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MAN, STATE, AND FISHERIES:

An Inquiry into Some Societal Constraints that Affect Fisheries Management

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Introduction

Fishing is not only an economic activity, but is a political, cultural, and social one as well. Therefore, to understand how a particular fishery has been managed requires investigations by social as well as physical scientists.

The purpose of this paper is to identify some of those factors that might impinge on the implementation of rational management strategies for living marine resources. We will focus on the Peruvian anchoveta fishery which underwent rapid growth and development, beginning in the early 1950s. An analysis of influences on the exploitation of the Peruvian anchoveta can provide valuable insights into the management of similar stocks elsewhere.

One can find views in the literature that relate the successes and failures of fishery management to either activities at the international level, group behavior at the national level, or individual behavior. This paper treats these three levels as analytically distinct categories of factors that affect rational fishery management. This is an attempt to present a new way of evaluating existing information about the different factors that affect fisheries management.

The International Level

Even when the international community is not directly involved in the exploitation of a national fishery, the fishery will surely be affected by technology transfer, fluctuating commodity prices, and so forth that result from the actions of other nations.

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Such factors can affect the supply of fish and might include, for example, technology transfer (including technical advisers), jurisdiction over coastal waters, the need for foreign exchange, and international development assistance loans. They can also affect the demand for fish products and might include such factors as international market demands, competition from other fisheries, and international prices for fish products. A third set of international factors encompasses aspects that do not appear to relate directly to fisheries management and can include, for example, international reactions to the expropriation of foreign investment in sectors other than fishing, the seizure of foreign fishing vessels, or even the demise of a fishery thousands of miles away. Each of these can affect the development of a fishery.

Underlying these international considerations one finds differing, often opposing, ideological beliefs which may agree, for example, that a specific activity transpired, but will disagree as to its causes or consequences (for an example of such debate see Malpica, 1975 versus Tantalean, 1978).

One of the important aims of this section is to question the belief that what happens in one fishery is of little consequence, except in the marketing sector, to other fisheries in other regions exploiting different stocks. The Peruvian situation suggested that the rapid development of its fishing sector was precipitated by the collapse of the Californian pacific sardine fishery which had also been a factor in the development of the South African pilchard fishery.

Today we see a repetition of that historical experience. Peru is now attempting to sell its surplus catch and processing capacity to the international community, and South Africa, following the collapse of its own pilchard fishery in the late 1970s, has become directly involved in the exploitation of Chile's pilchard stocks.

#### The National Level

This section focuses on national-level activities that take place in a given country that might influence the management of a fishery; for example, the issuance of government decrees related to agrarian reform,

worker strikes in the mining sector, policies toward exchange rates (encouraging or discouraging foreign investment), government nationalization of foreign investments that are unrelated to the fisheries. The fishing sector is a subsystem embedded in a larger political and economic system. In order to understand how the fishery is managed, it is necessary to be aware of that larger context.

Competing interests can adversely affect the management of a living marine resource. It is necessary to recognize that "there are different classes of objectives--biological, economic, and social--as well as different time horizons over which objectives might be obtained." Each of these objectives, if followed, could lead to a different pattern of harvest and exploitation.

To date, there have been a dozen changes of government (elections as well as military takeovers) in Peru since 1939. On several of these occasions new governments pursued policies affecting the fishery that were major (if not drastic) changes from those of their predecessors, especially in 1948, 1968, 1975, and 1980.

Changes within government can also affect fisheries management. For example, during the Belaunde administration (1963-68) there were seven holders of the Finance Ministry portfolio. This may be an important consideration for why the same resources in the same country may have been managed in different ways, and is an aspect that is seldom addressed explicitly at technical meetings on fisheries management.

#### The Individual Level

Individuals have different, often conflicting, perceptions of those events that take place around them and those perceptions become their reality. While they may not prove to be accurate reflections of reality, the actions taken based on them will be real, as will be the consequences of those actions. Three important considerations that relate to fisheries management at this level are (a) one's view of society's relationship to nature, (b) one's view of the renewability of living marine resources, and (c) ideological perspectives.

(a) Man-Nature Relationship. There are many conflicting views about what the relationship between man and nature should be. Two major views emerge: man-over-nature and man-in-harmony-with-nature. Most leaders in developed as well as in developing countries tend to pursue policies of development that are manifestations of the man-over-nature belief.

(b) Renewability. Most observers categorize fish as a renewable resource, probably because they are self-generating. Pelagic fish populations, however, have collapsed in the recent past. Notable examples of such collapses are the Peruvian anchoveta, the South African pilchard, and the Californian pacific sardine. Might fish populations of a particular kind, in a specific region, and during a specified period of time, be considered nonrenewable resources? Perhaps there is now enough evidence to suggest that pelagic fisheries be treated as a nonrenewable resource, if under adverse conditions they can disappear.

(c) Ideological perspectives. Opposing ideologies exist and that existence must be accepted even if the contents of a particular ideology are not. Observers with differing ideological perspectives assess interactions between different groups and nations in profoundly different ways. For example, while an observer might note that foreign investment in a fishmeal processing plant in a developing country was designed to yield profits for both national and foreign entrepreneurs, another might view the same activity as an attempt by a developed country to gain access to the natural resources of the developing country.

#### Concluding Comments

Fisheries management is affected by many factors that occur at the three levels of social organization discussed in this paper. While some of those factors are obvious to those involved in fisheries, others may not be so obvious. It is extremely important that those directly and indirectly responsible for the management of a fishery be aware of the complexities of the larger political and economic system of which their sector is a part and to which their sector is integrally linked.