

Fisheries Co-management and Small-scale Fisheries: A Policy Brief



Robert S. Ramsey
Mary C. Williams

ICLARM

International Center for Living Aquatic Resources Management

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This policy brief addresses some of the issues and options available in managing all fisheries, including small-scale ones. The argument is that recent lessons point to potential benefits in some fisheries from management partnerships between the government and local fishers and communities - fisheries co-management. However, this policy brief cautions that co-management is not a universal panacea and more experience and research are needed to learn about the conditions leading to successful fisheries co-management.

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Executive Summary

Co-management is defined as the sharing of responsibility and authority between the government and local fishers/community to manage a fishery or other natural resource. Co-management covers various partnership arrangements and degrees of power-sharing and integration of local- and government-level management systems. It may involve recognition and legitimization of traditional local-level management systems. It involves some degree of communal management of the resource. That is, a recognized group of fishers or an organization establishes and enforces community rules, norms and regulations for catching fish or using the resource, with support from the government.

Given the different conditions, processes, needs and demands within the small-scale fisheries sector, there is no simple management solution appropriate for every community, region or nation.

As a fisheries management strategy, co-management shows promise for addressing many of the issues of sustainability, efficiency and equity that exist in small-scale fisheries today.

The advantages of co-management, versus a centralized, top-down approach, could include lower management and enforcement costs, improved data reliability, a higher degree of acceptability and compliance with management measures, greater participation of fishers in management, and improved social cohesion and community development. Co-management is not, however, a panacea for fisheries management. The development of co-management systems is not automatic or simple; it can be costly to establish, require a long-term effort and have limited guarantee of success. Government administrative arrangements and fisheries laws and policies will generally require restructuring to support co-management.

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Introduction

Global-scale changes in the supply, demand, value, management and uses of fisheries resources could threaten progress towards sustainable food security in many parts of the developing world, but they could also stimulate improved management and use of the resources. Decisionmakers are searching for better ways of managing all fisheries, including small-scale ones.

This policy brief addresses some of the issues and options available, arguing that recent lessons point to potential benefits in some fisheries from management partnerships between the government and local fishers and communities - fisheries co-management. The trend to greater formal involvement of users in management of resources was recognized in many chapters of the United Nations Conference on Environment and Development (UNCED) Agenda 21 Declaration and are enshrined in such international instruments as the International Convention on Biological Diversity ratified in 1993. This policy brief cautions, however, that co-management is not a universal panacea and more experience and research are needed to learn about the conditions leading to successful fisheries co-management.

In the developing world, 14 to 20 million people are directly involved in fisheries and aquaculture; 50 million if postharvest handling and marketing are included; and about 1 billion rely on protein from aquatic products as their main source of animal protein. The resources on



which these people depend are still largely natural fish populations. Harvesting of these resources has expanded over the last four decades but has now reached its upper limits and is even declining in many cases. Therefore, as human populations continue to increase, supply per person is starting to fall and will keep falling despite modest gains from aquaculture in some countries. Increasing competition for scarce resources will further stress fisheries management systems.

In most societies, small-scale fishers suffer the greatest deprivations as they have low social status, low incomes, poor living conditions and little political influence. They frequently compete for resource access with larger-scale fishers and other sectors of the economy. Small-scale fisheries are embedded in larger aquatic resource, and in social, economic and political systems. Many of the solutions to improving their standard of living lie outside the fisheries sector.

To prevent further degradation of fisheries resources, there is an imperative for better management. Many present fisheries resource management arrangements have failed to coordinate and restrain the many users, leading to depleted resources and conflict. Resource conflicts may be diminished, management better implemented and resources better managed when fisher and other user groups are more involved in the management of resources.

The Search for Better Management Methods

Fisheries management experts recognize that the underlying causes of fisheries resource overexploitation and coastal environmental degradation are often of social, economic, institutional and/or political origins. The primary concerns of fisheries management, therefore, should





address the relationship of fisheries resources to human welfare; and the conservation of the resources for use by future generations. That is, the main focus of fisheries management should be people, not fish per se. Policy interventions, if they are to bring about lasting solutions, must address these concerns.

Fisheries management in many countries has been heavily influenced by the temperate scientific model of calculating maximum sustainable yield of a few key fish species and of the need for centralized administrative authority. This model has been shown to have limited applicability in multispecies tropical/subtropical fisheries. It also provides for little or no effective consultation with or participation from fishers. Fisher participation in management can provide a wealth of local or indigenous knowledge to supplement scientific information, to help monitor the resource and improve overall management.

Fisheries managers now recognize that a fishery cannot be managed effectively without the cooperation of fishers to make laws and regulations work. Fisheries management abounds with laws, rules and regulations in most countries; many of them are quite specific and well intentioned. However, the effective capacity of many fisheries agencies to regulate what goes on in widely scattered, often isolated fishing grounds, is distinctly limited. Under these conditions, the delegation of fisheries management and allocation decisions to the local fisher and community level may be more effective than the management efforts which distant, understaffed and underfunded national government fisheries agencies can provide.

Managing the Commons

The “commons” include natural resources, such as fisheries, wildlife, forests, irrigation waters and pasture lands, which by their physical nature are not owned by individuals but are shared by a community of producers (e.g., fishers) and consumers. “Common property resources” share two important characteristics. The first is excludability or the control of access. The physical nature of the resource is such that controlling access by potential users is a problem and may be costly. For example, migratory fish species present problems for regulating access to fishing. The second characteristic is subtractability; that is, the fish harvesting activities of one fisher subtracts from or lowers the catch per unit of fishing effort of other fishers. The term “common property regime” is used to describe the system of property rights and rules under which the common property resources may be managed. Common property regimes aim to provide assurance that the resources on which all persons collectively depend will be available sustainably. In many parts of the world, rights to common property resources are all that separate the poor from destitution. Thus, development planners must eventually deal with the issue of institutional arrangements for property rights and rules over natural resources.

The “commons” has come to connote inevitable resource degradation. Many accepted that fishery resources which are held in common are often subject to overexploitation and degradation. They incorrectly identified all common property situations as being those in which entry into the fishery is uncontrolled, with no effective boundaries



around the resource, and no restrictions on how the resource is to be exploited. This situation is more correctly classed as an open access fishery. This popular notion of the nature of common property resources is misleading and has led to inappropriate policy recommendations and project implementation in the fisheries sector. Policy recommendations have often focused on how to create individual property rights rather than on how to limit access. Common property management where joint rights exist is a legitimate form of management and can be successful if access is controlled. Many government management arrangements failed to conceive of or recognize the existence of local community-based fisheries management (CBFM) institutions which could effectively manage common property fisheries resources.

Common property regimes are forms of management grounded in a set of individually accepted rights and rules for the sustainable and interdependent use of collective goods, that is, a resource that is managed and controlled by a group. Such a regime is composed of a recognized group of users, a well-defined resource boundary that the group uses and manages, and a set of institutional arrangements (rights and rules) for the use of the resource. Common property represents private property for the group of co-users. These regimes have been shown to develop when a group is highly dependent on a resource and when availability of the resource is uncertain or limited. If resource availability problems are repeatedly experienced, such as low or no catches, and if it is controlled by a single community of users, the fishers are likely to develop collective arrangements to deal with the problem.

The principal problem faced by group members of a common property regime is how to organize themselves. That is, how to change from a situation of independent action to one of collective action and coordinated strategies to obtain greater joint benefits and reduce joint harm. A sense of commonality, commitment and compliance must be established for the collective good. Problems on the allocation of catch and assigning duties for resource use must be overcome.

Common property regimes can be very effective at controlling access to the resource. Most common property regimes are based upon the exclusion of certain potential users. The entire community, sensing security of tenure and enjoying some of the benefits from access control, will actively take responsibility for monitoring and enforcement.

The establishment of common property regimes is a complex process that cannot be done solely by administrative decree. It must take into account general factors and their local context such as the nature of

the resource; the characteristics of the users of and stakeholders in the resource; the characteristics of the legal, political and institutional environment in which the users reside; and external economic forces which shape resource use.

Fisheries Co-management

Common property regimes offer some insights into how fisheries might be better managed but, except in isolated cases, they cannot offer a complete solution since the theoretically ideal situation for common property management is not obtained and fishers therefore cannot manage fisheries entirely by themselves.

As fisheries were developed over the last four decades, most countries increased the role of the national government in managing fisheries; the role of local level control through traditional management and control has correspondingly diminished. National governments often failed to develop an adequate substitute for or complement to the traditional resource management regimes. Policies of nationalization or privatization have not solved the resource overexploitation and degradation problem, and in many instances, may have deprived many small-scale fishers of their livelihoods.

In many cases, what is needed now is a more dynamic partnership using the capacities and interests of the local fishers and community, complemented by the ability of the state to provide enabling legislation, enforcement and other assistance. This approach to fisheries management will require a shift away from a centralized, top-down form of management to a new strategy in which fisheries managers and the fishers jointly manage the fisheries - "co-management" (Fig. 1).

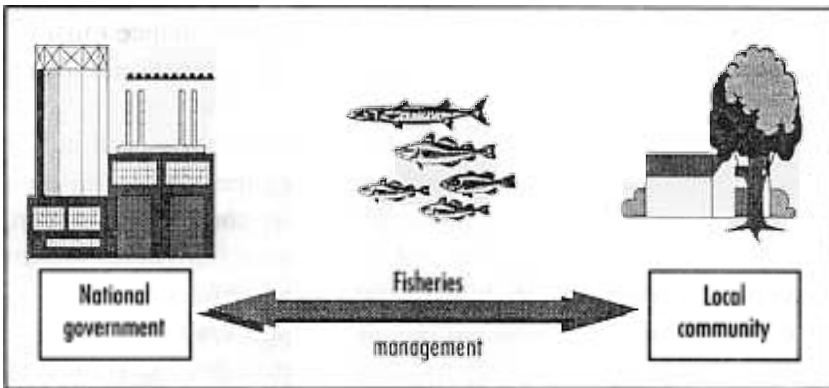


Fig. 1. Fisheries co-management.

Co-management is defined as the sharing of responsibility and/or authority between the government and local resource users/community to manage the fishery or resource (e.g., coral reef, mangrove shoreline habitat). There is a hierarchy of co-management arrangements (Fig. 2) from those in which the fishers are consulted by the government before regulations are introduced to those in which the fishers design, implement and enforce laws and regulations with advice from the government. The amount of responsibility and/or authority that the state and various local levels have will differ and depend upon country- and site-specific conditions. Determining what kind and how much responsibility and/or authority should be allocated to the local levels is a political decision.

Given the different conditions, processes, needs and demands within the small-scale fisheries sector, there is no simple management solution appropriate for every community, region or nation. Co-management should not be viewed as a single strategy to solve all the problems of fisheries management. Instead, it should be seen as a set of

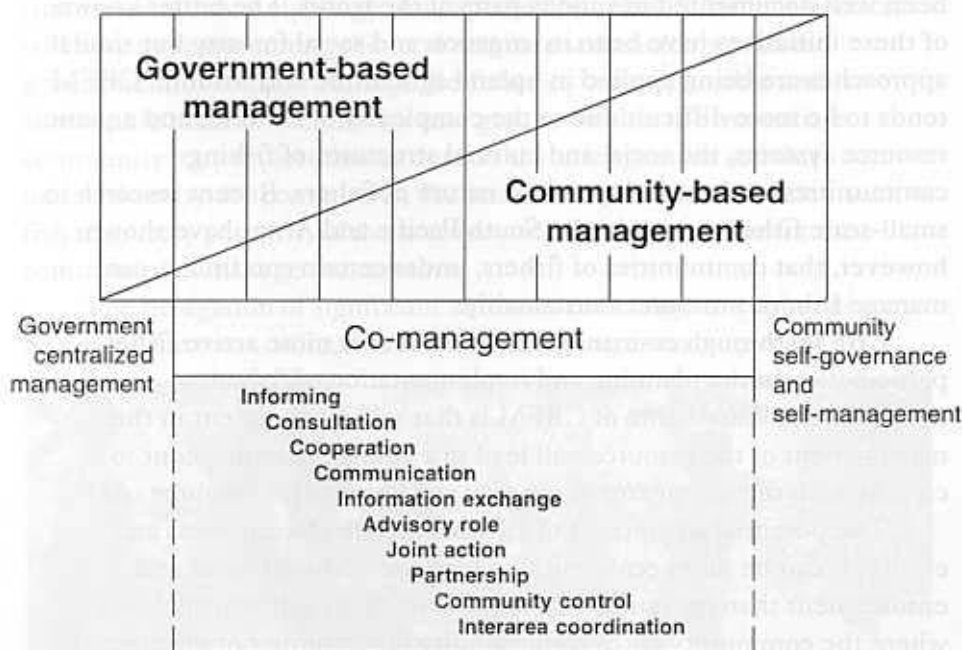


Fig. 2. A hierarchy of co-management arrangements (after Berkes 1994).

alternate management strategies, appropriate for certain areas and situations. The establishment and successful operation of fisheries co-management can be a complex, costly and multiyear effort.

Co-management involves various degrees of delegation of management responsibility and authority between the local level (resource user/community) and the state level (national, provincial, municipal government). Co-management is a middle course between state-level concerns in fisheries management for efficiency and equity, and local-level concerns for self-governance, self-regulation and active participation. Co-management can serve as a mechanism for both fisheries management and community and economic development by promoting participation of fishers and the community in actively solving problems and addressing needs.

In some cases, co-management may be simply a formal recognition of a system of fisheries management which already exists. Informal and customary community-based management strategies already exist side-by-side with formal state-level management strategies.

Community-based resource management (CBRM) is a central element of co-management. The advantages of CBRM systems have been well documented in various parts of the world. The better known of these initiatives have been in irrigation and social forestry but similar approaches are being applied in upland agriculture and wildlife. CBFM tends to be more difficult due to the complexity of fisheries and aquatic resource systems, the social and cultural structures of fishing communities, and the independent nature of fishers. Recent research in small-scale fisheries in Asia, the South Pacific and Africa have shown, however, that communities of fishers, under certain conditions, can manage fisheries resources sustainably.

CBFM, through co-management, strives for more active fisher participation in the planning and implementation of fisheries management. The theme of CBFM is that self-involvement in the management of the resource will lead to a stronger commitment to comply with the management strategy and sustainable resource use.

The potential advantages of CBFM include effectiveness and equity. It can be more economical in terms of administration and enforcement than centralized systems. It involves self-management where the community takes responsibility for a number of managerial functions. It provides a sense of ownership over the resource which makes the community more responsible for long-term sustainability of resources. Fishers are given incentive to respect the rules because they

complement cultural values and because they are seen as individually and mutually beneficial. CBFM allows the community to develop a management strategy which meets its own particular needs and conditions. Since the community is involved in the formulation and implementation of management measures, a higher degree of acceptability and compliance can be expected. CBFM makes maximum use of indigenous knowledge and expertise to provide information on the resource base and to complement scientific information for management. Its strategies can minimize social conflict and maintain or improve social cohesion in the community.

CBFM may not be suitable for every fishing community. Many communities may not be willing to take or capable of taking on the responsibility of CBFM. A long history of dependency on government may take years to reverse. Leadership may not be available within the community to initiate or sustain the CBFM efforts. For many communities, the incentive(s) - economic, social and/or political - to engage in CBFM may not be present. The risk involved in changing fisheries management strategies may be too high for some communities and fishers. The costs for individuals to participate in CBFM strategies (time, money) may outweigh the expected benefits. Sufficient political will may not exist among the local resource stakeholders or in the government to actually manage the fisheries in a responsible and sustainable manner. Actions by user groups outside the immediate community may undermine or destroy the management activities undertaken by the community. Particular resource characteristics, such as fish migratory patterns, of the area may not make it possible for the community to manage the resource.

The delegation of significant authority to manage the fisheries may be one of the most difficult tasks in establishing co-management



systems. While governments may be willing to call for more community involvement, they must also establish commensurate rights and authorities and devolve some of their own powers. Fisheries administrators may be reluctant to relinquish their authority or parts of it. They may fear infringement by local fishers and their representatives upon what they consider their professional and scientific turf. In all cases of co-management, the ultimate authority is held by the government.

The issues are not easily resolved. Each policy bearing on co-management is embedded in a broader network of laws, policies and administrative procedures, at both national and local government levels, and consequently will be difficult to change. The role of the government in co-management is to provide enabling legislation to facilitate and support the right to organize and make fisheries management arrangements at the local level, address problems beyond the scope of local arrangements, and provide assistance and services to support the maintenance of local arrangements. Government administrative and fisheries laws and policies will, in most cases, require restructuring to support decentralization and co-management. The actual form of co-management will depend upon the form of government and the political will for decentralization.

Other than fishers, resource users that derive economic benefit from the resource (e.g., fish traders, business suppliers, police, politicians, consumers) will also need to be considered in the co-management arrangements. These stakeholders often hold considerable political influence in the resource management regime.



Key Conditions for Successful Fisheries Co-management

Over the last decade, research done at different locations around the world has documented many cases of co-management and community-based management in fisheries and other natural resource systems. From the results, certain conditions are emerging which appear to be central to the chances of developing and sustaining successful co-management arrangements. These conditions should not be taken as complete as research is continuing to reveal more about the systems and the factors for successful performance. Indeed, more research is required to establish evaluative criteria for such outcomes as sustainability, equity and efficiency of fisheries co-management systems. Among the emerging conditions for successful co-management are that the more of these key conditions that exist in a particular situation or system, the greater the chance for successful co-management.

The key conditions are (Ostrom 1990, 1992; Pinkerton 1989):

1. *Clearly defined boundaries:* The physical boundaries of the area to be managed should be distinct so that the fishers group can have accurate knowledge of them. The boundaries should be based on an ecosystem that fishers can easily observe and understand. It should also be of a size that allows for management with available technology, i.e., transportation and communication.
2. *Membership is clearly defined:* The individual fishers or households with rights to fish in the bounded fishing area and participate in area management should be clearly defined. The number of fishers or households should not be too large so as to restrict effective communication and decisionmaking.
3. *Group cohesion:* The fisher group or organization permanently resides near the area to be managed. There is a high degree of homogeneity, in terms of kinship, ethnicity, religion or fishing gear type, among the group. Local ideology, customs and belief systems create a willingness to deal with collective problems. There is a common understanding of the problem and of alternative strategies and outcomes.

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4. ***Existing organization:*** The fishers have some prior experience with traditional community-based systems and with organizations, where they are representative of all resource users and stakeholders interested in fisheries management.
 5. ***Benefits exceed costs:*** Individuals have an expectation that the benefits to be derived from participation in and compliance with community-based management will exceed the costs of investments in such activities.
 6. ***Participation by those affected:*** Most individuals affected by the management arrangements are included in the group that makes and can change the arrangements. Decisions about management arrangements are made by the same people that collect information on the fisheries.
 7. ***Management rules enforced:*** The management rules are simple. Monitoring and enforcement are able to be effected and shared by all fishers.
 8. ***Legal rights to organize:*** The fisher group or organization has the legal right to organize and make arrangements related to its needs. There is enabling legislation from the government defining and clarifying local responsibility and authority.
 9. ***Cooperation and leadership at community level:*** There is an incentive and willingness on the part of fishers to actively participate, with time, effort and money, in fisheries management. There is an individual or core group who takes leadership responsibility for the management process.
 10. ***Decentralization and delegation of authority:*** The government has established formal policy and/or laws for decentralization of administrative functions and delegation of management responsibility and/or authority to local government and local group organization levels.
Coordination between government and community: A coordinating body is established, external to the local group or organization and with representation from the fisher group or organization and government, to monitor the local management arrangements, resolve conflicts, and reinforce local rule enforcement.

Conclusion

The idea of active participation of local resource users and communities in development and management is not a new one; it has been part of the development process since the 1960s. What is different is the increasing commitment of governments to programs of decentralized co-management. Fisheries co-management aims specifically at achieving the sharing of authority and/or responsibility between government and local fishers and the community to manage the fisheries.

Co-management systems that have arisen around the world show promise for addressing many of the issues of sustainability, equity and efficiency that exist in small-scale fisheries management today. Co-management is only one alternative fisheries management strategy which has recently emerged. Others include territorial use rights and area leasing. Co-management is an alternative that requires compromise, respect and trust among all parties involved. Its potential advantages and disadvantages are well documented. The development of fisheries co-management systems is not automatic or simple, nor is its survival guaranteed.

Co-management is a political issue. The local fisher and community and the government will have to be restructured. Co-management addresses the critical management issues of who controls the rights to use the fisheries and who obtains the benefits from these. More experience and information are needed to learn about the conditions leading to successful fisheries co-management.



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The Fisheries Co-management Research Project conducts research in coastal, coral reef, lake and river/floodplain aquatic resource systems in Asia, Africa and the Pacific. The overall purpose of the project is to determine the prospects for successful implementation of fisheries co-management strategies. General principles and propositions which facilitate successful implementation of fisheries co-management strategies are being identified.

For more information, please contact: The Project Leader, Fisheries Co-management Project, ICLARM, MCPO Box 2831, 0718 Makati City, Philippines. Tels. (632) 818-0466, 818-9283; Fax (632) 816-3183; E-mail: RSPomeroy@cgnnet.com

