



INTERNATIONAL CONFERENCE ON SUSTAINABLE CONTRIBUTION OF FISHERIES TO FOOD SECURITY

Kyoto, Japan, 4-9 December 1995

organized by the
GOVERNMENT OF JAPAN

in collaboration with the
FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

CULTURALLY-BASED CONFLICTS IN THE USE OF LIVING MARINE RESOURCES AND SUGGESTIONS FOR RESOLVING OR MITIGATING SUCH CONFLICTS

By

James R. McGoodwin

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CULTURALLY-BASED CONFLICTS IN THE USE OF LIVING MARINE RESOURCES AND SUGGESTIONS FOR RESOLVING OR MITIGATING SUCH CONFLICTS

EXECUTIVE SUMMARY

The cultures of peoples utilizing living marine resources vary considerably in terms of their overall sizes and cultural characteristics. At one extreme, there are native and community-based small-scale fishers, who often have long-standing, traditional approaches to utilizing certain fisheries, including to fisheries management. At the other extreme are larger scale or more industrialized fishers who care little about the traditions that have pervaded the utilization of a particular fishery, and instead emphasize its exploitation for mainly commercial and income-producing purposes. When these types of fishing cultures or subcultures strive to exploit the same fisheries at the same time, conflicts will almost inevitably arise. Similarly, where fishing peoples have long-standing traditions regarding the exploitation of certain marine species, such as marine mammals, which have become of concern to various environmental and animal-rights groups, conflicts are again practically inevitable. There are also conflicts between fishers and aquaculture and mariculture enterprises, travel, tourism and recreational groups, and other competitors for marine resources, such as agriculture, industrial users and polluters.

In the present document, particular attention is paid to conflicts between native, traditional community-based, and other small-scale fishers, and modern industrial fishers. The importance of sustaining subsistence and commercial exploitation of living marine resources among various types of small-scale fishers is stressed, not only in order to ensure their food security and economic welfare, but also to ensure their cultural existence.

Suggestions are offered for resolving or mitigating culturally based conflicts in fisheries, stressing the importance of sustaining people's subsistence and commercial economies in order to ensure their food security, as well as their cultural survival. A better articulation of the cultural attributes of maritime peoples, and especially their traditional systems of sea tenure, while also helping to empower them politically, is emphasized.

CONFLITS D'ORIGINE CULTURELLE DECOULANT DE L'EXPLOITATION DES RESSOURCES BIOLOGIQUES MARINES ET MESURES CORRECTIVES PROPOSEES

RESUME

Les cultures des populations exploitant les ressources biologiques marines varient considérablement, tant du point de vue de leur extension géographique que de leurs caractéristiques culturelles. On trouve à un extrême des artisans-pêcheurs autochtones vivant dans de petites communautés qui obéissent souvent à une tradition bien établie en ce qui concerne l'exploitation de certaines pêcheries et leur aménagement. A l'autre extrême, il y a les pêcheurs opérant à une échelle industrielle qui ne se soucient guère des concepts traditionnels se rapportant à l'exploitation d'une pêcherie particulière et s'attachent plutôt à l'exploiter à des fins principalement commerciales et de génération de revenus. Lorsque ces différentes cultures ou sous-cultures tentent d'exploiter les mêmes pêcheries au même moment, des conflits sont presque inévitables. De même, lorsque des groupes de pêcheurs ont une large tradition pour l'exploitation de certaines espèces marines, comme les mammifères marins, désormais protégées par divers groupes écologistes et associations de protection des animaux, les conflits sont, là encore, inévitables. Il y a aussi des conflits entre les pêcheurs, les entreprises pratiquant l'aquaculture et la mariculture, les groupes vivant du tourisme et des activités créatives et d'autres usagers entrant en compétition pour l'utilisation des ressources marines, comme les agriculteurs, les industriels et les pollueurs.

Le présent document s'attache particulièrement à décrire les conflits entre d'une part les artisans-pêcheurs autochtones vivant principalement dans de petites communautés traditionnelles et de l'autre, les pêcheurs appliquant des méthodes modernes à l'échelle industrielle. Il souligne qu'il faut permettre aux différents types d'artisans-pêcheurs de vivre de la pêche et d'exploiter commercialement les ressources halieutiques marines, non seulement pour assurer leur sécurité alimentaire et leur bien-être économique mais aussi pour préserver leurs valeurs culturelles.

Des suggestions sont proposées pour résoudre ou atténuer les conflits dérivant de différences culturelles dans le domaine des pêches, en insistant bien sur le fait qu'il est essentiel de préserver l'économie de subsistance des populations et leurs opérations commerciales afin de garantir leur sécurité alimentaire mais aussi la survie de leur culture. Le document souligne qu'il conviendrait de mieux articuler les attributs culturels des populations vivant de la mer et notamment leurs systèmes traditionnels de zonage de la mer, ce qui devrait également contribuer à leur donner plus de poids politique.

CONFLICTOS DE BASE CULTURAL EN LA UTILIZACIÓN DE RECURSOS MARINOS VIVOS Y SUGERENCIAS PARA RESOLVERLOS O ALIVIARLOS

RESUMEN EJECUTIVO

Las culturas de los pueblos que aprovechan los recursos marinos vivos varían mucho en cuanto a su naturaleza y características generales. En un extremo están los pequeños pescadores nativos y de base comunitaria, que muchas veces poseen métodos tradicionales y antiguos para aprovechar algunas pesquerías, y también para su ordenación. En el otro extremo están los pescadores en mayor escala o más industrializados, a quienes preocupan poco las tradiciones que han dominado la utilización de una determinada pesquería, y en cambio hacen hincapié en su explotación con fines principalmente comerciales y lucrativos. Cuando estos dos tipos de culturas o subculturas pesqueras pretenden explotar las mismas pesquerías al mismo tiempo, casi inevitablemente surgen conflictos. Asimismo, cuando la gente del mar tiene largas tradiciones por lo que se refiere a la explotación de determinadas especies marinas, como los mamíferos marinos, que se han convertido en una preocupación para varios grupos ecológicos y de derechos de los animales, vuelven a ser prácticamente inevitables los conflictos. También se producen conflictos entre pescadores y empresas de acuicultura y maricultura, los viajes, el turismo y los grupos de esparcimiento, y otros sectores que compiten también por los recursos marinos como la agricultura, los usuarios industriales y los agentes contaminantes.

En este documento se presta especial atención a los conflictos entre los pescadores nativos, los de base comunitaria tradicional y otros pequeños pescadores y, por otra parte, las modernas empresas industriales dedicadas a la pesca. Se recalca la importancia de sostener una explotación de subsistencia y comercial de los recursos vivos marinos entre varios tipos de pequeños pescadores, no sólo para asegurar su seguridad alimentaria y bienestar económico, sino también para procurar supervivencia cultural.

Se dan sugerencias para resolver o aliviar conflictos de base cultural en las pesquerías, insistiendo en la importancia de sostener a unas economías de subsistencia y comerciales de la gente con objeto de asegurar su seguridad alimentaria, así como su supervivencia cultural. También se recalca la necesidad de una mejor articulación de las características culturales de la gente del mar y sobre todo de sus sistemas tradicionales de tenencia del mar, al propio tiempo que también se contribuye a potenciarlos políticamente.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
RESUME	iii
RESUMEN EJECUTIVO	iv
1. INTRODUCTION	1
1.1 Background	1
1.2 Purpose	1
1.3 Acknowledgements	1
2. THE NATURE OF CULTURALLY BASED PRACTICES	1
3. A REVIEW OF CULTURALLY BASED CONFLICTS BETWEEN USERS OF LIVING MARINE RESOURCES	4
3.1 Conflicts between fishers having different cultural orientations	5
3.1.1 Internal conflicts	6
3.1.2 Conflicts regarding native fishers	7
3.1.3 Conflicts involving traditional community-based small-scale fishers	11
3.1.4 International and intranational fishery conflicts	16
3.1.5 Fishers in conflict with fisheries-management subcultures	19
3.1.6 Fishers in conflict with fisheries development subcultures	20
3.2 Conflicts between fishers and non-fishing groups concerned about various marine species	21
3.2.1 Conflicts regarding marine mammals	21
3.2.2 Conflicts regarding seals, sea lions and sea otters	24
3.2.3 Conflicts regarding whales	27
3.2.4 Conflicts regarding porpoises or dolphins	30
3.2.5 Conflicts regarding sea turtles	32
3.2.6 Conflicts regarding other species: bald eagles	35
3.3 Conflicts between fishers and aquaculture and mariculture enterprises ...	35
3.4 Conflicts between fishers and travel, tourism and recreational interests ...	37
3.5 Conflicts between fishers and other competitors	41

3.5.1	Conflicts regarding agriculture	41
3.5.2	Industrial and other sources of pollution prompting conflicts in fisheries	43
3.5.3	Conflicts engendered by petroleum industries	45
3.5.4	Conflicts regarding the timber industry	46
3.5.5	A conflict entailing a coalition of usual antagonists	48
4.	SUGGESTIONS FOR RESOLVING OR MITIGATING CULTURALLY BASED CONFLICTS IN FISHERIES	49
5.	BIBLIOGRAPHY	54

1. INTRODUCTION

1.1 Background

This paper was prepared as background material for the International Conference on Sustainable Contribution of Fisheries to Food Security being held in Kyoto, Japan, in December 1995.

1.2 Purpose

The purpose of the paper is to describe culturally based conflicts in the use of living marine resources. The cultures of peoples utilizing living marine resources vary considerably in terms of their overall sizes and cultural characteristics. At one extreme, there are native and community-based small-scale fishers, who often have long-standing, traditional approaches to utilizing certain fisheries, including to fisheries management. At the other extreme are larger scale or more industrialized fishers who care little about the traditions that have pervaded the utilization of a particular fishery, and instead emphasize its exploitation for mainly commercial and income-producing purposes. When these types of fishing cultures or subcultures strive to exploit the same fisheries at the same time, conflicts will almost inevitably arise. Similarly, where fishing peoples have long-standing traditions regarding the exploitation of certain marine species, such as marine mammals, which have become of concern to various environmental and animal-rights groups, conflicts are again practically inevitable.

1.3 Acknowledgements

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2. THE NATURE OF CULTURALLY BASED PRACTICES

From an anthropological perspective, "culture" does not refer specifically to cultivation in the arts and social graces, but rather to a particular people's learned, shared and transmitted *knowledge* (including knowledge of its history, language, symbolic meanings, attitudes, normative behaviour patterns, customs, beliefs and values).

Thus, culture is *a people's ideational design for how to live and how to behave*. (see Keesing 1981: 68-69 and 144). For purposes of this discussion about culturally based conflicts among fishers, it is important to stress that *culture also includes a people's ideas about the natural environment and its resources, its rights to use them, and how these should be utilized and managed*.

Furthermore, cultures are complex systems having various interconnected parts, or components--the kinship component, for example, or the economic, political and religious components.

Members of a particular culture share the same "greater cultural tradition," or pattern, even though individuals and groups within the culture will differentially share aspects of the greater tradition to varying degrees. Groups that share only a part of the greater tradition in an internally consistent way are usually described as "subcultures" of the greater cultural tradition. It should also be noted that *occupation, prevalent and recurring activities, residence and community* are among the most important attributes ascribing cultural or subcultural identity--and this is no less true in the case of fishing peoples (Smith and Hanna 1993).

To this complexity we must add that particular subcultures within a greater cultural tradition may have much in common with subcultures in other greater cultural traditions. Modern industrial fishers from greater cultural traditions as distinct as Asian and European, for example, may have more in common with each other than they do with the small-scale peasant fishers in their respective nations. Similarly, members of the Green movement, or recreational fishers, may be described as distinct subcultures with much in common, even though they hail from different greater cultural traditions. Thus, differential adherence to nationalist or modernist ideas may distinguish members of various subcultures as much as their greater cultural traditions do.

Modern industrial peoples should be seen as a pervasive subculture around the world, showing certain consistencies in world view or ethos, individual goals, tastes and preferences, and ideas concerning how the world's resources should be utilized, as well as other ideational, attitudinal and behavioural patterns. These consistencies now often blur formerly more important cultural distinctions based upon differences in pre-modern histories, ethnic backgrounds, languages, religions and other important features in various greater cultural traditions. Particularly, modern industrial peoples' orientations towards utilizing the natural environment and its important resources often differ considerably from those found among most native and traditional, community-based peoples.

Regarding peoples who utilize living marine resources, their approaches may be very old and deeply integrated into their cultural heritage, or they may be relatively new. For the most part, long-standing traditional approaches stem from sociocultural and ecological requirements for survival--the high per caput consumption of fish in pre-modern Iceland or Japan, for instance. Similarly, the seasonal herding of tuna in Sicily, the harvesting of whales around the Faroe Islands, and Arctic peoples' high reliance upon marine mammals of various sorts, were important among pre-modern peoples living in those regions, who had to make every possible use of such resources in order to survive.

Correspondingly, these peoples developed various rules and ideas regarding how these vital resources should be exploited and managed, which over time became important aspects of their cultural traditions.

When such peoples are drawn into conflicts regarding their rights to utilize and manage the resources, they will perceive these not only as threats to their economic well-being, but to the sustainability of their cultures as well.

Where native and long-resident traditional community-based fishers have come into conflict with new, more competitive cultures or subcultures for important fishery resources, they have often been the losers--as a result of social, political and economic marginalization, or resource depletions, or both. Examples can be found in various fisheries around the world--in the Gulf of Thailand, for instance, or around the North Atlantic rim. Only where powerful countervailing cultural pressures have been successfully launched have these tragedies been averted--in Japan, for example, which long ago developed cultural institutions to protect its small-scale coastal fishing cultures, and more recently in New Zealand, northern Norway and among certain Arctic-dwelling native peoples in Alaska, United States. Where there is pervasive cultural disregard for these matters--in cultures where financial concerns are the preeminent values and where other developmental opportunities promise greater profitability--conflicts in the fisheries may become both persistent and acute.

Depending upon their particular emphasis, environmental activism may help or hurt fishing peoples. Where it targets marine pollution and imbalances in marine ecosystems, it may benefit them in the long run. But, where its fundamental concerns are to preserve marine resources for other users or to protect certain marine species from any utilization whatsoever, it may draw fishing peoples into bitter conflicts. The animal-rights movement for instance, a component of the Green subculture, is a relatively recent development that has arisen from mainly Western, urbanized, liberal culture. Hence, its interests in living marine resources differ considerably from those mentioned above. Its aims are manifestations of cultures in which most people have achieved physical and economic security, having at the same time divorced from direct participation in food production and the natural biological processes underlying it.

Thus, around the world today, the prevailing cultural ideas about the utilization of natural resources are in a state of transition and are being renegotiated via various conflicts. On the one hand, a majority in most cultures, much as their ancestors have for the past several centuries, still press for growth and development corresponding to increasing use of natural resources. On the other hand, an increasing number of peoples, groups and emergent cultures and subcultures, by underscoring the consequences of various environmental abuses, are pressing for a sustainable use of natural resources that would avoid the disasters they see as certain, should their warnings go unheeded.

The world's fisheries and fishing peoples also find themselves caught up in this conflict-laden, transitional era, as various groups, nations, cultures and subcultures contend to see their ideas concerning the best use of living marine resources prevail. Especially for the world's small-scale fishing peoples, who comprise more than 90 percent of all people involved in fishing worldwide, it is extremely important to resolve or mitigate culturally based conflicts over living marine resources, since they may threaten these groups' food security, and in many cases their cultural survival as well. Obviously, many of these conflicts will be solved over time as the weight of societal, public and political opinion eventually tilts decisively in one direction or another. But for now, culturally based conflicts regarding the use of living marine resources are perhaps at their peak.

3. A REVIEW OF CULTURALLY BASED CONFLICTS BETWEEN USERS OF LIVING MARINE RESOURCES

Culturally based conflict may arise internally, between members of the same culture or subculture, or between these and members of other cultures. One reason is because practically all people are ethnocentric, i.e., feel that their particular cultural orientation and its associated ideas are superior--the "right" way to live--and that their own particular needs for survival are paramount. Thus, all peoples inherently feel that their own traditions, cultural identities and core values must be preserved, and that they are entitled to utilize important natural resources in the future much as they have in the past. Conflict arises almost inevitably when peoples having different cultural orientations compete for the same natural resources. This is no less true for fishing peoples with different cultural orientations who compete for resources, since the members of each competing group will stress different ideas concerning exploitation and the sustaining of important subsistence and commercial economies, as well as their cultural identities.

One might assume that different groups that have long targeted particular fisheries would find much in common, but, more often, as Gulland (1974) has commented, "everybody concerned with fishing will have slightly different ideas on what the proper objective of fishery management should be."

Glantz (1986: 218) emphasizes Gulland's point even more strongly, commenting that "this phrase, 'slightly different ideas,' is a rather mild description of competing interests pursued by groups locked in a struggle for a share of a finite fish resource." He goes on, "The fact that these are competing interests...can adversely affect the management and viability of a living marine resource in which these groups have an economic, social, or political stake," and, "One can find objectives, stated by different groups involved in the exploitation of the same resource, that are diametrically opposed to each other." Glantz's thinking here was influenced by his study of subcultural conflict between fishmeal and guano harvesters in Peru, which had been ongoing since the 1950s and became very heated following the collapse of the *anchoveta* fishery in 1972-73. But his general observations are applicable to understanding conflicts among various groups in other fisheries.

For the purpose of organizing this discussion, conflicts between the following competitors will be examined:

- Conflicts between fishers having different cultural orientations.
- Conflicts between fishers and non-fishing groups who are concerned about various marine species (e.g., marine mammals, sea turtles, etc.).
- Conflicts between fishers and aquaculture and mariculture enterprises.
- Conflicts between fishers and travel, tourism and recreational interests.

- Conflicts between fishers and other competitors for marine resources (e.g., agriculture, industrial users, polluters, etc.).

3.1 Conflicts between fishers having different cultural orientations

In the discussions below, fishing cultures will be identified not only by their ethnicity or greater cultural tradition, but mostly by the following descriptors, which imply certain distinct cultural orientations regarding fishing activity: "small-scale," including "native" and "traditional community-based" fishers, "modern industrial" fishers, who are generally larger scale and commercially oriented, and "recreational" fishers. In addition, it will be useful to conceptualize "fisheries management" and "development" subcultures, which work closely with many fishing peoples, and which qualify as subcultures in their own right.

Small-scale fishers are identified by a variety of descriptive terms, including artisanal, native, traditional, tribal, peasant, coastal, inshore, and subsistence oriented. All of these are distinguished from larger scale fishers by their relatively small individual capital commitments and similarly small levels of production. Important distinctions may also be made between small-scale fishers, especially between those who fish mainly to meet subsistence needs while engaging in techniques that have deep cultural and historical roots, and other small-scale fishers who fish mainly to participate in commercial markets. Of course, most small-scale fishers participate in both subsistence and commercial fishing at one time or another. But it is usually possible to distinguish between these sorts of fishers on the basis of the relative degree of emphasis they devote to fishing for subsistence versus commercial purposes.

Small-scale fishers almost always conduct their fishing activities comparatively near their home communities, and therefore may utilize only a limited number of fisheries or species. As a result, their activities are deeply integrated into the cultural traditions of their local communities. They also usually manifest a sophisticated understanding of the marine ecosystems they exploit, expressing strong ideas concerning how these should be utilized and managed (McGoodwin 1990: chapters 1 and 2).

Dasmann (1974) described small-scale fishers as "ecosystem people," that is, as people who utilize a single marine ecosystem, or at the most two or three adjacent and closely related ecosystems, while using fairly rudimentary fishing gear and selling their catches mainly in the regions in which they reside. They are markedly different from larger scale fishers, whom he described as "biosphere people," noting that the latter more often exploit a variety of unrelated marine ecosystems while utilizing sophisticated and capital-intensive technologies, and more often sell their catches in global markets.

Thus, he concludes, small-scale fishers are aware that if they deplete the marine resources they rely upon, they may risk their own ruin, whereas larger scale fishers often behave as if there will always be other marine ecosystems to exploit, should the ones they are currently exploiting begin to fail (see also Klee (1980: 1).

As McGoodwin (1990: 46) has characterized the fundamental difference between small and larger scale fishers, "large-scale fishing is mainly a business enterprise, whereas small-scale fishing is a business enterprise *and* a social and cultural enterprise--a way of life."

Larger scale fishers not only bring significant capital commitments to fishing activity and correspondingly higher catch levels, but as a whole are almost entirely devoted to fishing for commercial purposes. They are considerably more mobile than their smaller scale counterparts, and therefore less dependent upon particular fisheries, with many able to roam the various oceans and seas of the world in practically any weather. Therefore, their fishing world view is less oriented to a particular locale, even though the fishing industry may be important and highly visible in their home ports. Their degree of intimacy with particular marine ecosystems is also usually less than is typical among small-scale fishers. Because of their higher degrees of capitalization and overall economic significance, as well as because they are more often urban based, they are usually regarded as more important than small-scale fishers by government and industry leaders, and thus benefit from higher degrees of government and financial support. (McGoodwin 1990: chapters 1 and 2).

A tragic byproduct of the commercialization and modernization of small-scale fishers is often the breakdown of their traditional fishing cultures, as well as their systematic dehumanization, as they struggle to remain competitive in a world that is increasingly dominated by modern industrial institutions and their corresponding ethos regarding the utilization of fishery resources. A recent article by Davis (1991), describes such a transition occurring over the past twenty years in the small-scale fishing societies found in the rural "outports" along Newfoundland's coastline:

"...small boat fishers, largely participating in an owner/operator and small community referenced fishery, are driven from deeply rooted attachments and *modus operandi* articulated in familial and familiar social conditions to sharp-edged, self-interested utilitarian rationalities as their livelihoods become dependent upon and expressive of the imperatives and logic of capitalist-industrial formal institutions such as government and broad-based representative organisations (p. 13)".

3.1.1 Internal conflicts

Some conflicts arise internally within particular fishing cultures as a result of certain pervasive attributes that are found in nearly all fishing cultures. Fishing, for instance, especially small-scale fishing, can stress personal attributes such as rugged individualism and freedom from restraint, sometimes downplaying the importance of cooperative endeavours and community-based collective action, thereby providing a fertile context for nurturing conflicts of various kinds.

Moreover, sporadic incomes and the generally heightened climate of both economic and physical risk that fishers work in often prompt stress, strain and discord among the members of fishing communities. So do the prolonged absences of fishers from their communities and the dichotomous patterns of social organization that may result: resident community members versus transients, men working at sea while women and other community members maintain the households and the community's social, economic, religious and political institutions. Finally, alcoholism, drug use, contrabanding, gambling and other such activities are often prevalent in fishing communities, also prompting internal conflicts (McGoodwin 1990: 21-36).

3.1.2 Conflicts regarding native fishers

Certain living marine resources are vital to the cultures of native or aboriginal peoples who have lived in particular coastal regions for long periods of time. For them, the importance of these resources will almost always transcend their mere subsistence and commercial values, and be regarded as part of their cultural identity--including such aspects of that identity as their history and important oral traditions, mythology, folklore, legends, religious beliefs, linguistic usages, and so forth.

Many native fishing peoples believe that they and the marine creatures they exploit have parallel lives or mixed destinies, or that the worlds inhabited by certain marine creatures mirror, or are metaphorical of, the world in which they live. Anderson (1994: 141-142) notes how along the northwest coast of North America "all evidence suggests that the fish held in highest regard were the most vulnerable yet important stocks, that they were deliberately and explicitly managed, and that their social construction as revered members of human society was a conservation-related belief." Thus, among the Katzie Salish peoples living along the lower Fraser River in British Columbia, Canada,

"The sturgeon was held in reverence... According to Katzie belief, the Creator had a son and a daughter. The son became the ancestor of humanity; the daughter became the ancestor of the sturgeons. Sturgeons and humans are therefore siblings (p. 142)."

Among the aboriginal Eskimo of west Greenland, the "fish world" was regarded as a metaphor of human society, and traditional songs are still sung among modern-day Eskimo which maintain that "fish love freedom," much as Eskimo peoples do, or that fish "often engage in social relations with other members of their species." These songs express beliefs that individual fish have families, family problems and individual histories, just as humans do. These myths have been recently published in readers and song books utilized by Eskimo children in Greenland's public schools, so that these traditional beliefs originating in ancient Eskimo societies can be known and perpetuated by contemporary Eskimo peoples, most of whom no longer engage in fishing activities (Kleivan 1984: 887).

Among the Yolngu aborigines in northeastern Arnhem Land (Australia), physical, economic, and spiritual life is still centred around the sea. Thus, according to Davis (1984: 231),

"From the sea, they believe, their spirit comes at conception and there it must return on their death... (and) exclusive right to inhabit coastal waters in their area and to use the resources contained therein has been theirs since time immemorial...(and) they possess elaborate rules for restricting access to sacred marine sites and for apportioning access to economic resources."

Thus, among many native peoples, fishing activity and even fisheries management are usually regarded as an integral aspect of customary social relations, or "etiquette." Because these beliefs are specific to their particular cultures, they are often difficult to translate or explain to non-natives who have interests in the same fisheries.

Non-native immigrant people, on the other hand, and other comparatively recent arrivals who exploit fisheries that were long relied upon by native peoples, while having social, economic and political traits which we would describe as culture, differ in important ways. They generally have only limited knowledge about the cultures of the native or long-resident inhabitants who have been using the fishery, that is, little knowledge concerning how the fishery has been utilized prior to their arrival. They also have few ideas, at least initially, concerning how these fisheries should be exploited and managed. At the same time, they may have imported cultural views regarding the exploitation and management of fisheries, which might have been appropriate where they came from, but which may not be in the fisheries they have colonized.

Immigrants in comparatively recent times are generally oriented to fishery production for commercial ends, rather than the perpetuation of their traditional subsistence systems and cultural identities *per se*. Thus, whereas long-standing cultural traditions may have fundamentally driven fishing behaviour among native or long-resident fishers, profit maximization may be the most important value driving immigrant peoples' fishing activities, however small scale their approaches to fishing may be.

Where native and immigrant groups compete for marine resources in the same region, we usually find culturally based conflict in its clearest and most raw form. As the competitors articulate their claims, often stressing the importance of certain resources for their survival, closer scrutiny will often reveal that these groups differentially emphasize certain values and overall aims. For instance, subsistence for most native peoples is analogous to cultural survival, whereas it usually has a more limited connotation among contemporary immigrant peoples, who are less concerned with losing their ethnic or cultural identities than losing important means for assuring their economic welfare and prosperity.

Conflicts between native and immigrant peoples have, therefore, been complicated by semantic disputes regarding the meaning of such concepts as subsistence. Non-native peoples, for instance, often object to seeing native peoples fish for commercial purposes while utilizing modern technologies, arguing that laws guaranteeing native peoples the right to pursue "subsistence" activities never envisioned the modern era, but instead only guaranteed them the right to harvest resources much as their ancestors had.

Native peoples, on the other hand, who equate "subsistence" with cultural survival, are adamant that it means being able to compete effectively in a world which, otherwise, is culturally overwhelming them.

Moreover, in some quarters it has been alleged that non-native commercial fishers are potentially more efficient and productive than are native fishers. Commercial fishers have often been able to garner more support from state or national leaders, and correspondingly more favour in the establishment of fisheries management and development policies, by making convincing arguments that their approaches to fishing hold greater promise for contributing to the overall economic welfare of the national society.

This may not actually be true, of course, since there is nothing inherently inefficient or unproductive about native approaches to resources, while native peoples also have a better record, overall, in sustaining important marine resources. What is true is that this is an aspect of economic and class warfare, which has historically seen native peoples marginalized in modern fisheries, not because of their supposed unprogressiveness, but more because of their unfavourable differential of knowledge and access to political and economic power in their national cultures.

These problems are also often compounded by racism, class or ethnic prejudices existing in various cultures, or because in many countries native peoples are mostly articulated with special government agencies having everything to do with native peoples, but otherwise little articulation with mainstream commerce and politics in the national society.

For example, there has been chronic conflict for more than a century between native peoples and immigrants regarding access to and allocation of salmon resources along the north American Pacific coast from Alaska down to California, where salmon have been *the* core marine resource among native peoples for thousands of years, but which are now a high-value resource in modern-world fish markets (McEvoy 1986).

In essence, many disputes between native peoples and other fishers are facilitated by ambiguous or never codified or never resolved or now resurgent legal claims regarding certain fishery resources. These disputes have spawned a growing literature concerning traditional systems of sea tenure (e.g., Cordell, ed., 1989, Dyer and McGoodwin, eds., 1994, Johannes 1977 and 1988, McCay and Acheson, eds., 1987, Ruddle and Akimichi, eds., 1984, and Ruddle and Johannes, eds., 1985), as well as a closely related literature on the common-property problem (e.g., Bromley, gen. ed., 1992, Hardin 1968, and McCay and Acheson, eds., 1987).

The members of most native and other traditional fishing cultures usually assert their rights to certain marine resources on the basis of their cultural membership or by virtue of their membership in particular communities, kin groups or families which have traditionally utilized them. Seldom are their claims codified in any written documents nor are they articulated as "ownership" rights in a modern conventional sense. Rather, they are asserted in terms of the conceptual inseparability of the human cultures utilizing these resources and the resources themselves. Of course, contemporary political units--districts, states or nations--usually instituted rights to marine resources on the basis of other criteria, ignorant of the rights that local peoples had long asserted, thus setting the stage for conflict, competition and contention.

As Cordell (1984: 301) states, "Matters of sea rights close to the shore involving fisheries are a source of escalating conflicts among ethnic groups, inshore and offshore fleets, central and local governments and competing marine commercial interests of all kinds." Similarly, Ruddle and Akimichi (1984: 1) state that traditional fishers' "uncertain, weak or contested tenurial status is one of the principal difficulties encountered by small-scale fishermen."

Perhaps, it is the difficulty of establishing definite territorial boundaries in marine realms that poses the greatest problem for native and other traditional fishers who strive to assert their sea-tenure rights. Most fishing peoples' assertions about their rights will emphasize important aspects of their cultural knowledge, which may remain essentially unknown or difficult to comprehend among non-members of that culture. This point is made by native fishers inhabiting the islands of the Torres Strait between Papua New Guinea and Australia's Cape York Peninsula, whom Nietschmann (1989: 65) quotes as stressing that "territory is knowledge" (see also Johannes and MacFarlane 1984).

Similarly, traditional fishers in the Trobriand Islands, who constitute a small-scale fishing subculture within Papua New Guinea (PNG), have recently been pressing their rights to fisheries based on traditions, customs and laws long asserted *among themselves*, but which contradict rights conferred by national and international law to the state with respect to marine ecosystems and the resources therein. Compounding this conflict are other national laws giving statutory recognition to certain native or traditional claims to marine resources, so that overall the legal regimes and policies regarding traditional marine claims in PNG are unclear and inadequate for the harmonious use, development, conservation and management of coastal marine resources (Tom'Tavala 1990).

This general state of discord is common in varying degrees around the world, particularly wherever significant populations of native or long-resident traditional fishing peoples have begun to assert their legal and constitutional rights within their respective national cultures. These complex problems will not permit easy resolutions anywhere in the near future, for in essence they constitute conflicts among various cultures and subcultures that are pressing their claims on the basis of *how the world used to be*, in opposition to other, usually more powerful cultures and subcultures that press their claims on the basis of *how the world is now*.

However, it should not be automatically assumed that native fishers are always victimized by others invading their fisheries, or that they are always the ones to be marginalized. Indeed, in the current era which sees various native fishers around the world pressing for restoration of their former rights, it is sometimes they who have marginalized their non-native competitors. In the valuable salmon fisheries of western Washington (US) for instance, native fishers were successful in recapturing significant rights to salmon resources with the Boldt decision of 1974, named after Federal District Judge George Boldt (Knutson 1987 and 1989).

Boldt ruled that under the terms of treaties dating back to 1854, certain Indian groups should have retained title to at least half of the salmon resource of western Washington. Prior to this decision, non-native commercial and recreational fishers had long been preeminent in the fishery. While native peoples initially applauded the decision, the overall level of conflict and contention between native and non-native fishers intensified, instead of decreasing, as was widely hoped.

Now it is the non-native fishers who are most aggrieved, seeing their long-standing fishing practices and subcultures threatened. "Rather than returning fish to traditional Indian river and inshore fisheries," Knutson (1987: 43) argues on behalf of non-native fishers, "the Boldt Decision appears to be encouraging the creation of a wealthy class of offshore, capital-intensive treaty-tribe fishermen, who are intercepting much of the resource before it reaches the traditional estuary and river fisheries of the tribes." These offshore fisheries, non-native fishers argue, should have been reserved for the "all citizen" fishers and not the native peoples, since they were not used by native peoples prior to modern times. In essence, this new legal regime upholds native claims to the resource, rather than traditional sites for harvesting it, and thus it may be some time before we see any abatement in the high level of conflict in these fisheries.

Culturally based conflicts involving native peoples' exploitation of living marine resources will also be discussed in section 3.2 below.

3.1.3 Conflicts involving traditional community-based small-scale fishers

Conflicts specifically pertaining to native fishing cultures were discussed in the preceding section. In the discussion below, the more general cultural type, i.e., traditional community-based small-scale fishers, is considered. Of course, many native fishing cultures can be described as being traditional, community-based and small-scale. However, here, the more general problems confronting practically any long-resident, community-based, small-scale fishers are emphasized.

With modernization, traditional community-based small-scale fishers in practically every country around the globe have been increasingly embroiled in competitive conflicts with larger scale fishers who are utilizing more sophisticated, expensive and effective fishing gear, and correspondingly higher levels of capitalization.

The latter usually have a competitive advantage over their smaller scale counterparts, enjoying greater economies of scale, mobility and influence with government leaders. Smaller scale fishers are therefore often marginalized as a result of several factors: their relatively greater dispersion, individualism and lesser degree of organization; in some instances their adherence to tradition and inherent conservatism regarding innovation and change; and their difficulty of access to financial and political help. In other words, they become marginalized mainly as a result of their smaller degrees of social, economic and political power.

This process has been ongoing in various fisheries since the beginning of the Industrial Revolution in the late 18th century, appearing first in what are now the developed countries, and reaching the now-developing countries in the late 1950s and early 1960s.

By now, literally thousands of studies published by social scientists, economists, developmentalists and many others document the grievous conflicts that have arisen in fisheries where long-resident community-based small-scale fishers have been increasingly drawn into competition with more modernized fishers.

In some instances, some small-scale fishers have merely been socially, economically and politically marginalized by their better-equipped and better-organized competitors, but have continued to fish and maintain their cultural identities as fishing peoples. But, many others, especially those seeing the depletion of valuable stocks upon which they had depended, have disappeared as distinct fishing cultures.

Ruddle (1993), for instance, focuses upon the severe problems of traditional community-based fishers when their long-asserted tenure claims and traditions regarding the management of their fisheries are overwhelmed by modern industrial fishing enterprises. He states,

"In the Asia-Pacific region, *as throughout the world* (emphasis added), traditional community-based marine resource management systems are increasingly affected by external factors that cause stresses and often lead to radical change in systems, including their demise (p. 1)."

Ruddle goes on to discuss a particularly severe contemporary conflict in tuna bait fisheries in the South Pacific:

"In the South Pacific perhaps the single most important and widespread inshore fisheries problem involving traditional community-based fisheries management systems occurs where tenured waters are also used by industrial fisheries to obtain live bait for the pole-and-line tuna industry. Since tuna is undoubtedly the most important renewable natural resource in the region, and an essential source of export earnings, this has become a high level policy issue (p. 18)."

In essence, Ruddle is describing a worldwide phenomenon, i.e., the commercialization and commoditization of various heretofore traditional community-based fisheries, which have resulted in severe social, cultural and economic dislocations among long-resident fishing peoples. In response, many small-scale fishers have opposed these deleterious changes, which increasingly they realize are happening to fishers like themselves all over the world.

The most common way that small-scale fishers resist incursions into their fisheries and fishing communities is by prohibiting or frustrating the entry of "outsiders" (e.g., Acheson 1988, describing "lobster gangs" in Maine, US, who defend their fisheries from interlopers; Andersen 1979 and 1982, and Martin 1979, describing small-scale fishers living in the clannish "outports" along the coast of Newfoundland, Canada; Johannes 1978, describing pre-modern and contemporary native fishers in various parts of Oceania; etc.).

In many cultures, keeping outsiders out of certain fisheries utilized by small-scale coastal fishers has been institutionalized by government sanction, resulting in significant reductions of conflicts. Japan from feudal to present times provides an excellent case in point, as do the pre-colonial Philippines, and most of Oceania prior to European colonization (see Ruddle and Akimichi 1984, and Zengoryen 1984, regarding Japan and Okinawa; Blair and Robertson 1905, regarding the Philippines; and Johannes 1978, regarding pre-colonial Oceania).

Unfortunately, in the currently volatile modern era, which is characterized by unprecedented social, economic and political change, traditional small-scale fishers have often secured rights in their fisheries only by engaging in violent conflicts with other, competing fishers. For instance, traditional and ethnically distinct gillnet and driftnet fishers in North Yemen's Red Sea fisheries, after suffering gear destruction and resource depredations when trawlers entered their traditional fishing grounds, organized politically, threatened violent action, and eventually got the government to withdraw permission for the trawlers to operate there (Thomson 1980: 3).

Similarly, Indonesian small-scale fishers were moved to action after suffering severe conflicts as trawling and purse-seining fleets increasingly entered their traditional fishing grounds. Their strong protests and sometimes violent acts against trawler fishers were eventually decisive in bringing about a government decree banning coastal trawling, which also stated that small-scale fishers would be the priority group in the nation's future fisheries development programmes (Thomson 1980, and Bailey 1986). But such gains have usually turned out to be only temporary and isolated occurrences, especially in rapidly developing countries where modernization and development continue apace.

In Thailand's coastal fisheries, for instance, conflicts between small and larger scale fishers have been ongoing for several decades, and while a few isolated groups of small-scale fishers have made momentary gains, overall practically all of them have been progressively marginalized. Clark (1991), for instance, describes how the rapidly developed large-scale fishery has marginalized many small-scale fishers, and how both groups are responsible for overfishing, which in turn further aggravates the ongoing conflicts between them.

Among the various solutions proposed are the development of employment opportunities outside the fishing sector for fishers of both types, with hopes of reducing overall fishing mortality, while simultaneously undertaking fisheries enhancement projects, such as artificial reefs, as well as organizing joint projects that will enable both types of fishers to work together to solve their mutual problems.

A particularly serious ongoing conflict in the Gulf of Thailand involves squid-trap fishers and larger scale fishers utilizing trawlers. The conflict arises from the destruction of squid traps, an essentially passive type of fishing gear deployed by small-scale fishers, by more aggressive fishers utilizing trawlers (which, indeed, Bailey 1987: 173, observes is a pervasive problem between fishers utilizing "passive" versus "active" gear throughout Southeast Asia, the Indonesian archipelago, and other associated regions). Karnjanakesorn (1992), in a recent study of this problem in Thailand, investigated cultural characteristics of the squid-trap fishers, their perceptions of the conflict, and made suggestions for its solution. His findings underscore the seriousness of the conflict between the squid-trap fishers and the trawlers, and provide the former with a scientific study that should help them compel the government to revise existing fisheries-management policies.

Another example of the marginalization of traditional community-based fishers by larger scale, more industrialized fishers is found along the Pacific Mexican coast, where the indigenous peoples relied upon the harvesting of various marine species--particularly shrimp and oysters--for several millennia. Colonization by the Spanish beginning in the 16th century led to the disappearance of many of the indigenous cultures living along this coastline, but the fisheries continued to be exploited much as they had been by the native peoples. In essence, there was a practically unbroken tradition regarding the utilization of these fisheries reaching back many years (McGoodwin 1987).

All this changed, however, with the advent of production for export, starting in the late 19th century, and really taking off in the 1930s as Mexico organized fishing cooperatives. In the initial phases of development, the rural coastal peoples continued to harvest these important resources much as their predecessors had, and for several decades thereafter their traditional community-based fishing cultures prospered and persisted, maintaining important cultural continuities. However, because of the polluting effects of agricultural development, by the 1960s oysters were no longer abundant enough to permit further commercial exploitation, leaving shrimp as the most important marine resource. Even then, the rural coastal peoples were still able to maintain many traditional cultural attributes having antecedents reaching far into the past. Thus, shrimp continued to be harvested at weirs erected across estuarial channels, or by cast nets utilized by individual fishermen, in much the same manner as native and early-colonial peoples had harvested these resources (McGoodwin 1987).

But as these peoples continued to prosper, the more modern and capital-intensive offshore shrimp-trawling sector was also growing, becoming preeminent in the middle 1960s in Mexico's shrimp export industry.

As shrimp stocks became fully utilized and competitive conflict emerged between the older, rural inshore shrimp fishers and the newer offshore trawling sector, the former were progressively dissociated from the shrimp resource, so that by the late 1970s shrimp production was no longer important in the rural inshore regions. With the demise of this traditional fishery, the fishing cultures along the Pacific Mexican coast essentially disappeared (McGoodwin 1987).

Similar conflicts have been recorded in many other parts of the world. In Indonesia, for example, traditional community-based small-scale fishers have long regarded skipjack tuna as the core resource in their local cultures, but many now find themselves in a losing struggle against larger scale Japanese fishers, who have penetrated their traditional fisheries and are harvesting skipjack for export (Bailey 1986).

An interesting case from the Gulf Coast in the US departs somewhat from the foregoing general pattern. The fishing cultures that were invaded were mainly subcultures of the dominant Anglo-American culture of the US, with many fishers being members of ethnically distinct communities reflecting English, Irish, Scottish, Mexican, Italian, French, German or Scandinavian origins. Many of these subcultures maintained important traditions, including festival and ritual events, as well as those regarding the utilization and management of the fisheries.

Then, in 1975, with the communist takeover in South Vietnam, Vietnamese began to come to the US. Many who had been traditional community-based fishers in Vietnam, took up fishing along the Gulf Coast. "We were always fishermen, back to the beginning of memory," one of them explained (Arden 1981: 381).

The Vietnamese fishers brought with them a more intensive and less restrained approach to fishing than was characteristic of the Anglo-American fishers. As the Vietnamese increased and their impacts in the Gulf Coast fisheries became significant, severe conflicts arose. In essence, the Vietnamese immigrants entered fisheries already suffering from high levels of competition and overcapitalization, high operating costs, and, in the case of shrimp--the most important marine resource in the Gulf Coast fisheries--low prices as a result of the market being flooded by low-cost imported shrimp.

Moreover, not only did the Vietnamese fishers approach fishing more intensively than heretofore seen, but their aggressivity sometimes interfered with other fishers' activities. Also, by virtue of their practice of using extended family groups to achieve low overall labour costs, they were able to undercut the prices charged by their competitors. They utilized different types of fishing craft and gear, which had been familiar in Vietnam, but which was regarded as foreign, and in some cases illegal, by the various Anglo-American fishers. And, at least initially, they were ignorant of the long-standing laws and customs developed in these regions for regulating fishing activity, so that it is not surprising that they seemed to the Anglo-American fishers more like lawless and rapacious interlopers rather than impoverished, displaced refugees (Arden 1981).

Severe conflicts broke out in Texas, Louisiana, Mississippi and Alabama, culminating in the widely publicized incident at Seadrift, Texas, where a Vietnamese killed an Anglo-American. Charges of homicide against the Vietnamese fisher were later dismissed, with the judge concluding that his actions were "justifiable homicide in self-defense, prompted by intolerable harassment" (Arden 1981: 386). For many years thereafter the situation remained tense on both sides but it has now abated considerably. One reason is because the Vietnamese have learned the prevailing laws and long-standing traditions regarding fishing activities; another is the result of efforts by the federal government to help each group understand more about the culture of the other; and, perhaps most important, by now the Vietnamese fishers have established themselves as politically and economically important in the region.

In a different vein, it must be noted that small-scale fishers are not always the victims of fishery collapses, but at times have decisively helped to bring these about. In Newfoundland, for instance, small-scale fishers for several decades had been embroiled in worsening conflicts with larger scale fishers, as each sector competed for valuable northern cod resources. An important aspect of this conflict was the small-scale fishers' underscoring their cultural continuity along Newfoundland's coast for more than 300 years, ever since European colonization first began (Gillmor 1990, Martin 1992, and Walsh 1991).

Following the collapse of Newfoundland's northern cod fisheries, and imposition of a moratorium on harvesting the stock imposed in June 1992, it became apparent that both sectors played important roles in bringing about the collapse. Thus, once this fishery recovers sufficiently to permit its reopening, careful consideration must be given to its exploitation on a sustainable basis. And, given its role in bringing about stock depletions, the small sector's cultural survival in the same form that it had long enjoyed prior to the collapse will no longer be possible (see also Brox 1972, regarding the earlier history of conflicts between Newfoundland's small and larger scale fishers).

3.1.4 International and intranational fishery conflicts

Because so many fisheries are located in waters that have been regarded as part of the global commons, or because weaker nations often have valuable fisheries close to their shores which they cannot protect against incursions by stronger nations, or because coastal fishers are vulnerable to incursions by more powerful groups coming from within their own countries, fisheries have long been the reason for conflicts among nations, as well as within nations.

Conflicts among nations can entail competition regarding a particular fishery as well as migratory resources, which spend parts of their life cycle's in various national domains. Conflicts in some fisheries are sometimes only aspects of more general conflicts between nations. Thus, seafaring fishers may become pawns in conflicts between nations, or at least see their fishing activities greatly curtailed during serious conflicts between nations, such as occurred during the 1967 Arab-Israeli War, which disrupted the passage of fishing vessels to Port Said, Gaza and through the Suez Canal.

Conflicts surrounding the imposition of colonialist regimes were problematic in many fisheries from the 16th through the 19th centuries. In the 20th century, nationalist movements have enabled many countries to throw off long-standing colonial regimes, although in many of them colonial-type relationships have persisted in the form of neocolonialism and internal colonialism, discussed below.

For regulating conflicts between nations, various treaties, multilateral agreements and laws of the sea have long been important. However, because of the increasing social, economic, political and technological changes that have occurred since the Industrial Revolution, a stable or certain *status quo* in fisheries has never been achieved.

International conflicts have increased steadily during this century, corresponding to the collapse of important fisheries targeting cod, haddock, flounder, salmon and tuna, as well as smaller fisheries for such species as bluefin tuna, red snapper, swordfish and sharks (Smith, G., 1994). Thus, in the modern era nations are inevitably thrust into conflicts with one another over the exploitation of marine fisheries.

Neocolonialism must also be recognized as an important aspect underlying these conflicts. In essence, neocolonialism is the process whereby a more modern and industrialized nation strives to exploit a less-developed nation politically and economically, at the same time acculturating it to certain of its important cultural institutions. As Smith (1977: 222) described it, summarizing ideas earlier set forth by Weber (1947: 152), it entails "the ability to get actions favourable to one's position, or the probability of being able to carry out one's own will despite resistance from others."

Today, the modern industrial nations collectively constitute an articulated, grand-scale, world culture in which the individual nations may be conceived of as its subcultures--each nation having certain subcultural distinctiveness deriving from its distinct culture history, as well as differential amounts of social, economic and political power in the overall global scheme. However, this is not to say that all international conflicts in fisheries are an aspect of neocolonialism since it is also sometimes the case that two comparatively strong countries clash these days.

The old and ongoing low-level conflict between the United States and Canada, regarding fisheries around their national borders along the Atlantic coast, is just one good example. Another more heated conflict is the one that recently erupted between Canada and Spain (and, by extension the EU).

This conflict, which basically concerns traditional fishing rights off the Newfoundland coast, again raises ages-old questions concerning any nation's right to unilaterally redefine important boundaries. It can also be seen as a conflict between two different and relatively powerful cultures--each having separate "greater traditions," yet intermingled historical traditions regarding the use of certain fisheries, and distinct problems that they must wrestle with internally (Editors, *The Economist* 1995a and 1995b).

Another heated conflict between two relatively powerful nations was the recent dispute between Canada and the US, in which Canada attempted to limit visas to vessels travelling from the "lower forty-eight states" through Canadian waters enroute to US fishing grounds off the Alaska coast.

Canadian officials emphasized the long-standing importance of Pacific Coast fishery resources among both native and immigrant populations, alleging that these resources were being threatened by US fishing efforts north of Canada, which were preventing migratory fish from reaching Canadian waters.

In reply, US officials underscored the historical importance of these stocks among its own native and immigrant fishers. And, much as in the recent dispute between Canada and Spain, national leaders in both nations were compelled to participate in this conflict by internal social, political and economic pressures arising in their respective nations (Editors, *The Economist* 1994).

Nowadays, conflicts also arise with increasing frequency as a result of the volatility of social, economic and political change *within* various nations--that is, as intranational conflict, much of which is prompted by internal colonialism.

Internal colonialism entails processes in which institutionalized social, political and economic power enables powerful members of a national society--the power elite, consisting mainly of urbanites who control the nation's political and economic high ground--to exploit less powerful groups (Gonzalez Casanova 1965).

The power elite is usually identifiable as a distinct subculture within a nation, a group of people manifesting historical continuity and certain associated traditions, regularities in marriage patterns and social organization, distinct attitudinal and behavioural traits, common ideas and linguistic usages, and so forth. Thus, fishers in nations where they do not have significant political power, which is the case in most countries, may be drawn into conflicts with the power elite.

One good example of internal colonialism concerns what Smith (1977: 222) describes as "the progression of U.S. fisheries toward serving only luxury markets." Focusing on the Columbia River salmon fishery, he describes how powerful economic interests within the US broke down traditional and regional salmon markets, reorienting these to serving US and global luxury seafood markets.

Another example of internal colonialism, this from a developing country, concerns the comparatively recent ascendancy to political and economic dominance of outside investors in the traditional and highly productive raft fisheries of South Sulawesi Province, Indonesia. Investors from outside the region, many of whom had considerable business experience, but no prior knowledge of the fisheries, recently took control of the region's main fish market, with important implications for production as well.

The result has been increasingly heated conflict between the traditional participants in the fishery and the new investors. As Zerner (1991: 63) describes this radical transformation, which began in the early 1970s,

"The position of the community of fishermen, once conceived as those on the "inside" (i.e., the core community) and those on the outside (the non-fishing investors) were, by 1989, reversed. In the waters off Mamuju, working fishermen are even more clearly defined as marginal labourers or even "ant armada."

Both processes, neocolonialism and internal colonialism alike, can be considered worldwide problems with tremendous potential for disrupting traditional societies and drawing them into desperate conflict to sustain their cultural survival. At the same time, the potential of these two colonial "isms" for bringing about environmental and other resource problems should not be underestimated.

3.1.5 Fishers in conflict with fisheries-management subcultures

Documented conflicts between fishers and fisheries managers are too numerous to cite here; suffice it to say that, over the past half century these kinds of conflict have become so pervasive that they practically verge on becoming an emergent tradition. Explicit recognition that many fisheries conflicts were essentially people conflicts, and, therefore, were often culturally based, prompted many nations in the early 1970s to include a regard for cultural and sociological factors in the establishment of their fisheries policies. Unfortunately, such mandates have often constituted lip service rather than true commitment, and few nations have adequately addressed these concerns.

In essence, fishers and fisheries managers usually share one important goal--the sustaining of important resources--but beyond that their interests diverge considerably. Most fishers, for example, are concerned with maximizing catches and incomes from fishing over the short or near term. For the most part, they also desire to continue cultural and occupational pursuits in which they have large investments of personal experience and identity. Managers, on the other hand, have two somewhat opposed concerns: one is conserving resources on a long-term sustainable basis; the other is ensuring an efficient and equitable allocation of these resources so as to minimize conflicts and potential political problems.

Hence, fisheries managers have found it necessary to implement various measures for meeting these aims, which in turn have generated conflict between themselves and fishers--especially when they have implemented measures without knowledge or regard for the cultural orientations of the fishers who are to be managed.

On the one hand, strategies such as closing certain fishing areas, or seasons, have usually been compatible with many fishers' own cultural practices, enabling managers to institute these without causing undue conflicts; but, on the other hand, imposing restrictions on gear and technology, and the establishment of aggregate quotas on total allowable catches (TACs), all of which are commonly employed strategies in management today, have few analogies in the cultural practices of most fishers, and thus often generate conflict wherever they are implemented. Similarly, limiting entry and regulating fisheries through monetary measures such as licenses or taxes usually engender conflict whereas offering subsidies is more often applauded by fishers. Instituting various forms of property rights in fisheries will be applauded by those fishers who will benefit from the new rights, but will be strongly opposed by those who do not.

Nowadays, it is being increasingly realized that most fisheries managers have important subcultural orientations which differ distinctively from those of fishers and play an important role in prompting conflicts between the two groups. Ward and Weeks (1994), for example, looking at conflicts between small-scale oyster fishers in Texas and the state bureaucracy, stress how members of the management subculture share ideas about training, similarities in experience regarding their education and socialization into the management culture, certain *a priori* and sometimes erroneous assumptions about fishing peoples, understandings about natural resources and natural resource communities, as well as recurring linguistic usages, thought and behaviour patterns, and other attributes conferring upon them a subculture that stands in marked contrast to the cultures of the fishing people they are responsible for regulating.

Durrenberger (1992), discussing the interplay of politics in fisheries conflicts, makes similar observations regarding not only the subcultures of management, but also the subcultures of scientists who work on fisheries problems. Most scientists, he laments, have more in common, culturally speaking, with managers than they do with fishers, and because of the greater economic opportunities afforded them by managers, they often become "a political weapon in the hands of those powerful enough to afford it."

3.1.6 Fishers in conflict with fisheries development subcultures

A few scholars have argued that development agencies have brought about conflicts or extreme strains among fishing peoples. Of particular interest here are studies showing that development agencies, banks and their personnel constitute a development subculture that at times has unintentionally or unwittingly promoted changes which are deleterious to people living in regions targeted for development. Alexander (1975), for example, appraising development projects undertaken in Sri Lankan fisheries between 1958 and 1967, concludes that most increased unemployment, exacerbated socioeconomic inequalities, diminished the production of important subsistence foods, and in general further impoverished peasant fishing households, the intended beneficiaries of these projects. Inadequate understanding of local cultures, and especially their traditional means of producing seafood for both subsistence and commercial purposes, was ascribed as the main reason for the failure of so many of these projects.

Similarly, Turner (1991), negatively appraises various fisheries development projects launched by the Papua New Guinea government with considerable assistance from national and international development organizations. Regarding the transformation of PNG's skipjack tuna fisheries, which prior to the 1970s constituted subsistence resources of core importance among the various Melanesian peoples of the region, he states,

"One of the frequent consequences of development programs is the creation or intensification of inequality within the populations they target. This may result in an explosive situation that threatens the objectives of the program. This is especially true in those societies in which, traditionally, disparities of wealth were minimal, and value systems promoted political and economic equality within social categories based on age and gender (p. 71)."

In a somewhat different vein, McCully (1991) argues that the policies espoused by FAO have contributed to the depletion of fish stocks and the impoverishment of traditional fishers in various parts of the world by inadequately considering the ecological consequences of planned development in the fisheries.

3.2 Conflicts between fishers and non-fishing groups concerned about various marine species (e.g., marine mammals, sea turtles, etc.)

3.2.1 Conflicts regarding marine mammals

The importance of marine mammals in fishing cultures--particularly native cultures inhabiting Arctic regions--is legendary. Not only have marine mammals been valuable for their meat and blubber, hides, furs, ivory and other items of material culture, they have also figured importantly in these peoples' cultural institutions, mythologies and other traits, which are basic to their identities. This may be because marine mammals, unlike fish, more closely resemble humans. Their importance among Arctic peoples may also stem from the relative lack of other fauna in colder regions.

The native peoples of Arctic regions often believe that the lives of marine mammals parallel or intertwine with those of humans. Putative marine mammal "societies" are often portrayed in myths and songs as metaphorical of, or mirroring, human societies. Also, origin myths of many native cultures stress that the first humans evolved from marine mammals. For example, the Nootka Indians of the northwest coast of British Columbia, Canada (Arima 1988), are noteworthy for the importance they give to hunting and harvesting marine mammals, especially seals and whales, as are the Eskimo walrus hunters living around the Bering Strait (Ellanna 1988), the widely dispersed Inupiat Eskimo of Alaska's North Slope (Chance 1990), the similarly dispersed Inuit living between eastern Canada and Greenland (Einarsson 1990, Reeves 1992, and Sweeney 1992). As one contemporary student of Arctic peoples observes, marine mammals remain as important today in the mixed economies of Arctic peoples as they were in antiquity (Nowak 1988).

However, with the emergence of the worldwide environmental and animal-rights movement in the 1960s, important culturally based conflicts have arisen involving the utilization of various marine mammals.

These groups are usually referred to as the Green movement, constituting a worldwide subculture of peoples from very similar walks of life who share common goals, ethos and values. Most of its members are middle to upper class urbanites from modern industrialized countries, who live in societies in which daily life is usually divorced from food-producing activities.

Few members of this subculture have any direct experience with animal husbandry or with larger wild animals. Indeed, most have achieved a level of affluence permitting them to press for the cessation of activities that are no longer important in their own societies, but which are otherwise still essential among other peoples and subcultures--about whom they may know very little. Thus, the Greens have gained many recruits from the highly urbanized regions of the US and Western Europe.

Few of the members of this subculture directly depend upon specific marine ecosystems or have any familiarity with them--except, perhaps, in conjunction with travel, leisure and recreational pursuits. Most of their knowledge of marine mammals has been gained through the media and publications of various environmental groups, whose information is usually so animal-focused that it often neglects to mention any native people's reliance upon these resources, unless it is to deplore native practices. At the same time, it often anthropomorphizes marine mammals or makes exaggerated claims about them, which are not supported by science.

Over the past three decades, marine mammals have been the focus of a particularly intense and growing culturally based conflict, with members of the Green movement pressing to see less utilization, or even no utilization, of these resources while native peoples and traditional community-based fishing societies press for continued or expanded utilization. To be sure, it is various groups within modern industrial societies that have most abused certain marine species, so it is not surprising that protests regarding these abuses first arose from among other subcultural components of modern societies.

But, considering the resurgence of most marine mammal populations following several decades in which they have enjoyed considerable protection, the reasons for the continuing fervour of some animal-rights groups seems almost enigmatic in some quarters (see Northridge 1984, Wenzel 1991, and Wright 1984, sympathizing with Newfoundland's sealers, and Davies 1979 and 1989, Mowat 1972 and 1984, and Watson and Rogers 1982, representing animal-rights views).

Early conflicts, beginning in the 1960s, pitted fishing peoples against environmental groups that were concerned with protecting seals and sea otters, which had long been harvested for their pelts, whales, for various products, walruses, mainly for their ivory, and porpoises and dolphins, which were inadvertently being killed during fishing operations.

Soon thereafter, the animal-rights movement gained considerable momentum in the US, following passage of the US Marine Mammal Protection Act in 1972 (MMPA-72), and the Endangered Species Act in 1978 (ESA-78).

Nowadays, the movement is represented by powerful national and international organizations, such as the Earth Island Institute, Greenpeace International, the Humane Society of the United States, the International Union for Conservation of Nature and Natural Resources, The World Wildlife Fund, and many others.

Why have their appeals become so strong? Perhaps part of the reason is because marine mammals are the only other creatures in the sea that, like humans, are mammals. Perhaps it is also because of marine mammals' grace in the water, as well as their awesome size, in the case of whales, and their ranging over huge ocean territories. Part may also be because various groups, filmmakers, authors and others have romanticized or anthropomorphized various marine mammals, alleging that they have human-like characteristics, such as superior intelligence, sophisticated languages and communication systems, and high degrees of sensitivity and awareness, while, in the case of whales, weaving a mystique around these leviathans. Indeed, one important result of this widespread concern and interest has been the growth of the whale watching industry along the coastlines of many countries, an aspect of ecotourism that is regarded by the travel, tourism and recreational industry as having still unrealized potential for further growth.

The success of the animal-rights movement in recruiting a large and powerful membership may also stem from its abilities to enlist the sympathies of peoples who have divergent interests socially, economically and politically. Part of it can be attributed to the continuing decline of natural environmental systems around the world--even if the situation has generally been improving for marine mammals.

Among most activists in the animal-rights movement today, harvesting seals, seal pups and sea otters for their fur, meat or blubber, walrus for their meat or ivory, whales for various products, or culling porpoises or dolphins in order to preserve important fish stocks, are all regarded as examples of unnecessary and conspicuous consumption not essential in modern, affluent societies. Yet, these groups err whenever they call for a cessation of *all* harvesting, disregarding the importance these animals and their products have had, and continue to have, among various native and traditional coastal peoples.

These criticisms make many native and traditional community-based fishing peoples wonder whether their critics feel that marine mammals are more important than they are. And, where animal-rights groups have been successful in bringing about a decrease in harvesting, some fishing peoples have come to despise not only the activists, but also the very marine mammals that they and their ancestors had regarded as important to their local cultures.

As the conflict has matured over the past 30 years, more moderate policies have been adopted in some nations regarding the use and protection of these animals.

In the United States, for example, legislation was introduced in March 1994, re-authorizing provisions of the MMPA-72, which allow seals and dolphins to be killed in limited numbers if they interfere with commercial fishing (Camia 1994). Other recent legislation has been designed to benefit commercial fishers and some native groups, by reaffirming or slightly enlarging original provisions in the MMPA-72, which allowed a certain bycatch or mortality of specified marine mammals stemming from commercial fishing activities, the removal of "nuisance" animals in certain circumstances, or certain native peoples' rights to harvest specified numbers of animals for specific purposes.

More recently, in February 1995, responding mainly to pressures from the nation's Atlantic fishers who are suffering from the moratorium on harvesting northern cod, Canadian Fisheries and Oceans Minister Brian Tobin announced a proposal to test the commercial potential of seal products by offering a bounty to licensed seal hunters (Smith 1995).

3.2.2 Conflicts regarding seals, sea lions and sea otters

One of the earliest and most widely publicized conflicts regarding marine mammals concerned the Newfoundlanders' traditional hunt for harp seals, and to a lesser extent other seal species, for their furs. The ensuing furor garnered such great attention worldwide that even now, many years later, the image of a helpless, pure-white harp seal pup stranded alone on the ice remains an important icon in the animal-rights movement. The widespread public outrage about the harp seal hunt which arose was perhaps best explained by Busch (1985: 256), who said, "Above all...it is the killing of defenceless pups, totally unprotected by burrow or nest or camouflage, which has aroused such fury."

On the other hand, the importance placed on the seal hunt by rural Newfoundlanders was cogently stated by Wright (1984) as follows:

"Why is the seal hunt important...? Part of the answer is straightforward economics. The sealers are fishermen or marginally employed men who must make use of whatever economic opportunities come their way...Yet other, less concrete motivations are also important for the sealers...Most of the sealers live in tiny communities that have been inhabited by their families for many generations. Their culture has grown within their environment, and in response to it (p. 88)."

"The seal hunt provides men with the opportunity to test two criteria of manhood in Newfoundland society. These are hardiness and the ability to provide for one's family (p. 93)."

Thus, for the Newfoundlanders, the seal hunt was an important rite of passage in the local culture, an important test of attributes needed in manhood, such as cooperation, fraternity, solidarity.

In essence, the hunt affirmed old traditions, underscoring attributes that were essential for survival in the isolated and rugged little outport communities along the harsh northeast coast. Most of the critics in fact knew very little about the importance of the hunt in "Newfie" culture, and even less about the importance of the seals as a source of income in an otherwise declining mixed economy. As the seal hunters saw it, the animal rights movement not only threatened to deny them an important source of income, it threatened their cultural survival as well.

The native Inuit peoples, who had long harvested seals in the Canadian Arctic for their furs, similarly watched the demise of their seal-fur industry, and for them the result was more severe, since their economic welfare and cultural identities were even more closely associated with hunting seals.

Three decades have elapsed since the first furor over the fur-seal harvest in the Canadian Arctic, extending eventually throughout the whole Arctic. Although seal populations have increased remarkably during this period, only limited harvesting takes place at present, mainly because of depressed prices for seal pelts brought about by the continuing activity of animal-rights groups. At the same time, important fisheries have also steadily declined--some disastrously. Ironically, today's larger seal populations play a part in the depression of these fisheries. No wonder then that many peoples who formerly benefited from both the seals and the fisheries have come to despise not only the animal-rights activists, but also the marine mammals they have helped to protect.

In Iceland, seals are now negatively regarded for a variety of reasons. One is that Icelanders feel that their formerly important sealing industry was ruined by outsiders who knew almost nothing of their culture, and particularly nothing about the importance of seals in it. Not having these people against whom to direct their anger, they instead direct it at their "enemy's" most important symbol: the seals themselves. Because of seal protection and/or declining harvest due to decreasing fur prices, seal populations are reaching unprecedented high levels. They compete for dwindling fishery resources, and increasingly interfere with fishing activities by becoming entangled in fishermen's nets. As Einarsson (1990: 35) notes, seals are now being regarded by many fishers in Iceland "like rats in the sea with no right to exist."

Bitter conflicts have arisen in recent years among native, commercial and recreational fishers as animal-rights groups have tried to ensure the continuing and nearly absolute protection of sea lions along the North American Pacific coast, especially in Washington and Alaska, US, and British Columbia, Canada. These efforts have focused mainly on California sea lions, which are now abundant, and the northern Stellar sea lions, whose populations have not similarly revived following passage of the MMPA-72 (Alverson 1992). The soaring California sea lion populations not only began to impact other marine species sought after by both native and commercial fishers, but also interfered with fishing activities and important shore-side facilities.

After 1972, California sea lion populations grew at a steady 10 percent per year, reaching an estimated 110,000 animals by 1992, while commercial fishers and others increasingly called for restraints to be placed on their future growth.

The problem became particularly acute in the Puget Sound area, where the sea lions invaded some fisheries, bringing about the closure of some important shellfish beds due to excessive levels of *E. coli*. At the Ballard locks in Seattle they had taken up residence and were decimating steelhead from the depleted Lake Washington run, "raising," as Huppert (1995) notes with irony, "the possibility that a protected species may be responsible for the extinction of an endangered species."

Yet, despite appeals from various groups, consisting of native, commercial and recreational fishers, as well as the operators of marinas and other shore facilities, US wildlife officials have been reluctant to slow the growth rate of sea lion populations, saying they cannot estimate what the carrying capacity might be because there has not been any slowing in their growth rate since 1972. At the same time, and curiously, Stellar sea lions in the western Gulf of Alaska have actually decreased in numbers and are currently listed as an endangered species, even though they have been similarly protected in recent years.

Similarly, conflicts have arisen with commercial abalone fishers operating along the California coast, as well as with native peoples from Alaska, regarding the nearly absolute protection of sea otters following implementation of the MMPA-72. The problem remains in California, where sea otters faced extinction only a few years ago, but have now rebounded sufficiently to negatively impact important shellfish fisheries (Carey 1986). Nevertheless, because their overall populations are still fairly low, they will probably remain completely protected for some time to come.

In Alaska, the situation is quite different. Sea otter populations had rebounded so remarkably by the mid-1980s that native peoples began to petition to have their harvesting rights expanded--hoping for a revival of the commercial sea otter fur industry. Until then, native peoples had been allowed to take marine mammals for personal use only, not for commercial purposes, which was consistent with various provisions in the original MMPA-72.

As native groups began to pressure the US government, various animal-rights groups strongly opposed them. One particularly influential group pressured the US National Marine Fisheries Service (NMFS) to amend the MMPA-72 to make the provisions that forbade commercial exploitation of Alaskan sea otters even more explicit, claiming that the native Alaskans' use of them for their pelts was not traditional, but that the practice had only originated with the demand for furs made by Russian traders in the 19th century.

In fact, native Alaskans had long harvested sea otters, for their furs and other products, in a religiously prescribed fashion, requiring ritual use of a specially fashioned club, while offering prayers to the dead animal, asking its forgiveness for having been sacrificed--all traditions still being maintained by today's native peoples.

The conflict culminated in a number of hearings in the late 1980s to determine whether the MMPA-72 required changes that would further restrict native uses of sea otters.

Initially, the animal-rights group prevailed as the NMFS decided the MMPA-72 should be amended to explicitly forbid all harvesting of sea otters for their furs--even the limited harvesting native peoples had been allowed. The native groups appealed, and within a year the decision was reversed by a federal judge in Anchorage, who cited ethnographic evidence refuting the group's allegations that sea otters had not been utilized for their furs by native Alaskans prior to the advent of the (Russian) fur trade. As a result, native Alaskans may still harvest sea otters for their own personal use, but their desires to see a resurrection of the commercial fur trade remain unfulfilled (see Dyer 1995--who participated in the above-mentioned hearings).

3.2.3 Conflicts regarding whales

Perhaps it made sense that environmental and animal-rights groups launched powerful campaigns to bring a halt to commercial whaling around the world, especially the sort being carried out by large-scale industrialized whalers. After all, nearly two centuries of unbridled commercial whaling had taken a serious toll on whale stocks, qualifying several species for endangered-species status.

By the middle of the 20th century the various products derived from whales could no longer be argued to be essential in any modern societies. But, it made less sense that the anti-whaling movement insisted on a halt to *all* whaling, especially that conducted by native and other community-based small-scale fishers, most of whom had long harvested whales for subsistence foods and other important products. Such peoples, who hunted mostly around their home communities, had never significantly impacted whale populations.

A widely known and relatively early conflict regarding native peoples' rights to harvest whales and other marine mammals pitted Alaskan Eskimos, particularly the Inupiat of Alaska's Arctic north slope, against various environmental groups. The conflict concerned the Inupiat's hunting of bowhead whales, which were thought to be an endangered species. In 1976-77, environmental groups proposed a moratorium on hunting the bowhead whale, urging the US government through its NMFS, to suspend the Eskimo's hunt for at least a year.

The bowhead whale had always been important in the Inupiat's traditional subsistence economies, and the hunt encapsulated and perpetuated core aspects of their culture. As Liebhardt (1986: 277) notes, "Because it is the largest animal the Eskimos hunt, the bowhead is their most important source of meat." Moreover, she notes,

"Traditional Inupiat culture was closely bound to the Arctic environment. Eskimos perceived their relationship with whales and other wildlife on which their survival depended as interdependent. They understood and articulated those connections in spiritual terms: if hunters and their families respected and protected animal spirits by observing specific rituals, animals would give themselves to the hunters and would return the following year (p. 278)."

The Inupiat initially responded to criticisms of their hunting of bowheads by merely pointing out that they had harvested them for literally thousands of years without ever depleting them, and that they intended to continue doing so in the future.

Although they were few in numbers and ranged over extensive territories, the Inupiat were already well organized politically as a result of their struggles to ensure their participation in Alaska's north slope petroleum development. Their efforts had seen the formation of a tribal "borough," which was recognized by the state and federal governments, and exercised certain rights over the development of resources within its territories.

Fundamentally important in this organization was the preservation and enhancing of the cultural identity of the tribe.

Thus, when the moratorium on harvesting bowhead whales was suggested, the Inupiat borough responded quickly by forming a new political organization, the Alaska Eskimo Whaling Commission (AEWC), to work to rescind the moratorium. The tribal organization's leaders worked closely with the groups and Alaskan and US government officials, participating in scientific studies to estimate bowhead whale populations.

It was eventually discovered that the bowhead populations were roughly ten times larger than the environmental groups had earlier estimated (Chance 1990: 176-178). As Chance (1990: 177) describes the outcome of this conflict,

"Finally in 1978, at a special session of the IWC (International Whaling Commission) conference in Tokyo, the United States delegation--with members of the AEWC at their side--persuaded the commission to lift the moratorium in exchange for an agreement by Alaskan Eskimos that they would limit their annual subsistence hunting to twelve bowheads killed or eighteen struck. The AEWC agreed, conditional upon the establishment of a cooperative management plan...(entailing) research on improved equipment; AEWC participation in IWC decisions; and a U.S. commitment to seek full restoration of the subsistence harvest...(and) this self-governance of whale hunting has continued to the present time."

Not surprisingly, environmental groups continue to press today for an end to the Inupiat's harvesting of bowhead whales, while the Inupiat still fervently maintain that they alone should decide how the resources should be utilized.

At the present time, it seems the balance of public opinion may again be swinging more toward the environmental groups. Yet the Inupiat feel assured that the important precedent they established in the late 1970s will guarantee their utilization of this culturally important resource, at least on a limited and highly controlled basis, well into the future.

Other native peoples have recently become more militant in countering the restraints placed on their utilization of marine mammals during the 1960s through the 1980s. Another recent conflict in which the anti-whaling movement has threatened a native people's abilities to continue whaling involves the aboriginal Inuit Eskimo, who inhabit the Arctic between eastern Canada and Greenland, and whose local economies had suffered as a result of the anti-sealing movement's success in decreasing overall world demand for seal furs.

More recently, the Inuit have been drawn into a conflict regarding their harvesting of narwhals. Contrary to their defensive attitude during the seal conflict, they participated in scientific studies that have enabled them to influence management policies. Reeves (1992) recently completed a study of narwhal hunting among the Inuit, in which he explores factors that have motivated native hunters, both in the distant past and today, and focuses on how non-indigenous groups have recently intervened to restrict Inuit hunting activities.

Concern about narwhal conservation first arose during the late 1960s and early 1970s, and focused mainly on the presumably positive correlation between the monetary value of tusk ivory for export and the intensity of the Inuit's narwhal hunting. Reeves, therefore, developed an idealized model of conflict development and resolution to facilitate comparisons among six cases, including bowhead whale hunting in Alaska, beluga hunting in southeastern Baffin Island and northern Quebec, dugong hunting in Australia and Papua New Guinea, and narwhal hunting in Canada.

His main finding regarding the last is that the commercial dimensions and geographically dispersed markets for narwhal products (ivory and maktag) distinguish Inuit hunting from the other marine mammal hunts mentioned above. He concludes that appropriate management, which mediates conflicts between the Inuit and non-indigenous animal rights groups, must integrate scientific knowledge and core Inuit cultural values, while keeping narwhal mortality within sustainable bounds. Such thinking intelligently incorporates native concerns with guidelines for the Inuit's continued utilization of narwhals, and by extension, other important marine mammals.

In the same vein, Sweeney (1992) discusses how native Inuit peoples from the community of Pangnirtung, Baffin Island, Canada, have successfully defended their traditions regarding harvesting beluga whales. These peoples, she notes, stress that the conflicts surrounding their hunting of the beluga concern much more than animal rights and conservation. They question the degree of restrictive measures that are required to protect the beluga population, and especially, *who will define these conservation needs*.

Thus, the attempts by the Canadian Department of Fisheries and Oceans to institute a regulatory regime in the South East Baffin have so far been frustrated by the native Hunters and Trappers Association, which disputes not only the validity of various scientific studies concerning beluga populations, but also the value orientations of "outsiders" (i.e., non-Inuit peoples and groups) concerning how these creatures should be managed.

An important bulwark of the native people's assertions are various statute laws guaranteeing them rights to certain marine resources. Pangnirtung's Inuit stress their long-standing interaction with the resource in terms of their traditional predator-prey relationships, making recourse to historical, contemporary empirical and non-empirical experience, while expressing willingness to participate in new co-management approaches. They insist these approaches must feature local-level Inuit control regarding how the resource will be studied and managed in the future while explaining precisely what their role will be in these future activities.

Other traditional community-based small-scale whalers in other regions have suffered as a result of the environmental movement's successes in curtailing the harvesting of whales, which led to a moratorium on commercial whaling in international waters adopted by the IWC in 1982. Thus, while the IWC's resolution did not strictly prohibit the taking of whales by small-scale coastal fishers operating within their nation's sovereign 200-mile EEZs, the glare of adverse publicity has put many of these people on the defensive.

For small-scale fishers living in various communities around the coasts of Japan, for instance, whaling activities have historically played an important role in their social, economic and cultural activities. Many Japanese still participate in small-scale coastal whaling, which is now a highly regulated activity targeting mainly minke whales. But it remains important in local communities for purely economic reasons, as well as for helping to maintain cultural attributes (Iwasaki-Goodman and Freeman 1991). In turn, by supplying whale meat to larger fish markets in Japan, these fishers contribute to supplying a food that has long-standing cultural importance for practically all Japanese peoples (Takahashi, Kalland, Moeran, and Bestor 1989).

Small-scale whaling traditions are also being maintained in other countries--from the Azores to the West Indies and up to the Faroe Islands in the Atlantic, all around the inhabited regions of the Arctic, and throughout much of the Pacific basin-- despite mounting criticism from environmental groups.

3.2.4 Conflicts regarding porpoises or dolphins

Conflicts have also arisen between fishers and environmental groups that are concerned with protecting porpoises or dolphins. Recently, these conflicts have even prompted fisheries disputes between nations.

Beginning in the late 1960s in the US, for example, environmental groups began to pressure the government to reduce the mortality of porpoises or dolphins associated with tuna fishing utilizing purse seines. With the passage of the MMPA in 1972, the government began to require US tuna fleets to utilize then experimental methods and gear to permit the escape of porpoises or dolphins during fishing operations. For the most part, the tuna industry complied with these new requirements, working closely with government officials to develop fishing methods and gear that would further reduce the mortality of porpoises or dolphins (see Norris 1977 and Orbach 1977).

Meanwhile, efforts by environmental groups to protect porpoises or dolphins in other parts of the world prompted bitter conflicts. In Japan, for instance, various traditional community-based small-scale fishers, who had periodically culled dolphins to conserve important fish stocks, soon found themselves the objects of international criticism. For example, environmental groups alleged that the coastal fishers of Iki Island, Japan, had killed at least 6,000 dolphins between 1976 and 1982, and their pressures brought about a cessation of this long-standing practice.

Unfortunately, no suggestion was made for alternative means for conserving or enhancing the yellowtail stocks that both dolphins and human fishers depended upon, and as a result the Iki Island yellowtail fisheries have declined (Mulvaney 1990). Similarly, lesser known conflicts arose in other fisheries where traditional peoples had long harvested, or culled porpoises or dolphins to protect valuable fish stocks. These conflicts, while garnering less international attention than those in Japan, were nevertheless often quite heated, especially in certain fishing societies in the central and western Pacific.

More recently, criticism has been levelled at Japanese and other fishers who are taking porpoises or dolphins for use as meat, or as substitutes for whale meat. In 1990, for instance, Japanese fishers, who had for decades harvested a comparatively small number of Dall's porpoises for their meat, were said to harvest alarming numbers because their annual take of whales had been so drastically reduced by the 1982 moratorium on whaling. As the Dall's porpoise stocks declined, Japan was urged in 1990 to consider reducing its annual catch to the levels that were being taken prior to 1982.

Even more recently, environmental groups have played instrumental roles in bringing about restrictions on the utilization of drift gillnets, particularly in the tropical Pacific, citing their deleterious impact not only on porpoises or dolphins, but also their indiscriminate killing of many other untargeted marine organisms. They have also again turned their attention to purse-seining operations for tuna, alleging non-compliance by US and other purse-seining fishers, and claiming that various tuna fleets have long been understating their true impacts on porpoise or dolphin populations. In turn, these renewed pressures on tuna fishers engendered another international conflict, this time between the US and Mexico.

The US government alleged that Mexico was placing US fishers at an unfair competitive advantage because it had been lax in its protection of porpoises or dolphins and did not comply with multilateral agreements to utilize certain fishing methods and gear to protect these creatures. Thus, it placed an embargo on imported Mexican tuna in 1993. To be sure, the embargo was motivated as much by internal economic and political pressures within the US as it was by the government's concern regarding Mexico's protection of porpoises and dolphins.

Mexico responded by putting into place more effective means for reducing porpoise and dolphin mortalities and then urged the US to lift its embargo on Mexican-caught tuna. For now, this conflict seems contained.

3.2.5 Conflicts regarding sea turtles

Sea turtles have long been important in the cultures of traditional fishing peoples, being highly prized not only for their meat but also for their shells for making useful tools and art objects. They have also played a great symbolic role. Indeed, so importantly were these creatures regarded among most aboriginal peoples inhabiting the tropical Pacific that their harvesting was zealously controlled by various chiefs, while myths and rituals underscored the necessity of utilizing them wisely so that they would not be depleted (see Gladwin 1970, Johannes 1978, and Lessa 1984).

In traditional Asian and Buddhist cultures, sea turtles have always been considered sacred beings. As Anderson (1994: 146) notes for China, tortoises and sea turtles are "a cosmologically important animal in Chinese thought." He continues,

"Moving between land and water...it mediates between our world and the mystic lands under the waters and under the earth. Thus it is both sacred and unclean, and many strange myths are attached to it."

"Buddhists hold that release of turtles and tortoises is even more praiseworthy than release of other animals...This belief has influenced the fishers, whose folk religion has major Buddhist influences."

Unfortunately, because sea turtles are relatively simple to harvest and their meat is particularly palatable, their commercial exploitation in the modern era has brought about their depletion in many regions, and at the same time has prompted conflicts among coastal peoples who had long harvested them. Nietschmann (1974), for example, describes how sea turtles were basic to the cultures of traditional fishing peoples living along the Caribbean coasts of Honduras and Nicaragua. Not only were sea turtles part of their local subsistence economies, they were also core to sociocultural institutions stressing reciprocity, sharing and helping others. Correspondingly, they were important in local myths and stories that stressed how people and turtles should live.

All of this changed with the development of a commercial-export turtle fishery in the 20th century along Central America's Caribbean coast. As local turtle fishers began to produce turtles almost exclusively for the commercial-export market, the important local cultural institutions stressing reciprocity, sharing and helping others broke down. In the second phase of development, turtle resources were overexploited and eventually collapsed, and with it the commercial-export industry. Yet, there was no return to the previous, long-standing cultural traditions among the local peoples. The culturally atomizing effects of shifting from a locally oriented subsistence economy to a modern cash economy have persisted. Similar transformations of traditional societies have been recorded in many other parts of the world, where sea turtles once figured importantly in local diets, social institutions and cultural cosmologies.

As sea turtle populations have continued to decline, animal rights groups have given their attention to their conservation and revival, and perhaps with no greater fervor than in the Gulf of Mexico and the Caribbean Sea, especially where these bodies of water border the US, Mexico and various Central American countries. In many cases, by publicizing alarming declines of sea turtle populations in the Gulf of Mexico and the Caribbean, the groups have tried to curtail commercial harvest of these animals for their meat, and in this regard they have been mostly successful. Attempts to prevent rural coastal dwellers from harvesting turtle eggs, on the other hand, have met with less success, not only because of the general scarcity of food among many of these peoples, but also because of cultural beliefs stressing that the eggs enhance their physical vitality, health and sexual potency. Their geographic dispersion also makes enforcing prohibitions difficult.

But, perhaps no conflict has been more acrimonious in recent years than that between US shrimp fishers working in the Gulf of Mexico and groups concerned with protecting sea turtles. In Alabama, Mississippi, Louisiana and Texas, shrimp are by far the most valuable living marine resource. Thus, as Dyer and Moberg (1992: 30) describe the Gulf Coast shrimpers,

"Shrimp fishing (in the small coastal communities along the Gulf Coast) is not only the basis of livelihoods...but comprises a distinctive American subculture. Since the late nineteenth century, when local commercial fisheries were established, (these communities have) developed a unique set of economic activities and social relationships based upon the natural, technological, and social cycles of shrimp fishing. (This subculture derives its distinctive character) in large part from this occupational specialization and the relationships of mutual dependence between captains, crews, families, and firms that develop from it."

The Gulf Coast shrimp industry thrived from the late 19th century through the late 1970s. But this changed in 1978, when sea turtles were included in the US Endangered Species Act (ESA-78), engendering conflict between Gulf Coast shrimpers and groups concerned with protection, a conflict that has surprised many because of its persistence and volatility.

With passage of the ESA-78, the US National Marine Fisheries Service (NMFS) was responsible for protecting the turtles at sea, while the Fish and Wildlife Service was responsible for their protection on land. Inclusion of sea turtles under provisions of the ESA-78 had been hard won by environmental groups, which had long expressed concern about the number of turtles being inadvertently caught, and then drowned, during shrimping operations. The groups then began to press the government to require "turtle-excluding devices," or TEDs, to be mandatory equipment affixed to the nets used by shrimp trawlers. Shrimpers opposed such regulations, insisting that the TEDs would diminish their catches, were dangerous and expensive to use, and of dubious effectiveness in reducing turtle mortality (Durrenberger 1988).

In the mid-1980s, the use of TEDs became mandatory and enforcement, even when rather halfhearted, greatly escalated the level of conflict among shrimpers, the NMFS and environmental groups. The latter had gained a new ally: recreational fishing groups, which were pressing for a decrease in net fishing of all types. On their side, Gulf Coast shrimpers stressed that the NMFS had bypassed important legal guarantees requiring that credible and compelling scientific studies be completed, demonstrating the efficacy of the TEDs in saving turtles, before such gear restrictions could be imposed. Meanwhile, animal rights and recreational fishing groups accused the government of lackluster enforcement, alleging that the NMFS was protecting the shrimpers.

Some preliminary scientific studies regarding the efficacy of the TEDs came to light, which claimed they only slightly reduced shrimp harvests. Durrenberger (1988 and 1990), however, appraises these as examples of questionable science conducted more in support of government policy than as objective science *per se*; which was consistent with the claims of the shrimpers themselves (see also White 1989). Nevertheless, the regulations began to be faithfully enforced along the Gulf Coast during the summer of 1989. In protest, shrimpers blockaded several ports in Texas and Louisiana, while promising to press their legal claims more extensively, fervently and with a broader organizational base (Rudloe and Rudloe 1989).

Now, additional scientific studies have been completed regarding the TEDs' effectiveness in reducing sea-turtle mortality, as well as their impact on reducing shrimp harvests. Meanwhile, other studies have been conducted, many sponsored by animal rights organizations, concerning turtle ecology and mortality resulting from trawling. Unfortunately, these efforts have only exacerbated the conflict. Shrimp producers still dispute many of the scientific studies, and at the same time find themselves faced with higher operating costs and a market increasingly flooded with low-priced imported shrimp.

Thus, three important forces now threaten the future of the Gulf Coast shrimpers: production declines, which they allege are mainly the result of having to utilize the TEDs; high and rising operating costs; and low prices resulting from the US shrimp market being flooded by lower cost imported shrimp. As this fishery is threatened with extinction, so are the long-standing coastal subcultures that depend on it. As Dyer and Moberg (1992: 30) state, "It is not coincidental that when asked in an open-ended question what they feared most from TED regulations," approximately 70 percent of shrimpers responded with "'losing our way of life'."

And still this conflict rages! In November 1994, the NMFS issued the Emergency Response Plan, aimed at curtailing turtle losses stemming from trawler operations in the Gulf even further, which again prompted bitter protest among shrimp fishers. By summer 1995, animal rights groups became convinced that the emergency measures had only halfheartedly been enforced and had failed, with disastrous consequences for sea turtles. So, various groups banded together and jointly filed a lawsuit against the NMFS to prevent "the continuing slaughter of threatened and endangered sea turtles by the commercial shrimp trawling industry in the Gulf of Mexico and southern North Atlantic waters."

In this suit, the groups allege that the NMFS' Emergency Response Plan failed miserably, that it was "designed more to protect the shrimp industry than the endangered sea turtles," and that it was not faithfully carried out (Sea Turtle Restoration Project 1995).

3.2.6 Conflicts regarding other species: bald eagles

The bald eagle may not be a marine animal *per se*, but because it preys upon marine fish and thereby competes with human fishers for these resources, conflicts between groups concerned with its conservation and commercial fishers have recently arisen in northwest Washington (US). In the US, not only are bald eagles an endangered species, they are also an important symbol--indeed, perhaps the most important icon in the national culture of the country.

A recent study by Swanson (1993), with the objective of identifying the "economically efficient mix" of commercial fishers, eagle production and human eagle viewing at Skagit River Bald Eagle Natural Area (SRBENA), found that, while eagle numbers were sufficient to attract many viewers, the commercial fisheries harvest downstream limited the availability of spawning winter chum salmon to the eagle population, which in turn limited the number of eagles that can congregate at SRBENA. Were it not for the commercial salmon harvest, she argued, the bald eagle food source would increase, enabling higher concentrations of eagles into the area, which in turn would attract more viewers, and hence higher levels of potential support for protecting this species.

Unfortunately, she does not present comprehensive data concerning what the optimum mix might be, presenting only hypothetical data concerning possible populations of eagles, salmon and potential revenue coming from an increase in viewers. She simply assumes that larger revenues stemming from increases in visitors paying to see bald eagles will more than offset any losses due to placing further restraints on commercial fishers. Furthermore, she makes no mention of the possible problems a further restriction on salmon harvesting might pose for the area's fishing peoples. Unfortunately for fishing peoples, studies like these are getting greater attention from environmental groups, policy makers and others who are interested in developing tourism and recreational enterprises (see 3.4, below).

3.3 Conflicts between fishers and aquaculture and mariculture enterprises

Developing mariculture enterprises have recently prompted conflicts among users of fisheries resources in various regions of the world. Long-resident subcultures living along the US Louisiana coast, for instance, consisting of small-scale capture fishers having distinct ethnic identities, have for several decades conflicted with entrepreneurs who are interested in developing mariculture along that state's marshy coastline. Other important participants in this conflict have been various state agencies having sometimes conflicting legal mandates to safeguard coastal ecosystems or manage the fisheries or promote economic development (Herke 1995).

The situation in Louisiana is no isolated case, but rather is representative of a problem seen around the world. And perhaps this general problem is no more severe for coastal fishers than it is in tropical regions. Such developments have engendered bitter conflicts between traditional community-based small-scale fishers and developing shrimp-farm enterprises. By extension, it has also caused severe problems for other marine capture fishers who live at considerable distances from the mariculture farms--such as the Gulf Coast shrimpers who are being economically marginalized as low-priced shrimp imports, much of which are produced in developing nations, are flooding their markets, as we have seen above.

The problem has been especially severe in several Latin American countries. In these, the shrimp farms have usually been very large-scale highly capitalized projects, which, as Bailey (1988: 34) notes, is "a pattern consistent with that region's *latifundia* tradition." Shrimp mariculture development has also been important in various Asian countries, such as India, Bangladesh, Indonesia, Thailand, Philippines, Malaysia, Taiwan and China. In these countries, however, because coastal mariculture has a long-established tradition, its more recent development has usually been less disruptive than in Latin America.

In several Latin American countries, notably Brazil, Colombia, Ecuador, Mexico, Panama and Peru, development of shrimp farms has brought about severe strains for small-scale fishers. Generally, fishers have lost access to formerly important harvesting areas and watched the destruction of mangrove and other shrimp-rearing habitats, which has brought about reductions in wild shrimp populations and shrimp harvests, as well as reduced harvests of other important marine species. The productivity of capture fisheries has also declined as a result of polluting effluents released from the shrimp farms.

Regarding the impact on capture fisheries of the semi-intensive shrimp farms developed in Colombia, for instance, Larsson, Folke and Kautsky (1994), estimate that the total "ecological footprint" of these farms--that is, the amount of marine habitat impacted by their diversions of water and effluent releases--are 35 to 190 times larger than the farms themselves. In Ecuador, one of the earliest countries to promote shrimp mariculture, its development has brought about the destruction of roughly 20 percent of the mangrove forest. Otherwise, the foregoing problems facing capture fishers resulting from shrimp-mariculture development have many documented parallels in other countries, including Colombia (Larsson, Folke, and Kautsky 1994), Ecuador (Bailey 1988), Honduras (Wille 1993), and Mexico (McGoodwin 1991 and 1994), among others.

In all these cases, the conflict has been between long-resident traditional community-based fishers who rely heavily on shrimp and other fisheries resources, and developing shrimp farms which have often been directly subsidized by governments, or which have been developed with large infusions of foreign capital (notably from North America, Europe, Taiwan and Japan). Strong international demand for shrimp, with approximately two-thirds of all exports going to the US or Japan (Bailey 1988: 32), combined with dwindling or static supplies of wild shrimp and fish from capture fisheries, have made the development of farms extremely attractive to national leaders, private-sector business enterprises and development agencies and banks.

Because of the high levels of investment in these enterprises, as conflicts have arisen between rural fishers and shrimp farms, national armies and other special police forces have often been utilized on behalf of the farms.

In western Honduras, for example, such conflicts led to armed confrontation, loss of life and, subsequently, the rise of militant peasant political organizations--some having support from international environmental groups (Wille 1993). In these conflicts, rural peasants are struggling to ensure their cultural survival, while many national and international business interests, noting the long decline in rural coastal fisheries, see mariculture as the best hope for revitalizing seafood production.

But, problematically, such developments do not usually provide significant employment for the rural populace. At the same time, they diminish marine resources that have long been important in local subsistence and commerce, while disemploying rural fishers.

The long-term environmental/ecological future for such developments--and, correspondingly, their long-term potential for sustaining the food and cultural security of the rural peoples who live amid them--looms problematic indeed, since every acre of natural habitat lost brings these coastal areas closer to ecological bankruptcy. Mangrove habitats in particular are usually the *sine qua non* of coastal ecosystems in these areas, stabilizing shorelines, purifying water, and being habitat to a great diversity of marine life.

With the development of shrimp farms, coastal erosion has usually increased, leading to increased siltation in important estuaries and other watercourses. Water pollution has similarly become problematic, and the diversity of marine life, so important to the maintenance of healthy ecosystems, has been sacrificed for the sake of producing merely one marine organism--shrimp.

Thus, Larsson, Folke, and Kautsky (1994) conclude, shrimp farming ranks as one of the most resource-intensive food-producing systems in the world, which makes it an "ecologically unsustainable throughput system." With equal concern, they observe that an increasing number of shrimp farms have collapsed in recent years "for environmental reasons," citing examples from Mexico, Indonesia, Japan, Taiwan and Thailand. Tragically, despite the abandonment of these farms, the ecological destruction that accompanied their development is still having negative impacts on the productivity of local capture fisheries.

3.4 Conflicts between fishers and travel, tourism and recreational interests

The boom in the travel, tourism and recreational industries in the second half of the 20th century has engendered conflict for fishers of all types as they strive to ensure their sustained utilization of certain marine resources. Tourism and recreation have been described as powerful new subcultures on the world scene, constituting the second largest industry in the world, after petroleum.

As subcultures, their members share certain aims, descriptive terminologies, technologies and ideas regarding the utilization of natural environments and their resources (see Miller and Ditton 1986). Indeed, in many countries--from the most modern and industrialized to the least developed--tourism development has become a key component in national economic planning programmes. Yet, as Johnston (1987) has noted,

"While much attention has been given to assessing the economic costs and benefits of tourism, the linkages between social, cultural, and environmental change are poorly understood; long-term, non quantifiable, or indirect impacts of development are rarely considered and a myriad of social, economic and environmental crises have emerged from development efforts."

Not only have unforeseen problems been prompted by tourism development among fishing peoples, there have also been unfortunate environmental ones as well. One concerns the comparatively recent establishment of conservation reserves, which in a few instances have benefited fishers who are able to utilize them, but more often have excluded them from formerly important fishing grounds (see Stewart 1993).

Moreover, tourism and recreational interests have often taken over shoreside territories or facilities that have long been important for local fishers, such as mooring, beach landing or processing sites (e.g., Johnson and Metzger 1983, regarding fishers' loss of mooring and processing facilities in southern California's "play-full harbours," US; Pi-Sunyer 1976 and 1977, regarding the displacement of small-scale, traditional fishermen in northeastern Spain).

Johnston (1987) presents a comprehensive description of this process, showing how artisanal fishers in St. Thomas, US Virgin Islands, have been embroiled in bitter conflicts with the developing tourist industry regarding access to important fisheries spaces and to fish resources themselves. She states, "Traditional resource relations are contrasted with the present pattern, and social tensions and conflicts are tied to the tourism development context." Focusing on conflicts that came to a head when tourism developers attempted to construct a hotel adjacent to a popular public beach, she underscores the deleterious role tourism has played "in changing the value and use, and transforming the balance of group access and control, over critical resources in St. Thomas."

Tourism development has exacted not only an important and immediate economic cost from the traditional fishers but, more qualitatively, has redefined prevailing cultural attitudes regarding how resources are evaluated and what their best utilization might be--all to these fishers' detriment.

An extreme example of the insidious transformation of cultural values prompted by tourism and recreation development is discussed by McGoodwin (1986), who describes a small traditional fishing community on Mexico's Pacific coast.

Developments have not only displaced formerly important subsistence and commercial fishing activities, but have also corrupted traditional culture, bringing about deleterious changes in value orientations regarding the importance of work and religion, while diminishing the cohesiveness of families and domestic (i.e., household) units, as well as the local community itself.

Perhaps the most grievous conflicts between fishers and tourism and recreational interests have entailed competition over fish resources themselves. In the US, for example, by the mid-1960s gross expenditures on saltwater recreational fishing had exceeded the value of commercial domestic landings, with all that would portend for the negotiation of future fisheries policies (Nathan Associates 1974). As Kitner and Maiolo (1988: 213) observe, "In the area of coastal and ocean resource policy... commercial and private recreational interests often are pitted against each other in heated controversy."

Just recently, in Florida (US), for example, recreational fishers persuaded state and federal management officials to place a ban on the use of nets in commercial fishing, citing the greater economic importance of recreational as compared with commercial fisheries in the state's economy (Smith and Jepson 1993).

Various fishing subcultures that have existed in Florida for more than a century, with many having Cuban, Mexican, Portuguese, African, Creole and other distinct ethnic identities and cultural traditions, had been almost totally eclipsed by tourism and recreational interests by the early 1990s. This is especially true in south Florida and down through the Florida Keys, where today tourism and recreation are the most important social, economic and political sectors.

Many experts see the Florida case as foreshadowing a problematical future for fishers in other areas where tourism and recreational developments are proceeding apace. As Durrenberger (1992: 195) notes, paraphrasing Meltzoff (1989), if pollution, depletion or other competing uses for commercial fisheries do not eventually bring about their demise, "an alternate future... is being written in the Florida Keys and other areas of Florida as they become recreational playgrounds for the rich or settlements for the retired."

Prior to the imposition of the recent net ban, south Florida and the Florida Keys still had significant numbers of scattered small-scale commercial fishers. Now, with the new ban, it is likely that their numbers will further dwindle, and soon we may see the complete disappearance of these traditional subcultures. In this instance, the powerful subcultures of the travel, tourism and recreational industries have almost completely displaced the smaller scale fishing cultures.

Television, film and video presentations, magazine articles and industry advertising leave little doubt that recreational fishing constitutes an important subculture in many modern industrial nations. This subculture is highly articulated with the travel and tourism industries, while its participants share similar aims, linguistic uses, important symbols and strong opinions concerning the best use of certain fisheries resources.

Many recreational fishers emphasize aims that have few analogies and differ markedly from those stressed by most commercial fishers: fishing for trophies, for example, or for non-consumptive purposes such as catch-and-release fishing. And, with the rise of recreational fishing as a socially and economically powerful subculture in the modern world, its participants have increasingly clashed with other mostly commercially oriented fishers.

Along the lower Red River in Manitoba (Canada), for instance, recreational fishers, native subsistence commercially oriented fishers, and other commercial fishers vie for rights to harvest walleye. From a historical perspective, the native fishers have the oldest claims and interests in the fishery, even though in this region their numbers are now relatively small and their cultures are no longer particularly distinct. Commercial fishing has also been important for many decades, with its participants constituting a long-standing fishing subculture. Thus, trophy fishers constitute a comparatively new subculture and one of a substantively different type, since their main aim is not to produce fish for food, but to catch a few particularly large fish for social display.

Thus, while trophy fish have become of paramount importance among the fisheries' recreational fishers, abundant stocks remain the paramount concern of the others. As stocks have declined and fishing pressures have increased, each subculture has blamed the others, while striving to wrest from the state more favourable policies for themselves. Earlier, the state had launched a scientific study of the problem, eventually determining that trophy-sized walleye are an important part of the spawning stock, which contribute to future walleye recruitment and yield. It therefore concluded that management should ensure that commercial harvests are sustainable, and it imposed mesh-size restrictions on native and other fishers, as well as delayed the opening of the spring season to protect fish in the large-size classes.

With these new regulations, recreational fishers assumed there would be more larger fish in their catches, while the others felt adequate stock levels would be ensured (Kristoffersen 1994). Both interests were served, but overall the new measures were not effective in reducing conflicts in the fishery since recreational fishers have become more vocal and influential, pressing for further limitations on walleye harvesting so that the trophy potential of the fishery is further enhanced.

Similar conflicts have been arising with increasing frequency in the US, one well-known example being that of the steelhead trout harvested in the Puget Sound area of Washington by recreational, commercial and native commercial fishers.

More recently, a similar conflict has arisen along the central and northeast coasts concerning striped bass fisheries. Commercial fishers have striven to block proposals by recreational fishers to confer game-fish status on the "striper," while recreational fishers have responded by claiming that they have sufficient membership, capital and organization to close down the commercial fishery completely, reserving the stock exclusively for their own use (Garrell 1994).

Indeed, as recreational fishers and their organizations have increasingly realized the extent of their social and economic significance, as well as their resulting potential political clout, many have seemed less willing to tolerate multiple uses of fishery resources, instead insisting that these be reserved for their exclusive use. This trend, taken to its extremes, not only has important implications regarding the future production of certain seafoods, it also threatens the continuing existence of many fishing peoples.

3.5 Conflicts between fishers and other competitors for marine resources (e.g., agriculture, industrial users, polluters, etc.)

3.5.1 **Conflicts regarding agriculture**

Agriculture may directly compete with fisheries for territory and water resources. In most countries the two sectors are administratively separate, the long-term problem being that developments in one sector--especially agriculture--have often caused deleterious changes in the other. Historically, this customary separation stems from their subcultural distinctiveness. Aquaculture and mariculture sometimes blur these distinctions, although, generally speaking, freshwater aquaculture is usually part of a nation's agricultural sector, whereas mariculture is usually regarded as a part of its fisheries sector. Otherwise, the two subcultures--fisheries and agriculture--usually manifest important and long-standing differences in traditions, historical experience and other aspects conferring cultural identity. From a culture-and-ecology perspective, the radically different adaptations required by each of them practically guarantees their cultural distinctiveness, even when they are found in otherwise very homogeneous societies.

Until the modern industrial era, the two sectors functioned more or less independently, and conflicts were rare. But with modernization and industrial development, agricultural expansion has often been accompanied by aggressive demands for territory and water resources, prompting dredging, water diversion and channelization projects in aquatic ecosystems long utilized by fishing peoples. Agriculture has also negatively impacted marine ecosystems in other profound ways, such as when fertilizers, herbicides, pesticides and other chemicals utilized in agriculture find their way into aquatic ecosystems.

Beginning in the 1960s, for example, serious problems were observed in Asia, where pesticides were having deleterious impacts on aquaculture fish production. In many of these regions, fish produced by aquaculture had long been the only or the most important source of animal protein in people's diets. In flooded rice paddies, Asian peasants have always cultivated fish, not only as an important cash crop, but also as an excellent, low-cost source of protein. But, by the early 1970s the widespread use of pesticides had drastically reduced fish production on rice farms in the Philippines, Malaysia and Indonesia. As Lappe and Collins (1977: 54) stated, "In Indonesia in 1969-1970, German and Japanese multinational corporations began spraying over two million acres of paddy with the same chemical that allegedly only a few years before had killed millions of fish in the Rhine." They added, "Water buffalo, an important source of labour and food to the peasant population of Indonesia, reportedly have died."

Similar problems arose in other nations, in developing countries as well as in many of the most modern and industrialized ones--in their inland aquaculture activities and in marine fisheries. Thus, negative impacts in both types of fisheries were observed in various Deep South states of the US, such as Louisiana, where Lappe and Collins (1977: 54) observed, "huge fish kills have occurred following the application of various insecticides to nearby cotton fields." In Alabama, oyster and other marine resources were badly damaged (Durrenberger 1992).

A detailed and instructive case describing the impact of modern-day agricultural development on traditional fishing peoples concerns the western states of Sonora, Sinaloa and Nayarit in Pacific Mexico.

Oyster production had been extremely important for native peoples in this region long before the Europeans came. Archaeologists have documented the harvesting of oyster resources beginning approximately 8,000 years ago (Hubbs and Gunnar 1964: 145), as well as their central cultural importance as early as A.D. 300-400, and perhaps earlier. Not only were oysters and other molluscs the mainstays of these ancient peoples' subsistence and trade, they were also basic to their political organization and prominent symbolic orientations (Scott *et al.*, 1967-1973).

Native peoples smoked the oysters so as to preserve them for regional trade, leaving behind hundreds of linear shell mounds, the largest of which were deposited between approximately A.D. 200 and the coming of the Spaniards in the 16th century. In the coastal marshes and estuaries in the boundary area between the modern states of Sinaloa and Nayarit, for example, more than 575 large shell mounds have been identified--some more than 3 kilometres long and 180 meters wide, with peaks reaching 10 meters in height.

An oyster shell "pyramid" was also discovered in the early 1970s, which is approximately 79 by 89 meters at its base and 23 meters high. Built between A.D. 700 and 1300, this structure is roughly quadrilateral in shape, as were most Mesoamerican pyramids of that period, and was probably a ceremonial or temple mound. Oyster shells were also utilized in some of the art objects produced by the aboriginal people of the region. But it is the pyramid itself that most underscores the importance of the oyster resource among the aboriginal peoples, and mainly because a majority of the shells going into its construction were never opened, meaning the valuable meat inside was never consumed by the humans who produced them.

The first Spanish explorers who came to the region quickly took over the oyster industry for themselves. By the mid-18th century the native population had either disappeared as a result of diseases introduced by the Spaniards, or had been assimilated into the new colonial order, but the oyster trade still thrived.

In the late 19th century and well into the middle of the 20th century, regionally produced oysters found their way into a lucrative export trade. Even then, they were still harvested and preserved in much the same way as the aboriginal peoples had for nearly two thousand years.

It all came to a rather quick end, however, with the advent of agricultural development in the 1960s. Because Mexico has never had significant numbers of maritime peoples or marine fishers, whereas its great pre-Columbian civilizations were all predicated upon agriculture, it is not surprising that agriculture and not fishing has always been central to Mexican national cultural identity.

Thus, when various agricultural-development projects were launched in the coastal zones of western Mexico, relatively little concern was shown for the possible impact on the region's oyster production, or on other fisheries. Immigrant farmers diverted fresh water from rivers that had heretofore reached coastal lagoons and estuaries, depriving marine ecosystems of replenishments of minerals and other nutrients. Ecological shifts occurred, rendering some formerly important fishing sites unproductive, while creating new fishing sites in areas where there were no precedents regarding use rights. The rural coastal population swelled as impoverished farmers from other parts of the nation were resettled in the coastal zone. Unfortunately, these new arrivals knew practically nothing about local customs regulating marine resource exploitation and conservation, and as a result conflicts broke out between them and the longer standing residents as they harvested marine resources for subsistence purposes. Moreover, in the aggregate they began to place undue pressure on marine food resources of all types (McGoodwin 1987, 1992, and 1994).

The death knell for the oyster-harvesting industry came in the late 1960s, as chemical herbicides and pesticides washed into the coastal lagoons and estuaries, decimating the oyster stocks. Soon after that, the government imposed a moratorium on all oyster harvesting, but to date the resource has not recovered. Continued use of chemicals have kept the stocks depressed, as has illegal harvesting by various members of the mostly impoverished rural population (McGoodwin 1987).

3.5.2 Industrial and other sources of pollution prompting conflicts in fisheries

It is not merely agricultural pollution that harms fisheries, but more generally the increasing levels of polluting effluents that originate in modern industrial mostly urban societies. Thus, marine pollution has become a formidable and seemingly intractable problem in both modern industrial nations and in many developing ones. Perhaps the reason for the seeming intractability of this problem is best summarized by McEvoy (1986: 9), who states,

"The injuries that...water polluters inflict on the fishing industry...do not normally come to account because the market diffuses them too broadly--too many victims each suffering a little bit--for any one person or coherent group to demand compensation for them in the marketplace or in the courts. They are..."social costs," that is, costs that fall to society at large because the expense of making and enforcing contracts to pay them is too great to make the effort worth anyone's while."

Indeed, nowadays fishers practically everywhere are finding the aquatic ecosystems upon which they depend threatened by pollution or other forms of environmental degradation.

In the US, in various countries of Western Europe and in Great Britain, for example, the "congested populations" associated with modernization and urbanization brought about grave problems in various shellfish fisheries during the latter half of the 19th century, with serious declines observed by the 1920s (Durrenberger 1992: 62). Obviously, these declines were met with corresponding declines, and in some cases disappearances, of fishing subcultures that had long relied upon the deleteriously impacted marine life.

On the Atlantic coast of the US, the Chesapeake Bay "watermen" have long been a highly visible fishing subculture, with traditions and continuities going back to the colonial era of the early 18th century. These fishers harvested wild oyster stocks using tongs; indeed, harvesting oysters in this way has been an important attribute of the watermen's cultural identity. Now, however, as large urbanized populations surround the bay, bringing high levels of pollution, as well as new sorts of parasitic infestations, the stocks are dwindling, and the traditional culture of Chesapeake's watermen is also disappearing. As they point out, once they have lost the oyster resource, they will have lost the last and most important vestige of their traditional culture (Editors, *The Economist* 1993b). Thus, it is the complex of modern urban, suburban and industrial subcultures that is displacing them and their distinct subcultures.

A similar state of affairs regarding the disappearance of traditional fishing subcultures along the coast of Alabama (US) is documented by Durrenberger (1992). Traditional community-based fishers were producing oysters by the labour-intensive method of tonging as early as 1819, when Alabama became a state. They remained important and culturally distinct until 1943, when pollution was first observed as a problem in the oyster fisheries. The first closures in the fisheries occurred in the early 1950s, becoming ever more frequent and extensive (pp. 117-118), and eventually leading to the disappearance of these subcultures. Now, because of chronic pollution, no oysters can be taken from Mobile Bay, which formerly had the largest fisheries in Alabama. A few people still tong for oysters along Alabama's coastline, but the distinct subcultures that specialized in this activity for more than a century have disappeared.

Other traditional fishers in modern industrialized nations have experienced the culturally marginalizing effects of marine pollution. Tokyo Bay, for instance, infamous for its mercury poisoning stemming from industrial pollution in the mid-1950s, now has a comparatively new problem known as "blue tide" (Short 1987: 23-25). The blue tide is caused by excessive amounts of phosphorus and nitrogen being dumped into the bay by factories, agriculture and households. According to Short (p. 25), it now "threatens the livelihoods of the fishermen and the very biological existence of Tokyo Bay."

Practically all of Japan's traditional coastal fishing peoples--with the exception of those living in remote areas such as Hokkaido--have been struggling with similar problems for the past three decades. Counted among these fishing peoples are some of the oldest traditional coastal fishing cultures to be found anywhere in the world.

The various fisheries management regimes established by Japan, particularly in the immediate post-war era, effectively resolved sea tenure as an issue of contention among various groups interested in the fisheries, while also anticipating and avoiding the conflicts that might otherwise have arisen as a result of overexploitation and inequitable allocation of the harvest. Thus, many governments in other parts of the world have regarded Japan's management of coastal fisheries as an exemplary prototype for their own fisheries.

But, as Wigen (1989: 388) notes, even as Japan instituted wise policies, "another threat to marine resources was fast arising from beyond the fishing communities and beyond the reach of protective legislation." She continues,

"Beginning in the 1950's and accelerating in the following decades, an external development--Japan's staggering rate of coastal-belt industrialization--began to take a real toll on the country's traditional fishing grounds... Fishing cooperatives had been granted the power to regulate fishing in coastal waters, but who had the power to decide if the coastal zone itself could be taken over for other, incompatible uses?"

3.5.3 Conflicts engendered by petroleum industries

Practically everywhere that petroleum development has occurred in coastal regions, it has caused problems for the small-scale fishing peoples living there (Nadel 1988). The problems have been varied, ranging from interference with customary fishing activities, increased water pollution with deleterious impacts on marine life stemming from production and shipping activities, to displacement of fishers as petroleum enterprises took over formerly important shoreside facilities. Equally important, severe sociocultural and socioeconomic disruptions have been prompted by implanting petroleum enterprises into coastal regions, communities and economies (Nadel 1988).

Where such development has lasted several years or even decades, the associated chronic strains have altered local cultures, perhaps irrevocably. More dramatic in terms of their potential for disruption, although less extensive in terms of their overall global impact, have been shipping accidents in which tanker ships have spilled petroleum products into coastal areas.

The *Exxon Valdez* oil spill in 1989, for instance, is recorded as the largest tanker accident in American history, yet the actual amount of petroleum that was released into the sea was small compared to the total reaching the sea every year from all sources combined.

Nevertheless, this spill had dramatic and immediately disastrous consequences in the region where it occurred, not only for marine ecosystems, but also for local fishing peoples, whose cultures and accustomed ways of life were disrupted, perhaps irrevocably.

From its first day, the oil spill threatened coastal fishing communities in Prince William Sound, Alaska. One of these was Cordova, with a population of approximately 2,150 persons living in several dispersed small settlements, many of whom trace their cultural heritage through native Alaskan Eyak Indians or the Chugach Eskimo (a.k.a. "Aleut"). Cordova's local economy was highly dependent upon both subsistence and commercial fishing activities, with a variety of marine species being harvested for both purposes, including salmon, herring, razor clams, halibut, crabs, shrimp, rockfish and sable fish. Seals were also harvested, consistent with traditional subsistence activities. Resource sharing, reciprocity and redistribution had also been part of tradition among Cordova's people prior to the disaster (see Dyer, Gill, and Picou 1992).

The people of Cordova and similar communities in the region had little say, and practically no participation, in the development of oil-shipping activities. Although the Cordovans and their neighbours expressed concern about the potential impact of a shipping accident, they unfortunately did not have jurisdiction over the territories in which the oil-shipping developments would take place, and thus were able to secure little more than legally non-binding reassurances by the oil companies', state and federal officials that adequate safeguards would be put in place to avoid such accidents, as well as to mitigate their impacts should they occur.

When the *Exxon Valdez* hit a submerged reef in Prince William Sound, approximately 11 million gallons of crude oil were released into the surrounding waters, with disastrous consequences for the region's marine resources. It quickly became clear that the personnel, materials and equipment kept on hand by the oil companies and government agencies were inadequate for mitigating the disaster to any meaningful degree. Thus, as the spill severely affected local marine environments, it also quickly brought about serious economic and social dislocations for the Cordovans and their neighbours. Commercial fishing activities ceased altogether for several months, and Cordovans greatly curtailed subsistence fishing activities, fearing the harvests might be contaminated. Eventually, as local peoples seized upon new income-making opportunities stemming from environmental mitigation and restoration projects, the long-standing traditions regarding sharing, reciprocity and redistribution quickly broke down.

A year after the spill, the marine ecosystems in Prince William Sound had begun to recover, but the Cordovans' traditional way of life seemed to have been shattered and disrupted forever.

Indeed, the dismaying effects of the spill and the artificial economy that arose in its wake left many reluctant to return to the old ways. Today, six years after the spill, Cordova's local culture is quite different from what it was (Dyer 1995).

3.5.4 Conflicts regarding the timber industry

Conflicts among coastal, inshore and riverine fishers have long been problematic anywhere timber industries affect waters with important fisheries.

Large-scale timber operations, including not only cutting and transporting raw timber, but also processing timber into its various products, increase erosion and deposition of various sediments and other effluents into aquatic ecosystems, often ruining important spawning beds (see Neiland and Verinumbé 1991, regarding effects of deforestation on Lake Chad's fisheries in Nigeria, and also Hodgson and Dixon 1989, discussing sedimentation and pollution of coastal marine areas in Southeast Asia).

Such problems have been well documented in US fisheries. The timber industry first negatively impacted fisheries along the urbanizing Atlantic coast, and then along the Gulf of Mexico coast (e.g., Durrenberger 1992, regarding the late 19th-century timber boom in Deep South states, due to the extension of railroad networks). More recently, the timber industry has been especially problematic in Pacific coast salmon fisheries in California, Oregon, Washington and Alaska, as well as in British Columbia (Canada). With the widespread interest in reviving formerly abundant salmon stocks along north America's Pacific coast being shown by coalitions of recreational and commercial fishers, native groups, environmental groups and some government leaders, conflicts between fishers and loggers have considerably intensified.

The timber industry and the fishing industry constitute economically important, and yet quite distinct, subcultures having distinct traditions and identities going back many years. Both stress certain traditional values, and each participates in activities in their respective communities which they stress are important for sustaining their cultural identities.

However, to a far greater degree than is seen among most fishers, loggers enjoy important support from national and multinational corporations engaged in producing timber products, as well as corresponding political and economic support from local, state and national leaders. Comparatively speaking, fishers are usually more dispersed than are loggers, less organized and less articulated with powerful interests. Consequently, they enjoy a lesser degree of political and economic support. Thus, fishers in the north American Pacific Northwest, including native traditional community-based and larger scale commercial fishers, are now embroiled in a difficult struggle to reverse serious marine resource declines brought about by timber operations.

Gatewood (1989), for instance, emphasizes the culturally based aspects of this conflict in the region surrounding Ketchikan, Alaska, which has long been known for both its timber and fishing industries, and is now an important destination for increasing numbers of tourists. He stresses that fishing and logging represent core "occupational cultures." Both have long-standing traditions regarding the utilization of particular resources, and both are highly visible and considered as heroic and somewhat dangerous.

But, because fishing activity is considerably more seasonal and its participants more mobile and transient, they are relatively less visible than the loggers. Townspeople and tourists rarely see exhibitions of fishers' skills, whereas contests demonstrating traditional loggers' skills are commonplace. As a result, "Townspeople, if they take sides at all, tend to favour loggers over seiners."

Moreover, local timber operations employ about 1,000 of Ketchikan's 7,000-8,000 permanent residents, whereas many fishers are clearly migrant workers (p. 96), so it is not hard to understand why the loggers are more sympathetically regarded in the local community.

Gatewood explains, "With the rise of tourism in Alaska, the old competition between fishermen and loggers for social preeminence has taken on new forms."

Now, each group competes to symbolize the frontier history and spirit of southeast Alaska, knowing that preeminence regarding these important symbols will help to facilitate social, economic and political influence with local, state and national leaders. "This struggle for cultural dominance," he notes, "reaches its crescendo each Fourth of July, when towns sponsor public logging contests with no comparable forum for fishermen" (Gatewood 1989: 87).

More fundamentally, because each of these subcultures exploits ecosystems that are interconnected, they have long conflicted with one another. This has been particularly true regarding the valuable salmon resources.

Hence, economic development for one of these subcultures has usually prompted economic stresses and strains for the other. While the loggers have perhaps historically enjoyed relatively more political clout, and may emerge as symbolically more important in Alaska's developing tourist industry, fishers are now enjoying new support from environmental and recreational fishing groups.

By increasingly working together, fishers and these other groups are pressing not only for a revitalization of fish stocks, but also for a more sustainable use of timber resources and other important natural ecosystems.

3.5.5 A conflict entailing a coalition of usual antagonists

An interesting example suggests the volatile and changing nature of fisheries conflicts these days, demonstrating how various presumed antagonists representing diverse subcultures may work together when they perceive it is in their mutual interests to do so.

In Maine (US), a coalition of commercial fishers, recreational fishers and environmentalists came together to oppose the construction of a dam that would block natural migrations of salmon, striped bass and other fish.

The city of Augusta, which wants to build the dam, insists it needs the revenues that the dam would bring far more than it needs enhanced fisheries. Just a few decades ago, the dam would probably have been built.

Nowadays, such coalitions are changing the *status quo* regarding the use, management and conservation of living marine resources (Carpenter 1989).

4. SUGGESTIONS FOR RESOLVING OR MITIGATING CULTURALLY BASED CONFLICTS IN FISHERIES

Regarding reducing internal conflicts in fishing communities: this cause may be helped by developing projects aimed at promoting cooperative activities among fishers, as well as collective activities in the general community incorporating fishing peoples, while also helping to make available credit and other economic support aimed at reducing the risks and uncertainties associated with fishing activities. Other aid should feature welfare assistance to fishing families, addressing problems surrounding the loss or disabling of key family members, supporting women and children, and reducing alcohol and drug abuse, where appropriate.

Regarding native and traditional community-based small-scale fishers: in recent years these have increasingly prevailed in fisheries conflicts by organizing politically and asserting important sea tenure rights to marine resources, which they have also usually argued are important for their survival. Anthropologists and other social scientists have helped such peoples to articulate these long-standing claims, and should provide instrumental help in the future. Thus, native and traditional community-based fishing peoples may benefit more from assistance to empower them politically, as well as research to elaborate their traditional relationships to various marine resources, than they will from projects that provide technical assistance or other more common forms of aid. Correspondingly, steps must be taken to ensure the sustainability of subsistence economies, with special vigilance to see that these are not overwhelmed or transformed by participation in market and export-oriented economies.

As a part of promoting more sociocultural analysis of small-scale fishing peoples, sincere attempts should also be made to incorporate their indigenous means of fisheries management into modern management schemes, whenever apropos. Gmelch (1988), provides an instructive case in this regard, concerning how conflicts were mitigated between various native Tlingit salmon-fishing groups in Alaska, who set gillnets at specific riverine sites where individuals or groups have long claimed exclusive access and/or harvest rights. Conflicts had arisen regarding which groups would have priority to use certain sites. Fishery managers, knowing that native peoples eschewed autocratic solutions imposed on them by non-native fishery bureaucrats, instead decided to permit a native practice known as a "raceoff" to resolve these conflicts. Thus, state fishery managers sanction a contest that requires raceoff losers to recognize first rights to fish at a site by the winner of the race. The result has been a significant decrease in conflicts between the various native groups competing in the fishery.

Of course, it does not need to be assumed that native or traditional fishers' ways of managing a fishery are always the best for avoiding conflicts. Only scientific study and experience gained from experimentation with different approaches can determine this. What is so potentially promising about incorporating indigenous means of management is that they will capitalize on important ideas already existing in the fishing cultures to be managed, rather than going against them from the outset.

Similarly, exploring possibilities for instituting cooperative co-management in various fisheries, especially those utilized by native and traditional community-based fishers, should also be undertaken.

This is because an important strategy for reducing conflict in the fisheries may entail moving away from the autocratic and paternalistic modes of management that have characterized the management of many fisheries in the past. Instituting cooperative co-management, on the other hand, will require the development of new managerial approaches relying on the joint efforts of fishers, managers, scientists and other fisheries experts. One way to begin the process might be to redevelop educational systems so that fishers could take advantage of opportunities to learn more about the main concerns of fisheries management, while managers could also learn more about fishers and fishing cultures.

In theory, when cooperative co-management is instituted in a fishery, the various producers will perceive their mutual stake in sustaining resources at healthy levels, and should therefore be more motivated to police fishing effort among themselves. These changes should in turn reduce their conflicts with fisheries managers, while bringing about potential savings in costs associated with the managerial effort. As Smith (1988: 134) emphasizes, "For all users to feel the impact of their own actions on the whole, they must have some stake in the management of the resource. To develop incentives for resource conservation, harvesters must collectively experience feedback as to how their individual actions affect the resource."

Cooperative co-management has already been successful in reducing culturally based conflicts in several fisheries. Programmes in Iceland (Durrenberger and Palsson 1987), the Lofoten cod fishery in northern Norway (Jentoft and Kristoffersen 1989), and among the native Aleut in Alaska (Langdon 1984) have all been pronounced successful. Of course, perhaps the oldest and most successful co-management regime anywhere in the world is found in Japan, where it has long been the norm.

Cooperative co-management is not a specific clearly defined strategy for managing fisheries. Neither should be it seen as a panacea for reducing conflicts. Rather, it should be regarded as a philosophy emphasizing the potential benefits that may accrue when peoples who are embroiled in conflicts are given incentives to work together cooperatively. Thus, it may have little to offer for reducing conflicts in some fisheries--those exploited by culturally heterogeneous and socioeconomically diverse fishers, for example, which may indeed require an autocratic referee to mediate ongoing disputes. On the other hand, cooperative co-management may offer good possibilities for reducing conflicts in fisheries that are exploited by culturally homogeneous fishers.

Regarding reducing or mitigating international and intranational conflicts in fisheries: the resolution of international conflicts must still mostly rely on traditional means of diplomacy, but it may also be made more effective by stressing the importance of sustaining food security among fishing peoples.

On the other hand, addressing intranational conflicts may be relatively more problematic, since doing so may question the sovereign rights of nations to conduct their internal affairs. Still, progress may be made if governments, businesses and development organizations remain vigilant about not engaging in activities that may exacerbate internal structural problems in the nations where they are working.

Regarding intranational conflicts in fisheries, Dubinsky (1987) provides a thought-provoking comparison of the different approaches pursued in Canada and in the US, focusing specifically on Atlantic Canada and New England (US). He concludes that Canada's internal approach to management, by neglecting consideration of the fishers' cultural orientations, exacerbates conflicts between fishers and government officials, whereas the opposite approach pursued in the US diminishes conflicts (similar conclusions are presented in Hanrahan 1986, regarding conflicts between fishers in Newfoundland and Canada's national fisheries bureaucracy).

Dubinsky's main concern was "cultural conflict between small-scale fishermen and members of the bureaucracy, particularly those in charge of public resource management and allocation." Thus, he noted, problems arose concerning the reconciliation of differing and/or competing sources of knowledge, while the magnitude of the conflicts was determined by the "complementarity of the cultural mindset of the fisherman and that of the dominant political culture and ideology." Canada, he further argues, "has enshrined the Toryist (i.e., conservative, non-liberal) strain in its ideology, while the United States has favoured the ideology of *laissez faire*," lessening conflict in the latter, while exacerbating it in the former.

Regarding reducing conflicts between fishers and fisheries managers and developmentalists: progress will be made here by having each subculture learn more about the prime concerns of the other. Thus, organizing exchange programmes analogous to completing internships in each other's realms might do much to mitigate conflicts between these often antagonistic and poorly communicating subcultures.

Regarding conflicts concerning marine mammals: part of the solution for native and traditional community-based peoples has already been summarized above. Efforts should also be made to increase awareness among environmental and animal rights groups concerning important distinctions between high-impact, large-scale industrialized uses of marine mammals, and lower impact, smaller scale, more localized uses, characteristic of native and traditional community-based fishers.

Furthermore, the influence of environmental groups might be reduced somewhat by further investigating how total protection of marine mammals has led in some cases to serious imbalances, distortions and declines in natural ecosystems, complementing other studies already underway to determine the levels of harvesting that can be sustained into the future.

In this regard, progress may also be made by exploring the complex webs of human-animal-fish relationships that sustained the lives of each of these for several millennia.

Regarding conflicts between fishers and environmental groups concerned with preserving sea turtles, bald eagles and other animals: the human, social and economic costs associated with proposed conservationist programmes must be fully explored, with governments standing ready to compensate fishers for their losses, while making every effort to sustain human subcultures as well as the animal species they depend upon. One way to mitigate conflicts such as those in the shrimp fisheries in the US Gulf of Mexico would be for the government to make certain concessions to fishers--for example, providing credit and subsidies to help them defray their rising operating costs, while imposing tariffs on shrimp imports to provide them with a measure of economic security.

Regarding conflicts between fishers and aquaculture and mariculture enterprises, and especially regarding further development of shrimp-mariculture enterprises: environmental and socioeconomic impact studies should be conducted as part of the developmental process, with special regard for preserving natural marine ecological systems and the cultures of the local fishing peoples utilizing them. Particular attention should be paid to conserving mangrove habitats to the fullest extent possible, since, as Burbridge (1983) said, the long-term value for fisheries of mangrove habitats is potentially greater than its value for practically any other use--including coastal mariculture.

Environmental and socioeconomic impact studies must also address important questions regarding who will benefit, how the benefits will be distributed among coastal peoples living in close proximity to the developments, and what new employment and income-producing opportunities will offset potential declines in traditional systems for ensuring social and economic welfare. Otherwise, as Bailey (1988: 37) reminds us,

"Stripped to its essence the expansion of shrimp mariculture into mangrove habitat generally involves the transformation of a multi-use/multi-user coastal resource into a privately owned single-purpose resource. In many tropical developing countries policies which encourage development of privately owned shrimp ponds involve expropriation of resources over which local residents have traditional rights based on long-standing patterns of usage."

Thus, to avoid both severe environmental *and* human disasters associated with shrimp mariculture development, important emphasis must be given to sustaining both natural marine ecosystems and the rural coastal populations living around the sites of the proposed developments.

This will mean not only elaboration, in depth, of these populations' core sociocultural institutions, with particular emphasis on the role of various marine resources in their social and economic lives, but also determining how these can be sustained into the future.

Regarding conflicts between fishers and travel, tourism and recreational interests: native and traditional community-based fishers must be politically empowered if they are to fare well in conflicts with travel, tourism and recreational interests. An important cornerstone of this empowerment will be to better articulate and safeguard, wherever still possible, their traditional sea tenure rights to marine resources, at the same time underscoring the importance of the latter to their sustained cultural survival.

Moreover, it may be efficacious for fishers to underscore that it is not only the environmental, but also the cultural features of certain regions that make them attractive destinations for tourists and recreationalists, and hence that it is in everybody's mutual interest to see such values preserved. Yet, perhaps most important will be to encourage governments to include local peoples in every phase of the tourism and recreational development project, ensuring that they play decisive roles in everything from its initial planning to full participation in its benefits once it is in place.

Regarding conflicts between fishers and other competitors for marine resources: broad efforts must be made at the highest national and international levels to ensure that developments in any sector do not bring about deleterious consequences for the fisheries. Coordinated planning will be important here, incorporating joint participation by all stakeholders interested in utilizing resources that are consequential for marine realms. In particular, these efforts will require further scientific study of the sources, sinks and costs of polluting effluents, which will then prompt national and international efforts to restructure modern society so that the incentives to continue as before are removed. To do otherwise invites environmental and cultural disaster.

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