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The context of policy design for existing community-based fisheries management systems in the Pacific Islands

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Abstract

Community-based fisheries management is being widely promoted as an alternative to centralized systems based on the familiar bioeconomic models that have manifestly failed to prevent a near catastrophic overexploitation of fish stocks worldwide. The Pacific Island Region probably contains the world's greatest concentration of still-functioning traditional community-based systems for managing coastal-marine fisheries and other resources.

It has been frequently asserted that many such traditional systems provide both a firm foundation for future coastal fisheries management in the Pacific Islands Region, as well as a conceptual framework for managing fisheries elsewhere. Although now seemingly self-evident to fisheries development "experts", such assertions remain largely unverified.

Whereas it is a relatively straightforward task to distil basic "design principles" from a sample of systems, it is far more complex to analyze the multi-sectoral national environment in which they function, especially when their history is taken into account. In other words, it is far less widely appreciated that many contemporary community-based fisheries management systems are the end products of a long process of change and adaptation to external pressures and constraints.

In this article I address some of the broader contextual issues that should be appreciated in policymaking with respect to a potential modern role for traditional management systems in general, and in the analysis of a future role for any given system. First, the principal external factors that have caused change in systems are described and exemplified. The recognition of the potential role of existing community-based fisheries systems, and attempts to act on it, is summarized for some Pacific Island nations, with a focus on the complex problem of reconciling customary and statutory legal systems. In the final section I examine three principal national policy alternatives regarding the potential role of existing local fisheries management systems, together with three main criteria for determining whether or not a system can be adapted to fulfill modern requirements. © 1998 Elsevier Science Ltd. All rights reserved.

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1. Introduction

The familiar worldwide management problems of capture fisheries need no recapitulation here. Although the most highly publicized problems have occurred in the industrialized countries, the same biological and economic models responsible for them are still generally recommended for fisheries development and management in Third World contexts. This is ironic because in many such societies there already exist community-based fisheries management systems well adapted for local use.

Such systems have been documented throughout the world. They remain especially rich in many Pacific Island nations. There they are generally common property regimes where access to a particular territory is limited to a defined user group, who obey specified operational rules and who are controlled by traditional local authorities [1, 2].

Many of those systems were either deliberately or inadvertently weakened or destroyed by colonial administrations and replaced by centralized fisheries institutions nominally responsible for all aspects of fisheries management, from policy formulation through enforcement [3]. Often, the cumulative effect of that restructuring was the impoverishment of tropical fisheries resources and fishing communities. The administrative and technical abilities of government agencies attempting to manage inshore fisheries are generally relatively weak compared to the scope of the problems facing them. As a result, devolution of resource management and allocation decisions to local communities, usually within a co-management framework, is widely viewed as an alternative to ineffective management by distant, understaffed and underfunded government agencies.

Unlike conventional fisheries management, traditional community-based systems focus on resolving *gear externalities* and *allocation problems* [4, 5].¹ The fundamental characteristics of such systems are implementation based on *defined geographical areas* and *controlled access*, self-monitored by local fishers and enforced by local moral and political authority [1, 6].

Both the problems of gear externalities and assignment are overcome by (1) control of a fishing area, as a *property*, and (2) defining exactly who has access *rights* to that area. *Rules of operational behavior* then specify assignments of time and place within that space and group having access. Control of a fishing area is sustained by rights of exclusion, or limited access, that maintain the private area of a community of local fishers against outsiders, and intra-group operational rules are sustained by local authority empowered to invoke sanctions on offenders [6].

2. A modern role

Although now either eroded or destroyed in parts of the Pacific Island Region, particularly during the colonial era, with its reliance on imported scientific concepts,

¹ It is important to note in this context that what is often labeled "traditional" may not be especially old-established. Following Nietzsche, I use the term "traditional" in a self-referentially identifying sense, and not to connote something necessarily deeply embedded in any local history. As Crocombe has observed, "tradition" or "custom", is a practise rather than a principle.

community-based fisheries management systems are still widely used to manage coastal fisheries. Thus it is commonly asserted, although still largely undemonstrated, that traditional community-based systems of inshore fisheries management offer a modern management alternative by ensuring equitable access and managing and enforcing conservation measures to ensure sustainability. And the devolution of control over local resources would likely reduce the social, political, legal, conservation-related and management cost problems to be addressed by central or provincial governments [2].

At first sight the adaptation of traditional systems to a modern purpose may appear to invite local resistance, since they are often so much a part of a way-of-life. But traditional community-based systems of marine resources management in many parts of the Pacific Island Region already incorporate important elements of “conventional” fisheries management. For example, parallel management strategies include limited entry, seasonal, spatial, gear, size, or species restrictions, prior appropriation rights and the concept of sole ownership, among others. In fact, the use of many such strategies in the Pacific Basin long-antedated their adoption in the West [7]. In conventional marine economics terms, sole ownership, limited entry, individual transferable quotas, and other such fisheries management schemes are based on the theory of the firm. On the other hand in many Pacific Island societies the community is the sole owner, and traditions of resource use and management are enforced by community norms that control the behavior of the membership [2]. But this, too, has its parallels in many Western fishing communities where socially binding yet unwritten and informal rules carry more weight than official regulations [2].

Most Pacific Island nations face an array of dilemmas in determining rights and delineating responsibilities in marine resources management and development. Among these are

- the institutions that should manage and enforce regulations for subsistence fisheries;
- the legal support for traditional regulation and enforcement;
- the managerial and developmental role of the central government in small-scale commercial fisheries;
- the feasibility of centralized management plans versus local decisionmaking; and
- the nature of the consultative and collaborative process among fishers, local governments and national authorities.

Initially these look like local versus central jurisdictional matters. But the underlying issue is one of the policy toward and the means of managing marine resources, and of adapting traditional concepts to modern needs and frameworks, such that the range from subsistence fishery to the highly commercialized industrial fishing is served properly.

Alternative arrangements can help in overcoming the weaknesses of conventional fisheries management. The most widely advocated appropriate form of fisheries governance appears to be one in which management authority is decentralized, within a broad policy framework, to enable local governments to fundamentally control local fishing via community-based management systems. Such a system is co-management, whereby decision-making is shared between central and/or provincial governments and community-based management authorities [8]. Arrangements like this have long-existed *de facto* in many Pacific Island nations.

Thus over much of the Pacific Islands Region modern co-management designs would have to closely involve antecedent viable systems of management. Essentially they would become a syncretic model that blends the complementary domains of conventional management and scientific knowledge with traditional management and local knowledge. In many places there are few practical alternatives to the future management of coastal fisheries becoming this kind of neo-traditional fisheries management.

But from the perspectives of central and provincial governments, traditional fishing rights remain a largely ill-defined factor that can be construed either as hindering the use and development of national fisheries or, in contrast, as encouraging their effective use and management. Two major problems arise from them:

1. providing access to “outsider” commercial fishers to underutilized grounds and species from which they are now excluded by traditional fishing rights claimed by people who themselves do not fish commercially; and
2. preserving the valuable role played by and social organizations associated with community-based traditional marine resource management systems and traditional rights.

Regardless of the precise legal situation, individuals, group, clans or villages, as locally appropriate, claim exclusive fishing rights over certain areas. Further, despite their legal basis, such claims are usually zealously guarded. Thus outsider commercial fishing is generally not possible. This hampers the development of a modern, efficient, national inshore fishery sector.

3. Change factors

In the Pacific Island nations, as throughout the world, traditional community-based marine resource management is increasingly affected by external factors that stress and often lead to radical change in systems, including their demise. This is not new. But the intensity and diversity of impacts has increased in recent decades. Thus nowadays systems exist under environmental, social, ecological, political, and demographic circumstances that are often very different from those of even the recent past. And they are greatly affected by the complex processes of national modernization.

Among the principal, all-pervasive external forces affecting traditional management systems are the legacy of colonialism, contemporary government policy and legal change, the replacement of traditional local authority, demographic processes, urbanization, changes in education systems, modernization and economic development, commercialization and commoditization of aquatic resources, technological change, the policies of external assistance agencies, and national policies for economic sectors other than fisheries (Table 1). Such external forces rarely act in isolation, but rather as a mutually reinforcing and potentially destructive complex [3].

Somewhat more recent pressures – but not universally so – are the commercialization and monetization of formerly local and mainly subsistence or reciprocal exchange or barter economies, which now links them with external markets. This, in turn, leads to changed perceptions in fishing communities regarding the value of

Table 1
Factors causing change in traditional inshore fisheries management systems [3]

Factor	Impact and Examples
Colonialism	The systems of laws and policies introduced by British, Dutch, French, German, Japanese, Portuguese, Spanish, and U.S.A. administrations, and their post-colonial continuation, was a major "external" factor that either by default or deliberately undermined customary law and community resource rights. The principal impact is a strongly contradictory legal complexity, with the Western-based State law that essentially regards all waters below the high tide mark as being state property and open of access, at odds with local, indigenous customary law, which recognizes some form of marine property right. The relationship between the customary law that governs, or governed, community-based marine resource management and statutory law is locally highly varied and extremely complex. Except near urban centers, almost every disappearance of a traditional system has resulted from colonial era legislation. The problem can only worsen as other pressures become more pronounced.
National Policy	The present unsystematic and <i>ad hoc</i> statutory framework relating to community-based marine resource management claims stems from an absence of appropriate policy, resulting partly from a legacy of colonial neglect and partly from a preoccupation with other development priorities. Tom'tavala observed of Papua New Guinea in the early-1990s that neither the national government nor the provinces had a policy for traditional marine fishing rights, despite the official admission that conflicts over them are among the most prevalent contemporary disputes [9]. Two principal policy approaches are discernible; centralization and incorporation of traditional systems.
Replacement of traditional authority	Traditional resource management systems often declined because traditional political systems were deliberately replaced by Western political systems during the colonial era. In the Cook Islands, for example, from 1821 the activities of the London Missionary Society destroyed traditional religion, part of the basis for traditional authority, and imposed a British legal and administrative code adapted to missionary concepts. From 1888 the administration was conducted from Rarotonga, with Resident Agents on the larger outer islands. This gradually undermined the traditional power holders (<i>ariki</i>), a fundamental component of the traditional resource management [10]. In Palau, the greatest blow to the integrity of the kin group has been the vesting of property ownership in the individual, and the individual accrual of wealth. Thus authority and economic and political functions of the chiefs are now minimal [11].
Demographic change	Natural population growth, population declines and migrations are all-pervasive factors. Where populations are expanding geographically and increasing in number, demand for marine products increases. Combined with the penetration of cash economies this creates new commercial opportunities. Impacts on fishing communities are exacerbated by new harvesting technologies that provide larger and regular marketable surpluses. Together these cause a host of social changes. In-migration, in particular, exerts a major impact on traditional community-based systems (see below). Excessive population decline can also undermine them. In the Cook Islands, for example, introduced diseases and Peruvian slave traders decimated local populations, thereby contributing to the demise of traditional management systems [10]. On Penrhyn Island, the worst case, at one time only 88 mostly old people and children remained, resulting in abandonment of two villages [12]. Missionaries encouraged resettlement, and on each island the main village grew from in-migration [13]. Such drastic changes ensure the decline of traditional society and institutions. Both the moral authority underpinning and practical regulations governing marine resource management systems are thereby diminished.

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Table 1 (continued)

Factor	Impact and Examples
Urbanization	Heavy in-migration, particularly during urbanization, is a major factor causing the breakdown of systems, and against which it is impracticable to defend them. In Kiribati, for example, in-migration is significant only on Tarawa Island, the capital area. Fishing rights holders complain that without prior permission in-migrants exploit their customarily exclusive shellfish beds. In accordance with introduced statutory law, the government argues that every citizen has access rights [14]. But urbanization, and associated demographic change in areas of out-migration, can lead indirectly to the strengthening of traditional systems. For example, in parts of the Solomon Islands records of boundaries and rights to customary fishing areas were formerly handed down orally. But nowadays this is supplemented by written records of young people to safeguard themselves against disinheritance during prolonged absences for employment [15].
Changes in education systems	Introduced educational curricula and formal schooling has had a massive impact on the local knowledge systems that sustain traditional management. Educated elites now generally neglect and commonly disparage local knowledge and traditional management systems. The practical usefulness of local knowledge is now neither properly acknowledged nor used to assist the design of development projects or management systems. This is not new; such an attitude can be attributed to colonialism and nineteenth century Western social science [16], both firmly rooted in seventeenth and eighteenth century works of historians and natural scientists [17].
Modernization and economic development	This all-pervasive factor includes developments within the fisheries sector, in other economic sectors, infrastructure development, and general modernization. Modernization also inevitably causes attitudinal change and alterations in lifestyle, especially in food habits, local animal husbandry and imported proteins reducing the importance of fishing. Thus support for the management of lagoon and reef resources, and particularly for access limitations, has declined. Community resource rights may be usurped by such activities as foreshore reclamation, dredging and tourist resort development, infrastructural changes that usually have deleterious impacts on coastal-marine ecosystems and habitats. Agricultural developments and change, lumbering activities, and the development of pond and coastal aquaculture may all have deleterious downstream impacts on aquatic habitats, and thus on the management systems that control them. The discharge of waste water and sewage, as well as lighting and general noise from tourist resort complexes, for example, may modify the fish migration and aggregation patterns, such that the value of fishing rights is greatly diminished. The construction of physical infrastructure like causeways and seawalls, without culverts for water passage, has disrupted marine ecology by blocking fish migration paths, and so damaging the fishery. This has compounded the issue of traditional rights to foreshore resources other than fish. Probably the single most important and widespread inshore fisheries problem involving traditional community-based fisheries management systems are the conflicts that arise where tenured waters are also used by industrial fisheries to obtain live bait for tuna fishery.
Commercialization and commoditization of fisheries	New markets for valuable marine products exert a universal pressure on local management systems, by attaching a new value to products that causes changes in the local perception of their value, technological changes in production, and intensified exploitation. Central to this is the monetization of local economies, plus wage employment that reduces subsistence fishing. This contributes to the undermining of traditional management systems because consumers buy fish from a diminishing pool of full-time fishers. Thus local demand represents a structural change in local economies that increasingly demands the breaking of traditional rules against

Table 1 (continued)

Factor	Impact and Examples
	<p>fishing for sale. This breakdown can also be partly attributed to the internal loss of moral authority, since in some cases villagers themselves, motivated by rapidly rising consumer expectations, have encouraged this commercial exploitation. Eventually the whole management system becomes undermined, fishers are no longer interested in limiting harvesting rates. The opposite outcomes can also occur when existing systems are either reinforced or adapted, or where systems are introduced where they have not previously existed. Thus in the Cook Islands only the commercial pearl-shell fishery was valued highly enough to maintain support for the traditional system. There, commercial incentive with the development of the pearl-shell fisheries provided the rationale to retain traditional management systems on Penrhyn and Manihiki islands, where this industry became established [10].</p> <p>The new commercial value often effects inter-village access rights. Such reciprocal rights were widely permitted to neighboring villagers. But this has recently been curtailed, and village reefs reserved exclusively for the use of village residents, owing to increased food demands of a growing population and because of commercialization of resources.</p>
Technological Change	<p>New fishing techniques, gear types and fishing vessels have helped weaken local management systems and traditional authority. These pressures occur when</p> <p>(i) fishers can purchase new gear types in situations where cash economies have eroded social organization that formerly limited ownership of efficient gear to the socially and economically, most powerful;</p> <p>(ii) modern gear types are not immediately encompassed by traditional gear categories, and therefore effectively exempt from traditional controls, and also when the degree of that traditional control is no longer appropriate to the catching efficiency of the new gear; and</p> <p>(iii) traditional techniques for monitoring compliance with rights and rules have been rendered obsolete by new vessels and gear types, such that, for example, poachers can now flee using powerful motorized boats, night flashlight spearfishing can be practised surreptitiously, or modern gillnets can be left unattended and require fewer handlers than the older types.</p>
Development and management projects	<p>Small-scale fisheries development projects are commonly misdirected, as when they are based on such capital-intensive approaches as purse seining or trawling, which further distort local economies by benefiting the already wealthy and often having a negative impact on the livelihood and welfare of most fishing families. Such development has generally been a top-down process characterized by the imposition of external values on fishing communities. Introduced technologies and management systems are also freighted with alien values, especially those concerning preferred social organization, distribution of benefits, and division of labor. As a consequence, economic concerns tend to displace other social values among fishers as they now require more cash than hitherto to repay credit for such expensive items as nylon nets, engines, fuel, and, perhaps, new boats. Traditional management systems and associated regulations are commonly disrupted by the introduction of expensive gear types, such as nylon nets, that are beyond the financial capacity of small-scale fishermen, who then often become low paid laborers for businessmen who can afford the new gear. Unable to save from their low salaries to purchase nets, small-scale fishers often eventually lose their resource rights. In the Pacific Region, most international funding has gone into the commercial fishing sector and relatively little to small-scale fisheries. This has often led to the impoverishment of small-scale fishing communities, especially when the commercial fleets intrude illegally into inshore waters, with often severe resultant conflict.</p>

marine products, and often to external factors being internalized by village elites, and so to the breakdown of traditional management systems through the weakening or total collapse of traditional moral authority. Small communities are not immune from the pressures that drive larger polities and commercial elites, and that undermine the moral imperative of local management systems from within. Regional and global markets also have a direct impact on them: external incentives introduce temptations for individual profit at the expense of local social equity, and thus undermine systems from within by weakening their moral basis [3].

Thus community institutions and management systems change through time, adapting to both external and internal experiences and pressures, many of which are not directly related to the fisheries sector. As a consequence participants in community-based management systems cannot be assumed *a priori* as being inherently benign resource conservational and socially equitable actors. So any policy and program decisions about the present-day and future usefulness of local management systems must be based on a clearheaded and realistic evaluation of the evolving moral authority, motives, interests, and cultural conceptions that underpin and drive them.

4. The use of existing systems in contemporary fisheries management

In many Pacific Island nations, and especially those in Melanesia but also in parts of Polynesia and Micronesia, despite an absence of clear-cut policy and the requisite statutes, the contemporary value and role of traditional community-based coastal-marine resource management systems is recognized [18]. There have also been scattered and somewhat *ad hoc* attempts to implement this recognition. For example, the government of Papua New Guinea seeks to return enforcement to local "resource owners". In this, devolution of power to provincial and lower levels is fundamental. [19]. Similarly, based on the *Provincial Government Act* (1981), revisions to the *Fisheries Act* of Solomon Islands seek to transfer inshore fisheries management to the provinces, whereby they will have full jurisdiction over "Provincial Waters" for 3 nm offshore, and will formulate their own by-laws. In this way it hoped to achieve a better correspondence between provincial management and customary laws [20]. In Vanuatu coastal communities own all reefs. This is enshrined in the constitution: "All Land in the Republic belongs to the indigenous custom owners and their descendants" (Art. 71, Chap. 12) [21]. In Fiji the Native Lands Trusts Board is attempting to increase integration of the traditional community-based fisheries management system with State law, by seeking more formal Fijian ownership of proposed Marine Parks. This planned devolution of management responsibility has recently received ministerial support [22].

A similar process is underway in parts of Polynesia and Micronesia. For example, in Western Samoa since 1988 an attempt is being made to merge local *matai* council rules into national legislation, thereby strengthening them by official recognition. So *matai* councils now consult fisheries officers when designing and implementing local rules. The government must cooperate with the *matai*, thereby blending the management efforts of the two levels (U. Fa'asili. Pers. Commun.).

Thus in many Pacific Island nations it is being increasingly accepted by government that many subsistence fisheries are governed by community-based management systems, and that such systems must be accounted for in evaluating potential development strategies. There a combination of factors makes such systems a potentially valuable management alternative [23]. In an overview of options and prospects for the 1990s by the Forum Fisheries Agency [24, p. 362] it was observed that: "For management of [the subsistence] fishery sector, it may... be advantageous to examine traditional or customary marine management. The Pacific Islands have a rich history of traditional management that is up to now only partially documented.... Modern management of this fishery can then be based on traditional or cultural practices. This would then greatly facilitate its acceptance".

Further, the policies of many governments, particularly in Melanesia, as exemplified by Vanuatu [21], recognize that traditional systems are an integral part of a matrix that regulates social and political relationships and defines cultural identities and ways of life, rather than being concerned with just fishing rights and the organization of economic activities. Thus in many instances abandonment would entail severe social and cultural repercussions. In recognition of this, although generally not without considerable confusion and complications, in Papua New Guinea, Solomon Islands and Vanuatu, where traditional marine resource management systems are recognized as a form of customary law, they have been embedded within State law. In those countries it is a tenet of policy that customary law may empower community-based management, as well as being a basis for co-management of local marine resources.

In the context of economic and social change, during which rights to resources increase in value, groups may attempt to obtain codification of their customary rights. This has occurred in Papua New Guinea [25]. Whereas formal acceptance by legal and political institutions provides communities with a legally codified basis for control over resources, state supervised codification could potentially destroy much of the adaptive flexibility characteristic of unwritten customary law [26], since, as in Palau, "the aura of mystery connected with [unwritten] traditional resource management... was part of its effectiveness" [27]. Dilution of the flexibility of traditional systems is clearly not desirable. Hence codification could be both difficult and of questionable usefulness.

In Papua New Guinea, statutory law, as enshrined in the Independence Constitution, pragmatically recognizes the validity of legal obligations conferred by custom.² Custom is valid if not inconsistent with Constitutional or other statutory laws, and not repugnant to the general principles of humanity [9].

This was reinforced by Section 5 of the *Customs Recognition Act*, which among other things recognized the customary basis of rights to marine areas and resources.

² The Constitution of Papua New Guinea defines custom as: "[T]he customs and usages of indigenous inhabitants of the country existing in relation to the matter in question at the time when and the place in relation to which the matter arises, regardless of whether or not the custom or usage has existed from time immemorial".

This represents the best attempt by the state to recognize traditional community-based marine claims. However, this appears to have been intended more to resolve conflict than to uphold claims *per se*, since it refers to recognition and application of customs during civil litigation, whereas it does not explicitly provide for the prescription by custom of rights in *rem* [9]. However, that "the ownership by custom of water or of rights in, over or in connection with the sea or a reef, or in or on the bed of the sea" can be legally proven presupposes the pre-existence of rights to coastal waters and marine resources based on custom. Thus where a local community recognizes rights to marine territory or resources, these rights could be implicitly recognized under the *Customs Recognition Act* for all other purposes.

However, Tom'tavala concludes that this interpretation, except for principles of common law and equity, could be overridden by the provisions of any other law which prescribes anything to the contrary. He goes on to say, "However, if there is a dearth of statutory prescription to the contrary, then, rights to maritime territories and marine resources (at least for indigenous people) fall to be regulated by customs as implicitly recognized under Section 5 of the *Customs Recognition Act*" [9].

Further, fishing is also an integral part of many traditional coastal societies. For the Trobriand Islanders, for example, the sea and marine life have immense cultural significance, embracing the whole fabric of their beliefs about their origin, their prowess, their relationships, and their ceremonies. Origin stories tell of the maritime origins of certain lineages, the relationships of others with certain fish species and the acquisition of fish magic by others. The sea was also fundamentally important in the ceremonial, inter-island *kula* trade. And fish were an important symbolic and nutritional trading commodity with inland villages.³ Thus the recognition of traditional fishing rights is inseparable from the protection of indigenous culture, part of the fifth "National Goal and Directive Principle", inscribed in the Preamble to the Constitution (1975) [9].

But even the discussion of legislation to register traditional claims can of itself lead to changes or attempted changes in systems. For example, in Solomon Islands in some cases exaggerated claims are made because it is anticipated in the future a community's exclusive fishing areas would be registered, hence it would be wise to stake a claim to an enlarged exclusive area. This occurred in Western Province [15].

Although in some cases this may be just opportunism, in others it may be seeking to protect both the inshore exclusive area and an offshore open access area, from which a community's subsistence is habitually derived. An example of the latter protective anticipatory claim occurred at Dundee Village on Munda Island, Western Province. There it was stated that any individual or tribe does not own the sea beyond the barrier reef, but if that area was to be considered as customarily owned, then the fishermen of Dundee Village would claim it, as they use it to catch bonito. Thus they

³ The exchange of fish for yams and other garden produce between the inland and coastal villages of the Trobriand islands was a legally enforceable reciprocal relationship that Malinowski used to demonstrate the validity of customary laws in Trobriand society [28].

would claim as customary waters those extending to about 6 miles offshore. In other words, official boundaries would have to be drawn so as to take actual practise into account [15].

However, traditional systems embrace far more than just fishing rights, and their functions range beyond the organization of economic activities. In the Pacific Islands, marine resource management forms part of the framework that regulates social and political relationships and defines cultural identities. Thus in many cases abandoning a system is unthinkable for villagers, since it would imply an alienation of their marine resources [29]. And, as Kunatuba [30] has stated: "It is important to note that the social and political setting of a fishing community is not a problem; rather it is a situation. It would prove very costly and time-consuming to try to change that 'situation'".

5. Reconciling legal systems

In the Pacific Islands Region the relationship between the customary law that governs or governed community-based marine resource management and State law is highly varied and extremely complex. Nevertheless, broad historical patterns and resultant contemporary conditions are clear. In this context over much of the region the impact of British, Dutch, French, German, Japanese, Spanish, and U.S.A. administrations, and the post-colonial continuation by independent nations of the laws introduced and policies pursued by those regimes, has been a major external factor that, either deliberately or by default, led to the undermining of customary law and community resource rights [3].

Thus over much of the region there is a strongly contradictory legal complexity, with Western-based State law that essentially regards all waters below the high tide mark as being state property and open of access, at odds with local, indigenous-based customary law, which recognizes some form of marine property right. Worse, it is generally accepted by Westerners and those Western-trained that customary law, which locally legitimizes customary rights to resources, is invalid for upholding legal claims, because it is unwritten, not made by either a sovereign or legally-constituted legislative body, and arises from societies lacking any notion of "law". In contrast, in customary law, as exemplified by the Kiriwinan Islanders of the Trobriand Islands, Papua New Guinea, traditional claims are substantiated by records preserved in lore, legend, song, and dance [9, 31]. As observed by Williamson [31, pp. 31, 32], "Traditions and customary usage are important in resolving disputes relating to maritime claims. Folklore, legends, songs and dances to a Kiriwinan are like principles of the English Common Law to judges in Common law jurisdiction".

For most Pacific Islands nations the present unsystematic and *ad hoc* statutory framework relating to community-based marine resource management claims is the result of the absence of appropriate policy, which, in turn, is partly a legacy of colonial neglect. But, given the underlying philosophy of colonialism, this neglect was understandable. The object never was to adapt metropolitan legal systems to indigenous systems and institutions, rather that the latter should be displaced and native peoples

educated to use Western systems and institutions.⁴ To have encouraged community-based management systems rooted in local systems of customary law would have been inimical to this objective. Rather, either legislating directly against community-based systems or allowing them to wither and become displaced during a gradual process of modernization and Westernization would attain the objective.

Further, in colonial times as today, the sheer logistical and practical complexity of attempting to incorporate customary rights into a system of legal norms is almost overwhelming. An extraordinarily diverse society like Papua New Guinea, for example, makes it a daunting if not impossible task to consider formulating appropriate law and policies to embrace the specific customs of some 700 distinct cultural groups into a system of norms.

National independence has not changed the situation. This is partly because of the factors noted immediately above, and partly because nations have been preoccupied with other development priorities. Regarding Papua New Guinea, for example, Tom'tavala [9] observes that in early-1990 neither the national government nor the provinces had a policy for traditional marine fishing rights, despite the official admission that conflicts over them are among the most prevalent contemporary disputes. This actually or potentially impedes economic development, leads to social and political instability, and contributes to an increase in criminality, since customary claimants tend to uphold their claims by physical violence without regard either to the national good or to the validity of outsiders' claims. But force or the threat of it to enforce claims, although customarily sanctioned in many parts of Papua New Guinea, is unacceptable according to modern criminal law. However, unless traditional claims are given some degree of recognition or protection, people will continue to enforce their claims with violence, since they regard their actions as both culturally warranted and sanctioned.

6. Codification of customary law and resource rights

In the context of economic and social change, during which rights to resources increase in value, groups may attempt to obtain codification of their customary rights. Some authors have stressed that dilution of the flexibility of traditional systems is clearly not desirable [18], because "laws that freeze traditional customs prevent the evolution of tenure systems to fit contemporary needs" [7, pp. 361]. In contrast, Graham [32] argues persuasively that inflexibility is not an inevitable consequence of codification, rather the behavior of rights-holders depends on their perception of risk, a key factor that has hitherto not been adequately considered. Where the benefits derived from defending rights are perceived as outweighing the costs, rights-holders will have a strong incentive to manage resources sustainably and for optimal use. But

⁴However, traditional institutions for conflict resolution and such functions as land transactions, transfers and inheritance were permitted to operate, provided they did not conflict directly with colonial administrations and statutory law (see Ref. 33).

where rights are perceived of as being insecure – as under the ambiguities introduced by dual legal systems – holders will defend them less vigorously, if at all. This process has occurred widely throughout the Pacific Islands Region, first through colonialism and more recently as a part of the general process of modernization. Thus as an integral part of codification of rights it is essential that legal ambiguities be resolved, thereby enhancing rights-holders perceptions of the quality and durability of their rights.

Further, the inherent flexibility of traditional community-based management systems, although widely assumed, remains a vague and untested assumption. Although there is ample evidence to demonstrate that such systems are inherently flexible enough to cope with short- and medium-term cyclical and even gradual linear changes, there is equally abundant evidence to demonstrate their inflexibility when confronted with the rapid and complexly interrelated changes of the present.

There is no reason for assuming that codification would be any more deleterious to traditional community-based management systems than any of the other contemporary pressures that confront them. Further, flexibility could be legislated, and will probably be in many localities, to accommodate competing and often incompatible demands on coastal-marine resources and space [32].

The most compelling reason for codification is to restore to local communities the authority to protect their rights. One principal reason why traditional community-based management systems have been undermined is that the quality and security of rights has been eroded: “Traditional [local] authority has been usurped, replaced by the ephemeral authority of central governments; the institutions in which [traditional management systems were] previously ‘informally codified’ have collapsed.

Another main objective of codification of customary marine tenure is the identification of local principles of customary law, and their modification for congruence with statutory law. In Solomon Islands, for example, where the legal system is strongly influenced by English Common Law, the official stance is that customary rights to natural resources entail comprehensive, exclusive “ownership” of an area [34]. This is clearly a gross over-simplification of reality, given the complex overlapping and interconnections between primary and secondary rights [32, p. 36]. Thus modern codification is required to re-institute local authority to protect rights.

The linkage between the preservation of systems of traditional authority and the preservation of traditional resource management systems has been recognized in the constitutions of some Pacific Island nations, particularly in Cook Islands, Samoa, Fiji, Vanuatu, Marshall Islands, the Federated States of Micronesia, and Palau [33]. This enables traditional leaders to influence national and lower level marine resource management, and in particular to assist in the reconciliation of the ambiguities between statutory and customary law [33].

7. Policy alternatives for the future of systems

Clearly, some existing local coastal-marine resource management systems will have a future usefulness, both nationally and locally. But equally there will be valid grounds for diluting, modifying or abolishing outright other systems. Deciding which course to

follow will basically depend on national priorities. It should also be based on national fisheries management capacity.

Essentially there are three basic alternative policy approaches for community-based fisheries management that consider its relationship to the development of fisheries and other economic sectors:

- the case-by-case approach,
- dilution policies, and
- reinforcement policies.

(1) *The case-by-case approach.* This option essentially implies that no clear-cut policy is established and legislated for. Rather, each problem is resolved as it arises in terms of the relative costs and benefits to nation, region and local community. The approach has the advantage of political acceptability, since no fundamental changes are required, and traditional sentiments and rights are reinforced. The disadvantages are that traditional rights-holders incur no obligations, such that development of other sectors will be difficult at best and impossible at worst. Further, because this process is *ad hoc*, solutions to problems will be piecemeal, with no guidelines for the legal interpretation of traditional fishing rights and their articulation with national development priorities. The case-by-case option is therefore at best a stopgap approach, since it is obviously unsatisfactory in the long-term.

(2) *The dilution option.* A dilution policy requires legislative action to curtail and strictly define the powers of traditional rights-holders, and to modify traditional management systems to enable the use of some traditional fisheries rights areas for other economic activities, including commercial fisheries. Some systems would be abolished entirely.

The advantages of a dilution policy are that it allows both commercial fisheries and other economic sectors to develop, clarifies property rights and related issues, and defines the modern rights of traditional rights-holders. Its disadvantages are that it is often politically difficult and numerous implementation problems would arise. In many cases, the losses of rent, administrative costs and problems and possible social unrest would outweigh the economic and other benefits derived. Further, once traditional management systems are either abolished or severely eroded, they would be difficult if not impossible to re-introduce, should the need arise.

(3) *The reinforcement option.* The advantages of a reinforcement policy that also specifies the scope and power of traditional rights are recognition of historical and present situations and, possibly, the promotion of resource conservation. That this approach would make conventional development difficult may often not be bad, although many would regard it as a disadvantage. But the reduction of the powers of central governments while placing responsibility on the rights-holders would likely be construed as a disadvantage by vested interests. However, this could be overcome by reinforcing the scope of traditional systems within a concurrently legislated framework of co-management.

7.1. The invalidation of systems

It makes little sense in terms of overall national development to prolong unnecessarily the existence of traditional community-based management systems that have

outlived their historical usefulness. Such a situation arises most clearly near urban-industrial centers where, depending on the intensity of onshore developments, the invalidation of systems could also be justified by the potential health hazard of fish taken from polluted waters. Weakening or invalidating traditional systems is a course of action that can be justified where such systems impede alternative and more important uses of coast-marine space.

But some would demur. Johannes [35], for example, believes that the invalidation or weakening of systems is unjustified, except where they are finely subdivided through “nested” rights, since rights within rights seem to have a large potential for problems, and they appear to have little or no conservational potential. Regarding situations where traditional authority has lapsed beyond the point of possible revival, as around urban centers, Johannes [35] feels that fisheries management may best be pursued by co-operatives. This was done in Japan [36, 37]. Nevertheless, it is no easy task, and failures have been legion.

7.2. Negative consequences of invalidation

Whereas in many cases community-based management systems ought to be invalidated or weakened, in the national or regional interest, when such a policy is implemented nation-wide it carries with it enormous costs. This is particularly obvious in such archipelagic states as Kiribati, Tuvalu, Solomon Islands, and Vanuatu, but no less so in any developing nation that lacks the financial and physical ability and personnel capacity to police its inshore waters. Invalidating traditional community-based systems together with the local knowledge base that underpins [38] them also eliminates local policing of resources, which results in increased financial, administrative and personnel burdens on governments that cannot handle them. Many governments are incapable of designing effective fishery management systems owing to limited understanding of the complex and highly variable nature of fisheries resources. Therefore government management policies which fail to recognize local institutions and economic needs may be creating more problems than they solve. Solving this major problem of costs provides one of the most persuasive reasons for retaining well-functioning community-based marine resource management systems.

But the ability of many local community management systems, based on a depth of traditional ecological knowledge, is quite the opposite. However, to be effective these local rules require recognition, acceptance and protection under statutory law.

In those rural, mostly subsistence level societies, where traditional authority remains strong, enforcement and punishment are often largely traditional. This can also be used to serve a modern purpose. Traditional punishment can be severe and feared more than that meted-out by government, as in, Palau [27] or American Samoa [39]. As Wass [39, p. 81] observes of American Samoa, “Management regulations instituted on the village level are much more effective than those of the territorial or federal governments because they are promulgated within the cultural context by traditional leaders and, consequently, are more likely to receive the approval and fealty of the villagers.” Thus where traditional authority remains strong, a community-based management system can still provide a solid foundation for modern fisheries

management. However, ironically, when such authority is eroding or has disappeared, it is often the fault of the government.

8. Determining a future role

Three basic factors require analysis to determine if an existing traditional management system can be adapted to modern requirements or if an entirely new system should be created. These are

- compatibility with government policy;
- definition and robustness of rights; and
- contribution to conservation (cf. [40–42]) and sustainable fisheries.

(1) *Compatibility with government policy.* Both national development and fisheries policies differ widely in objective and definition. The future role of traditional resource management would vary depending on such policy priorities as rent maximization, food production or employment generation.

Formerly, colonial governments often ignored or overrode traditional systems, granting access to industrial fishers lacking traditional rights in an area [3]. Nowadays many governments, especially in the Pacific Islands, recognize the legitimacy of traditional management systems. When such systems are likely to hamper fisheries development they may reconcile through mediation the needs of traditional and industrial fishers. This is sometimes done by compensating traditional rights-holders for allowing access to outsiders [34, 43]. Thus a balance is sought between employment and rent for national development.

If maximizing economic rent is the main government fisheries objective, then it should be determined if traditional rights-holders exercise their property rights in a manner that prevents or discourages overcapitalization as well as overfishing. When a traditional system operates to discourage outsiders from entering a heavily exploited fishery this helps limit overcapitalization. But overcapitalization may still occur within the traditional rights-holding group itself, unless operational rules on effort prevent it.

(2) *Definition and robustness of fishing rights.* The clarity of definition, strength with which they are upheld and permeability of fishing rights varies enormously. This is potentially a major difficulty. One fundamental problem might be precise determination of the location of traditional boundaries; they may be imperfectly remembered, and written records would but rarely permit a legal settlement of conflicting claims [35, 43]. Equally complex is the identification of traditional rights-holders, deliberate relocation of settlements by churches or governments, compounded more recently by urbanization, having diminished the role of kin groupings, such that individuals' rights are only hazily recalled. Thus efforts to resuscitate or resurrect a traditional system under such circumstances might lead to territorial disputes and long-lasting conflicts. [43]. Given such potential problems it is not surprising that governments might be loathe to codify traditional tenure systems within statutory law, unless they have functioned continuously or at least until historical times, as in Solomon Islands [44].

(3) *Contribution to marine resources conservation and sustainable fisheries.* Whereas traditional management systems⁵ often provide an incentive to harvest in moderation, in some rights-holders do not limit their own fishing pressure [45, 46]. In some communities, for example, a causal relationship between the contemporary rates of exploitation and future fish yields is not perceived [46, 47]. Sometimes this might be because there has been no such relationship, abundant supplies having always exceeded demand, as in parts of Melanesia where human population densities are low, like the Torres Strait Islands [42]. Later, when marine resources in such areas are threatened by increased fishing pressure, as when they become commoditized, for example, fishers may not recognize the need for conservation because there is no cultural precedent [42].

But this is not to say that traditional management systems serve no conservation purpose. Almost universally rights-holders limit fishing by outsiders. Regardless of motive, and although not guaranteeing efficient marine resource management, this demonstrates as a vital prerequisite for conservation in a fishery threatened with overexploitation.

Despite the common assertion that the traditional practise of area or temporal closures on reefs enhance fish stocks, by (1) maintaining species abundance and diversity and possibly enhancing these characteristics over the long-term, (2) providing undisturbed breeding sites, (3) exporting biomass by emigration of adult individuals, and (4) enhancing larval dispersal over a wider area [48], there have been few direct tests to verify this via natural or manipulative experiments. This is a severe drawback, since further advances in tropical coastal fisheries management depend on it becoming experimental and testing empirically the consequences of various management regimes [49].

Although in many cases access and other controls which pertain to harvest optimization and social equity do contribute to sustainability, alone they are not enough to ensure it [50]. Rather, long-term sustained yields depend on conscious planning as well as monitoring and control of harvesting rates. Achieving this may or may not coincide with harvest optimization and equity goals.

Chapman [50] suggests that three basic elements are required for the sustainable development of fishery resources. First, there must exist within a community preconditions for recognizing a need for conservation and implementing measures to ensure it. These preconditions are that the resource must be valued and, based on local knowledge, perceived of as finite; the community must be both willing and able to forego short-term benefits to ensure long-term yields; and both the resource and its biophysical and socio-economic environments must be predictable, such that there is an assurance that if today's benefits are foregone, tomorrow's will arrive. Second, community consensus should be achieved on both the need for and means of regulating a resource for sustainability. Third, access to the resource must be regulated by access controls that are enforced.

⁵ To evaluate a system in terms of its actual or potential conservation value presupposes a prior assessment of whether or not marine resources involved are now or likely to be overexploited and/or degraded or destroyed by pollution, destructive fishing practices, or other human activities.

Where fisheries have traditionally been managed sustainably, all three basic elements are probably to be found. Where not, they are probably lacking. This may change through time, such that at certain periods a resource might not be managed in a sustainable manner, whereas at other times it is.

Technical assistance programs usually treat these elements in isolation. This is a mistake. For example, some regard the preservation of fishing rights as the key to sustainable development. That focus alone will not ensure sustainability. To ensure sustainability, rights must be preserved in conjunction with the other elements mentioned above.

9. Conclusions

Despite the enormous pressures now being exerted on traditional community-based marine resource management systems through the Pacific Island Region, some systems will have a future usefulness, both nationally and locally. But equally there will be valid grounds for either diluting, modifying or abolishing outright others. Deciding which alternative course to follow will certainly depend on national priorities. But it should also be based on national fisheries management capacities.

Whereas many traditional community-based marine resource management systems might continue to play a major role in management of inshore fisheries, it is important that several cautionary points to be borne in mind. These are that the

- assertions regarding the potential management value of traditional systems remain to be verified;
- wholesale transfers of concepts would be hazardous since, by definition, systems arise from the deeper cultural patterns of the societies in which they are enmeshed [51, 52]. So, much more than an understanding of just the local, traditional fishery is required; entire national systems of fishery production, and particularly on the relationship between household (traditional) and capitalistic (modern) production require understanding [53]. But this is not to suggest that some of the underlying principles on which some traditional systems are based could not be introduced. However, much interdisciplinary research, combining human ecological, biological, and economic approaches, is first required to elucidate those principles, as well as to correct many of the misplaced concepts and erroneous interpretations that have characterized some of the earlier research on the topic [53].
- traditional systems could be “fossilized” through explicit, detailed legal definition in the terms of statutory law. This may weaken the adaptive flexibility of a traditional system, unless flexibility is explicitly legislated for;
- application of traditional knowledge and management practises to the solution of contemporary marine resource management problems is also a relatively new approach. However, it is now the focus considerable academic and applied interest, partly because of the inadequacy of the biological and economic models usually applied. Largely as a consequence of this newness, the relevant concepts and methodologies are not yet well-defined; and

- perhaps most important, traditional community-based management systems are not an automatic Godsend to fisheries managers. They create difficulties. Not uncommonly, therefore, governments and entrepreneurs attempt to either weaken or invalidate them.

Deciding on a policy alternative is not easy with respect to the role of small-scale fisheries and traditional management; there are no quick and simple solutions to the inter-locking problems. The question of traditional fishing rights is one of the most interesting, vexing and emotionally highly charged practical, political and philosophical problems confronting fisheries management in the Pacific Island Region. If the present situation is maintained and rights reinforced, fisheries development will have to take place within the context of exclusive properties, which is the historical pattern of the Pacific. Throughout the Region full debate on the issue is required at village, local government and national levels, and the national governments should thoroughly appraise the local governments and the villages of their rights. Further, before any action is taken, it is imperative that the nature of existing fishing rights systems be documented, particularly those that have been or are being exercised.

Thus, the future of traditional community-based marine resource management systems over much of the Pacific Island Region, is uncertain. It rests on the establishment of a consensus regarding national development goals, priorities and processes.

Policy-makers in the Region should be aware that replacing a traditional system with “open access” would entail much more than all the familiar discouraging results of fisheries management experienced by industrialized countries. Those problems would be greatly compounded. This would occur because

- the multi-species nature of tropical fisheries demands more cumbersome regulations and correspondingly more enforcement than systems in temperate waters;
- the scantiness of biological data for use in management and the large percentage of the small-scale catch that is used for subsistence create immense logistical problems in developing essential data sets from very widely scattered fishing communities;
- the vast number of geographically scattered fishing units would create almost insuperable financial and logistical problems for regulation and monitoring compared with Western commercial fisheries;
- the zeal with which data are collected and analyzed, together with poor official enforcement of regulations and lack of professionalism among officials leaves much to be desired; and
- most governments are too poor – or fisheries has too low a priority - to implement conventional regulatory systems that are required by open access regimes or to handle the resultant problems.

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