

## **Policies of Conservation and Sustainable Development: the case of fishing communities in the Gulf of California, Mexico.**

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During the past two decades Mexico's marine fisheries and coastal resources, like much of Mexico's rural sector, have been undergoing deep structural transformations as the country insists on the rigorous implementation of the neoliberal model. Like in much of Latin America, neoliberal reforms have involved macro-economic, agrarian, and environmental policies. These include the privatization of key economic sectors and state-owned industries; the liberalization of markets and the establishment of international free trade agreements; major changes to banking and credit systems; the elimination of subsidies; and decentralization of state control. Even though the declared objectives of the neoliberal model are to sustain economic growth, improve life, and combat poverty, its impacts have been rather contradictory, as indicated by the numerous studies that have been produced on the subject (i.e. Taylor 2002; Harvey 2005).

The case of marine fisheries and coastal resources in the Gulf of California offers an interesting example of how the neoliberal model has subordinated local economic development efforts and generated a model of intensive and extensive exploitation of natural resources. Parallel to the privatization of ejidos in the Mexican agricultural sector (see Haenn 2004), marine fisheries also went through a process of privatization and commoditization. This process contradicts decades of state intervention in which fishers organized in cooperatives had held exclusive rights to capture such commercially valuable species as shrimp, lobster, and abalone. Since the 1930s, the interests of local fishing cooperatives were represented at the national level by regional federations that formed part of a complex national organizational structure headed by the National

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Confederation of Cooperatives. Arguing corruption and inefficiency in the cooperative sector, the system was officially dismantled in 1992 with the “liberalization” of fishing rights.

The first sally in the privatization process began in the late 1980s with the closure of the Banco Nacional Pesquero y Portuario (BANPESCA), the state controlled fisheries bank. Set up in the 1970s to develop the fishing industry, BANPESCA provided loans to fishing cooperatives for the purchase of boats and equipment at relatively benign rates. Through the 1970s and 1980s loans from BANPESCA led to a sharp increase in the number of shrimp boats, Mexico’s most important commercial fishery. As the number of shrimp boats increased, catch per boat and total catch went on a general decline (see Graphs 1 and 2 below). By the end of the decade most cooperatives found themselves unable to repay their loans. This provided the justification to close the bank in the midst of allegations of corruption within the bank itself. The closure of BANPESCA crippled fishing cooperatives, forcing many into bankruptcy<sup>2</sup> and preparing the stage for privatization of the sector.

In 1992, after six decades of collective organization, fishing rights to reserved species were transferred to private investors. The implementation of neoliberal reforms led to a considerable loss of local control over resources as small-scale and offshore fishers lost political representation and negotiating power with financial institutions, the private sector, and the state (Vásquez-León and McGuire 1994; Alcalá 2003). At the same time, a strong trend towards conservation was set in motion in 1993 with the approval of the North American Agreement on Environmental Cooperation, an environmental side accord that addressed the lack of environmental provisions in NAFTA. Arguing resource overexploitation and an increase in the number of endangered species, a number of highly productive marine regions have been declared protected areas (see McGuire

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<sup>2</sup> See Vásquez-León and McGuire, 1993, for an in-depth discussion of the process by which cooperatives became highly indebted. See also Gomez 2006.

and Greenberg 1993), changing the legal status of fishing communities who are legally excluded from traditional fishing grounds.

By contrast, despite general concern over resource decline, the passage of the North American Free Trade Agreement (NAFTA), a key piece in engineering neoliberal goals of free trade, made it easier for private investors, both Mexican and foreign, to invest in such capital intensive enterprises as shrimp aquaculture and tourism infrastructure, developments which, as I shall discuss, increase pressures on marine and coastal resources, displace fishing communities, and are unlikely to contribute in any substantial way to the economic well-being of local fishing households. Since the beginning of the 1990s disputes among strong economic interests have led to conflicting views as who should benefit from the region's resources.

In this chapter, I focus on the impact of neoliberal reform policies on the Gulf of California's small-scale fishers. These policies include privatization of marine and coastal resources, "sustainable development" strategies promoted by the state and private capital, changes in the structure of markets, and loss of credit and basic social services for small-scale producers. Socioeconomic studies in the Gulf of California since the early 1990s (McGuire and Greenberg 1993; Vásquez-León 1995; Aubert 1997; Fernandez 2003; Greenberg 2006) have identified a progressive deterioration of the economies of marine-dependent communities and a decline in the productivity of a variety of commercial fisheries. After more than a decade of neoliberal reforms, poverty and resource scarcity have worsened, and today small-scale fishing households are being pressured to the point where marine dependent livelihoods are becoming unviable. Even though neoliberal reforms, including environmental policies, have been undertaken in the name of efficiency and sustainability, fishers find themselves increasingly vulnerable as the state withdraws support for this sector in favor of industrial producers in offshore fisheries and shrimp

aquaculture, tourism development, and conservationist concerns<sup>3</sup>

I begin by examining the major problems that impact fishing communities in the Gulf of California. I then analyze the solutions being proposed by the state, NGOs, and the local communities to revive economies and to conserve resources. And last, I focus on traditional small-scale fishers and their communities to show how they perceive and are impacted by the problems and the proposed solutions. The problems discussed in this paper are not unique to small-scale fishers in the Gulf of California; in Mexico, small-scale producers in other rural sectors also are facing similar challenges (Vásquez-León and Liverman 2004; Haenn 2004; in this volume see Greenberg on coffee, Carter on grapes, and Emmanuel on ranching).

### **The Struggle for Resource Control in the Gulf of California**

The Gulf of California is a large relatively isolated basin containing about one hundred islands surrounded by rocky shores, and a large number of protected estuaries, lagoons and bays bordered by mangrove swamps and salt marshes. It is characterized by a high tidal range, high evaporation, low precipitation, strong upwelling of cold, nutrient rich waters, and high salinity. These features have produced a very distinct biotic community with several endemic species and over 800 species of fish (Thomson et al. 1987).

In economic terms, the Gulf of California is considered to be the most productive marine region of Mexico<sup>4</sup>. Its continental side has numerous river discharges, which have permitted the development of densely populated areas. Fishing is a mayor economic activity and there are

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<sup>3</sup> See Alexander, this volume, for a similar discussion of the contradictions and incongruities of statism and neoliberalism over the past thirty years in Chile.

<sup>4</sup> Mexico is among the world's top 20 countries in fish production with an annual production of approximately 1.4 million metric tons or 1.5% of the world's catch. The fishing sector contributes 0.7% to the country's GDP and employs approximately 1.3% of the working population. Almost 2/3 of Mexico's fishing production comes from the northwest region (the states of Sonora, Sinaloa, and Baja California) (CIBNOR 2006).

several important fishing ports, small fishing communities, and hundreds of seasonally occupied fishing camps. Although tropical shrimp, (*Penaeus sp.*) constitute the most important commercial fishery (both in terms of the income and employment that the fishery provides), sardine and giant squid are also of significant economic value. Large industrialized fleets exploit these three fisheries. In addition, shrimp are exploited by a large number of small-scale fishermen throughout the Gulf of California. The small-scale sector also exploits a multiplicity of habitats and a large variety of fish.

Despite the high productivity of the region, within the past two decades, a combination of factors related to neoliberal policies is contributing to an overall economic decline in fishing communities. These factors include a decline in catches for some commercially important species, a lack of credit to withstand years of low productivity, and regulatory mechanisms that exclude fishers from access to resources. The shrimp fishery, for which historical catch statistics are readily available for the offshore sector, provides a good example. Whereas in the 1970s shrimp became Mexico's third most important export product, in the 1990s catches declined so drastically that there were fears of stock collapse (see Graphs 1 and 2). Although there was a slight recovery from 1992 to 1998, catches declined again from 1998 to 2001. The fishery is characterized by a strong interannual variability, which has been associated with sea temperature and precipitation (Lluch-Belda n.d.). Because of this variability, lack of credit during critical times can have devastating economic consequences. In addition, complementary legislation to the privatization of the offshore shrimp fishery has reduced small-scale fisher's access to the fishery through the gear restrictions and the implementation of critical seasonal and territorial closures, which include a shortening of the shrimping season for small producers and an exclusion from off-shore waters (see Vásquez-León 1998). A downward trend also has occurred for other species, such as lobster,

oyster beds, and totoaba (*Totoaba macdonaldi*), a species endemic to the Gulf and now considered endangered (McGuire and Greenberg 1993)<sup>5</sup>.

[Graphs 1 and 2]

In addition, poor economic conditions in Mexico and reform policies which have undermined the livelihoods of rural smallholders, (see Greenberg and Sesia in this volume) have led many to migrate from southern states into the Gulf region. Today, Baja California and Sonora, Mexico's Northwestern states, are the first and third fastest growing states in Mexico (INEGI 2002). This rapid increase in population around the Gulf of California has prompted greater competition for scarce marine resources.

### **The “Solutions” to the Neoliberal Crisis**

Whereas everyone agrees that there is a crisis, proposed solutions are diverse and contradictory. Political jurisdiction over the region remains divided among various states and federal agencies that have competing interests and opposing agendas. For example, responsibility for the environment and ecosystem quality belongs to one agency, but control over fishing lies in another. The contradictions are clearly reflected in the main schemes being developed by the Mexican state in an attempt to alleviate the environmental and economic problems of the region and achieve “sustainable development.”

Starting in the early 1990s, in response to concerns over biodiversity conservation and resource depletion, the Mexican government initiated an ambitious environmental policy program, the Federal Program for Natural Protected Areas (FPNPA) for the preservation of Mexico’s biodiversity. The program, under the Ministry of Environment and Natural Resources

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<sup>5</sup> Other anthropogenic pressures contribute to an overall decline in marine resources. The damming of rivers for agricultural purposes has reduced fresh water flows into the Gulf. This increases salinity, which has a negative impact on estuarine habitats (Glenn et al 2001). There is also pollution generated by agricultural runoff, ports, urban areas, industrial fishing and processing, and aquaculture operations.

(SEMARNAT) has dramatically increased the number of protected areas in the country. In the Gulf of California there are 19 protected areas (see Map 1), both terrestrial and marine, which include biosphere reserves, marine national parks, and areas for the protection of flora and fauna (CI 2006). Biosphere reserves, for example, are intended to integrate protection of natural areas with economic activities amenable to conservation objectives. In core areas only scientific research and monitoring activities are permitted, in buffer areas economic activity is strictly regulated, and transitional zones are defined to “guarantee sustainability of the entire biosphere area” (Nadal 2003:4).

[Map 1. Source: Museo de Historia Natural de San Diego y PRONATURA. 2000.]

Arbitrary regulatory enforcement, however, has led, not to conservation, but to a transformation of the status of traditional fishers into illegal resource users. General decisions about the use as well as the conservation of resources have tended to be made without adequate input from fishers or concern for local economies and exogenous population pressures (Alcalá 2003). As the literature on environmental policymaking in Mexico reveals, environmental policy continues to be characterized by advanced, formal environmental regulation tied with arbitrary or non-existent implementation (Mumme 1992; Dedina 2000). Factors such as lack of enforcement, conflict-ridden and contradictory policies, corruption, and limited public participation have generated a sense of distrust and defiance at the local level (Silva 1997; Camp 1998). This sense is exacerbated in the case of marine reserves where fishing communities often see themselves transformed into illegal resource users (Young 1999; Vásquez-León 1998).

Concurrent with Mexico’s promotion of a conservation agenda, and in accord with the neoliberal agenda, the state also is promoting capital-intensive development that is likely to

contribute to environmental degradation. In 1992 Mexico revised its Fisheries Law, to encourage commercial producers to invest in enterprises such as semi-intensive shrimp aquaculture. Since then, aquaculture in Mexico has expanded rapidly, and today approximately 20,000 hectares are under production. In Latin America, the environmental and socioeconomic impacts of semi-intensive and intensive shrimp farming on local resources and communities are well documented in places like Honduras, Ecuador, and Mexico's state of Sinaloa where semi-intensive shrimp farming has clearly taken its toll (Stonich 1995; Meltzoff and LiPuma 1986; Aubert 1997; De Walt 1998; Cruz-Torres 2000). Among the environmental problems highlighted are loss of mangrove forests, degradation of coastal wetlands and lagoons, loss of terrestrial habitats, water-quality deterioration, and introduction of viral diseases that impact wild shrimp populations. Sachs' (2004) observation regarding agrarian systems that alter ecosystems is valid. As he points out, "the conversion of ecosystems into production machines" designed to "fill the tables of distant consumers" is a considerable source of conflict at the local level.

From a socioeconomic perspective, in Mexico the shrimp aquaculture industry has been presented as sustainable development alternative, but, as Cruz-Torres (2000) points out, "so far this 'sustainability' has largely focused on economic aspects" as the industry promises to generate millions of dollars every year in export earnings. Because the development of semi-intensive shrimp farming requires large amounts of capital, international conglomerates or very wealthy national investors often carry it out. As is typical of such 'trickle down' development, contribution to local economies in the form of employment is negligible, and the money these enterprises generate tends to be spent and invested elsewhere(see Stonich 1995; De Walt 1998). This largely debunks the myth that free trade and neoliberalism will bring direct benefits to local economies.

The other "sustainable development" scheme is the *Escalera Náutica*, or Nautical



Staircase. This “mega-development project”, which started in 2001, consists of a series of marinas, and corresponding tourism infrastructure, that will be established in coastal areas all along the Baja California Peninsula and the states of Sonora and Sinaloa (see Map 2). The project, is scheduled to be finalized in 2014, at which time it is projected that an annual average of 860,000 “nautical tourists” from the U.S. will visit the Gulf of California. The project’s official website (<http://www.escalera.nautica.com/>) describes the region as having the “highest potential at the national level to develop nautical tourism as a result of its high biodiversity, ... wealth of sports fishing, ... scenic value of the coast and to [sic] the favorable conditions for navigation.” The Escalera Náutica is viewed by Mexico’s president Vicente Fox as the “passport towards modernity”, representing a strategic development project for Mexico. The project will “create 53,000 direct and indirect jobs in hotels, golf courses and naval infrastructure, as well as urban development” and it is designed to “respond to a legitimate yearning of the industrialists and tourist developers.” What “sustainable development” requires in this case, is the commoditization of natural resources and the transformation of a fishing industry into a tourism industry with NAFTA promoting Mexico as a “Third World” playground for the wealthy consumers of the north. At the same time, the public is assured that the project is “sustainable” because it does “not represent a threat to the ecosystem since its development is within the regulatory framework derived from the General Law of the Ecological Balance and the Protection of the Atmosphere, that will allow to conserve and to recover the ecological and environmental conditions of the region” (FONATUR 2001).

[Map 2. Source: Escalera Nautica.com 2001]

In her book “NAFTA Stories” Kingsolver makes the link between NAFTA’s objective of economic development and biodiversity conservation. NAFTA’s 1993 environmental side

agreement resulted in the creation of the North American Environmental Commission, supported by such U.S.-base environmental NGOs as the World Wildlife Fund, Conservation International (CI), the Natural Resources Defense Council, and the National Audubon Society. In reference to Mexico's environment, the president of Conservation International at the time stated that "The greatest enemy of the environment is poverty", arguing, as Kingsolver points out, that "nations need strong economies to protect their environments and NAFTA was the route" (Kingsolver 2001:69). However contradictory -the creation of protected areas for conservation, big investment in commercial shrimp farming, and the development of nautical tourism - all three may appear to appeal to the notion of "sustainability". They also assume that fishers and fishing-dependent localities will gladly switch occupations; that they will happily switch from being independent workers who manage their own time, make their own decision and take pride in what they do, to become eco-tourism guides in biosphere reserves, or cheap labor for the aquaculture and tourist industries. There is little concern expressed for the fact that employment in these types of enterprises tends to be seasonal, low-wage and temporary (Carlos Vázquez León 2003). These examples, however, clearly speak of the condescending and arrogant assumptions of a neoliberal state that believes that fishers (or peasants or artisans) will put a price tag on their independence.

As all of these enterprises are unfolding, management of marine resources has also undergone changes since the mid-1990s. Traditionally, natural resource management in Mexico was highly centralized and characterized by a "top-down" approach. Today, this approach has become unacceptable as along with free trade comes the trend towards democratization and decentralization. In its place, the discourse of "sustainability" has become the new paradigm for fisheries and environmental management, officially adopted by government officials and environmental NGOs, fishery managers, scientists, and politicians. In terms of management, the

concept of sustainability is contradictory. It can, on one hand, refer to the notion that the traditional technologies of native and indigenous groups are not only capable of sustaining human communities but are also beneficial to biophysical conditions, as is stated in the conservation literature (West and Brechin 1991). On the other, from the point of view of stock assessment, sustainability refers to finding an equilibrium, whereby the level of fishing effort equals the natural productivity of the fishery, or Maximum Sustainable Yield (MSY). In practice, management based on MSY has been notoriously unsuccessful (e.g., McEvoy 1988; Holling et al. 1998). Despite its wide use, the term sustainability remains ambiguous. Ironically, it continues to be mobilized to justify further intensification of resource use and coastal systems.

### **The local-level of fishing communities: the mid-Gulf of California**

How do these multiple issues actually play out at the local level? A focus on one community of small-scale fishers, Bahia de Kino, allows a closer view of their implications. In Bahia de Kino fishing is the most important economic activity; quite simply, there is no other alternative. The community is located in the arid Sonoran coast where annual precipitation averages only 150mm, there is no fresh water, and temperatures often go up to 45°C during the summer. Bahía de Kino originated as a fishing camp in the 1920s from fishing families that migrated from Baja California. Since then the population of Bahía de Kino, has risen to 4,000 residents, and though it has changed dramatically over the years, following booms and busts caused by changing markets and declining fisheries, most of its residents continue to depend on small-scale fisheries. (Fernandez 2003).

Small-scale fishers in Bahía de Kino, as in most fishing communities in the Gulf of California, are a very heterogeneous group. There are those who target few species and have relatively little fishing knowledge and experience. They tend to come from agricultural or urban

areas and see fishing as an alternative livelihood. Many of these are recent arrivals, some of the displaced populations from rural areas alluded above. There are others who have depended on fishing for generations. These are traditional resource users who tend to be highly diversified, multiple-species, multiple-gear fishers. These fishers possess vast funds of knowledge (Velez-Ibanez 1992) transmitted through generations that collectively allows them to shift fishing strategies in response to species availability and during times of crisis. This flexibility requires a sophisticated understanding of the ecosystem, of the biology and behavior of a variety of species, as well as access to a variety of fishing gear and the ability to use it appropriately. In this section, I am mostly concerned with the impact of neoliberal reforms on traditional fishers, their households, and their communities.

After more than a decade of neoliberal reforms, poverty and resource scarcity have worsened. And today, small-scale fishers and their communities are being pressured to the point where traditional fishers are discouraging their children from continuing to fish. Whereas some may argue that this is a desirable outcome, as it may lead to a decline in fishing effort and a better chance at conservation, I, like others (e.g. Berkes and Folke. 2002), argue that this will lead to a loss of very specific ecological knowledge. This knowledge is critical in terms of trying to achieve long-term sustainable management of marine fisheries.

One fundamental problem traditional fishers face today is a lack of clarity on who actually has the right to use marine resources. As resources decline and neoliberal reforms take hold, the law which regulates small-scale producers' access to marine resources has become increasingly ambiguous, and administrative decisions do not take into account the historical rights of traditional fishing families. The dismantling of the cooperative structure and the transference of fishing rights to the private sector, have had drastic implications for fishing households and communities.

Today, fishers have no political representation at either the regional or national level; they have lost access to health insurance and institutional forms of credit. This has led to a significant transformation of their relationship with market intermediaries, who are now the only source of credit available. Financial dependency on intermediaries has considerably diminished fishers' ability to negotiate prices or decide what, where, and how much to fish. Market intermediaries, whose financial and political status in the communities has improved as a result of the neoliberal reforms already outlined, now control fishing permits. In fact, whereas in the past they were called *compradores* (buyers), they are now referred to as *permisionarios* (those who have permission). *Permisionarios*, however, are not fishermen, and most are not even from the localities in which they operate. Rather than hiring local fishers, they often bring fishermen from southern states; and, instead of buying their catch, they hire them for short seasons to catch specific species and pay them low wages. This is the case of a group of ten fishermen from Guerrero who are taken to Kino by a *permisionario* every year and are hired to catch shark during a five-month season. This further deepens the traditional fishing household's sense of alienation.

Conservation efforts in the region have also led to conflict. Even though environmentalists talk about co-management, the concerns of traditional fishers are rarely represented in discussions about environmental protection. In fact, it is usually the *permisionarios* who generally end up "representing" the community. There is a paternalistic attitude towards fishers that is resented by local fishers. As one of the representatives of an environmental NGO working with a government agency in the region said, "we need to work with the fishermen so that we can tell them what to do" (Vásquez-León and Rentería 2004). Instead of perceiving fishers as equal partners, the tendency is to see them as ignorant subjects in need of education. Workshops and pamphlets designed to provide environmental education and to promote a conservation ethic are the usual means of

communicating with local fishers.

Conservation efforts have had a direct impact on fishers and what they may do legally. Bahía de Kino is located near the Mid-reef Islands. Traditionally, fishers used these islands as fishing camps and areas of refuge. Most of these islands have been recently declared areas for the protection of flora and fauna. Their designation as protected areas was based on arguments that the islands contain high levels of biodiversity as well as endemic species. SEMARNAT environmental officials argued that fishers disturb local flora and fauna, thus their presence on protected islands was made illegal. As a SEMARNAT representative clearly put it, “it is not that fishers want to do bad things to disturb nature, but their sole presence already constitutes an impact” (Vásquez-León and Renteria 2004).

The resolve to enforce the new regulatory regime was made clear in 2002 when seven fishermen from Bahía de Kino, caught on these islands were not only fined, and had their fishing gear and vessels confiscated, but were sent to jail for eight months. The fishermen declared that they were using the island as refuge. Authorities from the Procuraduría Federal de Protección Ambiental (PROFEPA), the federal agency in charge of environmental protection, claimed that their sole presence was enough to disturb endangered species of birds and lizards. The fishers, however, never received an explanation, as one of them stated

They locked us up and they (guards and other inmates) asked us that what crime had we committed? Before putting us in jail they were told that we were there for an environmental crime. But they saw us with our backpacks, blankets, tired and with our fishing boots on, all covered in salt. So they asked us, how was it that we had committed an environmental crime? If we had been burning tires, or what? Everyone was puzzled, no one understood why we were there (Vásquez-León and Renteria 2004).

The incident sent a clear message to the communities: those fishermen who at the beginning endorsed conservation efforts by the state, began to see themselves as the victims of conservation, and increasingly ask: Who is going to benefit from conservation?

The impact of private sector capital investment also has been negative. As resources diminish. Private investors are encroaching into what used to be considered the territory of small-scale fishers. For example, sardine boats are capturing fish near coastal areas where in the past only small-scale fishers operated. A sardine boat, with sophisticated equipment and sonar, has the ability to capture several tons of mackerel in a relatively short time. Because this catch is illegal, as sardine boats are only allowed to catch sardine, tons of mackerel are dumped in local communities, saturating markets and deflating prices. The environmental and biological impact of massive extraction of schools of mackerel is unknown, but it suggests excessive fishing effort and overexploitation over the long term. Local fishermen also complain that the rapid development of shrimp aquaculture operations in the region over the past five years is degrading nursing grounds for a variety of species. The largest farm, which at the time of our research had 1,000 hectares in ponds and was planning to expand to 3,000 hectares, is both taking water from the estuary and discarding its wastewater into it, the environmental consequences of this are not yet known (farm manager, personal communication 2002). In addition there are fears that, as the farms claim rights to coastal areas, fishers will lose access to critical fishing camps.

### **The Fishers**

Given the kind of knowledge about the natural environment that traditional fishers have gained through observation and experience, it is important to understand their perceptions of the natural environment as these perceptions stand in stark contrast to those of mainstream environmental groups. The latter tend to be based in core countries, focus on narrowly defined quality-of-life issues (such as the conservation of the landscape for the pleasure of tourist from the north), and on the conservation of highly visible species and parts of nature (see Zimmerman 1993). By contrast, fishing communities are concerned about questions of economic survival,

equity and resource distribution. They are also concerned about sustainability, which is perceived as the capacity to adapt to uncertainty and to respond to variability in species availability in such a way that overexploitation of any single resource is avoided. Environmentalists are perceived as outsiders who not only lack an understanding of the complexity of the local political ecology, but are dangerous in that they have the political power to draft and implement conservation oriented measures.

Fishing communities see themselves as increasingly vulnerable given the state's withdrawal of support in favor of industrial producers and conservationists. Given the lack of clarity about "sustainable development" means fishers are very ambivalent about the notion of "reserve" as the concept does not guarantee fishers any legal rights or guarantee of future access, instead, it increases government control. In the words of a very eloquent young fisherman, "I believe that it is unreasonable, unsustainable, and threatening to the survival of thousands of people the fact that they [environmentalists] want to close down fishing grounds, without even having biological certainty, and I am not even touching on the socioeconomic implications" (Vásquez-León and Renteria 2004). Fishers perceive the environment as a place of work, and as such have a long-term interest in the conservation of resources for future generations. However, because reserves rather than guaranteeing their legal rights to resources in the region, limit them, fishers fear that the government will use them to consolidate its control over these waters, and limit their future access. In addition, because tourism development, through the Escalera Nautica, is linked to marine reserves, fishers believe strongly that conservation efforts are likely only to benefit outsiders. The communities are asking for legal concession over adjacent costal resources in order to ensure that their historical rights to resources are respected. As stated by one of the



women in the community: “With the lack of clarity that exists we are all going to end up fighting over the region...we the people of this town must take care of our resources in the best way we can, but if we don’t have legal recognition over our fishing territory, we don’t have clearly defined regulations. That means we will never be able to grow, we won’t have anything to offer to our families and children (Vásquez-León and Renteria 2004). By asking for concession over particularly fragile and productive areas, fishers are asking for government support and for unequivocal evidence of political support for their historical rights.

## **Conclusions**

Under neoliberal policies, legal reform over the control of key coastal spaces clearly favor industrial producers, transnational capital, and distant markets. Those powerful enough to make major decisions regarding the use and conservation of resources in the Gulf of California seem more accountable today to U.S. based environmental NGOs and investment capital in aquaculture and tourism than to small-scale rural fishers.

Although Neoliberals use the concept of “sustainable development” to justify their environmental and development agenda, their policies have given rise to various power struggles between dominant and subordinate social forces. Even though neoliberal reforms, including environmental policies, have been undertaken in the name of efficiency and sustainability, fishers find themselves increasingly vulnerable as the state withdraws support for this sector in favor of industrial producers in offshore fisheries and shrimp aquaculture, tourism developers, and conservationist concerns. As Cruz-Torres points out, “The environment becomes an arena for struggle and conflict when the state enacts and promotes policies that favor one sector of a population to the detriment of other sectors.” (2001:131).

By lumping fishers together, and failing to distinguish between those who possess extensive empirical knowledge of the marine environment from those who do not, the neoliberal

state is able to blame them for widespread environmental degradation and resource decline, while at the same time denying them political representation and transferring responsibility for the provision of basic social services (health insurance and credit) to the fishers themselves.

Any attempt to achieve viable local economies that can continue to depend on fisheries that over the long-term may contribute to alleviating Mexico's escalating problem of rural poverty, requires a recognition of the adaptive capability of traditional fishers, and a recognition of their historical rights to resources as well as their rights to define who are members of their communities. As an empirical issue, sustainability as well as a better understanding of the linkages between fisheries, environment, resource use and management requires the examination of kin-based knowledge among traditional fishers as one component of a much larger system in which competing agendas and resource users coexist and interact. If such a study is to increase adaptive capability it also requires an assessment of the potential to modify the social systems that manage resources through policy.

Finally, there is a need for comparative participatory research, aimed at strengthening and empowerment of actual fishing communities to counterbalance the increased marginalization and impoverishment that they are experiencing. The Gulf of California fisheries offers a clear example of how neoliberal agendas and policies put the interests of global capital, markets, and transnational entities before those of basic human rights. For fishers, at least for those who have been in the region for a long time, the relationship with the natural environment is an intimate one. In the words of a retired fisherman,

there are also people like us who depend on the sea. That is what we like, to live off the sea. And from there we get our sustenance. Besides, we love what we do, our work. But all of this [policies of "sustainable development" and conservation] is totally impacting all the fishermen! It is said that one falls in love with the sea, that is true, the sea is like a woman, or so they say... (In Vásquez-León and Renteria 2004).

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