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Cooperatives, concessions, and co-management on the Pacific coast of Mexico

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ABSTRACT

Ten fishery cooperatives of the Pacific coast of Mexico were studied to examine reasons for successful community-based management of the fishery commons. The cooperatives hold exclusive rights to 'concession' territories for major fisheries and are linked by geographic adjacency and through a federation. The case study underscores the role of factors such as smallness of scale; the productivity, visibility and legibility of the resources and fisheries involved; clarity of social and territorial boundaries; adjacency and linkages among territorial units; a strong sense of community. The cooperatives also made considerable investments in attaining high levels of knowledge, leadership, transparent and democratic decision-making, and "vigilance," or enforcement of the rules and the running of the organization. The study also shows the workings of windows of opportunity and experience with environmental change in the development of strong and adaptive capacities for co-management between local organizations and government agencies. Although particular histories and larger legal, political, and cultural contexts matter, the Mexican case supports arguments for greater community-level engagement in "catch share" and territorial management throughout the Pacific.

1. Catch shares and TURFs

Community-oriented fishery management is recognized in the United States within the framework of a national policy advocating the management of fisheries through "catch shares": "Catch share" is a general term for several fishery management strategies that allocate a specific portion of the total allowable fishery catch to individuals, cooperatives, communities, or other entities. Each recipient of a catch share is directly accountable to stop fishing when its specific quota is reached [1].

Catch share-based management is often interpreted as a euphemism for using individual transferable quotas (ITQs), and a recent flurry of research papers on catch shares and their effectiveness in achieving the biological and ecological goals of fisheries management interpret them that way [2,3]. However, as noted in the quotation above, the policy opens the door to a broader interpretation: allocation can be to cooperatives, communities, and other entities besides individuals.

Concerns about the often negative effects of ITQ-based catch shares programs on communities have led to efforts to make allocations of shares of a fishing quota directly to community-based organizations and cooperatives [4]. Although the cooperative-like sectors recently implemented in New England's groundfish fishery [5] have little explicit reference to community, some of the sectors are developing in ways intended to reflect and protect community resources and values [5–7]. On the U.S. Pacific coast, plans have appeared for Community Fishing Associations to hold shares of quota, as is already the case in certain Alaskan fisheries [8]. Somewhat surprisingly, the U.S. "catch share" policy statement explicitly included

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the possibility of TURFs, or Territorial Use Rights Fisheries, where by groups are granted exclusive privileges to fish in geographically designated fishing grounds ([1], p. 1), even though exclusive fishing area privileges are not the same as holding shares of a catch quota. TURF management has a long and widespread history, particularly in the developing world [9–12], but it has had limited application in the United States apart from some town-controlled coastal shellfisheries, individual shellfish leases, and the informal territories claimed and defended by some fishers [13].

The purpose of this essay is to offer a case study from the Pacific coast of Mexico as a source of ideas for community-oriented fisheries management in other regions of artisanal fisheries, particularly where some consideration is being given to community-oriented allocations of exclusive fishing privileges. The case, based on a study of a federation of 10 fishing cooperatives in western Mexico, is unique and deeply contextualized in a specific history, political culture, and environment but it offers instructive experience for other situations. Specifically, it reinforces the argument for the robustness of many "design principles" or contributing factors toward successful community-based management of the commons [14]. It also reinforces claims for the value of co-management arrangements in linking the scales, knowledge, and resources of local resource users with that of government [15–18], a claim which recently gained support from a large comparative study of co-managed fisheries [19] but requires further specification of mechanisms involved. The case goes further in highlighting the value of exclusive but community-held property rights for management of the fishery commons. Economists have long argued that exclusive property rights were needed for economically sensible fisheries management [20,21], and this argument has led to ITQs, which have been shown in another large comparative study to have some success in averting biological collapse of fisheries [2]. The TURF case suggests that communal property claims also may have beneficial ecological and social outcomes, where the scale of the territory is appropriate to the life histories of the marine resources involved, as in the case of Chilean artisanal coastal benthic fisheries [9,10,19,22–24]. Other factors that emerge from this case include the importance of functional connectivity among the territories, the human settlements, and the fishing organizations; participation of fishers in research, monitoring, and decision-making about resources; and commitments within the cooperatives to transparency, fairness, and organizational integrity [25,26].

2. Overview of the Pacífico Norte fisheries and fishing cooperatives

Baja California is a desert peninsula of western Mexico bounded by rich marine ecosystems of the Pacific Ocean to the west, and the Gulf of California to the east. The Pacífico Norte, a region encompassing the Vizcaíno peninsula on the Pacific side of the peninsula as well as the offshore islands of Cedros and Natividad,[1] is the site of an interdisciplinary and international research project carried out between 2005 and 2009. The project studied the ecological, economic and social performance of the fisheries that are worked by cooperatives with exclusive access rights. The harsh and majestic desert of the Vizcaíno is a UNESCO Biosphere Reserve. It is very sparsely populated by approximately 10,000 people, and the fisheries that directly or indirectly support most of them take place close to a few coastal settlements. In the 1930s and 1940s, when the fishing cooperatives were established, these were isolated frontier settlements, dominated by foreign fishing and canning companies, and they remain relatively isolated today due to the scarcity of water and poor infrastructure. Paved highways and linkages to electrical grids have appeared only since around 2005–2006. Five settlements have year-round residents as well as churches, schools, some local government offices, and businesses; others are mainly seasonally occupied fishing camps.

Collectively the cooperatives have about 1200 members plus non-member employees and apprentices. They work as harvesters and in processing operations which together form the main economic activity of the zone [27,28]. The smallest of the cooperatives is solely a seafood processing organization; the rest combine harvesting with some kinds and degrees of processing and marketing. The cooperatives belong to "Fedecoop," a federation with offices in the city of Ensenada, hundreds of miles from the fishing communities. The federation provides marketing services, technical expertise for fisheries management, and a venue for collective bargaining; it is a key liaison with government agencies. Variation in performance among the cooperatives reflects ecological differences [29] and differences in historical and current priorities and strategies among the cooperatives and communities [30], but the overall pattern is similar enough to warrant the generalizations that follow.

Spiny lobster (*Panulirus interruptus*), abalone (*Haliotis* spp.), turban snail (*Megastraea undosa*), and sea cucumber (*Parastichopus parvimensis*) are targeted by the fishers. Local fishers, both cooperative members and "free fishermen" also harvest kelp, octopus, and a large variety of finfish species, including California halibut (*Paralichthys californicus*). Metal traps are used for lobster; abalone and turban snails are harvested by divers using "hookah" systems; gill-nets and other gear are used for finfish. The boats are open, outboard motor-powered skiffs, about 7 m in length.

One of the distinctive features of the fishing cooperatives of the Pacífico Norte is that they are vertically integrated and have an unusually high degree of investment in the means of production. The cooperatives rather than individual fishers own the boats, gear, and other technologies needed for the fisheries, and the cooperative's officers, in consultation with members, decide on seasonal and daily schedules and work assignments.

In addition, the fishing cooperatives are fully intertwined with the coastal communities in which they are located. With the exception of Isla de Cedros, which has a salt transport operation (external to the cooperatives), fishing is the only industry, and access to the more valuable fisheries is controlled by the cooperatives, as will be discussed in more detail below. Consequently, the cooperatives are the primary sources of livelihood. Moreover, some of the cooperatives supplement government programs, for example, running desalination and electricity-generation plants to compensate for the lack of freshwater and the unreliable connection to the electrical grid. The cooperatives have also built and maintained roads and taken the lead in pressuring government for more facilities.

The Pacífico Norte cooperatives have developed the reputation for productive and sustainable fisheries. This is clearest for their spiny lobster fishery, which is one of the two main fisheries in the study zone. The spiny lobster fishery's distinction as the first artisanal, developing nation fishery worldwide to receive certification as a sustainable fishery is recent evidence. In 1999 the World Wildlife Fund (WWF) together with a local NGO, Comunidad y Biodiversidad (CoBi) initiated a program to use eco-certification as a method of helping small-scale, community-based fisheries receive recognition for and improve their management of local fisheries. WWF focused on the Pacific Norte cooperatives, hoping to help the cooperatives get financial benefits in exchange for their commitment to practices believed to ensure greater sustainability of fisheries [31]. The process also involved government and university scientists and of course the

[1] Isla de Cedros is in the Mexican state of Baja California; the rest of the Pacifico Norte region lies in the northwest corner of the state of Baja California Sur.