SMALL - SCALE FISHERIES IN THE CONTEXT OF GLOBALISATION

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ABSTRACT

The small-scale fisheries sector is the oldest and most important part of the marine fisheries economy of the world. Being a relative term, small-scale operations exist in most maritime nations. This is particularly true of the developing maritime countries where the small-scale sector normally accounts for the largest employment and a significant share of the fishery output. The future of the fisheries sectors in these countries will depend significantly on the manner in which their small-scale fisheries fare in the coming decades. One important factor determining this future is the nature and the impact which the recent new phase of globalisation of the world economy will have on this evolution.

Taking a perspective from the developing Asian context, this paper first attempts to characterise the small-scale sector; provide an explanation for its continued resilience; examines some dimensions of the impact of the new globalisation on the sector; and provides a framework for suggesting some institutional arrangements and programmes of action to ensure its secure future.

JEL Classification: FO2, O13, Q22

Key Words: small-scale fisheries; globalisation; crafting institutions; triadic network of community-state-market; aquarian reform; technology blending; resource co-management; support-oriented research

INTRODUCTION

Concern for the future of marine fisheries has attained special significance today. The debate is particularly lively in regions of the world where fish and fisheries play a vital role in the nutritional status and livelihood prospects of millions. Developing Asia[1] is one such region. Fish and fisheries have been an integral part of the socio-cultural and economic fabric of these ancient Asian civilisations. During the last half century, through the aegis of free market operations, an export orientation to trade and planned technology transfer from the west, the fish economies of these countries began to get inextricably interlinked with the global economic system.

The investments in harvesting and processing using technologies and artifacts having their origins in the developed world resulted in the creation of a broad technological dualism in the fish economy. What had existed in the form of technology and institutions were largely ignored and considered irrelevant for the expanding opportunities provided by the rapid global market expansion for certain specific varieties of fish. They were branded as "traditional", being assumed to be incapable of making the transition. This was one consequence of this first phase of globalisation also referred to more commonly as the "development

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1 The particular and the general references in this paper are largely applicable to the following countries: China, India, Indonesia, Philippines and Thailand. Together they account for the largest share of the marine fish harvest and the majority of the small-scale fishing community population in Asia.

decades." However, despite this "neglect" the traditional sub-sector of the fish economies composed largely of the small-scale units survived this phase. In fact, in certain countries they even grew in numbers, though their share of the fishery output reduced.

The new worldwide "commitment" to liberalisation and globalisation, as far as the fish economies of developing Asia are concerned, is therefore only an extension and deepening of old links. Though the basic socio-economic dynamics of this incorporation process is the same, the outward manifestations are more pervading and inclusive. In the earlier phase of globalisation the "traditional" small-scale fishery units were only tied to the global market through their output. The new globalisation extended its economic and technological tentacles to the very realm of production, modulating the technology used by the small-scale fishery for harvesting. The integration was sought to be total. There was a direct and real subsumption of the sector by capital. The effects of this have been mixed. Though at the outset there were some comparative advantages, as time advanced, the uncertainties became more pronounced and the future less predictable. This paper first provides a sample of the realms in which the new globalisation has taken its toll of the small-scale fishery. Secondly we sketch out an agenda for a new institutional framework in which a secure future can be envisaged. We commence with an attempt to define the small-scale sector in fisheries (Section I) and attempt to explain the reasons for its continued predominance in the developing tropics despite the neglect suffered (Section II). Following this we examine three realms where the new globalisation has taken its toll on the dynamism and resilience of the small-scale sector (Section III). The new ingredients required to ensure that small-scale fishing will have a secure future will be the focus of the last part of the paper. In Section IV we provide an institutional framework and an agenda for policy orientation and action aimed at achieving this.

I

DEFINING THE SMALL-SCALE SECTOR

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 particularly in Asia.**

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.[2] 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?

A working group set up to examine the critical factors affecting small-scale fisheries in the world today approaches the issues by stating that:

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2 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.

> *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.

As a sort of first approximation to this we first make a comparison at an aggregated global level of certain socio-economic characteristics between the small, medium and large-scale sectors in marine fisheries. Because of the heterogeneity even within the sectors, particularly of the small-scale sector, we provide a range as the indicator of the characteristic under consideration. (See Table 1 below)

Table 1: Rough Estimates of Characteristics of Different Scales of Operation in Global Marine Fishing

Characteristic	Large-Scale	Medium-Scale	Small-Scale
Estimated number of units	5000 - 5500	30,000 to 32,000	3,200,000 to 3,500,000
Investment range per unit (USD '000)	10,000 to 40,000	300 to 4,000	1 to 80
Crew range per unit per unit	40 to 60	25 to 30	1 to 5
Range of fish harvest per unit per annum (tonnes)	5,000 to 8,000	200 to 1200	2 to 100
Range of fuel consumption per unit per annum (tonnes)	1600 to 1800	400 to 450	1 to 60
Range of fish harvest per tonne of fuel (tonnes)	3 to 4	2 to 3	2 to 3
Range of value of output per crew per annum (USD)	15,000+	8,000+	200 to 1500

The Table highlights that the three sectors are by no means gradual technological progressions. The discontinuities are self-evident even in this rough classification. So also are the intra-sector variations. By and large, it would be fair to surmise that the small-scale sector can be accounted largely by the indigenous fishing units in the developing maritime nations and they fish primarily in the coastal waters. The medium-scale sector is an aggregation of the fishing units introduced largely during the "development decades" and fish largely in the Exclusive Economic Zones of the respective maritime nations, both developed and developing. The large-scale sector on the other hand are largely the fishing units of the developed maritime nations involved in high-seas fishing and are also referred to as distant water vessels.

Given the vastness of the small-scale sector a more qualitative description of its chracteristics is warranted. A review of some of the vast amount of literature available today on small-scale fisheries the world over provides us with a starting point for this.(See References) 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
- Fish close to their home communities in relatively near-shore waters in single day/night operations
- Integrally linked to locally oriented hinterland market networks
- 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.

II

WHAT MADE SMALL-SCALE FISHERIES RESILIENT

Development gurus had predicted that with capitalist penetration and incorporation, the small subsistence units of the economic sectors of developing countries would either gradually disappear or make a metamorphosis into large, modern, commercial enterprises. In the

fisheries sector the reality evolved differently. Even after the operation of this incorporation spiral for over a period of three decades (euphemistically called "development decades") the small-scale, subsistence, decentralised forms of economic organisation in fisheries remained resilient and dynamic, often maintaining their economic and social predominance.

Much has been said about the destiny of small-scale organisational forms in agriculture and related sectors. The prediction that they would all wither away with the rise of capitalism in these domains does not square with the present realities. Marx was of the opinion that large-scale farming is the organisational form in which scientific advances can be systematically applied, scale economies exploited and higher rates of profit and capital accumulation achieved (Marx, 1967 Vol 1;XV;10) Lenin on the other hand proposed the possible route of small peasant farming as the vehicle that would promote the swift advances of capitalism (Ennew et al, 1977:300). Several neo-Marxian analysts have also concluded that capital being a social relation of production can integrate numerous organisational forms into its process of exchange and that non-capitalist household forms of production are a way in which local social structures mediate the effects of capitalistic penetration (Friedmann, 1980; Long, 1984; Goodman & Redclift, 1981). Kautsky emphasised that small enterprises have a strong comparative advantage in specific activities requiring intensive and skilled labour and management practices (Ennew et al, 1977:304). New institutional economists take up on this point to explain the *persistence* of the small-scale household forms of production since they are deemed to be institutions that are socially efficient (Basu et al, 1987:9-12).

In the marine fisheries context this efficiency of small-scale operations arises from several factors. This is particularly so in the

developing tropics. We may classify the factors as nature-determined and work-determined. Nature determined factors, include the unpredictable and perpetual harvest nature of fishing (common to all marine fisheries) combined with the relatively small quantum, highly seasonal and dispersed character of fish species (common to tropical waters). These two elements make for a nature-bias towards decentralised and small-scale operations which give scope for both physical and techno-economic maneuverability. The work-determined factors include the high risk, the arduous nature of fishing coupled with the need for high degree of team work to ensure successful operations making any excessively supervisory and hierarchical work organisation inimical to success. Small teams with complimentary skills and good intuitive coordination yield best results. All the above factors are to a great degree mutually reinforcing and are woven together by the system of distribution of rewards using a sharing system (which is the practice even in industrialised fisheries) rather than a wage system.

In combination, these factors account for the "staying power" of the small-scale fishery sector. The location specific objective reasons for the resilience of the sector has been well documented by numerous social scientists. [Alexander, 1975; Robinson, 1976; Evans, 1976; Lockwood and Ruddle, 1977; Gerhardsen, 1977; Lawson,1977; Smith, 1977; Kurien, 1978; Smith, 1979; Panayotou, 1980; Thompson, 1980; Emmerson, 1980; Johannes, 1981; Kurien & Willmann, 1982; Bailey, 1982; Panayotou, 1983; Weber & Fontana, 1983; Bavinck, 1984; McGoodwin (1990) and Tvedten and Hersoug (1992)].

The core elements of the characteristics (Section I) as well as the above mentioned reasons for the resilience of the small-scale sector remain valid even today. This is evident from the fact that participants in the small-scale fishery numerically dominate the fish economies of

developing Asia. In South and South-East Asia alone it is estimated that over 10 million people are directly employed in the fisheries, over three-fourths of them being participants of the small-scale sector. If we add to this the large numbers of small-scale fishers in China, of whom no estimate exists, the number are boosted substantially. Around the mid-1970s the share of the total marine harvest contributed by the small-scale sector varied from country to country. It accounted for 98 percent in Indonesia and China; 80 percent in India; 55 percent in Philippines and 30 percent in Thailand (Platteau, 1989). There are no recent estimates of the number of participants or the share of the sector. Sketchy information from country studies suggest a slight downturn in the share of the marine harvest but little indication of any substantial drop in the number of participants involved in fishing.

However, there are certain crucial aspects of the small-scale fishery which have been undergoing exponential change. Much of this has occurred in the context of the more recent, rapid market integration of the developing Asian economies into the global economic and financial system. This recent process we term the "new globalisation".

III

EFFECTS OF NEW GLOBALISATION ON THE SMALL-SCALE FISHERY

It is fashionable in the academic circles today to situate discussions about the national economy, as well as the sub-sectors in it, within the context of globalisation. Fashion apart, there are real life issues pertaining to the effects of this process of trans-nationalisation of economic, social and cultural life which merit close examination. Whole nations and

communities have been absorbed into the globalisation spiral unsure of whether it is expanding or contracting. The small-scale fishing communities world over, and particularly in Asia, constitute a small share of these unsuspecting millions.

It is often made out to seem that globalisation is a new phenomenon. The fact is that this process is not something special to the close of this century. It is as old as the rise of capitalism and its overseas expansion since the 15th century. Capital penetrated into the small-scale fishery sector and shaped it to suit the objective needs of capital accumulation and output enhancement which was determined by market expansion. This incorporation process and the subsequent transformation of the sector is well documented and we shall not dwell on it here.[3]

In the post-1980s, several developing countries in Asia began to experience a new wave of globalisation. It began as a fresh commitment to further opening up of the economies to international trade and finance. The export of natural resources increased. This was coupled with import of large amounts of consumer goods and industrial products. These economies were also able to attract sizeable amounts of foreign capital in the form of direct investments and portfolios investments. Over time, negative trade balances resulted in the need to borrow funds to cover deficits. International lending agencies like the World Bank and the IMF played a lead role in this bail out. They lent funds on strict conditionalities. These included a commitment to higher exports; devaluation of the local currency; further liberalisation of the national economy to facilitate greater imports of technology and finance. These measures were accompanied by a strict curb of state expenditures on health, education,

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3 For a good analytical exposition of the process see Platteau, 1989. For a narrative of the dynamics of change in the developed and developing countries see Kurien, 1996

social subsidies and other welfare measures. This package came to be known as a structural adjustment program or SAP.

In the fish economies of developing Asia the SAP resulted in fresh compulsions to adopt new technologies; presssure to export more fishery products; and efforts to redefine the access rights to the coastal marine resources. It would be fair to say, that in the process of accepting or succumbing to these new pressures, small-scale fisheries in the developing Asia countries have lost some of their desirable features mentioned above. Though still large and dominant when numerically aggregated, they came into a state of social and economic disarray. The earlier sense of resilience, cohesion and community seemed to be waning.

There were several realms where the new globalisation took its toll on the dynamism and self reliance of the small-scale fishery. In this paper we wish to highlight only three among them. We consider this sample to be significant and representative in furthering our understanding of the manner in which the dynamics of the new globalisation operated. Our choice is intended to focus on the multi-dimensional approach which will be required to devise an agenda for a secure future.

Importing New Technology

The new era of globalisation brought with it new forms of "appropriate technology" to assist small-scale fish harvesting. The most important among these were the outboard motors (OBM), beach landing crafts and fishing nets made of new materials. Adoption of OBM's on small-scale fishing boats was rapid. Its contribution to reducing the drudgery of labour in small-scale fishing was considerable. Use of the OBM also led to a comparative advantage as regards the speed with which one could reach the fishing grounds and return early in order to get a higher price. Given the unchanged structure of control in the fish

market, it soon became apparent that this advantage was restricted only to the first few arrivals. It also took a little while for fishermen to realise that there was no direct correlation between use of an OBM and enhanced fish harvest. By this time, in some countries, use of OBMs led to the total displacement of the use of sails and oars. Fishermen had got "locked-in" on the OBM and "de-skilled" in relation to the use of renewable energy technologies perfected over the centuries. The coastal waters in these countries were largely under an open access regime, and there were no regulations by the state on the power (HP) limits of the OBMs in use. What followed was a steeple race for increasing horse powerage. The sole implication of this was rising investment and higher recurring costs of fishing without commensurate returns. With OBM's needing to be replaced every two years, an increasingly fewer number of fishermen were able to set aside sufficient funds from their earnings in order to make the new investment. Indebtedness on this account began to rise. In the end, the real beneficiaries of this "propulsion revolution" were the financiers and fish merchants. There was yet a third beneficiary, the biggest in fact -- the multinational companies producing the OBMs. It was soon apparent that this new found technological upgradation was but a techno-economic mirage rising above an unreachable horizon.

This situation brings to sharp focus two realms of concern which merit closer attention in future. Firstly, to ensure even a minimum socially necessary accumulation to sustain income levels that ensure a decent livelihood warrants more than appropriate artifacts. More important to achieve this end is the capability to determine the institutional-organisational framework within which the technology is set-up. In the case of the small-scale fishery in developing Asia, the three most crucial parameters for this are the ability to (a) access credit and determine its cost;(b) delink debilitating interlocking of markets and (c) set the first price for the produce of one's labour.

Secondly, in a world that is striving towards perfecting renewable sources of energy, a switch over from such a scenario into a single minded pursuit for propulsion based on fossil fuels alone, is a blind strategy. It is a chase up the steep precipice of unsustainability. Indeed, a race for total enslavement. These perceptions were so eloquently brought out (in 1990)in the words of a small-scale fishermen in Kerala State, India at a meeting discussing the problem of non-availability of spare-parts for imported OBMs:

> "In the 1960s we sold our prawns to the Japanese; in the 1970s our cuttlefish too. At that time *we* decided when to fish and *they* determined the price of our fish. In the 1980s we lost out on our sailing skills by switching completely to their OBMs. Now they also decide whether we can go to fish. I hope that in the 1990s I won't have to sell my soul to them!

The contours of a strategy for blending of knowledge systems and technologies must emerge to keep the small-scale fishery techno-economically viable. Specifically, the use of multiple sources of energy for propulsion are indispensable for a sustainable and self-reliant future.

Exporting all the Harvest from the Sea

The export pressures which accompanied the SAP made the natural resource sectors of Asian economies particularly attractive as potential foreign exchange earners. The marine fishery was a prime candidate because yields were quick. While global marine fish harvests increased only by 19.3 percent from 75.8 million tonnes to 90.41 tonnes between 1985 and 1994, the share of the developing countries as a whole, and of developing Asia in particular, rose at a more rapid rate during the same period. The marine fish harvest of the top five developing nations in Asia doubled between 1985 and1994 from 11.6 to 23.2 million tonnes.

On the export front the contrast was more pronounced. Between 1984 and 1993 global fish exports in value terms increased by 175 percent from US dollars 16 billion to 41 billion, whereas fish exports from developing Asia countries as a whole increased by 228 percent from US dollars 7.1 billion to 20.1 billion. The exports from the five countries in Asia with the largest number of small-scale fishworkers increased by 350 percent from US dollars 1.2 billion to 5.4 billion. In the 1960s and 1970s, the marine exports from these latter countries was largely composed of crustaceans and cephalopods. It is very significant to note that the quantity increases in the post-SAP marine exports of the 1980s and 1990s came largely from fish which were popular in the mass consumption domestic markets.[4] The implications of this on the nutritional status of local consumers need hardly be overemphasised. In India for example the domestic prices of fish during this phase (1982-95) increased at a much faster rate than prices of other meats and even the overall cost of living index. (Government of India, 1996)

Without doubt the greater export orientation brought higher earnings to the fish economies. These higher dividends were not equitably spread among the participants due to the skewed distribution of market power. However, when it was realised that "anything that swims in the sea" has an export market, an unfortunate trend set in. Small-scale fishing communities, in their hast to earn more incomes to tide over larger costs imposed by SAP-inspired technologies, began to relegate the diversity of seasonally operated, environmental benign fishing gears. They adopted more standardised, perennially operated and over-efficient ones in their place. This took a heavy toll on the marine ecosystem. Such changes have become apparent in Thailand, India and the Philippines.

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4 Another source of exports in countries like Thailand was fish which was caught in high seas and the EEZ's of third countries but processed in that country.

In a free market situation, but where they were always price-takers, more than the unit-price, it was the total revenues which mattered to small-scale fishworkers. This explains their initial willingness to export all they harvested. However, between a fickle export market yielding higher returns and a stable domestic market with lower earning potentials, a choice was difficult to make. National policy makers in there anxiety to earn dollars to pay back national debts were quite willing to wax eloquent about the economic and patriotic appeal of the former and impose it upon unsuspecting small-scale fishworkers. They argued that when viewed from the macro-economic perspective, the short supplies of fish in the domestic market imposed a smaller social and economic cost than the loss of foreign exchange earnings. In their view, if need be, domestic shortages could be solved by imports. However, the dismal record of this import strategy showed that in many societies the cultural conditioning of tastes was not easy to change. In developing Asia, the source of food-fish has been the small-scale fishery. Consumers are also becoming increasingly aware of the link between the structure of the fishery and their freedom of choice.A new constituency of supporters for small-scale fisheries is thus in the making in these countries.

The future of nutritional security of the masses (rural population) is therefore intrinsically linked to a homeward production orientation by the masses (small-scale fishworkers). To this end must be tailored policies which give cautious attention to arriving at a judicious balance on the issue of fish for exports versus fish for domestic consumption. Obviously these are not decisions which can be "left to the market". They presuppose the active participation of community and state in modulating market forces to achieve the greatest social good.

Giving Access Rights to EEZs

Most of the oceans adjacent the developed countries have been overfished due to the combination of overtly "efficient" harvesting technologies and excessive fleet capacity. As long as the fishery was subsidised by the state, the going was good. Once this largesse dried up, the search commenced for new fishing grounds to relocate the fleet. The less intensively fished Exclusive Economic Zones of the developing countries became the prime target. Post-1985 witnessed the promotion of what can be termed a "fleets to the South and fish to the North" policy. The European Community as well as private investors from some other developed maritime countries subscribed to this.

In developing Asia, governments under the pressure of SAP adopted a "mare liberum" (open sea) policy inviting joint ventures into their EEZs on very liberal terms. The justification for this was that under UNCLOS, national governments are duty bound to allow access to their fishery resources if they themselves were not utilising the same at present. India and Philippines followed this path. Their governments explained that the activities of these foreign fishing vessels would be restricted to the deep sea outside the area of operation of the small-scale fishworkers. The reality however, was starkly different.

In India the vessels licensed under such arrangements were fishing for the same stocks, often even in areas of the sea well within the access of the national small-scale fishing fleet. This competition for resource and fishing territory resulted in competition and conflict at sea. On land, under the aegis of the national trade union of the small-scale fishworkers, it resulted in large-scale mobilisation of all the national stakeholders in the fishery sector against this "neo-colonialist" exploitation of natural resources (See Kurien, 1995b). The protracted struggles which were spread over four years (1993-1996) finally resulted in a total roll back of

the government's SAP-induced economic liberalisation policy in the fishery sector. Most joint venture fishing licences were cancelled.

The small-scale fishworkers arrived at an important conclusion over this conflict with the state. They had to alter their present open access rights to the coastal resources. It would have to be replaced by a property right within the overarching state property regime of the EEZ. The implications of this shift from rights of possession to rights of property in the coastal waters warrants major institutional changes. (See Kurien 1998 forthcoming)

IV

INGREDIENTS FOR A SECURE FUTURE

The realms which we chose for our discussion of the impact of the new globalisation on small-scale fishing communities in Asia point to several dilemmas which confront them at the end of this century. Stripped of the nuances, there is one basic issue before them: obtaining a structured assurance which guarantees the basic necessities for an honourable human existence. To reflect on the future of small-scale fishing communities in developing countries we must bring the "ethical" tradition of economics mainstage while keeping its "engineering" tradition in the wings.[5]

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5 This distinction has been forwarded by Amartya Sen. The "ethical" tradition which can be traced to the ethics-related tradition of Socrates, Aristotle and Kautilya for all of whom economic issues are related to the basic ethical question: How should one live? The engineering tradition, on the other hand, has come from several traditions including from engineers like Leon Walras. The stress here is on a mathematical analysis on some parts of the economy as a whole, particularly an understanding of the market and the realm of "abstract" competitive equilibrium analysis. However, contrary to now well established tradition, the two approaches are not incompatible in their ability to enlighten us about the functioning of the real world economy.

Despite the euphoria of new globalisation, it needs to be stated at the very outset that the ingredients for a secure future into the 21th century for small-scale fishing communities in Asia, and one suspects in other developing regions as well, cannot be left to *emerge autonomously* in the confines of a trans-national "free market" economy. It must be *consciously crafted* in the context of a triadic network of the community, state and market.

Community

The small-scale fisheries have always been rooted in community. In developing Asian countries the autonomy of the individual and the household or family are circumscribed by the welter of both traditions (history) and aspirations (future) provided by the community. A group of households constitute a community to the extent that they are held together in these shared traditions and aspirations. The perpetuation or rediscovery of some traditions and the articulation of aspirations is possible only through collective action by institutions created in and by the community. The community is the **anchor**. The primacy of this community-oriented approach to the future is the *sine qua non* for a self-reliant and sustainable future for small-scale fishworkers in Asia.

State

The state in which the community is situated, will necessarily have to play the role of a **rudder**, giving direction for a voyage into the future. The state comes to have a degree of autonomy as an institution because it represents *at once* both the conflicting interests within a society and the common interests of that society as a whole. Retaining that autonomy, and exercising the prerogatives associated with it, have in the past been an important factor in supporting small-scale fishing communities in developing Asia. Interestingly, this kind of state support has been evident

irrespective of the nature of the state. It has found expression in the erstwhile dictatorial regime in Indonesia, the martial law-ruled Philippines and in democratic India.[6]

The breakdown of the erstwhile socialist countries has tended to put the state in bad light. But today even institutions like the World Bank seem to be changing their views on this.[7] In our context we allude to a state which invigorates rather than steam-rolls; a state which bolsters capability rather than stifles initiative; a state which defines the broad contours of economic action rather than straitjacket it.

Market

One important reason for emphasising less on the "free market" in questions relating to the future stems from the simple fact that the market has no way of signalling from the future to the present, though the actors in the market make their own highly subjective calculations about the future.[8]

In highly populated developing countries, where the work opportunities are restricted, households in small-scale fishing communities are at once "owning, producing and consuming units" using their labour and non-labour resources to ensure survival. One of the

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6 In these three contexts, while the class interests of the state may have been loaded against the poor, it is the autonomy of the state which made it possible for it to (forced it to) "take sides" with the small-scale fishing communities at decisive moments in their struggles against forces inimical to their interests. The trawl ban in Indonesia; the inclusion of the rights of the small-scale fishworkers in the constitution of the Philippines; and the cancelling of the licenses given to joint ventures in fisheries in India provide good examples of this state support.

7 The annual report of the World Bank in 1997 focussed on the role of the state in economic development.

8 The most important decisions in a market economy -- the investment decision -- is based on this foundation. Isn't it strange that the market economy with its accent on objective rationality depends heavily on subjective calculations for its most important decisions?

obvious conditions of survival is of course that labour must have a positive share in the output. In such a context one wonders if it is possible to maintain the free mobility of factors in search of a competitive equilibrium with each factor obtaining its highest remuneration.[9] Consequently, the failure of the competitive system, and its institution the free market, to operate in this case is not due to ignorance, inertia, irrationality or any "imperfection".

Markets however, are not new institutions to small-scale fishing communities. As a matter of fact between state and market it is the role of the state which is new to these communities. Exchange, and consequently the complusions of the market, enter into small-scale fishing communities even at a very low level of the development of the productive forces. The market is like an **oar** providing momentum to the economy. Initially the market facilitates the expansion of economic opportunities for the community as a whole. However, with the emergence of the specialised role of the trader and the development of a buyers' market, the leverage of the producer is greatly diminished. A credit market develops and its consequent interlocking with the output market results in greater dependency on intermediaries. This becomes an important motive force for excessive exploitation of the open access fishery resource. Resource depletion in turn leads to human immiserisation and further dependency. This is a matter that warrants close circumspection. Only a regulatory body larger than the local community can undertake this crucial role. This is where the state must step in both as the ultimate custodian of the natural resource and guardian of vulnerable communities. The state can initiate steps to ensure that markets are modulated to become friendly to communities rather than vice versa.

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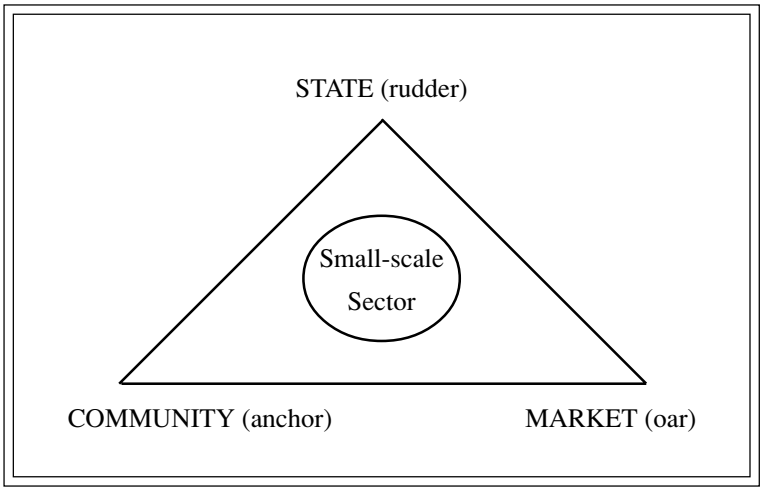
9 A competitive equilibrium and the optimal allocation of factors would be impossible to attain because this analysis makes the assumption that every participant has enough resources to ensure survival and some surplus to enter into market operations.

Figure:1 A New Institutional Setting for Small-Scale Fisheries



The basic thrust of the ingredients for a secure future for small-scale fishing communities is thus to create the foundations for an economy in which they can attain their set of "endowments", "entitlements" and "capabilities".[10] The ingredients we propose[11] will also form the basis of 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 dependance. In this manner small-scale fishing communities can become full-fledged

10 These are terms popularised by Amartya Sen and Jean Dreze (Dreze and Sen, 1989) 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. The capability set comprises the functioning bundles representing the various alternative "beings and doings" that a person can achieve with her/his economic, social and personal characteristics.

11 The ingredients mentioned in this paper are extracted from a document prepared by the author at the request of the UN Department for Policy Coordination and Sustainable Development (See Kurien, 1996)

participants in the community, affairs of state and the market in their own independent right.

Implementing Aquarian Reform

The most basic element to genuinely strengthen the small-scale fishery sector as an integral part of this community-state-market triad is to implement an aquarian reform package. This package has three elements to it.

1. Fishing Assets to the Fishworkers

First, the right of ownership of fishing assets for use in coastal waters should be restricted exclusively to those who fish.[12] With this, the breed of "absentee, gentlemen fishermen", largely a creation of the fisheries development decades, will be pushed out of the fishery. The fishing assets made redundant in this fashion may have to be "bought back" thus making a significant reduction in the excessive fishing effort in the coastal waters.[13] The salutary effect of this measure will go a long way to enhance the ecological productivity of this fishing zone and thus

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12 The agrarian equivalent of this proposal is "land to the tiller". This 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.

13 It is important to note that the suggestion is to "invest in disinvestment". 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.

raise the economic productivity of the active, small-scale fishworkers. 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 community property rights regime must be created for this new "owner-worker" community of small-scale fishworkers within the overarching state property rights regime of the Exclusive Economic Zone. In this zone the rights and the responsibilities for development and management must be exercised by them in cooperation with the state. (See Kurien, 1998 (forthcoming) for an elaboration of these ideas)

2. Rights Over First Sale of Fish

For the rights of access to the sea to become meaningful in economic terms, they must extend to rights over the harvest from the sea. The legal right to decide on the mode, structure and the floor price of the ***first*** sale transaction of their fish (on the beach or the landing centre) should rest exclusively with the above defined community of owner-worker, small-scale fishworkers.[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 provide a basis for more zealous unity of action on the part of small-scale fishworkers. They can form their own organisations, at their own pace, for dealing with the sale of their fish, wherever and whenever it becomes necessary. Provision of

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14 Such a right exists in Norway under the "Raw Fish 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.

state support to form such economic organisations will become more meaningful and effective against the backdrop of this legal measure.[15]

3. Greater Social Control Over Export

The tendency for the harvests of the small-scale fishery sector in developing Asia to become almost entirely export-oriented is a feature of the new globalisation. In the short run this does yield higher incomes to fishworkers. However, the long run benefit of this to small-scale fishing communities is suspect. In the open access context the dynamics of this orientation gives rise to over-investment in capital and resource depletion. The best example of this is the small-scale shrimp fishery in Asia. 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 more investment in harvesting again.

This vicious circle of investment, which is more often than not indulged in by investors from outside the fishing sector (but using a workforce drawn from fishing communities), needs to be broken. It 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 isattuned 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 of the processing sector

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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.

need to be considered with the state playing a facilitating role. Disincentives for export must be matched with incentives for enhancing the domestic orientation of the sector.

Consumer power is also becoming an important factor in modulating the patterns of production and consumption. Initiatives in this direction from the consumers in industrialised countries can also provide vital support for creative initiatives at greater social control over exports.

Blending Knowledge and Technology

Small-scale fishing communities world over have a fund of unwritten knowledge accumulated over centuries of learning-through-labour. The initial neglect of small-scale fishing during the "development decades" and their subsequent rapid incorporation in the new globalisation has led to 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 and 1998).

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.

Coupled with this 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 once widely used in the small-scale fishery with the prime objective of understanding how they had evolved and the rationale behind their form and operation. The most important of these relate to fishing gear and sailing skills. Gear are distinguished by 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 these fishing nets low in productivity, more target oriented in use, ensuring minimum discards and waste and retaining marine ecosystem biodiversity.

Knowledge of such nuances gives the flexibility needed for technology blending -- taking from the strengths of indigenous technology and merging with the positive elements of modern technology. This will provide artifacts and processes that can be both energy efficient as well as economically and ecologicallysustainable. The aim should be to evolve convivial technologies which are appropriable by the user and that do not deskill. Tailoring and adapting rather than wholesale transfer provides a sounder basis for technology diffusion. This 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, 1994a).

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.[16] Socio-cultural aspects are the least important barriers in achieving such technology transfers between small-scale fishing communities across countries. They have the common culture of the sea and the language of fishing. Of paramount importance for successful transfer is a proper understanding 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 endeavours.

Empowering Fishworkers' Organisations for Resource Co-Management

A new genre of fishworkers' organisations is emerging in the developing countries of Asia. These are not cooperatives or welfare societies but organisations formed more along the lines of trade associations or unions. Their primary interests have been largely twofold: 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).

These initiatives from India, Thailand, Philippines and Sri Lanka point undoubtedly to the fact that for effective empowerment, the medium of a structured organisation -- of, by and for the small-scale fishworkers -- becomes imperative. These organisations are striving to become more

16 In 1985 the Asian Cultural Forum on Development(ACFOD) brought together small-scale fishermen from Thailand and Philippines to Malaysia. They learnt the art of cockle culture from the fishermen of Kuala Juru village yielding encouraging results and building international solidarity. In 1993 the International Collective in Support of Fishworkers (ICSF) facilitated the transfer of the environmentally friendly trammel net. Two fishermen from South India visited Senegal and taught the fishermen there to fabricate and use this net.

decentralised and democratised, functioning through village level units, taking up local issues of consequence to the fishworkers. The ripples created by them in this process of shore-level "capability building" through "affirmative action" have made these organisations become forces to reckon with at their respective national levels. They have become an effective and dynamic link between community and state. Recognising the relevance of such organisations will be an important step in the commitment to providing the opportunity to build, revive, and support small-scale fisheries development.

Maintaining the ecosystem balance, harvesting the resource on a sustainable basis, and taking measures to rejuvenate it if necessary. These must be envisaged as the primary responsibility of the fishworkers who claim a community property right regime in the coastal waters. They are its stewards and this must be their mandate for collective action. Given that the overriding custodianship of the marine resources rests with the state, the endeavour should be to strive for a meaningful co-management regime. The rights and duties of the fishworkers, represented by an organisation of their own, and the state, represented by the lowest level of the state administrative apparatus,[17] must be clearly demarcated and reviewed from time to time. These decentralised co-management regimes can be formalised into resource use and management councils. They can then provide for a coordinated coastal network of institutions charged with the function of solving inter-regime resource sharing and conflict resolution issues which will inevitably crop up from time to time.

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17 In all the developing countries of Asia there is an administrative level of the state which is close to the village level. In India it is called the panchayat, in Philippines it is called the barangay.

Promoting Community Development Action and Alternative Employment

In most developing countries in Asia, 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 countries.[18] A package of socio-economic actions needs to be initiated in order to bridge the "development gap" between small-scale fishing communities and the rest of society.

More concrete socio-economic measures which will have a direct bearing on enhancing the quality of their lives are imperative to build greater self-reliance. Spelling out a detailed strategy of action is not a meaningful exercise given the diverse socio-political considerations that determine the country-specific degrees of freedom available for action on these fronts. 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 to mention a few. These are important ways of ensuring that small-scale fishing communities obtain the "endowments", "entitlement" and "capability" sets which they have been lacking.

Community-controlled and community-managed organisations supported by social agencies (NGOs) are important elements in civil society. They can help promote a more participatory and holistic development process in coastal fishing communities fostering greater self-reliance. This is not to minimise the role of the state or public policy in community development programs. On the policy front it calls for a reorientation of fisheries development to focus more on the building-up

18 This is a fact in most of South and South-East Asia. For a detailed analysis of India (Kerala State) explaining why this has happened there see Kurien 1995a.

of human, social and nature capital in the sector. There is need to relegate 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 must be part of a "bottom-up" participatory plan. It must also be integrated into a coherent fisheries development framework, a corresponding regional plan, and last but not least, an overall national development framework.

In most developing Asian countries the majority of the small-scale fishworkers take to fishing as a full-time activity. Many researchers and policy makers suggest that getting fishworkers out of the fisheries and into other sources of livelihood is often the only way to improve their incomes and protect the marine resource from "malthusian overfishing". 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 overall socio-economic and demographic realities of most of the developing countries in Asia it is unreasonable to expect that the scope for alternative employment outside the fisheries sector will be very large.[19] Consequently, for small-scale fishing communities who have traditionally been in the occupation on a full-time basis, the realistic scenario will be 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

19 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.

and technological changes which result in greater labour-absorption at lower capital and recurring cost; creation of community level social assets which can generate employment in their construction and maintenance; and activities for 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.

Generating a Data Base and Undertaking Support-Oriented Research

A global phenomenon in fisheries has been that we have more comprehensive and accurate statistics about the fish than about fishworkers. One of the greatest obstacles to decision and policymaking 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 socio-economic and cultural aspects of the people who form its backbone. This is the result of 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 a common pitfall and often explains the poor quality of the data even in countries where it is collected systematically.[20] 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. An income range 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*.[21]Stress must be laid on qualitative information regarding the dynamics of the life and work in small-scale fishing communities. There is need for more participatory data collection and research methods. Youth from the small-scale fishing community milieu are a particularly important resource

20 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.

21 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.

group that need to be utilised in any endeavour for filling the information lacunae.

No agenda for a secure future for small-scale fishing communities will be sustainable without support-oriented research. One of the key requirements of this is the need for an *aquarian perspective* of the socio-cultural and techno-ecological issues taken up for study and a strong bias for *multi-disciplinarity* in research. 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 be participatory since this is the only way that fishing communities can be closely involved in setting up research agendas and the conduct of research.[22]

The SIFR Working Party on Critical Factors Affecting Small-Scale Fisheries spelt out the key areas in which research will pay rich dividends. 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 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

22 The FAO/UN Advisory Committee on Fisheries Research has recommended in 1997 that research methodologies of this kind be more widely used in fisheries.

the mission of researching small-scale fishery issues as a matter of *central concern*.[23] This situation needs to be rectified. Since the specific 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.

IN LIEU OF CONCLUSION

The resources of the ocean are for the dead, the living and those yet to be born. This pithy statement of a small-scale fishing community in Asia encapsulates the essence of sustainable development. The process of new globalisation in fisheries, as it manifests itself today in Asia, jeopardises the prospects of the living and the chances of those yet to be born. Some dimensions with regard to the unsustainability of the process were highlighted in this paper. Charting a new course into the future must start by making committed changes in the present. Our ingredients for a secure future, if implemented, will result in a basic restructuring of the institutional and organisational contours of the small-scale fisheries in Asia. These measures are intended to empower the sector so that the participants within it will obtain the bargaining strength needed to "find their feet". Equally important is the need to challenge the monopoly of the main institution of globalisation -- the market. Modulating its excessive influence (rowing too fast) with the anchoring role of the community and the rudder of state policy become imperitive. To achieve all this we will require a ground swell of rising support from fishworkers' organisations and the committed support of several sections of civil society at the national and the international level.

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23 A notable exception to this at the international level is the International Centre for Living Aquatic Resources Management based in Manila.

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