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The Blessing of Commons: Small Scale Fisheries, Community Property Rights, and Coastal Natural Assets

John Kurien

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10th floor Thompson Hall
University of Massachusetts
Amherst, MA, 01003-7510
Telephone: (413) 545-6355
Facsimile: (413) 545-2921
Email:peri@econs.umass.edu
Website:
http://www.umass.edu/peri/

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The Blessing of Commons:

Small-Scale Fisheries, Community Property Rights, and Coastal Natural Assets

John Kurien
Centre for Development Studies
Trivandrum, Kerala State, India

Introduction

Following the influential article of Garrett Hardin titled 'tragedy of the commons,' it is part of both popular and scholarly belief that unless natural resources are strictly in the domain of private or state property, their fate is inevitable ruin. Closer examination of the actions of low-income communities who depend on natural resources for their daily livelihoods has recently brought to the fore a more positive view about human proclivity for caring and nurturing common resources found in nature (Hardin 1968).

A good example is found in the state of Kerala, in India, where small-scale, community-based fisherfolk initiated collective action to invest in rejuvenating the natural assets of the sea that had been destroyed by the incessant fishing operations of large-scale bottom trawlers in the region. They went about erecting artificial reefs at the sea bottom in coastal waters to create anthropogenic marine environments. Reefs act as fish refugia and become sources of food for them as the structures are soon covered with bottom-dwelling biomass. Artificial reefs placed in strategic positions in the coastal waters can in time increase the overall biomass and the fish stock in the local ecosystem. An unintended side-effect of sufficiently large artificial reefs is that they act as barriers to the operation of bottom trawl nets, effectively performing the role of a sea-bottom fence against incursions of trawlers into coastal waters. Such reefs have not yet healed the wounds inflicted on the coastal ecosystem of the area, nor can the fishing communities depend exclusively on them as a major source of livelihood. But such community investments by small-scale fisherfolk, and their appropriation of coastal sea area to form community property rights, point to the potential for strategies for visualizing natural resources in a new light – as *natural assets* that can contribute significantly to sustainable resource use, community empowerment, and well-being. Only with such strategies can we have the blessing of the commons.

Natural Assets of the Oceans and Seas

Life on our planet began in the oceans and seas. It is widely recognized that humanity's present and future will continue to depend very significantly on the way we are able to identify, understand and foster life in this vast watery milieu of our planet (Lovelock 1987). From time immemorial, many millions of persons the world over, living in coastal communities, have obtained food, work, and income for a decent livelihood from the vast stocks of living resources of the oceans and seas. Nurturing these resources as natural assets that are the common heritage of humankind can ensure their effective and sustainable use.

The coastal fishing communities in the developing maritime states and numerous native communities in the developed countries, using small-scale fishing equipment, continue to depend on these resources as their primary source of subsistence. These communities are the repositories of traditional knowledge, skills, and cooperative fishing techniques that exhibit a highly nuanced ecological sophistication. This is particularly evident in the Asia-Pacific region, where large human populations exert pressure on all manner of natural assets. In this region, the current relatively 'free access' to the seas and oceans often make coastal waters the avenues of last resort for the poor to eke out a living.

It is difficult to establish property rights to the living, predominantly mobile and wandering natural assets of the oceans. Through their long and continuous association with the oceans, however, coastal communities devised a variety of rules and norms – institutional arrangements – with regard to territorial claims and the manner in which living resources were to be harvested. These arrangements were especially important in societies where coastal resources constituted a significant part of daily livelihood. An elaborate array of such arrangements was typically found in island societies and regions where bays and lagoons constitute a significant feature of the coastal morphology. Where these economic and geographic conditions co-exist, some of these arrangements still remain vibrant despite the passage of time.

It is customary to refer to such collective rights over resources as 'common property rights' – meaning the private property of a group of individuals. In this paper, however, I refer to such collective rights as 'community property rights', to stress the role of the group *as a community* and not simply as a number of individuals.

Investments by small-scale fisherfolk point to the potential for visualizing natural resources in a new light – as natural assets that can contribute significantly to sustainable resource use, community empowerment, and well-being.

These community property right regimes were largely traditional, unwritten arrangements that were respected and adhered to by the coastal communities. They were not necessarily egalitarian or democratic institutions but were part of the 'moral economy' of the community (Scott 1978). Consequently, they typically ensured that the benefits from the use of the natural assets of the coastal seas, *as a matter of first importance,* were utilized to ensure food and livelihood for *all* before any surplus was utilized for sale outside the community or for other ceremonial and extravagant uses. The community used a variety of arrangements to modulate the manner in which its members tapped the flow of the resource from its stock. These included the design of equipment for harvest, taboos on its use, controls over times of access, and cultural norms of distribution of the harvest. These arrangements often contributed indirectly to the conservation and sustainability of the resource (Akimichi 1984; Amarasinghe *et al.* 1997; Berkes 1999; Doulman 1993; Dyer 1994; Freeman *et al.* 1991; Hviding 1993; Lim *et al*. 1995; McConney 1997; Normann *et al.* 1998; Johannes 1978, 1982; Pomeroy 1995; Ruddle 1988, 1993; Swezey 1997). Yet the diverse technologies, skills, knowledge, and institutional arrangements that evolved over the centuries to harvest these living and mobile natural assets are now not always easy to maintain or restore. They are also no match for recently introduced new technologies, modern scientific knowledge, and property right arrangements – particularly when viewed from the perspective of 'extraction efficiency.'

In the latter half of the 20th century, when most developing countries began to get or wrest their political independence, they started on various paths of 'planned modernization and

development.' It was optimistically assumed that modern science and technology could serve as a major force in stimulating and sustaining development in the countries of Africa, Asia, and Latin America. Development strategies in tropical coastal fisheries followed much the same assumption. There was a considerable amount of blind imitation of the large-scale fishing technology that was fabricated in temperate marine ecosystems and in a social milieu marked by greater urbanization, centralization, and capital intensity. Much of this technology transfer was based on the mistaken presumption that the existing rich heritage of small-scale technologies was 'primitive and inefficient.' The rural, spatially dispersed settlement structure in these coastal regions was also viewed as inimical to economies of scale. Conservationist resource-use principles and community property rights over the fishery resources were seen as contrary to the individualistic, entrepreneurial ethic needed to maximize economic growth and raise the throughput from the coastal marine ecosystem. Abandoning what existed for these perceived weaknesses, and replacing it with large-scale technologies, more centralization of activities and settlement, and an ethic of unfettered access to living resources, spurred and was further spurred by the extension of the fish economy. This took place first through the aegis of development aid and then international trade. But the initial euphoria of increased harvests, enhanced revenues, and higher profits was followed by ecosystem changes and resource depletion. At the same time, this strategy led to economic marginalization of coastal fishing communities and reduced their autonomy for participation in the new structure of the fish economy. It ruined the commons and the commoners (Kurien 1992).

The need of the times is for alternative strategies to revive locale-specific, small-scale technologies, coupled with community-oriented, participatory measures to protect the ecological integrity of the living coastal resources. Such approaches will return the natural assets of the coastal sea to the hands of the poor empowering them to reduce their poverty. There is an element of 'going back into the future' in this approach. In this context, it is appropriate to examine the relevance, potentials, and limitations of four strategies for coastal natural asset building: *investment* to increase the total stock of natural assets; *internalization* to increase the ability of the poor to capture benefits generated by their stewardship of natural assets; *redistribution* to transfer natural assets from others; and *appropriation* to establish community rights for the poor to erstwhile open-access resources (Boyce 2001). These are visualized as routes for rebuilding the living natural assets of the coastal seas and through this ensuring more secure and convivial livelihoods for the laboring poor in coastal communities.

The remainder of this paper is divided into two main parts. The first part sets the scene by further describing the nature of the oceans and human use of the living natural assets therein. It discusses technology and institutional arrangements through which coastal communities interacted with these living resources, and the political economy of the movement from small-scale to large-scale fishing operations and from community rights to open access. The second part of the paper examines the potentials of natural asset-building strategies. I draw upon examples from the Asia-Pacific region to highlight how small-scale, community-based fishing is both ecologically and economically suited to make a blessing of the coastal commons that simultaneously will ensure sustainable natural resource use and community well-being.

Part I: From Community Rights to Open Access

For millennia the oceans have been a source of livelihood to millions of humans who settled along their shores, and an important source of food to wider populations in the hinterlands. The interaction between humans and nature resulted in the evolution of patterns of life and livelihood supported by suitable technologies and community-based institutions. The hallmark of these patterns was the widespread prevalence of small-scale fishing communities, whose limited geographic extension was matched by great control over their natural resource base. The establishment of modern nation-states and the formation of the League of Nations and then the United Nations led to greater formalization and statutory laws regarding rights to use the living resources of the oceans. At the same time, international aid and trade led to the import of new ideas and large-scale technologies into the Asia-Pacific region, with the aim of enhancing the flow of living resources out of the oceans and into the marketing channels of the food supply of the developed world. While the stated intentions of these initiatives were to promote overall economic development, the end results were more ambiguous. The most adverse and unintended impacts were on the integrity of the living natural resources of the coastal seas and the well-being of coastal communities.

Living Marine Resources

The living resources of the oceans, if harvested sustainably, hold promise as a major source of quality food for the future. The yearly world ocean production of organic matter is about 130 billion metric tons, most of which is recycled and reused within the food chain composed of plants, prey and predators. Humans harvest only a small fraction of the total production, about 100 million metric tons per year.

The natural capital of the world's marine and terrestrial systems has been estimated to provide services and goods worth US$33 trillion annually (Costanza *et al.* 1998). The marine eco-systems are subdivided into open ocean and coastal areas. The latter include estuaries, seagrass/algae beds, coral reefs, and the continental shelf systems. Other than food production, marine ecosystem services include disturbance regulation, such as storm protection and flood control; nutrient cycling; provision of wildlife refugia; raw materials; recreation and cultural services. As much as 36 percent of the total value of global ecosystem services – an estimated US$12 trillion per year – is contributed by coastal areas.

The mobile nature of the living resources of the ocean distinguishes them from many terrestrial resources. Contrary to popular notions, these resources are not evenly distributed across the 362 million square kilometer area of the ocean. Some regions, particularly those waters close to the coastline into which sunlight penetrates easily, are characterized by higher biological productivity. In fact, roughly 65 percent of the living resources of the oceans are concentrated in the near-shore zone, which accounts for just 6 percent of the total ocean area. Much of the vast ocean area far from land is virtually an aquatic desert.

These characteristics of mobility and uneven spread constitute both a barrier to and an important opportunity for the sustainable utilization of these living resources. The barrier is that while it

may be possible to constitute a framework of property rights over marine spaces, it is difficult to institute a framework of rights over the mobile living resources in this milieu. When such frameworks are adopted, they are generally hard to define, often contested, and invariably subject to change over time. The resulting 'fuzziness' of rights impedes achieving optimum harvests from the oceans.

The opportunity is that the large share of living resources close to the coastline can be designated as a source of livelihood and food to many millions, particularly in the developing countries of the Asia-Pacific region. Coastal communities, often loosely defined as small-scale fishing communities, have pursued a full-time avocation of fishing from time immemorial. These 'ecosystem people'(Dasmann 1988) or 'marine biomass communities'(Kurien 2002) share a strong 'connectedness' to the resource and have a long-term stake in its secure future as their lives depend on it. Given an appropriate structure of incentives and encouragement, they can become the stewards and protectors of the 'seacosystem'(Kurien *ibid*).

Small-Scale Fishing Communities

Small-scale fisheries flourish in the marine, riverine or lacustrine ecosystems of many developed and developing countries. They can be found from the inshore sea of Atlantic Canada, the Amazonian floodplain of Brazil, the fjords of Northern Norway, and the Mediterranean waters of Spain, to the lakes of the eastern Africa, the backwaters of India, the rivers of China, the bays of the Philippines, and the lagoons of the Pacific islands. An accurate estimate of the number of persons directly and indirectly dependent on small-scale fisheries is hard to come by. After gleaning data from the Food and Agriculture Organization of the United Nations, Berkes *et al.* (2001) conclude that 'of the more than 51 million fishers in the world, over 99 percent are small-scale fishers.' They estimate that 250 million people in developing countries are directly dependent upon the fisheries for food, income, and livelihood, and that some 150 million people in developing countries depend on associated sectors such as marketing, boat building, and gear making.

With an appropriate structure of incentives and encouragement, small scale-fishing communities can become the stewards and protectors of the 'seacosystem'.

In most of the developing countries, fishing has been a hereditary occupation in coastal communities. This has resulted in an accumulation of knowledge about the marine environment and its resources through a process best described as 'knowledge-through-labor'(Kurien 1990), and a plethora of technologies for fish harvesting attuned to specific seasons and species. These long-term interactions have also led to the creation of institutional arrangements that modulated collective behavior vis-à-vis the resources. The resulting technologies and institutions created objective conditions for the sustainable harvesting of the resources.

Their Technologies

Most marine fishing requires the use of a craft on which to go to sea, together with nets, hooks, and traps (collectively referred to as gear) to catch the fish. The casual observer normally sees only the craft (and not the gear) on the shore or at sea. Fishing crafts of the small-scale fishing communities of the world are marked by a vast diversity of design. This is sometimes attributed to the 'insular' nature of many coastal communities that have given rise to culturally conditioned variations in the construction of traditional fishing craft (Chaudari 1985). Cultural influences have certainly played an important role in features such as colors, the curves of the prow of the boat and the shape of the sails. But two major constraining factors also influence the technical design of fishing craft. The first is the availability of appropriate woods or other construction materials such as reeds or bamboo. The second is the set of location-specific physical oceanographic factors, including the structure, the texture, and the slope of the sea bottom and the nature of the surf and waves approaching the coast – the latter being a function of the former. It is these factors, rather than cultural insularity, that largely explain the diversity of craft-building traditions.

The diversity of the fishing gear is often 'invisible' to the outside observer, as it is stored away when not in use and immersed in the sea while in operation. Gear forms, materials, and designs are the result of centuries of learning and doing. Fishing gear of small-scale fishermen are by and large passive – they wait for the fish to be entrapped in them. They are selective – constructed to catch a specific species and size of fish. They are used seasonally – only at the time when that specific species is available according to the rhythms of nature. In size and extension they are small – making them capable only of catching relatively small amounts of the concerned specie, and laying emphasis on the quality of the catch, such as its freshness, rather than on the quantity of throughput. Fishing gear of small-scale fishing communities reflects a sophisticated understanding of complex 'seacosystem' considerations related to the behavior of fish over space and time, and in relation to attributes of the sea such as color, smell, surface movements, and sub-surface currents.

Their Institutions

The interactions of fishing people with the natural assets of the sea have also given rise to rules and norms – that is, institutional arrangements – that circumscribe their actions both on the resources and among themselves. These arrangements have likewise evolved over long periods of time, although some have fallen into disuse and neglect in the context of modern legal developments. They are 'characterized on the one hand by having firm roots in local history, practice, and space, and on the other by being unwritten and non-codified, thus permitting continuous interaction, with constant dual reference to continuity and change, to past generations as well as to present challenges…' (Ruddle *et al.* 1992, 259). To illustrate the past rationale of these institutions and their continued relevance, I provide two examples, one from Kerala State in India and the other from the Maluku Islands of Indonesia.

Kadakkodi: The Court of the Sea in Kerala, India

Kadakkodi or the 'sea court' is an age-old community institution among the Hindu fishing communities in the northern part of Kerala State, India, closely associated with temples located on the beach. This coastal region is known for its teeming pelagic fishes – large shoals that inhabit the surface layers of the sea and migrate over long distances. The sea 'court' consists of village 'elders' and a certain number of functionaries who implement its decisions. It meets on the open beach. All the fishermen of the village gather to participate in the discussions on issues relating to access, conservation, and conflict resolution. The elders make the decisions and these are considered final. Monitoring their implementation is the responsibility of the whole community. The elders can impose sanctions against offenders, ranging from a mere warning to total social ostracism. Conflict resolution is handled cost effectively and amicably, thanks to open, systematic procedures, quick decisions, and effective implementation.

The *kadakkodi* institution has been subjected to considerable pressure from the early 1980s due to several factors. Some enterprising investors from outside the traditional fishing communities introduced new fishing gear for catching pelagic species, patterned on temperate ecosystem gear. These large scale gear were more effective in encircling shoals of fish, making their operations more profitable in the short-run. Initially, the elders of the *kadakkodi* proclaimed a ban on the use of such nets, but with the greater involvement of more educated youth in fishing operations such decisions were questioned as attempts to preserve traditional, old-fashioned technologies. At the same time, new government-promoted organizational forms such as cooperatives, and new political divisions among fishing communities, gave rise to new leadership that further questioned the authority of the elders. Yet the basic scaffolding of the *kadakkodi* is still in place. In many villages it continues to play an important role in solving the socio-economic conflicts that followed the new technological and organizational changes. Fishing communities in this region now express interest in reviving the institution, albeit in a new form. The Government of Kerala (1997) is placing a new emphasis on *panchayat* (village) level resource management and governance with full participation of the people. In this context, communities with a history of traditional institutions have an important edge in any new stewardship contract between state and community.

Sasi: Fishing Rights and Rules in Maluku

Sasi is a traditional community-based coastal resource management system prevalent in the Maluku province of Indonesia. *Sasi* means 'to prohibit', and it is part of the Maluku culture. The *sasi* system prohibits the harvesting of certain biological resources in the estuarine and near-shore coastal areas, in an effort to protect their quality and population. *Sasi* also operates to maintain patterns of social life, through the equal distribution among all local citizens of the benefits from the surrounding natural resources (Kissya 1995). As an institution it has never been static, but has changed with the times. With the coming of state and church organizational structures into the islands, the *sasi* practices have varied from village to village. The governing and enforcing authorities may be traditional, church, local government, or private individuals holding the harvest rights to coastal land and aquatic resources. In certain areas *sasi* has evolved to accommodate significant commercial transactions involving the natural resources and a

spectrum of claimants. Consequently the rules that define how the players in *sasi* work together are a mixture of tradition and modern innovations. This has been important to the resilience of the institution.

The modern state apparatus in Indonesia was keen to make marine fisheries an important source of foreign-exchange earnings. Extending state control over the coastal waters of the archipelago was a prerequisite for this. State patronage of modern fishing technologies (such as the bottom trawl), with investors from the Chinese communities taking the lead in the mid-1960s, resulted in the gradual spread of widespread and bitter conflict with coastal fishermen using small-scale, artisanal techniques. Institutions like *sasi* were initially deemed irrelevant to handling these new forms of conflict. State supported legislation and zoning arrangements were introduced to contain the conflict, but these centrally administered regulatory regimes were costly to implement and largely ineffective in enforcement given the geographic spread of the islands of Indonesia. Moreover, they had no legitimacy in the coastal communities who were marginalized from their traditional fishing grounds. This led to a revival of interest in the coastal villages for more community-oriented arrangements for protection and nurturing of the natural assets of the coastal waters. The *sasi* system attains a new meaning in this context.

Sasi does not cover the entire fishery. It is applied only in small inshore areas and to a few species. However, these areas and species can be considered to be keystones to the health of the ecosystem. This important ecological fact, together with the socio-cultural foundations of *sasi* in Maluku, provides a robust rationale for supporting *sasi* where it continues to be vibrant, and for efforts to revive it where it faces the threat of extinction. Since collaboration, trust and legitimacy are the pillars of the *sasi* system, these are also crucial elements of any new institutional arrangements (Novaczeck 2001).

In sum the integral reciprocal relationships between the living resources, technology, institutions, and people were not just arrangements that dealt just with rights to the fish. Rather, they were broad enough to embrace rights and duties over the other system features that determined the long-term sustainability of the fishery. To a considerable extent, this may be due to the fact that the relationships were premised on a custodial rather than a possessive attitude towards the living resources. The distribution of benefits tends to cater to the needs of all, before the surplus, where it did exist, was consumed and/or accumulated by a smaller minority. Interdependence rather than competition was the norm. The threat from 'outsiders' was restricted because societies were organized on a basis where each community or occupation group had its respective niche in the economy.

The Political Economy of Living Ocean Resource Depletion[1]

There is a long history to the evolution of rights to living ocean resources. In the Asia-Pacific region, the periods prior to the western colonial expansion were marked by claims to near-shore living resources by their respective coastal communities. These localized customary rights gave communities the freedom to make decisions about harvesting the resources, in particular the nature of technology used, and the responsibility to protect the resource from harm.

Colonial powers were often involved in setting up fishery administrations and in documentation of the fauna of coastal waters. Significant efforts were made to improve the processing of the resources such as fish, seaweeds, shellfish, and shark liver oil. In the first half of the 20th century, efforts were also made to organize the export of fish and fishery products to Europe and Japan. This phase also saw greater attention to the non-living resources of the oceans, such as minerals.

At the 1930 League of Nations conference on the codification of international law, nations raised issues regarding jurisdictional frontiers, with an eye on claims to both the living and non-living resources of the oceans. In 1945, President Truman of the United States took unilateral steps to proclaim rights over resources located in the continental shelf – the ocean floor extending out from the land. This action brought a spate of new claims by countries such as Chile, Peru, Ecuador, and Argentina, proclaiming exclusive sovereignty over a maritime zone extending 200 miles from their coastlines, including the fish, the subjacent soil and the subsoil.

After World War II, the UN General Assembly, sensing the potential for anarchy in ocean governance, instructed the International Law Commission to prepare draft articles and conventions for a law of the sea. These conventions formed the basis for discussions at the first and second United Nations Conferences on the Law of the Sea (UNCLOS I and II), held in 1958 and 1960 respectively. The debates at UNCLOS I and UNCLOS II gave rise to two important concepts. First was the concept of the 'special interest' of a coastal state with regard to the maintenance of the productivity of the living resources in the coastal waters. The second was the 'preferential right' of coastal states vis-à-vis other states in respect of allocation of fishery resources. Countries such as Vietnam, Philippines and Iceland advanced the argument that in cases where the resources are used primarily by coastal communities who are overwhelmingly dependent upon fisheries for livelihood, there is greater chance of success for resource conservation and management. It was recognized during UNCLOS I that communities whose fishing methods are mainly limited to local fishing from small boats deserve special attention. Had such concerns been articulated into the emerging law of the sea, the chances of greater community control of coastal resources may have become a reality. However, UNCLOS I and II could not produce the necessary consensus among the nations of the world to make this possible.

The stalemate led to further unilateral actions by several developing and developed nations making a variety of claims of rights over coastal waters. This trend towards creation of a mosaic of state property claims, often far beyond their capabilities to care for the resources so claimed, became a cause of concern to statesmen and the world community alike. Ambassador Arvid Pardo of Malta best expressed these concerns in his now famous speech in the UN General Assembly in 1967. He appealed for treating the oceans and the resources therein, beyond the narrow stretch of territorial sea that extends up to 12 nautical miles from the shoreline, as the common heritage of humanity. This, he opined, was the only way to provide a satisfactory framework for an equitable international order, and at the same time to ensure the preservation of the marine environment for the interests of all. Pardo's speech was the motivator for UNCLOS III convened in 1973 and concluded nine years later in 1982.

Under UNCLOS III, coastal states are given sovereignty over a large patch of sea termed the Exclusive Economic Zone (EEZ) – that area of the sea measured out from the coastline up to a

distance of 200 nautical miles. These EEZs account for 32 percent of the total area of the planet's oceans, and contain 85 percent of the living natural assets of the oceans. The creation of state property rights over the EEZ in effect negated all other *de facto* and *de jure* claims of rights in this zone. Traditional community rights to resources, which were not acknowledged in the first place by most nation states, were not recognized following the promulgation of EEZs, and fell into disuse. Territories and resources that had been considered as precious community assets were now up for grabs. Realms where clear notions of property rights had existed now became open-access domains, where only *possession* rights – rights established by capture and harvest – could be exercised. Those with more financial capital and better technology had a clear edge in asserting such rights. This end result was very far from Pardo's original intent. All that remained in the realm of the common heritage of humanity was the deeper parts of the ocean beyond the EEZs. Although this realm accounted for 68 percent of the ocean's total area, it contained only 15 percent of the living resources.

The promulgation of EEZs by states, even before the UNCLOS III was ratified, empowered economic interests with access to financial capital and modern technology to usurp the coastal waters and harvest their living resources with the objective of making quick profits. In developing countries, this often was promoted in the name of modern 'fisheries development' schemes. Small-scale fishing equipment in the tropical waters was replaced with large-scale craft and gear from the temperate-water countries. Given virtual open access in the EEZs, there was uncontrolled expansion of the fishing fleet. This often led to overfishing, with deleterious consequences for fishing grounds and fragile tropical coastal ecosystems. Simultaneously, it resulted in the disenfranchisement and impoverishment of numerous ecosystem people, who for centuries had benign interactions with the natural assets of the oceans and considered them as part of their own common heritage and community wealth. This was the real tragedy – that of the commoners.

In a global evaluation of fisheries development schemes, Professor Gerhardsen from Norway (1977) summarized the divorce between modern fisheries development and fishworkers' development:

> *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.*

In the Asia-Pacific region, one of the most compulsive forces in this unpropitious transition was new international consumer demands for the living resources of the oceans. The most illustrative example of this has been the search for new resources of prawns (shrimp), following the shortage in world markets when Chinese exports to the U.S., Japan and South-East Asia were banned after the victory of the Communist Revolution in China in 1949. This led to the 'discovery' of prawns in the coastal waters of many Asian countries. Development aid projects in India, Thailand,

Indonesia, and other countries introduced bottom trawl nets and mechanized trawlers in these tropical waters. There was a spurt of investment in these new harvesting technologies, and also in new processing techniques like plate freezing. Much of this investment was undertaken by people who were hitherto unrelated to fishing, or in the past had been involved in fish trade alone. The fish economies of many Asian countries (excluding China) took on a distinct 'export-orientation'. Fish exports rose from 57,000 tons valued at US$17 million in 1948 to 540,000 tons valued at US$236 million in 1958, and reached 1,600,000 tons valued at US$2300 million by 1976[2]. After 1958 the bulk of products reached the markets of U.S., Europe, and Japan in frozen form. Within the developing countries there was very strong national governmental patronage for these private investors, who were deemed by the state as economic heroes responsible for earning precious foreign exchange for their nations.

The consequences were threefold. First, it led to the marginalization of communities that had been traditionally involved in fishing and fish processing. Second, the unregulated use of bottom trawl nets slowly began to cause noticeable ecosystem damage in the coastal waters. Third, the traditional institutional arrangements that conditioned both access rights and technology use, were relegated in the process of unconditional state support for granting open access to the coastal waters. Market, state, and capital combined to deprive community and despoil nature.

Part II: From Open Access to Community Rights

Moving 'back to the future' to recreate a context where the living resources of the oceans are not threatened by human activity is of paramount importance. Viewing these resources as natural assets and placing the locale-specific needs of the ecosystem people at the center of our development perspective is the need of the times. This approach can guarantee both sustainable resource use and the alleviation of poverty in coastal areas. This will require firm initiatives by the coastal communities, committed action on the part of the state including efforts to modulate the raw forces of the market, and widespread support from organizations in civil society. Below I attempt to spell out this alternate approach, giving examples from across the Asia-Pacific region.

Building Natural Assets in the Ocean

We can consider at least four routes to re-conferring rights to coastal communities and (re)building the natural assets of the ocean. First, it may be possible for these communities, with their own initiative or with the support of the state, to make **investments** that will help to manage and rejuvenate the resource. Second, in contexts where these communities contribute to the larger society by their investment in and management of the resource, there may be possibilities for a greater **internalization** of the positive externalities so rendered by them. Third, there may be **redistribution** mechanisms that will ensure greater and fairer access of these communities to the resource. Finally, where ecosystem people have been effectively excluded by 'open' access to the resource, the social and political feasibility of **appropriation** of access merits consideration.

The current trends towards decentralization of governance and the control of resources by village-communities gives greater leeway for such alternative strategies to become a reality.

Whether this in fact will happen remains to be seen. In principle, however, initiatives for participatory democracy in the control and management of natural resources can foster greater democratization of state and the market, by instituting a role for the ecosystem people in modulating both.

Investment: Rejuvenating the Resource

Human activity need not lead inevitably to depreciation and ruin of nature's capital. Instead humans can nurture and invest in resources found in nature. A good example of natural asset-building via investment in marine fisheries comes from Kerala, in south India, where coastal ecosystem people confronted with a 'Hardinian tragedy' of a ruined commons initiated collective action to rejuvenate the natural assets of the sea. This yielded both concrete and symbolic rewards that became important ingredients for their larger struggle for resource protection and a better livelihood for all.

Human activity need not lead inevitably to depreciation and ruin of nature's capital. Instead humans can nurture and invest in resources found in nature.

The 130-km stretch of Kerala's southern coastline is known for its highly productive waters. It is one of the world's most important sources of marine prawns. The annual sustainable yield from one square kilometer of these coastal waters is estimated at 35 tons compared, to the all-India average of 13 tons. This resource plenitude has made this the coastal zone of India with the greatest concentration of fisherfolk. The zone is not only famous for its productivity and dense settlement, but also for the immense diversity of fish in its coastal waters. The assortment of gear used by the fishermen to harvest these resources is remarkable: specialized small-meshed gill-nets, trammel nets, bottom-set nets, boat seines, and a variety of hooks and lines. The fishermen are known for their skill and daring. Their intricate knowledge of the sea and the structure of the sea bottom and their navigational acumen have enabled them to fish even at the margins of the continental shelf with relatively simple technology. Some of the most important fishing spots have been large natural reefs that provide habitat for fish aggregation and breeding.

'Modern fisheries development' in the period from 1960 to 1980 resulted in the state-sponsored introduction of 'efficient' nets, such as bottom trawls, which could be used to fish throughout the year. These nets could be operated only from mechanized boats that the traditional fisherfolk could not afford. The nets and boats were initially introduced as part of a Norwegian aid project (Kurien 1985). A new class of merchant entrepreneurs and investors entered the fishery, breaking into the traditional preserve of the coastal communities who had viewed the sea as their 'community asset'. Access to the sea became open to anyone who could afford to make the necessary investments in craft and gear. This led to unbridled expansion of a fleet of mechanized boats, whose incessant bottom-trawling resulted in great damage to the natural reefs that were

once big fishing spots. Fish harvests initially increased as a result of the more efficient nets, but soon dropped as a result of the damage to the ecosystem.

This prompted two kinds of responses from the fishworkers. The first was a socio-ecological movement aimed at re-establishing their historical rights of access to the coastal waters (Kurien 1992). One of the movements leaders called this 'our struggle to ensure a future – for us and the fish.' Coastal fishing communities united to form a militant trade union of small fisherfolk and demanded that the state regulate the operation of trawlers in space and time. Their main demands were for a trawl-free coastal zone and for a ban on trawling during a three-month monsoon season when fish species breed in the coastal waters. A decade of struggles led to acceptance of the monsoon trawl ban by the state.

The second response was a search for ways to heal the ecosystem and revive fish stocks. One of the collective strategies adopted to achieve this was the construction of people's artificial reefs (PARs)(Kurien 1995). Artificial reefs are structures erected at the sea bottom in coastal waters. They can take a wide variety of forms – a few granite rocks wrapped in coconut fronds; heaps of truck tires; stripped out bus bodies; or even large, shell-like structures with intricate internal designs fabricated with steel-reinforced cement. The PARs initially serve to lure fish to the vicinity, as they provide shade, act as refugia, and soon become a source of food as they are covered rapidly with bottom-dwelling biomass. If placed in strategic positions in the coastal waters, particularly where there has been evidence of natural reefs and other sea-bottom promontories, they can in time contribute to an increase in the overall biomass in the fish stock in the local ecosystem. Good scientific evidence on whether major investments in creating such anthropogenic marine environments will increase fish stocks is, however, still not available. One side-effect of sufficiently large artificial reefs can be that they double as barriers to the operation of bottom trawl nets, thus active as a sea-bottom fence against the incursion of trawlers.

Encouraged by a voluntary organization, the fishermen from 22 Kerala villages set to work to establish PARs along the coastline, reviving their intergenerational knowledge of reefs and updating it with knowledge from marine scientists. The evolution of 'erection-access' arrangements started with the case of one individual financing the cost of throwing large amounts of granite rocks in one part of the sea. This resulted in small fish aggregations in the vicinity. He then granted the rights of access to this portion of the sea to a small group of persons. This attempt to privatize the sea was soon shunned. The predominant mode became the 'community erection and community access' arrangement organized under the auspices of a 'sahodara samajam' (brotherhood fraternity). One member of each household in the community was a member of the fraternity. Every household made a financial contribution according to its means. The total thus collected was matched with an equal grant from the church. Some special technical assistance was obtained from an NGO. Between 1984 and 1989 as many as 21 PARs were erected at depths 12 to 15 meters. After a few weeks of 'test fishing', community norms were evolved to restrict the fishing effort by individuals. Only hook fishing was permitted over the PARs, and a limit was placed on the number and size of hooks. The use of lights to fish over the PARs was prohibited. Priority access was given to older fishermen and to young boys learning to fish. Community sanctions were put in place for those who violated the norms.

There is no claim that PARs healed the wounds inflicted on the coastal ecosystem of the area. Nor can it be said that the fishing communities can depend on PARs as a major source of livelihood. But the experiences of the fishermen of Kerala do challenge the influential predictions that only state or market solutions can allocate and protect common resources. They also call in to question the assumption that those who are caught in a 'commons dilemma' will rarely invest time and money in the design and supply of knowledge, institutions, and technology to conserve resources. Rather it illustrates that, given the appropriate circumstances, people who have an intimate association with natural resources as a source of livelihood can empower themselves to go beyond macro-level political action aimed at conserving resources to micro-level initiatives for investing in them and rejuvenating them.

In the coastal sea, and even more so in the deeper ocean, such investments have their limits as means of restoring damaged ecosystems and providing alternative incomes for the laboring poor in the coastal communities. But initiatives of this type reaffirm that it is those with a livelihood stake in the living resources of the coastal seas who have the greatest stake in 'investing' to restore them. They do not, however, always have the financial capital, knowledge, or institutional capacity to undertake such ventures. This gap, between committed intentions and the effective ability to put them into practice, needs to be bridged.

Internalization: Rewarding Collective Action

The coastal ecosystem embraces a land and sea interface. It is, so to speak, a tail-end ecosystem, well-exemplified in the coastal proverb that the sea starts in the mountains. Sustainable management of biotic and abiotic natural resources of the coastal ecosystem results in synergies that can cut across many economic sectors of a coastal state. A well-managed coastal area ecosystem can be the basis of a healthy and economically sound fishing community. At the same time, the rejuvenation of coastal vegetation such as mangroves and seagrass can form an important protection against sea erosion and cyclones. The revival of coastal fauna such as corals and fish nurseries, and marine mammals such as dugongs can also be the foundation of a vibrant eco-tourism industry. Consequently, coastal communities that take the initiative to conserve, revive, and invest in the sustainable management of the ecosystem should be recognized and adequately rewarded by state and civil society for the social benefits or 'positive externalities' of their actions. The available evidence of small but significant measures taken by coastal communities in several parts of the world provides hope for such natural asset-building strategies (Ferrer 2001). This is illustrated below with one powerful example of an innovative community effort from Thailand (Cunningham 1998).

Small-scale coastal communities throughout the world have made significant contributions to the conservation of coastal ecosystems. Western development strategies – particularly in the Asia-Pacific region – have often dismissed the 'tiny technologies and local knowledge' as inadequate and inefficient for obtaining a greater throughput from the marine ecosystem. The quick diffusion of new technologies, and of the related specialized but compartmentalized knowledge (Kurien 1990), generated considerable wealth for those able to make the large financial investments. However, the negative externalities thereby imposed have led to the degradation of the natural assets of the tropical marine ecosystems. We have now come one complete circle on

this account, recognizing that what existed in the past was perhaps more ecologically sophisticated, socio-culturally appropriate, and economically appropriable by the people of the tropics. To 'go back to the future' on some of these counts, recognition and adequate reward should be given to those whose actions, undertaken in pursuit of earning a sustainable livelihood, bestow unintended externalities on others. Concretely, this implies providing support for low-impact, ecologically sophisticated fishing technologies, and for community activities that consciously safeguard the integrity of the coastal ecosystem. Examples include actions like preservation of mangroves, efforts at keeping estuaries pollution-free, and the creation of marine reserves where both resource extraction and protection take place simultaneously.

The work of the Yadfon (*raindrop*) Association in southern Thailand is an interesting example of participatory community action. The work started in seven remote coastal villages of Trang province in 1986. The fishing families were the poorest of the coastal population, and they were generally ignored by government and development organizations alike. The fisherfolk were Muslims in a predominantly Buddhist nation. While there was little open animosity between the two religious groups, the fact that they belonged to the minority group and were also poor made them feel like second-class citizens. Yadfon saw their poverty and the degraded environment as symptoms of a deeper problem. Though the people lived together, they had forgotten how to work together.

Through the work of the Yadfon Association, one of the villages decided to try to revive their badly degraded communal-use mangrove forests. This was part of a larger mangrove swamp that was leased out by the government to private concessionaires for extraction of mangrove wood or conversion into shrimp aquaculture ponds. The villagers initially petitioned the government to prohibit the concessionaires from encroaching into their communal-use mangrove forests. This was the beginning of an intense confrontation. Soon one of the village leaders was shot dead, a not-too-unusual consequence in the Asia-Pacific region when little people challenge powerful business and political interests. This violent turn ended the confrontation. The villagers decided that being politically weak, discretion was the better part of valor.

Faced with an impasse, the village group took a different tack. They started replanting the degraded mangrove areas that had been allotted to them to show their genuine concern for the forest. The mangroves are like the roots of the sea, without which the coastal ecosystem would die. They explained the reasons to fellow villagers, and also invited officials to take part. The provincial governor visited and was shocked and surprised to see such impoverished community, rife with child malnutrition, with such enthusiasm for conserving natural resources. This action helped to win legal demarcation of the communal-use forests. Within three years, an inter-village network sprang up. Following a series of meetings, village exchange visits, and study tours, an area of about 100 hectares of mangrove forest was designate by the Forest Department as a 'community-managed mangrove forest.' This designation has since been extended to six reclaimed forests in the Yadfon area of work. Mangrove planting parties were conducted twice a year in festive style. Provincial and district officials, fishery and forestry officers were invited to attend.

Following the successful mangrove replantation initiatives, the communities set out to protect corals and seagrass beds. The boundaries of the beds were demarcated with coconut tree trunks

until the Fisheries Department contributed buoys. With the tacit backing of the provincial officials, the area was designated by the community as a no-go area for boats with destructive pushnets used largely by people from elsewhere. The rewards of such actions were immediate and obvious. Fish, shellfish, squid, and turtles returned. Fishermen needed to travel less far out to sea, thus saving fuel. Children and women could catch enough crabs in the seagrass and mangrove swamps to earn the livelihood they earlier got from chopping down the mangrove trees. The most unexpected consequence of their actions, however was the return of the dugongs. Dugongs – also called sea cows, since they nurse their young from udders between their pectoral flappers – are a highly endangered marine mammal. They returned to their traditional home in the revived seagrass. The dugong has become the mascot that symbolizes the greatest returns – ecological and monetary – to the conservation and rejuvenation efforts of the community. Sensing the strong tourism appeal (a boom industry in Thailand), the return of the dugong resulted in unconditional government support to the effort of the community. This helped to secure another long-standing demand of the village people to enhance the trawler-free zone in the coastal waters. Government officials who once pleaded lack of manpower to enforce the official trawler ban were now compelled to be more active. No one wanted to be accused of threatening the dugong.

The example of the coastal communities of Trang has yielded a commitment from the government to reward the poor for their actions in protecting the crucial natural assets of the sea. Committed state support in the form of infrastructure facilities and financial grants, that allows communities to internalize positive externalities, is economically viable, ecologically crucial, and politically wise. On the part of the communities, the composite strategy of 'struggle for rights' and 'labor to build the alternatives' resulted in payoffs far exceeding the conventional 'waiting for the benevolence of the state.' Their actions not only set right their relationships with nature, but also gave them a new standing within the power equation of Thai society. Both are essential dimensions for ensuring sustainable environmental and socio-economic justice.

International recognition should also be accorded to such initiatives. The Yadfon Association recently received the Goldman Environmental Award. More sustained and ongoing measures could include certification efforts to promote fair and remunerative trade of the products harvested by such communities. Certification of marine-based products, particularly those harvested out at sea, can be more costly and complicated. A significant way forward will be for producer groups to reach markets through the aegis of advocacy by alternate fair trade organizations and concerned consumer groups (Kurien 2000). If sustainable production and harvesting are to increase, they must be linked to sustainable consumption through fair-trade practices.

Redistribution: Call for Aquarian Reforms

The post-1980 *de jure* arrangements of UNCLOS III, and the resultant national legislation spelling out access to ocean resources and space, do not recognize any traditional marine tenure systems that have existed in many maritime societies. The formal recognition of the territorial sea and the EEZ has given the nation-state the primacy in the management of the natural assets of the oceans.[3] The expectation of the global community was that following the creation of state

property regimes in the oceans, problems relating to the management of the natural resources of these coastal waters would be largely solved. However, this was not to be – not even for the developed maritime states. In the developing world the most important reason for 'state-failure' was the inability to prevent this state property from degenerating into an unregulated open-access regime. Possession rights of those with the capital and political power got precedence over the *de facto* property rights of those with historical livelihood claims.

In many developing countries, this gradually evolved into an ecological, economic, and social crisis. What most caught global attention was the issue of overfishing and declining resources. In 1984 the UN Food and Agricultural Organization (FAO) decided to organize a World Fisheries Conference in Rome to discuss the state of fishery resources. A group of concerned persons from around the world approached the FAO with the suggestion that this initiative should extend discussion of the state of fishworkers, too. When this suggestion did not receive an enthusiastic response from the FAO, a decision was taken to hold a parallel conference in Rome. This conference, called the International Conference of Fishworkers and their Supporters (ICFWS), brought to Rome 60 fishworkers and 40 supporters from 34 countries representing all the continents. One significant outcome of this historic meeting was a resolution calling on the international fisheries community to pay greater attention to the strengths of the small-scale fishing operations, in particular their economic, ecological, and social viability.

This resolution (ICFWS 1984) observed that: The small-scale fishery is labor and local-skill intensive, and capital and fuel-saving. Its technology and mode of organization give rise to a decentralized settlement pattern, and do not promote large income disparities. Small-scale fishery operations are well adapted to tropical aquatic ecosystems, and communities frequently possess built-in mechanisms and rules for preventing overfishing. Far from being stagnant, small-scale fishery, has amply demonstrated in the past that it is innovative, flexible, and easily amenable to efficient improvements. The sector is also well-integrated into small-scale marketing channels that are low-cost, highly efficient, and cater to local food needs; in many countries, these are managed by women from the community. Thus small-scale fisheries and fishing communities should be advocated for economic, ecological, technical, organizational, and social reasons.

In developing countries across the globe – including the Philippines, Indonesia, India, Senegal, Brazil and Chile to name a few – a new genre of small-scale fishworkers' organizations evolved after the conference to give substance to this call. One common demand made by all of them to their respective governments has been for a redistribution and redefinition of rights to create exclusive marine fishing zones where they could fish totally unhampered by the class of new operators using more powerful fishing crafts and more throughput-efficient fishing nets. Given the difficulty that developing countries' governments face in policing their EEZ's, this move by fishworker organizations to lay exclusive claim to the near-shore coastal seas (extending up to 3 or 5 nautical miles, or in some cases certain depth contours) was tactically astute.

The basic strategy has been to re-institute a community property rights regime within the territorial sea. By definition, this requires co-owners to engage in community consultation and participation to seek common approval of actions that they may mutually agree thereafter to undertake individually. These would include, among other things, decisions on the nature and the

quantity of capital to be invested in fishing; norms regarding the extent of effort to be expended; and the manner in which the produce of one's labor will be disposed. This community property rights regime does not usurp the crucial role played by individuals. It only circumscribes it within collective norms. Since the basic motivation is pursuit of a decent livelihood, the participants tend to have a longer time horizon as regards their relationship to the resource, as well as a keener ecosystem perspective (Kurien 1998). This combination of individual enterprise under a rubric of community norms helps to take advantage of the skill variations among fishworkers. It promotes benign competition in coastal fishing, yet it keeps in check the ills of unbridled freedom which led to excessive capital investments by outsiders. Community property right arrangements put a cap on private accumulation possibilities. But the benefits, in terms of equity of opportunity and freedom to modulate effort in keeping with the diverse fishery resources in the tropical seas, enhance the social accumulation of wealth from the coastal fishery. Taken together, these actions by fishworkers and state authorities are tantamount to a redistribution of resources to the large numbers of persons who depend on them for a livelihood.

Appropriation: Towards Community Property Rights

Effective redistribution, if it is to be sustainable, should be followed by meaningful appropriation of the natural assets by those who have the greatest stake in them. Such measures call for public action from both below and above, from both the community and the state. These are not 'one-time' actions. Rather, they involve long-drawn adversarial and collaborative interactions between the community and the state.

The struggles of the fishworkers in the brackish waters of Laguna de Bay in the Philippines over the last three decades bear witness to the fact that, in the ultimate analysis, only the real transfer of ownership of the natural assets into the hands of those who earn a livelihood from them will ensure resource integrity and an escape from poverty. The bay covers an area of about 90,000 hectares, and for centuries it provided a large population of fisherfolk with a seemingly unlimited source of livelihood. In 1966, the Laguna Lake Development Authority (LLDA) was created to 'promote development within the lake area, conserve natural resources and promote the socio-economic well-being of its residents.' In 1972, during the Marcos Martial Law period, the LLDA promoted an unprecedented privatization of the bay through the rapid establishment of fish pens to grow milkfish. Despite the purported intention of allowing fishermen's cooperatives to have priority in allocation of the pens, town mayors, military officers and government officials took major control over the Laguna. The bay became a maze of fish pens with watchtowers erected and armed guards protecting the pens from 'poaching' by the fishermen. Deprived of their livelihood and denied access to their traditional fishing grounds, the small-scale fishermen decided to fight back. In 1979, they formed the Organization of Small Fishermen in Cavite, Laguna, and Rizal – CALARIZ for short. Their initial forms of collective action were restricted to writing letters of protest addressed to the LLDA and the Office of the President of the Philippines. Drawing on two Presidential Letters of Instruction (LOI) issued earlier, ordering the demolitions of illegal fish-pens, the fishermen pressed government agencies to enforce the LOI directives. With the LLDA unwilling to act in their favor, the CALARIZ then decided to take direct action. The confrontation was brutal. Several leading activists of CALARIZ were killed by

the armed guards of the fish pens. The human tragedy and its social and political fallout created widespread tension in the Laguna region.

In an attempt to defuse the tension a new LLDA administrator was appointed. He implemented a zoning and management plan aimed at rationalizing and democratizing the Laguna's resources. The success achieved was limited. However, with the greater democratization of the whole country after the downfall of Marcos in 1986, the LLDA was forced to consider more actively ways and means of involving fishermen's organizations in the development and management of fishery resources.

The experience of collective action, the availability of greater democratic space, and the motivation provided by the fishworkers conference in Rome in 1984 spurred the small-scale fishworkers of CALARIZ to help form a new nationwide network of fishworker originations called BIKIS-LAKAS. In collaboration with others, BIKIS-LAKAS urged President Corazon Aquino to implement genuine fishery reforms and repeal the decrees of the Marcos regime. Most importantly, it urged her to institute mechanisms to give small-scale fishworkers a say in policy-making and effective control over coastal resources by reappropriating them from the commercial interests. More than a decade later, during the term of President Fidel Ramos, after many twists and turns in the legislative process that was stalled and influenced by the commercial fishery interests, the Philippine Fishery Code of 1998 was passed. This Code led to the appropriation of coastal waters (15 km from the coastline), including the waters of Laguna de Bay, exclusively for small-scale fishworkers.

Under this code Fisheries and Aquatic Resources Management Councils (FARMCs) were formed in 2002. These are the culmination of two decades of struggles, negotiations, confrontations, and reconciliatory actions by small-scale fishworker organizations and state agencies. Unlike in the Marcos era, these local organizations are not front organizations for outside interest groups, but genuine participatory networks created by a coalition of workers, committed social activists and NGOs with a good track record of working with coastal communities. Expressing the significance of this process, the Director of the Bureau of Fisheries and Agriculture states: 'It is really with a sense of pride that we say that only in Fisheries have we legalized, institutionalized and put significant meaning to people empowerment.'(BFAR, 2000: 5)

The FARMCs were created to institutionalize the major role of the fisherfolk and other resource users in the management, conservation, protection, and sustainable development of fisheries and aquatic resources. The FARMCs are formed by fishfolk organizations and assisted by the Local Government Units in the area. They assist in the preparation of the fisheries development plan for the area, evaluate its implementation, and recommend and enforce fishery ordinances and rules. The aim is that through the FARMCs "empowered municipal fisherfolk communities shall be able to exercise control over their fishing grounds and make decisions that should eventually alleviate, if not totally free them from, their poverty, while at the same time protecting and further enriching the very resource that gives them life support.'(Quicho *et al.* 2001)

Conclusion

To move from the tragedy of the commons to the blessing of the commons requires a wide spectrum of committed community efforts. Coastal communities and fisherfolk should certainly be active participants in designing their own future, since they generally have a much clearer conception of the important constraints under which they operate as well as a more holistic understanding of the opportunities before them. Where, however, a tradition for collective action is lacking, or the political space for it is limited, mobilization of communities for participatory planning and action may prove to be a long process. Faced with the increasing pressures from the ever-growing vested interests that covet the natural assets of the oceans, local coastal communities will need strong support to defend their priority claims and rights to these resources. Empathy from the state and a variety of civil society agencies is a prerequisite for success (Kurien 1987).

In many developing nations, governments are only now moving from the 'development' mode to the 'management' mode with regard to the living resources of the oceans. The former mode most often has been highly centralized and considerably influenced by western, temperate-ecosystem approaches. These have largely proved to be both ecologically and socio-economically inappropriate. The assumption that the decentralized, small-scale, community-based coastal fishing activities were on their way out, and would be replaced by centralized, large-scale firms, has been belied. The fact is that the former remains vibrant in many countries and continues to be the backbone of the coastal fishery in many tropical countries.

Viewing natural resources as assets – and the poor as their guardians – is a new paradigm that needs to be shared and fed into a community movement.

These realities have resulted in the growing interest by states to 'look back into the future', particularly with regard to local-level institutional arrangements. This ties up well with the recent trend in many developing countries – India, Indonesia, and the Philippines for example – towards more decentralized governance by the devolution of representative democracy towards the village level. Village communities are being given the rights to restore, use, and protect natural resources that were earlier converted into *de facto* open-access resources following hasty *de jure* state appropriation. This trend is providing strong incentives for rural households to devise arrangements for collective management of the resources. The state must now stand by – but not whither away. For state support is needed to ensure that benefits from the local commons are not expropriated by the more powerful in the locale and the community.

Restoring community rights to coastal resources does not necessarily lead to proper management for several reasons. These include disagreements among those who hold the rights over how the resources are to be used; corrupt practices in their use; and a lack of understanding of the ways to restore degraded ecosystem functions. In this context, the role of non-governmental organizations as well as the state attains significance. In many developing countries, the

shortcomings of the state apparatus and the inadequacies of community institutions create a social space that can be filled by a plethora of voluntary support organizations. These agencies often play a facilitative role in creating and fostering community action. They play an important function in envisioning new sets of basic ideas, thoughts, and beliefs. The significance of considering natural resources as assets and the poor as their guardians is a new paradigm that needs to be shared, converted into an ideal, and fed into a community movement. Recent initiatives in South-East Asia testify to the significant role being played by such agencies in enabling the ideals of community-based coastal resource management to take root once again in the region (Ferrer *et al.* 2001).

Reviving ecologically sophisticated fishing technologies is a prerequisite for reviving the perspective of living resources of the seas as natural assets. This is possible only when the harvests made using such equipment are backed by effective demand from the consumers. It was international demand for large quantities of shrimp, for example, that led to the widespread introduction of bottom trawlers in Asian tropical waters. It will now require new international demand for shrimp that does not harm the tropical ecosystem to help revive the passive, selective, and eco-friendly nets once widely used by small-scale fishing communities. Consumer movements in the U.S., Japan and the EU will have to link up with the community-based fishworker organizations to work out mutually beneficial fair trade mechanisms that link sustainable harvesting with sustainable consumption.

A reality of the development world is that ideas translate more quickly into action when they are supported in international circles. For the past decade, organizations like the UNDP, FAO, and World Bank have been emphasizing the merits of small-scale fisheries and the need to ensure participation of fishworkers in the implementation of fishery programs. More recently, there has been increasing concern about sustainable fishing and the need to address the issue of persistent poverty in coastal communities. These interrelated themes can dovetail well to ‘pressure’ national agencies to support the presently fragmented initiatives to combine the synergy of coastal communities for reclaiming their rights to the living natural assets of the sea. National political commitment is a necessary condition for the ripples of micro-local actions to coalesce into a sea change in ecological and socio-economic circumstances. This will help restore the blessing of the commons: the ecological integrity of the coastal seas, livelihood based on the sustainable use of living natural resources, and true community well-being.

Endnotes

[1] This section is drawn from Kurien (1998).
[2] Data from FAO/UN Yearbook of Fishery Statistics Vol. 10, 29 and 61.
[3] In the territorial sea the nation-state has absolute sovereignty over the sea space, air above and all living and non-living resources. In the EEZ, the sovereignty of the nation-state is for the purposes of exploring, exploiting, conserving, and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil. It also extends to other activities such as exploitation of the EEZ for the production of energy from the water currents and winds.

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