

Culture, Rationality, and Development: Historical Constructions and Distortions of Conservation Efforts in the Fisheries of Southwestern Puerto Rico

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ABSTRACT

A historical analysis of the fisheries in southwestern Puerto Rico suggests that government development efforts (both local and federal) have contributed to the depletion of marine resources, while advocating conservation practices. Local fishermen have also developed, through years of daily contact with resources, perceptions and cultural constructions about conservation and unsustainable practices. It is argued that productive and social processes in the fisheries are heavily influenced by market forces. Thus, the practice of small scale fishers, as well as their cultural perceptions on conservation issues, are oftentimes constructed by forces fitting into their logic of production and reproduction of daily life. It is this logic and cultural construction that tend to influence their decisions related to what technology to use and the fishing grounds to exploit.

This paper explores the many instances in which the fishermen of La Parguera express through their discourses and practices about production and the importance of conservation practices. This paper also takes a critical look at the actual conservation practices and those circumstances that prevent full sustainability on their behalf. Perhaps, the most crucial event related to conservation is the action movement towards the development of a Marine Fishery Reserve (MFR). This can also be seen in the way they chose a reef to be designated a MFR. Because the chosen area was perceived by the fishermen of La Parguera as the least productive in terms of quantity of fish, it was seen as the "perfect" place for the establishment of the marine reserve so it can be "saved" for future use.

KEY WORDS: Marine conservation, marine reserves, Puerto Rico

INTRODUCTION

In this paper we would like to explore the many instances in which the fishermen of La Parguera express, through their discourses and cultural practices, the importance of conservation practices. It also takes a critical look at the actual conservation efforts and circumstances that prevent full sustainability. Local fishermen have also developed, through years of daily contact with

resources, perceptions and cultural constructions about what they consider conservational and unsustainable practices. Our historical analysis suggests that government development efforts (both local and federal) have also contributed to the depletion of marine resources, while advocating conservation practices. We argue here that the social praxis of small scale fishers, as well as their cultural perceptions on conservation issues are oftentimes shaped by market forces, as well as other site specific socio-economic forces, fitting into their logic of production and reproduction of daily life. This logic and cultural practice tends to influence their decisions on technology and the utilization of fishing grounds. However, such behavior often distorts their actual conservation practices.

A historical background

For most part of the 20th century the community of La Parguera has had a long history of struggles and conflicts over the management of its natural resources. Fishing regulations and the prohibition of fishing particular species that are deemed endangered have been the most common policy. The persons affected by these regulations and laws are mainly the commercial fishers of the community.

In 1983, the National Oceanic and Atmospheric Administration [NOAA] of the United States Department of Commerce proposed the establishment of a 68.27 nautical mile National Marine Sanctuary at La Parguera, covering most of the waters south of three municipalities in the southwest coast of Puerto Rico. The objective of the proposed marine sanctuary was to protect the environment and provide recreational facilities for tourists, while leaving untouched the traditional fishing activities. However, local interpretations of the plan suggested that fishing could be adversely affected by certain regulations, particularly those that impact access to the mangrove forest and regulation of the reefs, two of the areas more used by the fishermen (Valdés-Pizzini, 1990).

The fishers resented that the government did not consult them in the proper manner. It was basically a top-down decision, and they were not happy about that. They argued that they are the ones in contact with the resources on a daily basis and therefore should have been consulted on the drafting of a management plan. In conversations with the fishermen, we were told that there is a need for a fishery management plan, but the approach taken by government was inappropriate.

Recently, the fishermen joined a local scientist and started a collaborative effort to develop and maintain a small Marine Fishery Reserve (MFR) in one of the reefs. The fishermen took the initiative of selecting one of the reefs as a reserve due in part to their concern with fishstocks depletion and their rejection of the government's 'top-down' management practices. Thus, for its implementation, government managers have to cede power so all the parties

involved can share responsibility by establishing a co-operative effort in the management of the fishery, in short, co-management. It has been argued that in theory, co-management (defined as the shared authority and responsibility of fishermen, scientists and government agencies should reduce problems "by bringing the users directly into the management process rather than assigning them solely the role of those being regulated" (McCay, 1992; see also Pinkerton, 1989). The case of La Parguera is interesting in this sense, because the contrary happens. The government agencies do not bring the users into the management process, but fishermen (the regulated) "force" the regulators into the management process by requesting from them the shared power and responsibilities in the decision-making process.

The selection by the fishermen of a reef as a MFR contends the local government view of them as lacking a conservation ethic. This is nothing new because managers tend to ascribe to the notion that fishermen are desperate to make money and they will overexploit and abuse resources due to the absence of property rights. This type of view is known as the notorious "tragedy of the commons", or better yet, the tragedy of the open access context. This view of the "commons" do not take into consideration the indigenous and artisanal fishermen that have developed through the years conservational practices and knowledge systems of the resources (Dyer and McGoodwin, 1994). This is known as local, indigenous, traditional or ecological knowledge, and ethnoscience (Ruddle, 1994). In this study of the fishermen of La Parguera, similar results have been reached (Valdés-Pizzini and Martínez, 1995).

A prime example of this is when fishermen do actually implement conservation measures such as fishing the 'bigger' fish and leaving behind smaller fish with no commercial value. However, not all fishermen engage in this sort of conservation practice. For example, although fish merchants and middlemen, who oftentimes are current or former fishermen, complain about fish size of their regular providers, they finally pay for them. For instance, once we were visiting the fisherman's house when a couple of fishermen had just arrived from fishing lobster. The fisherman, now merchant, came to the house to buy the lobsters that had just arrived. When he saw how small the lobsters were, he began to complain that his clients (mainly local restaurants) were refusing to buy lobsters from him. In the end, he bought the lobsters even though he knew what he was doing was wrong. This point of view can be seen in the selection of the reef Turrumote for a MFR, at it was perceived by the fishermen of La Parguera as the least productive in terms of quantity of fish and, subsequently, as the "perfect" place for the establishment of the marine reserve "to be saved" for future use.

The mexican ecologist Enrique Leff proposed a new approach to economic development in the Third World - the idea of a new environmental rationality

(Leff, 1995). This ecotechnological rationality consists of three postulates; ecological productivity, technological productivity, and cultural productivity. The incorporation of cultural productivity into resource management is not new. Leff acknowledges the efforts of anthropologists to understand the productive practices of indigenous and peasant communities, and furthermore their involvement in natural resource management. He shows the right direction arguing that an investigation of the social and productive rationality of indigenous groups and, in this case, of peasant communities, have to be aimed at comprehending conditions under which natural resources have been appropriated and utilized by local communities. Additionally, we must gain a better understanding of how local economies became integrated overtime within regional, national, and global market economies and disrupts the balance between population dynamics and the functional structures of ecosystems (Leff, 1995).

His work is of particular importance, because it attempts to understand environmental degradation (as O'Connor, 1988) within the capitalist mode of production and the logic of capital accumulation from an historical perspective. This is something that not many ecological or maritime anthropologists have done (for a critique, see Collins, 1992). By doing this, Leff also emphasizes the cultural mediation between economic and ecological processes by stating that "capital accumulation is always mediated by cultural organization of any given social formation that configures their specific relations and forces of production. Thus, the different ethnic styles of utilizing natural resources condition the interrelation between ecological and historical processes (Leff, 1995)."

One of our arguments is that the fishermen's initiative to establish a MFR can be seen as the development of an environmental rationality as consequence of the historical processes, mainly class conflicts and social movements, in the matter of management of the resources in La Parguera. These conflicts have (i.e. the marine sanctuary initiative) helped develop an alternative view of how the resources are to be managed, and future plans of management policies have to take them into consideration because they argue that they are the ones who have daily contact with the resources, and depend on them in order to survive and provide for generations to come.

RESULTS

In this section we will present the results of various interviews and observations of the cultural and social perceptions and practices of the fishermen (a group of key informants) of the southwest coast of Puerto Rico. The results of this preliminary analysis are divided into three sub-sections in which we interpret the main concerns of the fishermen related to the distortion of their conservations practices.

Coastal Gentrification

One of the key factors distorting conservation practices in this fishery is the pervasive process of gentrification. La Parguera has had a dramatic increase in seasonal and permanent housing development, tourism infrastructure and number of visitors. Leisure activities are highly concentrated in this area in comparison with the rest of the island. Only a handful of fishers have access to the coast, and even those fish houses on the shoreline are threatened by new management plans. Most of the shoreline is covered by hotels, marinas, and stilt vacation houses of the upper middle class. La Parguera also attracts many local tourists and visitors who crowd the restaurants and bars, causing many problems to the local residents, as they expressed in public hearings. Restaurants are perhaps the main customers of fishermen, dealers and fishers. It is clear that the demand for fish is not satisfied by local production, and restaurants depend heavily on imports. However, the local fishers provide a large portion of the "specialties" that the restaurants need to offer to attract customers, namely lobster, groupers, snappers, conch, dolphin fish, whelk and octopus.

The combination of gentrification and leisure development in La Parguera has exerted pressure over the fishermen and their conservation practices. In our research, we have identified other instances of such pressures that deserve further analysis:

- i) Increase in the demand for space and housing in the area. An unspecified number of local fishermen have sold their houses, and their access to the shoreline to outsiders.
- ii) Incorporation of the local population, including fishers, to the economic growth of the leisure activities. The parguereños work in the construction of vacation homes, and as laborers and contractors in construction projects. They also provide space and access to vessels and services (crewmen, maintenance) to sportfishing boats at the marina and yacht club. Needless to say, there are several instances of divided loyalties between the traditional small scale fishing sector, and the recreational.
- iii) Adverse effects of the infrastructure development on the coastal habitats: the destruction of mangroves, contamination of the bay waters that affect the bioluminescence and sedimentation of inshore reefs.
- iv) Acute competition for space between leisure and production: a) recreational boating (including jet skies) in the inshore area, mangrove channels and inlets, versus an array of fishing activities (use of gillnets and hand lines, fishing for bait with cast nets, mangrove oyster collection), b) recreational boating in the outer portion of the reef interfering with the use of traps, and c) sportfishing in the summer interfering with the use of traps near the shelf drop-off area. As a result, the fishers have reduced their activities during the weekends, refrain from seasonal fishing in the drop-off and conceded the use

of certain cays (such as Turrumote) for recreational boating during the weekends. Inshore, however, competition still is a factor.

- v) An acute sense of injustice on behalf of the government resource management agencies. Systematically, in interviews as well as in informal conversations and meetings, one of the key elements of the fishers' discourse is the lopsidedness of justice. They feel that they are closely monitored by management agencies, while casting a "blind eye" to recreational fishermen and the owners of the stilt houses (some of which are members of the judiciary).

"Todo tiempo pasado fue mejor": In search of sustainable past and a present for conservation.

In our interviews and observations, the fishers of La Parguera envision a more appropriate use of the marine resources, following a productive logic that we could call "sustainable". The majority of the fishermen interviewed indicated that fishing has declined in recent years, and as the number of fishermen has increased, the catch has to be shared among a large number of participants. A small number of them indicated that fish price constitutes the main difference between the past and present status of the fishery. Those who thought that the present conditions were better, attributed it to the increase in the ex-vessel price. The amount of effort was reduced, fishing was subsistence - ancillary activity that complemented income from other chores. Market pressures were not present, and the amount of fish was, of course, higher. In their view, the amount of fishers have increased over the years, the recreational fishers are selling the catch, and a number of fishermen (divers) do not have conservation ethics as they take small lobsters and conch.

Fishermen interviewed for this project expressed that most of them did practice the conservation of the species. However, a third of the interviewees cast doubts on the conservation issue. Some offered descriptions of unwise practices, mostly related to size of fish and shellfish, and the practice of buying such small specimens by the dealers. These fishermen basically argued that there was an urgent need for active enforcement of conservation laws to curtail the activities of those who did overuse the resources. A handful expressed the need of area closures and marine reserves to increase fish stocks. They also argued for the need for management, but a form of management that include the fishers a in more appropriate way. Various fishermen were very open about the issue of market pressure, even though some of them also commented about the contradictions and ambiguities of the market. In terms of fishing as a productive activity, the distortions to the patterns of resource conservation may come from the following factors:

- i) An increase in the number of small-scale and recreational fishermen. An

unspecified number of these fishers were considered as "young rookies" or newcomers that did not have a thorough conservation ethic, as the older fishermen had. The increasing number of fishermen was attributed to changes in the unemployment rate. Fishers recognize that fishing is a labor buffer zone that absorbs idle hands when certain industries go bust.

- ii) An increase in effort, measured in the number of fishermen and the gear they use.
- iii) Perceived decline in the stocks, attributed to the factors mentioned above, and to pollution, use of motor crafts, recreational activities, and the use of beach seines in the estuaries.
- iv) Occasional competition from sportfishermen in the sales of dolphin fish, mackerel, and other fishes.
- v) Increasing demand of certain fish and shellfish (lobster, conch, snappers, groupers) that force fishermen to seize the opportunity of catching them during their seasonal "runs" and aggregations. The constant pressure over these "specialties".
- vi) Competition (perceived as unfair due to "piracy" and theft) from divers, a group of fishers with the ability of high selectivity and mobility. The number of divers have also increased, as expressed by three of our interviewees (all of them divers), and corroborated by the official figures (see CFMC, 1994).
- vii) Probable decline in the number of traps, a traditional gear which has been the target of theft by divers. This also includes a re-structuring of the use of the space in the insular shelf.
- viii) An increase in the use of gill and trammel nets in the south and west coasts.
- ix) An observed shift to hand lines and trot lines for pelagic species during season.

The fisheries of La Parguera and the adjacent areas have increased in the number of fishermen and in fishing effort over the last 40 years. During that time the state agencies, and even university programs, have provided the means for development of fishing gear and crafts. The fishers, responding to different pressures and historical constraints of the Puerto Rican society, have used the ocean as a partial solution to their economic problems. In the 1930s and 1940s the number of fishers ranged between 1,500 and 2,000 (almost all of them with sailboats and sets of 25 traps), and the total catch was nearly 3.5 million pounds. In the last decade, the average has been close to 3.5 million pounds, with fishers operating sets of 125 traps and handling motor crafts. Sustainability and ethnomangement of marine resources, a relatively workable concept 50 or 60 years ago, is today a far more complex issue with regard to the realities of tourism and development. Our research suggests that the fishermen have vast

knowledge of the environment and fisheries resources, and probably have acquired through learning, experience and tradition an appreciation for their conservation. However, the forces of the market and other pressures have imposed perceptual distortions to existing fisheries management policies and the practice of resource conservation.

Development of the fishery of La Parguera

The fishing industry in Puerto Rico is performed mainly by artisanal or small-scale fishermen. In La Parguera, as well as other parts of the island, the principal means of production are traps, gill nets, and diving-spear fishing. The development of the fishing industry in Puerto Rico has maintained high levels of production by penetrating fishing ecosystems never previously exploited. New technologies, such as the outboard motor, and economic pressures of the market have prompted artisanal fishermen to travel farther away to catch other types of fish. Competition for these resources has put more pressure upon them because all bodies of water in Puerto Rico are considered public property and everybody has access to them. This is one of the primary justifications for the development of a Marine Fisheries Reserve.

According to Leff, "it is important to investigate how local environments, as they are presently configured, have been produced by long term historical processes of ecosystems' transformations, technical innovation, and cultural organization, and how these processes were integrated in other fundamental cultural traits, ethnic identities, and cooperative identities of local communities (Leff, 1995)." In the context of this case, it would be also to investigate class conflicts and processes of cultural resistance, and the role that the world capitalist system has had in the changing patterns of resource use that have resulted, ultimately, in the fishermen's environmental rationality and the initiative to establish a marine fishery reserve and share responsibility with the government to insure a sustainable development of the fishery. As Elizabeth Dore demonstrated recently, "conflicts over the environment can be best understood as class struggles over the use of natural resources" (Dore, 1995). These can be seen in the growing importance of La Parguera as a tourist site which has led to another invasion, that of the conventional tourist and water sport fans (including sport fishing). Two of its most valuable tourist attractions are the Bioluminescent Bay and the mangrove channels. As a consequence, La Parguera has become a tourist oriented community: guest houses, souvenir shops, bars, hotels, and sea food restaurants have multiplied. These developments have definitely had an impact on the fishermen's view of the resources.

CONCLUSION

Knowing that there is a need to protect the resources, the fishermen of La Parguera are looking for ways in which there can be a sustainable development for the fishery. The majority of them have developed, through years of daily contact, various conservationist practices through a working knowledge of fisheries species and habitats, including patterns of reproduction, movement and habitat and feeding preferences. This knowledge, in concert with cultural values and sustainable practices, can be a point of departure for developing innovative systems for utilizing resources without degrading them. They also can share their knowledge with scientists and managers to develop a more rational management plan for the fishery.

The MFR has yet to be implemented. Its greatest obstacles are institutional rigidities and economic interests that sustain and benefit from the prevalent system (Leff, 1995) for example, in the negotiations done with the Department of Natural Resources. Class conflict also make communal efforts difficult; between the interests of the recreational and upper class sector(sport fishermen and the caseteros) and the local fishermen and other members of the community, mainly fishermen from nearby communities that depend on the reef of Turrumote for daily fishing activities, thus proving the argument about class conflicts and the management of resources (Dore, 1995).

La Parguera fishermen argue that if the reserve is implemented all activities, including fishing, ecotourism and recreational diving, should be restricted. The only persons that should have access to the reserve are the scientists that are studying its sustainability. With the initiative of the MFR and the implementation of a co-management project, the fishermen of La Parguera have shown a new environmental rationality and willingness to cooperate in the management of the resources upon which they so much depend.

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