties. These organisations are striving to become more decentralised and democratised, functioning through village level units, taking up local issues of consequence to the fishworkers. The ripples created in this

process of shore-level "capability building" through "affirmative action" have made these organisations become forces to reckon with at the national and regional levels. Recognising the relevance of such organisations will be an important step in the commitment to providing the opportunity to build/revive/support small-scale fisheries development. The above mentioned aquarian reform measures and support actions cannot be implemented and sustained into the future without such organisations.

5. STRIVING FOR RESOURCE CO-MANAGEMENT

Maintaining the ecosystem balance, harvesting the resource on a sustainable basis, and taking measures to rejuvenate it if necessary, must be envisaged as the primary responsibility of the fishworkers who claim a coastal TURF. They are the stewards and this must be their realm for collective action. However, given that the overriding custodianship of the marine resources rests with the state, the endeavour should be to strive for a co-management regime. The rights and duties of the fishworkers - best represented by an organisation of their own - and the state must be clearly demarcated and reviewed from time to time. Formalising these decentralised co-management regimes into resource use and management councils can provide for a coordinated coastal network of institutions charged with the function of inter-regime resources sharing and conflict resolution issues which will inevitably crop up from time to time.

6. PROVIDING THE RIGHTFUL ROLE FOR WOMEN

The role of women in the economic, socio-ecological and cultural dimensions of rural communities is also being "rediscovered" afresh by social scientists and community activists. Many of the good intentioned programs tailored to the development of small-scale fishing communities have a strong gender bias stressing excessively the role of the *fishermen* and thus fail to appreciate the dynamic role that women play in the economic, cultural and moral life of these communities.

The International Collective in Support of Fishworkers (ICSF) - a network of social and physical scientists and community activists relating closely with fishworkers around the world - recorded at its formation meeting in 1986 this statement of shared concern:

"We acknowledge the important role that women play in the sustenance of the marginalised fishery sector and are aware that they remain out of the mainstream of the decision making processes. We feel strongly that the condition of the fishworkers will not improve unless the situation and the potential contribution of women are given primary attention."

In small-scale fishing communities where the psyche of the fishermen is greatly conditioned by the vicissitudinous nature of the sea, the role of women in giving a dimension of "stability" and "balance" to the household is almost universal. In the developing countries, often it is the wife, sometimes with the help of an elder daughter, that shoulders the prime responsibilities for the sustenance of the small-scale fishing household thus keeping it together as a contented social and economic unit. The small-scale fishermen's success is as much a result of his skill and perseverance, as it is a function of the integrating and supportive role played by the women in the household.

Women in small-scale fishing communities tend also to be more open and receptive to change. This is primarily because they interact more regularly with the larger social forces in society than do the men, who spend more time at sea away from the mainstream society on land. This is particularly true when the women are involved in the processing and/or marketing of fish. Women are also more sensitive to the deteriorating quality of life and the environment. Consequently they have more educated hearts when it comes to the rationale of conservation and the need for a more harmonious relationship with nature. Motherhood bestows on women the very special trait of caring without counting the cost or being calculative about future returns. Such values are essential to underscore the need to move towards a nurturing, caring and sharing approach to coastal fishery ecosystems which form the basis of livelihood of these small-scale fishing communities.

Restoring the gender balance and channelising the potentials of women in these communities pose an important challenge to be addressed with sensitivity and forthrightness. There is a creative role that they can come to play in resource management, lobbying for the rights of small-scale fisheries, and organising of activities such as credit unions, to name a few.

7. PROMOTING COMMUNITY DEVELOPMENT ACTION

In many developing countries, the decades of neglect suffered by small-scale fishing communities has put most of them at the bottom of the social and economic ladders of their respective countries²⁰. A package of socio-economic actions needs to be initiated in order to bridge the gap between small-scale fishing communities and the rest of society. Along with the institutional and technological issues mentioned above, more concrete socio-economic measures which have a direct bearing on the quality of their lives are imperative to build greater self-reliance.

Spelling out here a detailed strategy of action would not be a very meaningful exercise given the diverse socio-political considerations that determine the degrees of freedom available for action on these fronts from country to country. However, in broad terms, this calls for better organisation of the fish marketing activities to be able to earn more income; more flexible and cheaper credit arrangements; easier access to improved education, housing and health facilities; greater stress on population and family welfare issues; and more job-oriented skills to provide alternative employment possibilities particularly for the youth and women. These are important ways of ensuring that small-scale fishing communities obtain the "endowment set" and an "entitlement set" which they have been lacking.²¹

Community-controlled and community-managed organisations supported by social agencies (NGOS) are the best bet to achieve a participatory and holistic development process in coastal fishing communities in order to foster greater self-reliance. This is not to minimise the role of the state or public policy in community development programs. However, on the policy front it calls for a reorientation of fisheries development to focus more on the building-up of human, social and nature capital in the sector, relegating to second place the hitherto heavy emphasis on the role of human-made capital (artifacts and technology) as the prime mover of development.

A framework for community development action for small-scale fishing communities must necessarily be part of a "bottom-up" participatory plan. However it cannot stand in isolation and must be integrated into a coherent fisheries development framework, a corresponding regional plan, and last but not least, an overall national development framework.

8. FACILITATING ALTERNATIVE EMPLOYMENT

Too many fishermen, chasing too little fish, is often posed as the main cause for all the socio-economic and resource problems in the small-scale fisheries sector of the developing countries of Asia. Consequently, in situations where fishing is a full-time activity, getting fishermen out of the fisheries and into other sources of livelihood is often suggested as the remedy. However, despite the weight of scholarly writings in its favour, in practice we see only few meaningful instances where such a "demand-pull" migration out of fishing has taken place in the context of developing countries (Hotta & Wang, 1985; Panayotou & Panayotou, 1986). Also, given the larger socio-economic and demographic realities of most of the developing countries in Asia which account for the greater share of small-scale fishing communities, it is unreasonable to expect that the scope for alternative employment outside the fisheries sector will be very large.²² Consequently, for small-scale fishing communities who have traditionally been in the occupation on a full-time basis, the realistic scenario will be their continued dependance on fishery-related activities well into the next century.

If this be the case, then the strategy for generating more employment and income should be three-pronged: initiating institutional and technological changes which result in greater labour-absorption; creation of community level social assets and adding greater value to the fish at the village level. Elements of such a strategy can be found in all the measures which we have mentioned above.

9. INITIATING MULTI-SECTORAL ECOLOGICAL ACTION

The coastal fisheries of a country, on which depend the small-scale fishing communities, are not just affected by the fishing activity in the seaward side of the coastal zone. The ecological integrity of the coastal ecosystem is also greatly affected by all the negative externalities of the economic activities of the hinterland, largely via the links in the aquatic systems. These include: increased silt loads due to deforestation; reduced river flow following dam construction; and effluent from agriculture, industry, urban settlements and tourism which are dumped into the rivers and the sea.

Initially these externalities cause no harm and are easily "managed" within the capacities of the natural physico-chemical processes in the coastal sea. However, a point is reached when these externalities "accumulate" at a rate faster than they can be "absorbed" thus pushing the system to an ecological precipice. Many coastal sea ecosystems which are the realms of livelihood of small-scale fishing communities have reached the fringe of this cliff. To retrace steps back to the plateau of ecological stability requires collective action at the multisectoral level.

Since the "sea starts in the forests" cooperation from the "upstream" sectors of the economy is a necessary prerequisite for meaningful ecological protection of coastal sea ecosystems. To ensure this, calls for judicious combination of state/governmental and community action. The concerns for integrated coastal zone management emanating from the international and national level are a harbinger of hope.²³

However, greater participation of diverse sections of civil society will be necessary for more concerted, popular community action across sectors of the economy if state initiatives are to be bolstered and sustained. As "beacons of the sea" small-scale fishing communities come to have a special responsibility to animate and facilitate such popular action. Numerous recent initiatives taken by small-scale fishworker organisations across the globe provide hope along these lines.²⁴

10. OBTAINING TRANSNATIONAL CONSUMER SUPPORT

The major physical share of the output of the small-scale fishery is normally consumed in the local hinterland. However a very significant share of the value of the output is often seen to come from products which are exported. This is also likely to increase in the future. As a result, the *nature and the quantum* of fishing effort by small-scale fishing communities in coastal waters will be largely dictated by insatiable consumer demand in countries like Japan, United States and Europe for exotic tropical coastal seafood. Consequently, the salutary impact of aquarian reform, ecologically appropriate technology and community management of the resource, can be put to tremendous pressure by such strong export-trade compulsions.

The solution to this dilemma is not to ban all fish exports from the developing countries to the developed world. That would jeopardize the livelihood of

millions of small-scale fishworkers. The need of the hour is to arrive at a proper balance. There is a degree of discord in the nexus between transnational trade and developed country consumption patterns on the one hand, and a small-scale fishery oriented to community management of coastal resources for a wholesome and sustainable livelihood on the other. To reduce this requires global initiative. Transnational consumer support is a prerequisite to achieve it.

For example, the us, Japanese and European consumer movement can pressurise their seafood importers to refuse shrimps below a certain count/kilo specification and instead encourage the purchase of shrimp caught using passive small-scale fishing gear. The salutary environmental and economic impact of such a move on small-scale fishing communities in Asia will be far greater than the costly efforts to enforce mesh-size regulations and manage the socially and politically charged conflict between operators of small-scale fishing crafts and trawlers. Such consumer action will also provide both the economic and the ecological basis for one of the most crucial transitions to reinstate Asian small-scale fisheries to a more ecologically sustainable level of fish harvest: the shift from using bottom trawl nets back to the more passive and environmentally benign nets like gill nets and trammel nets once used for catching shrimps by the small-scale fishery.²⁵

11. CHANNELISING SOLIDARITY FROM CIVIL SOCIETY

One distinctive feature in the revival of the concern for small-scale fisheries and fishing communities has been the role played by non-governmental organisations (NGOs) and other pressure groups. In some countries there are voluntary groups who have had long and exclusive association with small-scale fishing communities. These groups have played the role of facilitators and animators to organisations which have emerged from within these communities. They have helped in highlighting the plight of small-scale fisheries to the public and policy-makers and have also contributed significantly to the cause of empowering small-scale fishing communities to assert their rights. The International Collective in Support of Fishworkers (ICSF) provides an important international forum for such non-governmental groups and individuals from all over the world to work in collaboration.

Several new initiatives for small-scale fisheries development have been initiated by national governments with the support of international assistance. Many laws and regulations have been passed by national governments which on paper provide a very sound basis for reviving small-scale fisheries development and management. At the international level, in the Agenda 21 and in the FAO initiated Code of Conduct for Responsible Fisheries, there are meaningful commitments towards this end. In the final analysis it is the proper implementation of these laws, rules and codes which will ensure that the opportunity and the participation of small-scale fisheries for sustainable fisheries development and management become a reality. Towards this end, the pressure and support of NGOs, trade unions, religious leaders, committed middle-class intelligentsia and other sections of civil society are invaluable.

12. ACQUIRING SUPPORT FROM INTERNATIONAL ORGANISATIONS

Ideas translate more quickly into action when they are supported in international circles. Organisations like the UNDP, FAO, UNESCO, World Bank etc. have in the recent past emphasised the merits of small-scale fisheries and also the need to ensure the participation of fishworkers in the implementation of fisheries development and management programs. Such thinking advocated in international conferences, expert consultations, working papers and other publications need to continue with greater vigour. This will facilitate a faster "trickling down" of such concerns to the national level through the aegis of progressive policy-makers, concerned scientists and other pressure groups.

Agencies like FAO and also the international multi and bilateral development banks and financial agencies, when called upon by national governments to assist in the fisheries sector, must provide the impetus to highlighting the rationale and relevance of the small-scale fisheries in the country. While this is no substitute for self-discovery, such measures can hasten the process (Bailey et al, 1986).

13. GENERATING A DATA BASE

A global phenomenon in fisheries has been that we have more comprehensive and accurate statistics about the fish than about the people who labour to catch it. One of the greatest obstacles to decision and policy making with regard to small-scale fisheries at present is the lack of reliable

data and information about the various facets of the sector - in particular about the socioeconomic and cultural aspects of the people who form its backbone. As a recent study of the small-scale fisheries in Africa laments, after two decades of considerably costly fisheries projects,

"we still know more about the different species of fish in African waters than we know about African artisanal fishermen, both in terms of quantity, migrations and internal dynamics." (Tvedten & Hersoug, 1992)

This is the result of the accumulated neglect of this aspect by government agencies charged with the duty of data collection. While in part this is due to lack of funds, it is also importantly due to the false belief that the sector was a disappearing one! It has been pointed out by economic anthropologists that often the contribution of several such "indigenous" sectors of the economy are rarely even fully reflected in the national income accounts in developing countries for want of an understanding of their dynamics of functioning and often due to the fact that their activities do not conform to the conventional classificatory schema of the modern economy (Hill, 1970, 1986).

For the future, acquisition of socio-economic data about the small-scale fisheries sector should be given priority. The information about the demographic profile; the asset holdings; the costs and earnings structure of fishing; the patterns of labour organisation and employment; the levels of credit and savings; the organisation of processing and marketing and the state of social infrastructure, too name a few areas, need to be collected as a priority.

Care needs to be taken to ensure that the data and information collection in fisheries is **not** modelled after the methods and formats used for the agriculture sector. This has been one of the important pitfalls that often explain the poor quality of the data even in countries where it is collected systematically.²⁶ Since the basis, the rhythm and the time patterns of economic and social activity in small-scale fishing communities is markedly different from farming communities, a different rationality needs to be adopted for reliable information gathering. For example, the concept of an "average annual income" (something fairly easily obtained from farmers) is alien to most marine fishing communities. It is an income range which

makes more meaning in the fishery context. To take another example, consider asset holdings. In agriculture, within a reasonable time frame of reference, land, farm implements and livestock are either fixed, gradually increasing or decreasing. In small-scale fishing communities there is a considerable degree of "asset holding fluidity", making asset-holding categorisations less static and hence more complex to arrive at than in agriculture.

Another issue of importance is the need to avoid what has been called *quantophrenia*.²⁷ A greater degree of stress must be laid on qualitative information of the dynamics of the life and work in small-scale fishing communities. This highlights the important need for more participatory data collection and research methods. Youth from the small-scale fishing community milieu are a particularly important resource group that need to be utilised in any endeavour for filling the information lacunae.

14. UNDERTAKING SUPPORT-ORIENTED RESEARCH

No program to provide opportunity and participation to small-scale fishing communities will be sustainable without support-oriented research. One of the key requirements of this is *multi-disciplinarity* research combined with the need to have a more *aquarian perspective* of the socio-cultural and techno-ecological issues taken up for study.

As a first step there is need to initiate, on a widespread basis, some form of "rapid fishery appraisals" (RFAS) which can provide a compendium of "first approximations" of the status of the various small-scale fishing communities studied. These RFAS must necessarily be participatory since this is the only way that fishing communities can be closely involved later in the setting up of research agendas and in the conduct of research.

The key areas in which research will pay rich dividends were spelt out by the SIFR Working Party on Critical Factors Affecting Small-Scale Fisheries in 1989. The broad focus is to be on people-related problems and consequently social-science oriented. The research areas identified by the group

"fall into three major subject matter areas:(1) the social organisation of fisher groups (2) the institutions within which the groups operate

and (3) the forces and conditions affecting the way in which the group operates" (World Bank, 1991: 31)

Data deficiencies apart, the neglect of research on small-scale fisheries at the national and international levels is only a reflection of the overall neglect of the small-scale fishery. With the exception of a handful of researchers scattered across the globe, there has been very little concerted, systematic effort by research institutes and universities specifically concerned with fishery issues to embrace wholeheartedly the mission of researching small-scale fishery issues as a matter of *central concern*.²⁸ This situation needs to be rectified. Given that the conditions and the concerns of the small-scale fishery vary from region to region, it would be appropriate to establish a net-work of small support-oriented research-cum-training institutions in which the participation of organisations of small-scale fishing communities can be assured right from the very start.²⁹

Chapter V SUMMARY AND CONCLUSION

Our analysis has taken us through the following course:

First, while recognising the uniqueness of each small-scale fishery we attempted to make some broad characterisations about it to facilitate our understanding of the dynamics of the sector. This was followed by a brief generalised historical review of the fisheries development decades in order to situate the causes for the neglect of small-scale fisheries in the different contexts of the developed and developing countries. The basis for reinstating the small-scale fisheries was then examined to suggest that in the changed circumstances of the present, it was more important to build upon the inherent strengths of the sector rather than to attempt to compensate for its weaknesses. In short a call for more empathy rather than sympathy. Taking off from such a premise, we then offer fourteen interrelated measures which can provide the foundation for a new agenda for small-scale fisheries development which contain the essential elements for building a just, participatory, self-reliant and sustainable development.

What needs to be stressed is that the situation which confronts small-scale fishing communities today is the result of the dynamics of interrelated socio-ecological and techno-economic factors which continue to evolve. There can be various and differing perceptions of these factors - in particular the way these are viewed by the communities themselves and by the state. As it stands today, there is also considerable heterogeneity and inequality within these communities which may retard the attempts to initiate change from the outside. Consequently, an essential pre-requisite for implementing any new agenda will be a deep consciousness and awakening which emanates from within these communities, about the need for far-reaching social change.

The overriding evidence from the developing countries in Asia, Africa, Latin America and the Pacific point encouragingly to such ripples of change. Sometimes these social movements are seen to be "protests" by small-scale fishing communities. However, on closer scrutiny, they reveal themselves as having the ethics of self-sufficiency; the quest for a symbiosis between people and environment; a thrust on maintaining biological,

economic and socio-cultural diversity; as well as a focus on ensuring that the fruits of labour are primarily directed to meeting the basic needs of people.

The opportunity is ripe to move ahead with a new vision and a new agenda. Only the concerted thinking and committed action by all concerned can make it a reality.

NOTES

- 1 It is also true that at one stage adjectives like "primitive" and "backward" were also commonly used knowingly or unknowingly to convey the idea of the sector being undesirable, inferior and to be done away with.
- 2 This gender neutral term was coined at the first International Conference of Fishworkers and their Supporters held in Rome in 1984 and embraces all working women, men and children involved in fish harvesting, processing or marketing. This term has since been widely used in international documents like Agenda 21, the draft Code for Responsible Fisheries and the draft agreement of the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks. In this paper therefore, the term "fishermen" is used by us (unless in quotation) to refer specifically to the men who fish. The term "fisherfolk" embraces the community as a whole.
- 3 The small-scale fishermen opposed the introduction of large trawlers into Norwegian waters on the grounds that their operations would exterminate the cod brood, over-exploit the stocks, and, not least, result in capitalists taking over the fishery. (Brochmann, 1983)
- 4 In India, just prior to attaining independence in 1947 a National Planning Committee Report on fisheries dismisses the vast number of artisanal fishermen in the country as consisting of an occupation "largely of a primitive character, carried on by ignorant, unorganised and ill-equipped fishermen whose techniques are rudimentary, their tackle elementary, their capital equipment slight and inefficient." (Shah, 1948)
- 5 This is particularly true in South and South-East Asian countries which account for the majority of the world's small-scale fishworkers.
- 6 A parallel is being drawn here to the moves made by landlords in Britain in the mid-eighteenth century who, following the rise in the price of wool, enclosed common fields and pastures for rearing sheep. In this process they forcibly dispossessed peasants who had traditional rights of access to these common lands (Hobsbawm, 1984)
- 7 In 1955 the anchovy catch in Peru was 0.50 million tonnes. The fish was the chief source of food for the guano birds and also supported a small-scale fishery catering to local consumption. The fishery was greatly influenced by an environmental phenomenon called the El Nino current. The rise in the demand for fishmeal in the US market to hasten the fattening of poultry and pigs spurred the growth of fishing for anchovy. Between 1957 and 1966 the registered boats rose from 272 to 1932 and the fishmeal processing capacity from 242 tonnes/

hour to 7321 tonnes/hour accounting for an investment increase (in 1963 prices) from \$ 5.5 million to \$ 262 million. The anchovy catch rose to 12.5 million tonnes in 1970 accounting for 20 percent of the world's marine fish landings! However after this peak harvest the anchovy suddenly "disappeared" spelling catastrophe to the whole industry. This was the combined result of ecological and fishery factors. Anchovy fishing was then banned for four years to help the stocks to "recover" from the excessive fishing pressure (Roemer, 1970).

⁸ See (Kurien, 1988b) for details of these socio-ecological movements initiated by small-scale fishing communities in India, Indonesia, Philippines.

⁹ These characteristics are important primarily because they are in sharp distinction with the features of the living resources in the temperate waters which are marked by small number of species, each available in teeming millions, taking longer to mature and larger in size, with far less inter-specie interactions.

¹⁰ It is also worthy of mention at this juncture that the move to empathise with and revive the small-scale fishery, as also to assert its socio-economic and cultural rationality, is not restricted to the developing maritime countries alone. Even in major maritime countries like Canada, Norway and Denmark, the movements to highlight small-scale fishing as a way of life has recently gained prominence. The gradual overcapitalisation and industrialisation of the fishery in these countries has threatened the livelihood of many coastal communities. This has also led to vocal, militant demands from these small-scale fishing communities to a right to livelihood.

"Their demands were aimed at rescuing a way of life, where people were woven into intimate relationships with their social and natural surroundings. Coastal fishing, not distant-water fishing, maintained the coastal cultural heritage and the many small fishing communities. This was by giving several people opportunities for a meaningful life, not merely assuring prosperity for a few." (Munk-Madsen, 1994)

¹¹ The agrarian equivalent of this "land to the tiller"—is today a well accepted policy and strategy which most developing countries would endorse as being a fundamental requirement for raising agricultural productivity and reducing income disparity in the rural areas. It is an extension of this idea to the aquatic terrain which is sought by this measure. Such rights exist in the coastal fishery of Norway.

¹² It is important to note that the suggestion is to "invest in disinvestment". For example in Indonesia, when the government banned trawling in 1980, they bought back the trawlers from the investors and gave them on hire-purchase to groups of fishermen to be used to operate gill-nets or trammel nets. In

some situations it may even be economically and ecologically beneficial in the long run to literally "sink the excess investment" in the form of fishing craft into the coastal waters. This would have two effects: the sunken vessels would in time become good, productive artificial reefs and raise the productivity of the coastal waters and they would also become effective physical barriers to operating bottom trawl nets. One problem is likely to remain: provision of alternatives for the workers who once manned these crafts. Many of them are likely to be from small-scale fishing communities and may be willing to individually or collectively become owner-workers of these crafts. Where they are not, and if they do not wish to adopt this status, alternative livelihoods may have to be created.

¹³ All these measures have been recently included in the Fisheries Development and Management Policy of the state of Kerala, the leading maritime state in India with a small-scale fishermen population numbering 160,000 supporting a community of nearly three-quarter million persons (Govt. of Kerala, 1994).

¹⁴ Such a right exists in Norway under the "Raw Fish Sales Act". This right was granted to the small-scale fishermen of that country in the early part of this century following their struggles against fish merchants who dictated the wholesale shore prices and made phenomenal profits in this manner. This is also another measure included in the Fisheries Development and Management Policy of Kerala State, India.

¹⁵ In most developing countries state-sponsored marketing organisations in the form of cooperatives for small-scale fishermen have invariably ended up in greater failures. An analysis of this has shown that it was the "unfreedom" to sell their fish to a buyer of their choice which caused the breakdown of these organisations.

¹⁶ These shrimp harvesting nets—delicately fabricated gill nets and trammel nets—have been used traditionally by artisanal fishermen in Asia to harvest shrimp during the seasons when they moved from their natural demersal (sea-bottom) habitat into the pelagic (surface layer) waters. The bulk of the harvest with these nets were *exclusively* of targeted large sized shrimp. Though the physical productivity of these nets was low, this was duly compensated by the much higher unit value of output. Moreover the problem of untargeted by-catch - the bane of the bottom trawl net - was completely avoided.

¹⁷ Participation can be understood as simple "consultation", active "involvement" or effective "empowerment". (See Kurien, 1994b for more details)

¹⁸ The initiatives undertaken by the Asian Cultural Forum on Development (ACFOD) in 1985 brought together small-scale fishermen from Thailand and Philippines to Malaysia to learn the art of cockle culture from the fishermen of Kuala Juru village yielding encouraging results and the building of international solidarity. More recently in 1993 the International Collective in support of Fish-

workers (ICSF) facilitated the transfer of the environmentally friendly trammel net by arranging for two fishermen from South India to visit Senegal and teach the fishermen there to fabricate and use this net which is now quite popular with the small-scale riverine fishermen.

- ¹⁹ The organisations alluded to are the following: In Chile the National Confederation of Artisanal Fishworkers (CONAPACH); in Brazil the National Movement of Artisanal Fishworkers (MONAPE); in Senegal the National Collective of Senegalese Fishworkers (CNPS); in India the National Fishworkers' Forum (NFF) and in Philippines the alliance of small-scale fishworkers (NACFAR).
- ²⁰ This is a fact in most of South and South-East Asia and several of the African countries. Small-scale fisheries in Latin America and countries like Senegal cannot be included in such a generalisation. For a detailed analysis of this in India see Kurien, 1994d)
- ²¹ These are terms popularised by Amartya Sen (Sen, 1981) The endowment set comprises all resources legally owned by a person: land, equipment, labour power, skill etc. The entitlement set consists of all possible combinations of goods and services that the person may legally acquire with the use of the endowment set.
- ²² In the rapidly growing S-E Asian countries there is some evidence of small-scale fishermen moving to wage employment in coastal based industries and other tertiary sector jobs. Another Asian phenomenon is the migration of youth, women, and to a much lesser extent active small-scale fishermen, to the Persian Gulf countries to undertake unskilled and semi-skilled jobs.
- ²³ The ASEAN/US Coastal Resources Management Project coordinated by the International Centre for Living Aquatic Resources Management (ICLARM) initiated in 1986 and the more recent Integrated Coastal Fisheries Management Project being undertaken in Philippines, Gambia and Trinidad under UNDP/FAO auspices provide a testbed for this new concept. At the international level the agreements in the Agenda 21 and the Code of Conduct for Responsible Fisheries being worked out by the FAO are of relevance to further this concept.
- ²⁴ Examples of such initiatives by small-scale fishworkers' organisations include: MONAPE in Brazil which launched campaigns against the destruction of extensive zones of the Amazon and the emission of waste waters in the bays; CONAPACH in Chile which succeeded in having the state Congress declare the Bay of Talcahuano a zone of ecological catastrophe; the National Network of Riverine Fishermen of Mexico that mobilised opinion against the tourism project of Punta Diamante which destroyed the bivalve fisheries; the NFF in India which organised a campaign around the theme "Protect Water, Protect Life" to raise the awareness about the value of both inland and marine water

resources; the fishworkers in Papua New Guinea who got together with landowners to force a mining company to build a tailings dam to control the pollutants flowing downstream; the fishing communities of the island of Haruku in Maluku, Indonesia who fought to prevent the destruction of coral reefs and mangroves; the fishworkers in Philippines who campaigned for pollution control measures in a geothermal power plant that was causing land, sea and air pollution.

- ²⁵ See footnote 16
- ²⁶ In India, until it was recently stopped, the census of both the fisherfolk population and the fishing crafts and gear were collected along with the livestock census! Gross inaccuracies in the identification of the craft and gear types have been pointed out. The statistics of fish harvests are however much more scientifically collected by agencies specialised in this task.
- ²⁷ The diagnostic symptom of this disease is the appearance of numbers purporting to be precise, whereas really they are of little meaning because the definition of what they measure is imprecise.
- ²⁸ A notable exception to this at the international level is the International Centre for Living Aquatic Resources Management based in Manila.
- ²⁹ A good example of this is the Fisheries Research Cell of the Programme for Community Organisation based in Kerala State, India.

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