Caught Up in Change

The experience of traditional fisheries in marine reserves in Mexico's Yucatán State reveals the influence of social and economic effects

The 15 human settlements along the 365-km coastline of the State of Yucatán in Mexico have engaged in traditional fishing for finfish since pre-Hispanic times. Fishing harbours, such as Celestún, Dzilám de Bravo, San Felipe and Rio Lagartos, have strong fishing traditions dating back to ancestral times. Puerto Progreso, Telchac and El Cuyo came up during the colonial era and are strongly linked to land-based activities. People from these communities have been able to accumulate a wealth of traditional knowledge based on experience, naming the various fish species and fishing grounds in the Mayan language, a tradition that continues with the current generation of young fishermen.

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Modern fisheries in Yucatán arose during the decade of the 1960s, when national programmes began looking seawards, by incorporating *campesino*s (Spanish for farmers or farm workers in a Latin American country) on land into the framework of coastal fisheries management. In parallel, the State established fisheries co-operatives to deal with high-value species, mainly lobster and shrimp. In Yucatán, traditional fishermen and *campesino*s from inland areas began to benefit from the abundance of the seas, which provided food and cash in a society steadily transforming towards urban life. Small and medium-sized coastal Yucatán communities began to increase in size, encouraged by the promising activity of artisanal fishing. This continues to occupy 80 per cent of the fishing-based population, and fishing provides full-time and seasonal incomes for more than 15,000 families in Yucatán.

The era of the fishery bonanza —when origin, ethnicity and political persuasion did not matter—was undoubtedly during the decades from the 1970s to the end of the 1990s. The fisheries bonanza did not translate into wealth for all, but rather resulted in the economic and social stratification of various sections of the local population, mainly traders and middlemen engaged in fishery activities. A large section of the fishing population remains poor, marginal, and with no hope of owning a boat or outboard motor—that is, without any means of production.

Management criteria based on the biology of species continue as priorities, in the face of the social reality of increasing conflicts between groups and individuals engaged in fishing activities, with the common refrain being "the cake must be shared among more people who are entering the fishing."

But what can be said about marine reserves? Were marine reserves created by traditional fishers, vessel owners and large traders or by urban academics? When did they begin in Yucatán? How many local marine-reserve initiatives exist? How are they translated into practice?

Protected areas

In the coastal and marine zone of Yucatán, there are five protected natural areas, two of which are biosphere

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reserves (Ría Lagartos and Ría Celestún, created in 1979 as fauna refuges, and re-decreed as reserves in 1997 and 2000, respectively), and a marine park (the Alacranes Reef, created in 1994), administered federally. Two of the areas are State reserves (El Palmar and Dzilám de Bravo, created in 1989 and 1990, respectively). The reserves are part marine and part lagoon. However, the local inhabitants were never consulted about their creation; it was a top-down project. Community participation began with academic and emergency non-governmental organization (NGO) projects, with the federal and State branches of government involved in implementing environmental education programmes. In the main, this started during 1997-98, when the fisheries began their period of stagnation, reporting low volumes of fish catches.

From then on, community participation has been concentrated between two groups of the population: children and fisher-producers. The latter form the focal population for consultations on fishing problems and how to achieve fishing-effort reductions.

At that time, problems began to be observed between traditional fishers, who comprised 40 per cent of the total fisher population, and *campesino* fishers, who made up 60 per cent. That started an academic and public debate about those who "conserve" (traditional fishers) and those who "do not conserve but overexploit" (*campesinos* from inland areas).

Given this context, are there any local initiatives to create marine protected areas (MPAs) that continue to be sustained successfully? The only fishers' community that has advanced with processes of traditional management in their fisheries and the creation of a marine reserve without academic or NGO interventions, has been the community of San Felipe. In 1994, it established a 'natural fish hatchery' in an area of 30 sq km, five km from the settlement, taking into consideration the special conditions of submerged aquatic vegetation called, in Maya, '*Tzil*'.

San Felipe's success was maintained for 12 continuous years, and its demise in the last two years has been due to various factors detailed below. The creation of the reserve is strongly associated with the experience of longtime fishermen, who, working in inshore areas, 'discovered' ecological conditions that allowed —and still allow, despite the constant occurrence of hurricanes—the entry and reproduction of marine species, including crayfish.

The first factor for success was that the San Felipe fishermen were strongly associated with a fisheries co-operative, the United Fishers of San Felipe, which had 218 associates. The nature, attitude and personality of the leaders (characterized by ethical conduct, trust and communication, a legacy of their grandparents) also contributed towards the success of the reserve. Further, the co-operative constituted the entire 'social event' of the community, that is to say, life strongly revolved around this institution, politically and, mainly, economically, through the export of crayfish. The community connected with the co-operative much more than with the municipal government. The administration of the co-operative was not exclusively dedicated to the sea and fishermen; it administered the lives, health and religion of the community's inhabitants, whether they were fishers or livestock rearers, expanding their

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Eliseo, a fisherman in the marine reserve of San Felipe. Local inititatives can often help improve marine protected area implementation through the use of traditional knowledge

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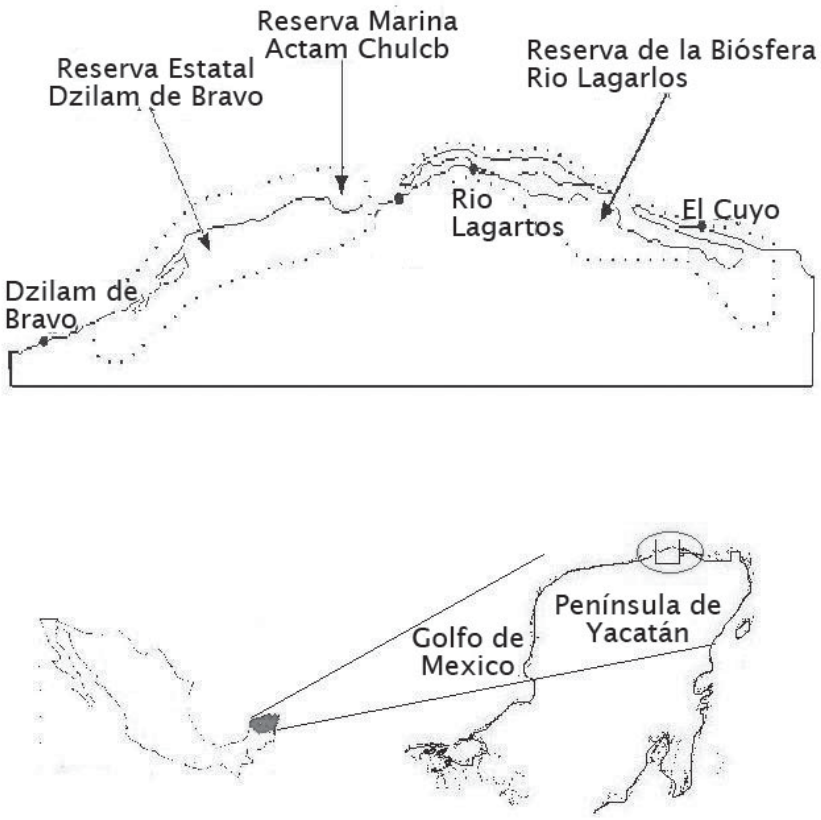

Map of the marine reserve of San Felipe in Yucatán, Mexico

community and family boundaries, at a time when the 'tragedy of the commons' was of little importance.

As mentioned earlier, the State reserve of Dzilám Bravo was created in 1990, with its jurisdiction extending to the municipal reserve created by the fishers of San Felipe. However, due to the lack of information, participation and consultation with fishers in both localities (Dzilám, which has more than 1,000 fishers, and San Felipe, with around 500 fishers), academics and State administrators were unaware of this local initiative.

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The fishers of San Felipe found out that their marine reserve is located in the State reserve of Dzilám only in 1998, when the first academic NGO began work there with United Nations Development Programme (UNDP) funds. The discovery was by chance, they say, since the NGO course that dealt with crayfish management also had a component on MPAs. In 2002, a group of academics undertook a participative study in both areas. They invited the traditional fishers associated into co-operatives to debate, but forgot to invite 'free' fishers, that is, those fishers not formally organized into groups. Perhaps that was one of the common methodological errors that in academia are simply relegated to footnotes.

What about the community rules applied to the marine-reserve initiative? Simply due to the existence of a strong co-operative, a council of representatives supported by the municipality, and strong family ties between the leaders of both local parties, sanctions and fines have been respected since 1995, when all the associated fishers signed the agreement to these rules.

A factor of success has undoubtedly been the existence of strong family ties among those who administer the daily lives of the inhabitants. Does poaching exist under prevailing community rules? The answer is yes, and the poachers were identified some time ago. Strong kinship ties also existed among them, "but they only used to go out at night", and "with great fear".

Another factor of success was the community's fear of the established rules and the co-operative's leaders. The fishery co-operative had established night surveillance systems with volunteer fishers, who were motivated more by species conservation than by payment for watching the area.

Who paid for the surveillance? The fisheries co-operative used to manage UNDP funds, and there was even an internal fund for the co-operative to buy fuel. In reality, the fishers say, not much was spent, and "we did it because we knew that the reserve is very valuable, and many fish and crayfish are conserved there."

End of success

The success of the San Felipe reserve seemed to end in 2004, with a division of political power and new personalities

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Gerardo, a fisherman of San Felipe. Fishermen in Mexico recognize the benefits of marine reserves, but they also need help from the federal government

taking over the administration of the co-operative. There was some bad management of money; kinship ties between families were broken; and a phase of gradual breakdown in the administration of the reserve gave way to a stage of social collapse in 2008, leading to conflicts and aggression. That stage coincided with low volumes of fish catches, and with poor seasons for crayfish and octopus, the two most important fisheries of San Felipe. The neighbouring fishers of Rio Lagartos, located 10 km away, noted that in San Felipe, "they have already abandoned their reserve". For the municipal government, however, a bad season for lobster was no justification for an invasion of poachers into the reserve, and the breaking of rules established years ago.

Several assertions have been made about the collapse of the San Felipe reserve. According to various co-operative fishers interviewed in June this year, "only eight to 10 launches depleted the reserve; they cleaned out everything; now there is nothing to be done." Some other San Felipe fishers recalled: "When we saw the amount that these few illegal fishers were earning, up to 15,000 pesos (US$1,500) in one night, catching between 700 and 1,000 kg each night, we felt deceived, desperate, without help from anyone, neither from the co-operative nor from the government. Everyone started to enter fishing, making it something that no longer benefitted all as before."

There is no doubt that the conservation and protection ethos that has existed for over 12 years in the San Felipe area faces a dilemma. Added to that is the presence of external institutions (including academia and tourism) that go about their work ignoring the negative consequences of the displacement of fishing as a source of subsistence and livelihood, in favour of activities that do not bring any collective benefits, in the way fishing does.

For those in San Felipe, the real conflict began in mid-2007, when, according to fishers interviewed in May 2008, "surveillance of the reserve was lifted, and money was given to the two guards of the Actamchuleb Civil Association not to say anything". But above all, it was "because the co-operative split into two when problems of corruption arose, and it got divided between the bi-partisan politics of PRI (Partido Revolucionario Institucional or the Institutional Revolutionary Party) and PAN (Partido Acción Nacional or the National Action Party)", and also because "to keep watch on the reserve requires US$48,000 per year."

According to one fisherman, "As for us, what we take out of the reserve is little—we may take 30, 40 or maybe 60 kg. But those who have piles of nets, up to 20 pieces of nets of over 1 km in length, they are the ones who take up to 1,000 kg in a single night. And the poachers are highly concentrated inside the reserve. It is highly unjust… I tell my friends: If I accuse you, then what? How do I get out of it? There will be many fights, you will assault me, and no one can do anything. That is how the situation is."

In a focal group discussion in May 2008, fishermen said, "We recognize that the benefits the reserve can bring to us as fishers are huge, if it can be cared for. Seizing the poachers—for us that would be excellent. We need a tough hand. Perhaps someone from the federal government can help us—the port authority, the city hall, local power groups, the fishers themselves, the co-operatives involved…".

Keeping watch

A San Felipe poacher involved in the conflict pointed out in an interview in May 2008, "Of course I support them in the reserve, so long as they keep watch 24 hours. Because if they don't keep a 24-hour watch, then I prefer to take advantage of it and work like mad for 12 hours, earning more than those who are going to work there."

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Ferrocement boats in San Felipe. The future of marine reserves in Mexico seems linked to ecotourism

What about the factors of success highlighted above that allowed 12 years of continuity in protecting a fishing site? What happened to the old fishers, the family relations, the people who administered the co-operative? What happened to this community of 1,800 inhabitants and around 500 fishers who once felt pride in their marine reserve? What happened to the Actamchuleb Civil Association whose administrator, for 10 years, provided the link between the co-operative, the government and financing programmes? Why does the reserve not matter to them any more?

The break-up started when the co-operative split into two, dividing fishermen by age, origin, name and political affiliation. Another factor in the break-up was the absence of any strong tradition of participative action research among the academic groups, which did not integrate with the co-operative, the municipal government and the community for research, thus obviating collective motivation.

Also, it is important to note that the Actamchuleb Civil Association, not being capable of working for, and with, the community, was simply converted into a link for communication between the government and the regional UNDP programme, to attract funds to make gasoline available for the surveillance of the reserve. The State government, on the other hand, does not have the financial and human-resources capacity to apply its mandate to protect biodiversity and protected areas. Further, personnel changes every six years modified the work programme.

Does the San Felipe reserve have a future? The area of this small reserve is included within the zoning of the Dzilám de Bravo State reserve. The management plan of the San Felipe reserve, published in 2006, denotes it as a sub-zone of special use, that is, where activities of conservation, environmental education and alternative tourism are allowed, profitable activities that may not modify the ecosystems' capacity for ecological recovery.

A July 2008 interview with the person in charge of protected natural areas in the State government, indicated that the need for a future for the San Felipe reserve as a municipal reserve is officially recognized, but it is not known exactly how this can be attained.

The future of the reserve appears to be linked to tourism, especially ecotourism, and sport fishing, which is increasing in the community, and fishers are gradually being converted into service providers. Ironically, there is an inversely proportional relationship between fish, which is decreasing and getting scarce, and tourists, who are increasingly visiting San Felipe to see and catch fish. What will there be to show them? The reserve is a good option. In mid-2009, San Felipe will be visited by more than 100 sailing boats from France. "Europeans are now looking in our direction, and are now interested in our beaches", say the fishers.

Main motivation

By and large, most inhabitants, above all, the fishers, feel that now nothing can be done for the reserve; it is no longer a place of work that can be passed on to their children, which was the main motivation for looking after it in the first place. Even the poachers do not see value in protecting the reserve because those who profit from it are hotel owners. Why bother to care for species for the benefit of people who will cash in on the tourists by taking them fishing in the reserve?

The local Actamchuleb Civil Association has a significant future because their ex-local fisher director is strongly linked with the outsiders and has been trained to deal with them. He has secured a five-year extension of the agreement, in which one of the clauses will benefit the association as a collaborator with the State government in the management of the protected natural areas of the State. To belong to a State ecotourism network and to be dedicated more to the administration of issues external to the community, and less with its main activity (fishing), highlights the extent of the transition in the community.

The case of San Felipe in Yucatán may not be unique; there must be similar other cases in various parts of the world, fundamentally changed by the strong transition towards service activities as promoted by national and international agencies guided by the ethic of ecotourism.

Doubtless, ecotourism in itself is no bad thing. What is bad is that local people are affected as their resources are not being cared for, and they lack ownership rights. In the long term, there is a real fear that the fishers will be left without food, beaches and houses on the river banks or beaches. In the case of San Felipe, perhaps they will also be left without a marine reserve. For them, much depends on being able to once again revive the task of conserving their resources. As San Felipe fishers said in an interview in May 2008, what is difficult for them is to decide "when to drop fishing and go and protest before the office in Mérida to get the government to help us with our reserve."

San Felipe requires the engagement of people who are honourable, honest, intelligent, trained, and who take pride in their true social capital. They need what neither the government nor academia is able or willing to give: the time and administrative resources to implement community-based coastal resource management. It would seem that what is needed is an NGO to establish itself in the area for a prolonged period, working towards the recovery and strengthening of both social and natural capital.

The incumbent president of the municipal government sees the local Actamchuleb Civil Association as appropriate to be involved in the administration of the marine reserve through co-management with the State government. The previous municipal government felt that while the local association was necessary, it required a change of leader. What seems right and should be supported is a generalized and transparent participative consultation to analyze the situation, which not only takes into consideration tourists, but local children and youth who will have to emigrate to find work outside their community. The avalanche of people looking for beach and sea areas for leisure, and their conversion into a source of employment or work through the provision of services, cannot be ignored. We cannot close our eyes to a society that is ever more interested in enjoyment of rural marine zones, but we should also think about planning for the future, taking advantage of the social conditions that already exist: direct family ties, religion, solidarity and the size of the urban community.

The San Felipe marine reserve unified the community in times of bad fishing, providing food for families most in need. It should unite them in other bad times as well, by perhaps combining fishing and low-impact tourism.

For more

icsf.net/icsf2006/uploads/publications/monograph/pdf/english/issue_92/ALL.pdf
Coastal and Marine Protected Areas in Mexico