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PRESERVING COMMUNITY INTERESTS UNDER
FISHERIES ENCLOSURE

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ABSTRACT

The adoption of "rights-based fishing" as the basis for management of fisheries involves the enclosure of common property. Although there are often good efficiency grounds for moving to private property, this enclosure transfers property from the community to private owners. Institutions could be devised in which decision-making is governed by private property institutions, but in which the broader community continues to share in the benefits produced by the resource. The usual proposal to accomplish this has been to require lease or royalty payments by resource users, but such payments (especially to central governments) are politically unpopular. This paper instead proposes the creation of fisheries governance corporations with both private and public stockholders. Some, but not all of the rights, would be transferred to fishers. The balance of the owner shares would be held by public stockholders. These public stockholders might be local service institutions, such as hospitals, schools, or port authorities. By exercising its share rights, the local public owners continue to have input into the governance of the resource and continue to receive benefits, perhaps in the form of lease payments for use of the publicly-held fishing rights. Because the public ownership continues to be at local level, this form of joint public/private governance is more consistent with many traditional institutions of common property governance than various forms of control by a national government.

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INTRODUCTION

The environmental and economic consequences of open access to fisheries resources have become increasingly obvious as resource after resource shows the signs of biological and economic over-exploitation. But despite the obvious problems, there is no agreement in either the academic or the political arenas about how best to structure new institutions of fisheries management.

The historic solution has been government regulation, which is tantamount to government ownership. Government regulation of fisheries in developed countries has a history going back to the 1930s. The roots of government regulation can be found in biological arguments for quota management, and quota management has become virtually the hallmark of government regulation. The record of government regulation is generally clear. Very few fisheries have received adequate biological protection under government regulation; even fewer fisheries have achieved significant economic benefits under government regulation.

Some involved in fisheries management are prepared to dismiss this poor record, primarily because the best scientific advice has rarely been followed in management. But social scientists generally agree that the overwhelmingly poor record of government regulation cannot be ignored so easily. Government regulation usually establishes a "game" in which every fisher has incentives to undermine the regulations. Government regulation inherently redistributes income, and the political response has been for every party to exert the maximum political pressure for regulations that favor its interests. Government faces significant handicaps in its effort to regulate, because much of the information needed for effective management is the hands of the industry, which will manipulate that information to distort government decisions.

Social scientists generally agree that new fisheries governance institutions must solve these inherent defects of government regulation. Greater fisher involvement in decision-making is generally seen as crucial to this institutional restructuring. It is generally hoped that cooperative solutions will replace the degenerative, confrontational outcomes that mark traditional management.

Despite some agreement on the general direction that is required of institutional change, there are two fundamentally different concepts of how best to structure institutions to provide greater fisher involvement. Economists (primarily) have

argued for creation of property rights. Other social scientists are gradually coalescing around various types of collective governance (e.g., Pinkerton 1989 and Jentoft 1989). One basic issue in this debate over private versus collective governance is the relative importance of efficiency versus equity in institutional design. Private property arrangements create the clearest incentives to maximize the economic benefits to be derived from the fishery resource. Private property also creates incentives to minimize the transactions costs of governance. However, privatization of the fishery resource often has the effect of creating a small class of winners and a large class of losers. Collective property arrangements, on the other hand, involve larger transactions costs and less clear economic incentives. But collective arrangements provide a vehicle for distributing the gains from resource use more widely.

The purpose of the present analysis is not to address the relative advantages of private versus collective property. Rather, the purpose is to argue that the dominant concept in fisheries economics, "rights-based management", is an unnecessarily restrictive concept of property that unnecessarily disadvantages private property in this debate. A much broader and more flexible concept of property, "corporate management", is proposed. The analysis shows that the corporate management concept both provides a more comprehensive set of rights to property owners and also provides a much more flexible institution to address concerns of equity.

RIGHTS-BASED MANAGEMENT

The term "rights-based management" is of relatively recent vintage; it has gained widespread use only since Neher, et al. (1989). Rights-based management is not "new", however. Individual transferable quotas (ITQs) are perhaps the dominant example of rights-based management; ITQ concepts are at least 25 years old (e.g., Christy 1973). Nor does rights-based management create private owners of the resource; only user rights are created. Under rights-based management, the fisher is a user of specified rights, not an owner of the resource.

The primary forms of rights-based management are rights to harvest some volume of fish (e.g., individual transferable quotas [ITQs]) or rights to use some set of inputs (e.g., individual transferable inputs [ITIs]). Limited entry is a very simple form of rights-based management. Given these usufruct rights, the individual fisher makes decisions about the appropriate combinations of resources (including the usufruct rights) to use in the fishing process.

Rights-based management creates a well-defined division of governance responsibility. The government assigns to the

individual fisher only those responsibilities that can be exercised appropriately by an individual harvester. Any decisions that require collective decision-making are reserved for the government. The government assigns some particular decisions about resource use to competitive market forces, but assumes for itself a monopoly on any collective decision-making. For example, the government determines the appropriate level of rights to allocate at each point in time and it has the sole responsibility for all other decisions that determine stock condition (such as closed seasons or minimum mesh sizes).

In principle, the government could sell or lease these usufruct rights at auction. But in practice, these rights are given to some set of fishers on the basis of historical participation. This distribution to historical participants serves both a political and an equity purpose. If, as is usually the case, effective rights-based management requires reduction of fishing effort, then its implementation will reduce the incomes of those who are excluded from fishing. By distributing usufruct rights relatively broadly, most potential losers receive a valuable right that they may sell or lease. This rental or sale income at least partially offsets the losses from exclusion. And because some fishers gain from the distribution of rights, some political support for rights-based management may be created.

Many limited entry and ITQ programs have had distributional systems that were essentially driven by the availability of data. Typically, the government had data on landings by vessel, so rights were given to the vessel owner. This excluded both crew and captain from a share of the benefits created by enclosure. While this is perhaps not a necessary feature of rights-based management, the history of such programs certainly indicates that political and administrative forces push strongly in this direction.

In sum, the traditional rights-based management approach is a very limited concept of private property for several reasons. Only usufruct rights are created. There is no vehicle for joint decision-making by the usufruct holders (except through general political activity). The political and administrative forces tend to result in rights being given to a relatively narrow part of the community, usually vessel owners. If private property approaches to fisheries management could avoid these limitations, more flexible and equitable concepts of fisheries management could be developed within the property rights framework.

CORPORATE MANAGEMENT OF FISHERIES

In fact, a much more flexible concept of private property is available: corporate ownership of fisheries. There is no reason to limit the concept of "private owner" to a literal sole owner,

which is implausible in most fisheries. A set of owners organized under corporate governance would also be a form of private property.¹ Given the dominant role of corporations in our economies, it is perhaps surprising that the analysis of fisheries management has completely overlooked the institutional solution of corporate governance.

Under a corporate structure, the government would determine the initial ownership of shares of the fisheries governance corporation. The owners of the fisheries governance corporation would operate under governance rules typical of private corporations. The owners could make decisions either directly, by voting their shares on management issues, or indirectly, by electing a board of directors to make those decisions. Owners of shares in the corporation would be free to sell their rights or to lease to third parties any fishing rights attached to their shares.

The owners of a corporately organized fishery would have complete responsibility for the fishery itself. The corporation would internalize all decisions about the commercial use of the resource, including decisions that determine the stock level. Because the objective of a corporate sole owner would be to maximize the present value of economic benefits from the fishery, she or he would face the appropriate incentives with regard to stock sizes and timing of harvests. Of course, the corporation may have negative effects upon other parts of the environment, such as damage to fragile reef habitats or interactions with endangered species. The corporation would be subject to government regulation of these externalities, just as coal-fired electric generators are subject to regulation for the environmental damages caused by sulfur emissions.

The corporate structure with transferable share rights creates a well-defined long-run interest in the resource. For a stockholder in a fisheries management corporation, the allocation of costs and benefits is completely defined. There is no distinction between current benefits and the present value of future benefits for a stockholder. A stockholder can sell the future stream of benefits to another party by selling the shares. The ability to transfer well-defined corporate rights also facilitates decision-making about investment decisions (as through stock re-building). Those who are willing to make such an investment can buy shares from those who do not favor the investment. In so doing, these investors not only incur all the risk of the investment, they also compensate the previous owners for the opportunity to make the investment. In return, they receive all of the future benefits. Also, because rights are clearly defined, stockholders will be able to use the corporate shares as collateral for debt financing.

The market for the shares of the corporation creates an important bias in favor of conservation. A fish stock is an asset that provides a stream of benefits into the future. There are trade-offs between current benefits and future benefits that must be assessed, and different economic actors may have different perspectives on these trade-offs. However, investors who place the highest value on the future (and who have the lowest discount rate) will put a higher value on the long-term stream of benefits than those with higher discount rates and more myopic planning horizons. Access to capital for far-sighted investors should not be a problem, because capital markets can finance profitable long term investments. Financing for limited entry permits and ITQ shares has been readily available, if the regulatory structure does not forbid use of the permits or shares as collateral. Moreover, the endowments of environmentally-concerned trusts will have both a financial and non-financial incentive to enter this market. Hence, market transactions will place control of these assets in the hands of those with the greatest concern for the future.

Turning fisheries management over to the industry, and especially to an industry that may have overexploited the resource, may seem a counter-intuitive policy. But the seemingly myopic behavior of fishermen under open access and under the state-centered concepts of rights-based management simply reflects the myopic incentive structure. Under any system of open access, however biologically sound, all rewards for short-term sacrifice are dissipated by new entry. Under state control, the long run decisions are made by a government that is, from the point of view of the industry, substantially unpredictable and unresponsive. Given the great risks that the next change in administrative policy will adversely affect the industry or some particular sector of the industry, the best strategy is to get as many concessions as possible from the current administration. In this environment, allocation decisions are much more important to individual fishers than resource conservation decisions. Myopic behavior is the result of the incentive structure, not the inherent preferences of fishers.

The flexibility offered by corporate management, in comparison to rights-based management, is rather obvious. Corporate management creates property that has multiple owners. The individual owner rights are permanent, well-defined, and fully transferable. Given these permanent rights, individual shareowners have every incentive to make decisions that maximize the long term value of their asset, a share of the resource. Corporate governance creates a well-defined decision structure in which the individual owners can collectively make decisions. That decision-making process includes only the one-share, one-vote governance structure, but also the market for shares.

DISTRIBUTION OF CORPORATE OWNERSHIP RIGHTS

The corporate structure also provides a very simple device for spreading the benefits of enclosure: Shares in the corporation can be distributed to accomplish whatever equity objectives are set. Because shares can be broken into arbitrarily small units, there is no limit on the number of shareowners. Nor is there any limit on the individuals or institutions that might be given shares in the resource.

The distribution of limited entry and ITQ rights have often been driven by the availability of data. Typically, the government had data on landings by vessel, so rights were given to the vessel owner. This excluded both crew and captain from a share of the benefits created by enclosure. Inasmuch as fishing crews are typically co-adventurers whose incomes vary directly with catches, this exclusion of crew from the benefits of enclosure is particularly inequitable.

But the distribution of rights need not be driven by the available data. The government could require that the distribution of shares be in proportion to the "lay" in the fishery. That is, if gross (or net) income is divided 40% to the vessel, 10% to the captain, and 50% among the crew, then the rights could be similarly divided.

The obvious problem is to identify the captain and the crew members who participated. The information to make that determination generally rests with the vessel owner, and the problem is create an incentive for the vessel owner to report accurately. Absent a strong incentive to report accurately, a vessel owner will misreport crew members (for example, by giving names of relatives as crew). The obvious solution is to provide severe economic penalties for misreporting crew membership. For example, treble damages could be given to any crew members who are the victims of misreporting. That is, if the vessel owner misreports the crew members, any crew member who can show that his or her name was omitted or misreported could sue the vessel owner for three times the shares that are due. Some vessel owners may lack the necessary data to report all crew for the relevant time. In that case, a pool of "undeclared" shares could be established so that crew members could file for shares through a judicial process. Shares left in the "undeclared" pool might ultimately be transferred to some collective institution, such as a pension fund or a fund to provide medical care for retired fishers.

There may be concerns that the equity benefits of distributing shares initially to crew and captains may be undermined in part if crew members immediately sell those shares. An option would be to create a pension fund (or similar

institution) that owned and managed the shares on behalf of the crew as a group.

A significant equity advantage of the corporate approach is that ownership need not be limited to vessel owners, crew and captains. By distributing the shares more broadly throughout the community, the benefits of enclosure can be spread more equitably. For example, shares could be given to organizations with broad marine responsibilities in the community, such as port authorities or community search and rescue organizations. Shares could also be distributed to institutions with broad social responsibilities, such as health care, social service, or educational institutions.

How ownership interests might be divided among the industry and broader community groups will vary considerably among different fisheries. For a fishery with few social or cultural links to the local community (as an industrial fishery in a major urban center), the process of enclosure affects primarily the fishing industry. Because such enclosure has little impact on the broader community, there is little reason to vest ownership in local community groups. On the other hand, when a fishery is intricately linked to local social and cultural institutions, then enclosure will have broad and complicated affects on local communities and their members. As the negative social costs of enclosure will be broadly felt, it makes sense to share the benefits of enclosure with the broader community.

If local institutions own shares in a fisheries management corporation, there is less likelihood that market transfers will result in control of a fishery by outside interests. A local pension fund, a local port authority, or a local health care institution is unlikely to sell its interests outside the community, because such local institutions have a range of obligations, both formal and informal, to the community. A local institution that has been involved as an investor in a fisheries management corporation may in fact be a potential buyer for shares that are put on the market.

An important issue is whether to vest ownership in local political units, such as town councils. There are several potential pitfalls of such broad ownership. First, the possibility that open access incentives will re-emerge cannot be ignored. Pressures to expand access can be difficult for local elected officials to resist. Second, political favoritism in various forms may emerge. Third, short-term political objectives, such as avoiding a tax increase before an election, may cause the government body to consider actions like selling shares more readily. Fourth, any benefits from government ownership may be felt largely through reductions in local taxes, which may disproportionately benefit the wealthy. Fifth, if a

large local share is created, ownership by a single government agency may create monopoly power in some markets.

By contrast, granting share ownerships rights to several local institutions reduces the probability of political incentives replacing economic ones. A local port authority or a hospital has a mission that must be pursued. Its internal culture is strongly driven by that mission. The availability of income from fishery share ownership will be seen primarily as a way to further its specific mission. The primary objective of share ownership will be to maintain income from this investment. When there are multiple local institutions that own shares, no single institution will have a predominant voice in governance. With multiple local institutional owners, there are multiple avenues through which benefits to the local community can be spread.

SUMMARY

Advocates of private property approaches to fisheries management have unnecessarily limited their institutional options by not considering corporate governance. Corporate governance provides a vehicle for collective decision-making that is absent from rights-based management. And corporate governance provides very flexible alternatives in the distribution of benefits that are created under enclosure of previously open-access resources.

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FOOTNOTES

1. The idea of structuring the governance of fisheries corporately was suggested tangentially by Scott (1955, 1989). Jones et al. (1980) suggested corporate organization of international fisheries agreements, but did not extend the idea to more traditional fisheries management problems. Townsend (1995) seems to provide the first direct analysis of corporate management as a governance alternative in fisheries.

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