

# Misconceptions, Outright Prejudice

Pre-existing fisheries-rights systems, under which many nearshore small-scale tropical fisheries operate, function in radically different milieu from those in temperate zones

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In his report on the Sharing the Fish Conference 2006 in Fremantle, Australia, (“Who’s sharing the fish?”, SAMUDRA Report No. 43, March 2006), Derek Johnson was shocked by the lack of representation from the South. Why? Overlooking, ignoring or belittling the tropics has always been the norm. Tropical small-scale fisheries are so different from their counterparts in temperate latitudes that it is misleading and dysfunctional to consider them within a common framework. So perhaps it is just as well that they were under-represented at Fremantle.

An enormous conceptual gap separates a great many pre-existing marine resource-management systems from the predominant Western thought on the subject.

In a simplified manner, there are, in any fishery, whether tropical nearshore or temperate industrial, four focal problems that require management. These are:

- (1) the flow of the resource (that is, the continued, regular availability of harvestable fish);
- (2) stock externalities (that is, the economic and, therefore, social impacts of harvesting interactions among fishers);
- (3) technological (gear) externalities (that is, the mutual incompatibility of various gear on a fishing ground); and
- (4) allocation problems (that is, competition for access to resources distributed unevenly in space and time).

Whereas Western models of fisheries management focus on fish stocks and stock externalities, and assume an open-access resource regime, pre-existing systems in many tropical regions, as has been well documented in the Pacific Islands, for example, take a different approach; they base management on the three inter-related factors of stock externalities, gear externalities and allocation problems, and base implementation on defined geographical areas to which access is controlled.

The essential difference is that Western fisheries management has focused on modelling the biological and physical flow of fish resources onto, and through, fishing grounds, and, in implementation, on attempting to manage the resultant stock externalities. In other words, it focuses on trying to manage what is unknown, and perhaps inherently unknowable, and thus unmanageable. In striking contrast, pre-existing Pacific Island management systems make no such attempt. Rather, they focus on the interaction among stock externalities, technological externalities and allocation problems, human problems that are inherently manageable. This implicitly accounts for the complex multi-species and multi-gear nature of the resource, thereby avoiding inherently irresolvable issues. This difference has generally never been widely appreciated.

## Tropical fisheries

Tropical nearshore fisheries development projects are characterized

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by a Western scientific bias made worse by a general lack of interest in, or willingness to, understand pre-existing local management systems. Conservation of fish stocks became the main goal of development assistance, based on transplanted Western fisheries-management models, with fisheries policy and management based on a conventional temperate-zone bioeconomic model.

Most fisheries biologists and the social scientists who advise them often have only limited experience in the tropical milieu. Not surprisingly, therefore, they commonly fail to appreciate differences between the temperate-zone industrial fisheries, with which they are familiar from their own training and research, and tropical nearshore fisheries.

This means that erroneous interpretations are passed on to donors and assistance personnel. Usually, none of the following seven characteristics of tropical nearshore fisheries and their importance for management are widely appreciated.

- (i) Fishing limited geographically to nearshore areas: Fishing activities are generally over limited areas because craft are small and often non-motorized, fish cannot usually be kept fresh, and neighbouring areas might be off limits owing to exclusive rights systems. There-

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fore, opportunities for increased catches are limited.

- (ii) Fishing areas defined socially: In many tropical areas, marine tenure and the associated rights limiting entry are centuries-old, with fisheries management based largely on such qualitative controls as limited access, closed seasons, areas and species, and a range of behavioural prohibitions. This is in contrast to the

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Boy with handline in Masklynes, Vanuatu, South Pacific



Tuna being dried in Cox's Bazaar, Bangladesh

- all-too-common and incorrect generalization that the problem with fisheries is their open-access nature, a major error resulting from Garrett Hardin's lack of understanding of common-property resources in fishing communities.
- (iii) Fishing communities are numerous and dispersed geographically: Often geographically isolated with numerous fishing communities and complex distribution channels, tropical nearshore fisheries are difficult and expensive to develop and manage using Western models that require comprehensive data collection.
  - (iv) Biological and technical complexity: Compared with temperate areas, tropical nearshore fisheries are typically far more numerous in terms of catch composition or areas fished and gear types. Hence they are of unfamiliar complexity to temperate-region scientists and planners, who typically deal with single-species fisheries.
  - (v) Employment options are limited and alternative jobs are scarce: Cultural factors like caste systems limit or preclude occupational mobility and limit employment alternatives, as do a lack of education and access to basic information. In many parts of the world, a redistribution of wealth through social inter-dependence and traditional credit systems is the norm. That may also bind fishers to their communities and occupation, as does the 'ethos' of the fisher and a sense of sub-cultural identity. Further, the opportunity cost of labour is zero or close to zero, and there often exist strong barriers to exit from the fisheries sector. Labour costs are low but capital costs, high, and these are often complexly inter-related. For example, crew sizes may be determined more by the social imperative to share limited economic opportunities and benefits than by workload. Such relationships can be devastated by the introduction of capital-intensive techniques, which heighten inequity and lead to conflict among segments of the overall fisheries sector and within communities.
  - (vi) Geographical and social territoriality is widespread: In addition to its positive aspects in terms of resource management, this limits the mobility of small-scale fishers geographically and socially, and prevents access to fishing communities by outsiders.
  - (vii) Economic rent extraction: The factors noted above combine to create market imperfections such that nearshore fishers in many tropical regions receive less than the free-market price for their catch, yet pay excessively for inputs, and usuriously for loans. These are the principal ways in which rents are extracted. They are also extracted by the requirement to share catches in small, traditional communities and among kin, as well as by other customary practices, such as ritual performance and donation.
- Many of those difficulties could be overcome were it not for the persistence of an extremely negative connotation associated with the term 'tropics' among fisheries scientists based in the temperate latitudes. Daniel Pauly summarized the prevailing attitude in an insightful essay inspired by a peer review, which, in its entirety, read: "Rubbish, may apply in the tropics—but not here" (Pauly, D. 1994. "May apply in

the tropics—but not here!”. In D. Pauly (Ed.), *On the Sex of Fish and the Gender of Scientists: Essays in Fisheries Science*, London: Chapman and Hall).

There is little doubt that an elitist bias virtually deifies objective Western science and regards other knowledge systems as illegitimate, and those who challenge conventional theories and formal models are belittled. Such deeply embedded attitudes inhibit unconventional projects and research, and innovation is dissuaded when only empirical, quantitative methodologies are acceptable. This results in a standardized technological transfer being promoted by the structure of research institutions and professions. Indeed, R.E. Johannes (1981, *Words of the Lagoon: Fishing and Marine Lore in the Palau District of Micronesia*, Berkeley: University of California Press) contended that the crux of the issue that handicaps the development of nearshore tropical fisheries is the lack of integration of knowledge, with elitist natural scientists routinely overlooking the practical knowledge possessed by artisans.

The historical roots of this prejudice are deep. One of the massive, if insidious, impacts of both historical and contemporary globalization has been the imposition of standard Western systems of resource management. In every respect, this is the cultural equivalent of a major reduction in biodiversity. Coastal communities throughout the tropics experienced this early in the colonial era, when many communities were wrongly deprived of their traditional rights to fisheries and other resources. In some cases, these have only recently been restored to them (Ruddle, K. 2007. “Wronging Rights and Righting Wrongs”. In W. Taylor, M. Schechter and L. Wolfson (Eds.), *Globalization: Effects on Fisheries Resources*, Cambridge: Cambridge University Press).

The most pernicious impacts of this conventional and long-applied Western model derive from the modern assumption of the lack of prior local institutional arrangements among fishers to govern a fishery, and that fisheries are unregulated by local collective action. The bioeconomic management model, therefore, argues that, to manage stock externalities, institutional arrange-

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ments must be imposed on local fishing communities by some external level of government. Such schemes are based on the assumption that the institutional context of the fishery is one of open access. This is simply not true for vast tracts of the world’s nearshore waters, particularly in tropical regions.

There are several reasons why those of us who have long emphasized the practical importance of considering pre-existing management systems are also partly responsible for this situation. An important reason was the pessimism expressed in one of the earliest articles on pre-existing systems, R.E. Johannes’ 1978 paper, “Traditional Marine Conservation Methods in Oceania and Their Demise” in the *Annual Review of Ecology and Systematics*, 9. In the mid-1970s, pre-existing systems of community-based marine resource management were everywhere in decline, the victims of Westernization. Despite their functional elegance, the author was naturally pessimistic about their future. Unfortunately, many of those who read



Canoe fishermen in Kiribati, South Pacific

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this early article based their unwavering opinions on it. Probably many did not bother to keep up with the related literature over the next 25 years, and, more than likely, they failed to read

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Johannes 2002 follow-up article, "The Renaissance of Community-based Marine Resource Management in Oceania" in the Annual Review of Ecology and Systematics, 33. Belying Johannes pessimism of a quarter century earlier, an amazing transformation had occurred in the ensuing 25 years, particularly in Vanuatu, Samoa and Fiji, where new fisheries-management designs have been based largely on the pre-existing systems. We all felt vindicated.

The second reason has undoubtedly been the use, from the very beginning, of the notoriously imprecise term 'traditional', as in 'traditional management' and 'traditional (ecological) knowledge'. This has probably not presented pre-existing systems in either

an accurate or favourable light. Worse, its use enables proponents of Western management models to claim that if something is 'traditional' *ipso facto* it is unsuited to modern conditions. In particular, it provides a perfectly tailored excuse for donors with different agendas, like promoting participatory democracy cloaked in a co-management design, to claim, for instance, that chiefly, authority of 'traditional management systems' is undemocratic and, therefore, antithetical to modernization. Further, some tropical societies may see the term 'traditional' as pejorative and synonymous with 'backward', which might incline them to accept a Western management model as part of a development assistance package.

Third is that the uncritical acceptance and romanticization of 'traditional' ecological knowledge, inflated claims about its environmental wisdom without determination of its validity, and selectively using facts to fit preconceived cases, have provoked a backlash. Particularly regrettable has been the conflating of an imputed sacredness with profound ecological wisdom, or the use of such phrases and terms as 'sacredness of ecological systems' or 'sacred ecology' of indigenous peoples.

Many of the earlier studies on non-Western management systems proposed using pre-existing local systems for a modern purpose in precisely those locations (for example, Samoa, Vanuatu and Solomon Islands) where traditional systems remained either still functional or well remembered. That advice was taken with the now excellent results clearly visible. This approach needs reinforcement and wider application. In furtherance of that is an immediate need for a radically different approach to fisheries management that recognizes that:

- (1) the underlying characteristics of nearshore fisheries in tropical countries are vastly different from those for which the conventional Western approaches were developed;
- (2) the various Western approaches to managing fisheries have not been successful in tropical nearshore fisheries; and

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Sharks caught by small-scale fishermen in Cox's Bazaar, Bangladesh

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In Lau, Fiji, it is common for women to use tidal changes to capture fish in pools using gillnets

- (3) there exist, in many tropical developing countries, pre-existing systems that provide proven alternative approaches to management and blueprints for new systems, since they are already pre-adapted to the characteristics of tropical nearshore fisheries and cultural milieux.

The earlier literature on pre-existing systems continue to provide a background and useful guide to further work. Those interested in further reading can obtain a copy of “The Collected Works of R.E. Johannes: Publications on Marine Traditional Knowledge and Management” from <http://www.intresmanins.com/publications/irmirej.html>

Many important articles can be downloaded from Traditional Marine Resource Management and Knowledge Information Bulletin, published by the South Pacific Community, by going to <http://www.spc.int/coastfish/News/Trad/trad.htm>

A publications list can be obtained by emailing the author at [mb5k-rddl@asahi-net.or.jp](mailto:mb5k-rddl@asahi-net.or.jp)

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