Alienated, Marginalized

The unintended consequences of conservation action has had several impacts on protected species and fishing communities of Pacific Mexico

Conservation initiatives are often urgently undertaken especially when they concern the protection of endangered species. Furthermore, these agendas are often focused on narrow or even singular objectives (that is, saving a single species from functional extinction), which, in turn, mount pressure on national governments to take immediate action. When such pressure forces quick actions with inadequate deliberation, resources for enforcement and monitoring, or appreciation for local context, conservation policies can harm both human wellbeing and the environment. Here we share a case study about how well-intentioned conservation efforts designed to protect vulnerable species have caused a series of cascading effects for coastal communities in Mexico and the marine environments on which they depend.

Small-scale fishing is critically important for the coastal communities of the Gulf of Ulloa in Baja California Sur, Mexico (Figure 1). Over 1,000 fishers make their livelihood off the 300 km stretch of productive coastline where the cold California Current converges with the tropical Costa Rica Current, assembling a unique composition of temperate and tropical species. Depending on the season and oceanographic conditions, small-scale fishers in the Gulf of Ulloa may use gillnets, hookah diving, traps, hook-and-line, and artisanal longline or trawl gear from their 6-9 m vessels, targeting a diversity of finfish, sharks, rays, bivalves, abalone, lobster, octopus and shrimp. While some products go straight to international markets, coastal communities strongly depend on local fisheries production for both nutrition and revenue.

More than a livelihood and food source, fishing represents a strong culture and way of life for these coastal communities and provides the backbone for social organization. As in many other coastal communities across Mexico, this region supports dozens of small cooperatives (each comprising six to 12 persons) and four larger cooperatives (up to 140 persons). These four larger cooperatives have been granted long-term concessions where they have exclusive rights to lucrative benthic resources like lobster and abalone, and, in some cases, contribute considerably to management and stewardship of these resources. Communication among fishers in the region is further promoted by cooperative federations organized at higher scales, strong family ties across communities, and a local baseball league in which cooperatives compete against one another.

Small-scale fishing is critically important for the coastal communities of the Gulf of Ulloa in Baja California Sur, Mexico.

Conservation action?

This story commences when Mexico, the world's sixth largest shark producer, was citedby the international conservation community for inadequate management and conservation of shark and ray (elasmobranch) species. A year later, Mexico enacted a moratorium on the fishing of all elasmobranch species

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throughout the nation's exclusive economic zone (EEZ) for almost two months during the first summer and three months during subsequent summers. The small-scale sector in the Gulf of Ulloa relies heavily on the elasmobranch fishery during summer months, using artisanal longlines and driftnets offshore to target larger migratory sharks and bottom-set gillnets and longlines inshore to target smaller coastal sharks and rays. Although warning of the new law was reportedly disseminated in advance to fisher leaders and federations, the shark fishing closure took most fishers completely by surprise; the closure was announced and enacted right at the start of the elasmobranch season well after most fishers had already made their important seasonal investments in preparation for the fishery. According to one fisher, "the [shark fishery] closure was a failure and nobody could work. One bought nets, bought everything, and we were left without work. The fishermen did not receive notice of the closure; nothing arrived and suddenly there was a fishery closure".

Although warning of the new law was reportedly disseminated in advance to fisher leaders and federations, the shark fishing closure took most fishers completely by surprise...

After the elasmobranch closure was enacted, to sustain their livelihoods many fishers retooled their nets to bottom set for finfish, including halibut and grouper. Fortunately, the summer of 2012 was an unusually good year for halibut, but, to the fishers' frustration, while fishing for halibut they caught substantial amounts of valuable sharks and rays, which they had to discard at sea, dead and unused. Anecdotal evidence suggests that this incidental capture of elasmobranchs during the first summer of the closure was comparable to the targeted capture of elasmobranch species during previous summers before the closure was enacted. In addition to having social and economic repercussions for the coastal communities of the Gulf of Ulloa, the closure did little to protect sharks and rays the first summer it was enacted.

Simultaneously during the elasmobranch closure, evidence suggests that fishers were accidentally catching loggerhead turtles in their bottom-set nets with record high frequency. The unusually good halibut catch coinciding with the elasmobranch closure attracted unprecedented numbers of fishers to the bottom-set fishery in 2012, concentrating fishers in space and time in a sea turtle hotspot in the southern Gulf of Ulloa. Subsequently, record high numbers of loggerheads stranded during July and August 2012 along the shoreline adjacent to primary halibut fishing area; 600 per cent more loggerheads stranded during these two months in 2012 than the average rate documented over the prior 10 years during systematic shoreline surveys.

The dramatic increase in sea turtle bycatch rates and strandings, officially documented by the Mexican government and independent researchers, culminated in a United States' citation of Mexico for its lack of bycatch management and the threat of trade sanctions, and raised alarm in the international conservation community. In response, Mexico developed a bycatch reduction programme in the Gulf of Ulloa, beginning with the establishment of a sea turtle refuge (Figure 1), fishing gear restrictions, and a fisheries observer programme. Thereafter, Mexico enacted a Gulf-wide closure of all finfish species for a four-month period during the summer of 2016.

Unintended consequences

While most sea turtle bycatch in the Gulf of Ulloa has historically been confined to a small geographic region in the south related to specific gear types, the blanket closure unnecessarily affected fishers throughout the entire Gulf, and,

combined with the shark closure effectively shut down over 1,000 fishers during their critical summer fishing season. Though the closure was accompanied with a compensation plan, the rent-out unfortunately failed to benefit the fishers who needed it the most.

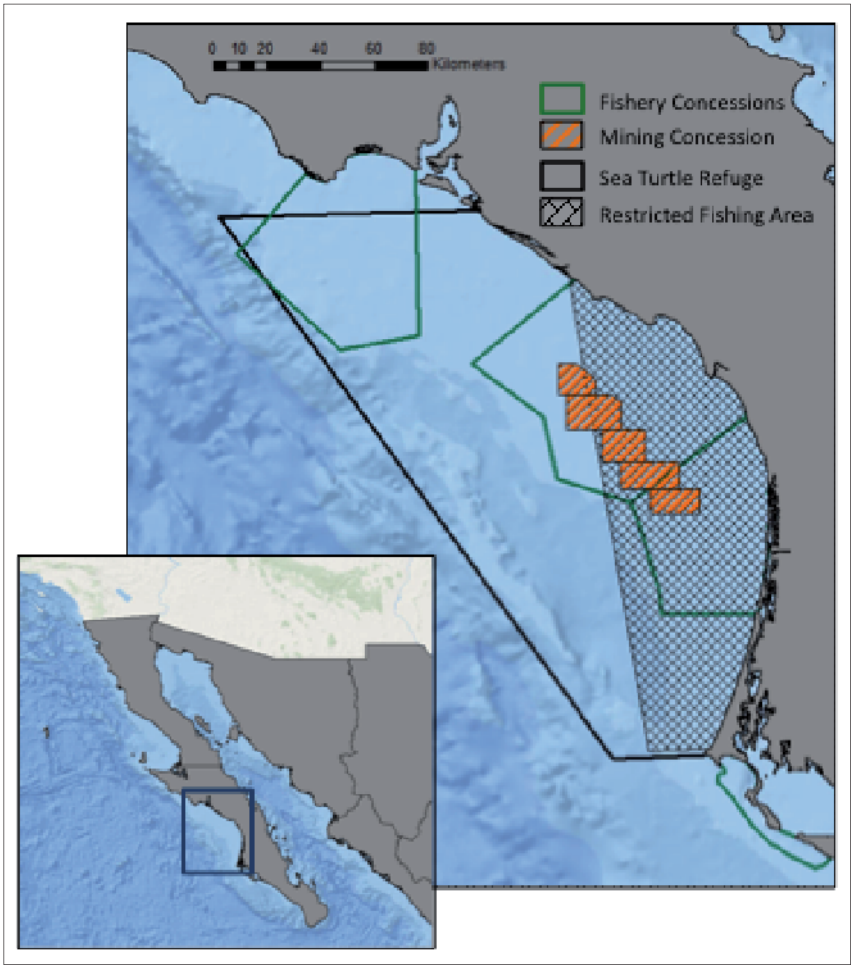
Over the course of these events, social and political conflict intensified at the local level as the situation became increasingly polarized. Feelings of mistrust among fishers, conservation organizations, researchers, and authorities culminated in the suspension of a participatory bycatch research and mitigation programme.

Meanwhile, the continuing presence of industrial trawl vessels, from other states of Mexico, fishing offshore in the Gulf of Ulloa, potentially contributing to resource decline and sea turtle bycatch, exacerbated feelings of mistrust and resentment among small-scale fishers in the region. And furthermore, a proposed underwater phosphate mine placed in the middle of the turtle refuge and two of the benthic fishing concessions, represents another compounding threat to local fishers' livelihoods and the local marine environment (Figure 1).

In this case, multiple processes and actors have combined to create a situation with undesirable and unjust outcomes. There is a strong incongruence across scales with respect to value orientation and power. While the international conservation community plays an important role as an advocate for biodiversity conservation and vulnerable species, this advocacy may fail to integrate local knowledge, culture, and context. Meanwhile nations are tasked with potentially conflicting duties of conservation of public trust resources, development of the fisheries sector, and protection of livelihoods.

Given the complex duties of protecting trade agreements, fostering economic growth, and adhering to evolving international conservation standards, ensuring local livelihoods and wellbeing may not be prioritized by governments. Thus, at the intersection of competing and powerful interests, who is speaking for the needs of marginalized communities? Who is bearing the majority of costs of decisions made at higher levels? In this case, fishers from the Gulf of Ulloa are having to pay the costs of conservation while also bearing witness to potentially destructive and unsustainable practices by other, more powerful sectors including industrial fishing and mining. Furthermore, both the elasmobranch and finfish closures were autocratic processes that failed to adequately involve fishers through consultation or meaningful participation. Unsurprisingly, feelings of political alienation and social marginalization are a consistent theme in the region, further undermining objectives of conservation and sustainable fisheries management.

FIGURE 1



Small-scale fishing is critically important for the coastal communities of the Gulf of Ulloa in Baja California Sur, Mexico

Lessons learned

There are important lessons to be learned from this story, applicable to conservation efforts within small-scale fisheries around the world. First, we argue for greater coherence among international conservation efforts, national policy making, and the realities faced by local communities. This requires a refocus of attention on how we integrate multiple value orientations and objectives across scales to achieve just outcomes for biodiversity and human wellbeing. This also requires addressing power relations occurring across scales (from international to local), and recognition of how the costs and benefits of biodiversity conservation are distributed among stakeholders. There is also a critical need to recognize the historical and cultural context of proposed conservation solutions. Are there histories of inconsistency, mistrust, or marginalization? If so, how might they impact the efficacy of a proposed conservation action, and what might the ancillary consequences be?

Second, conservation actions are likely to be more effective if they address interactions occurring beyond a single species, and integrate broader concerns beyond just that of biodiversity conservation. A focus on protecting single species may lead to cascading effects for other species or entire ecosystem especially if the policies are not thought through or do not consider potential feedbacks resulting from social, cultural, or economic realities. This was evidently the case with Mexico's effort to protect shark species, as the shark closure inadvertently caused increases in bycatch of both elasmobranchs and sea turtles. Most importantly, biodiversity conservation efforts must also integrate human wellbeing considerations to minimize human cost and maximize the potential for long-term sustainability outcomes.

Finally, we suggest that resource management and conservation should avoid negative impacts to local resource-dependent communities and engender more robust and longer-term solutions by including local stakeholders throughout the development of conservation strategies. In particular, authorities should seek out stakeholders' narratives concerning conservation threats and solutions. In this case, fishers' perception of the problem strongly dictated perceived legitimacy and efficacy of the enacted policies. As such, fishers' unique perspectives and long-standing ecological knowledge should be incorporated into the design of conservation and management policies. Furthermore, increasing stakeholder consultation and participation has the potential to achieve socially just outcomes for local communities in addition to biodiversity conservation. In fact, we argue, you can't have one without the other.

For more

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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.

...fishing provides full-time and seasonal incomes for more than 15,000 families in Yucatán.

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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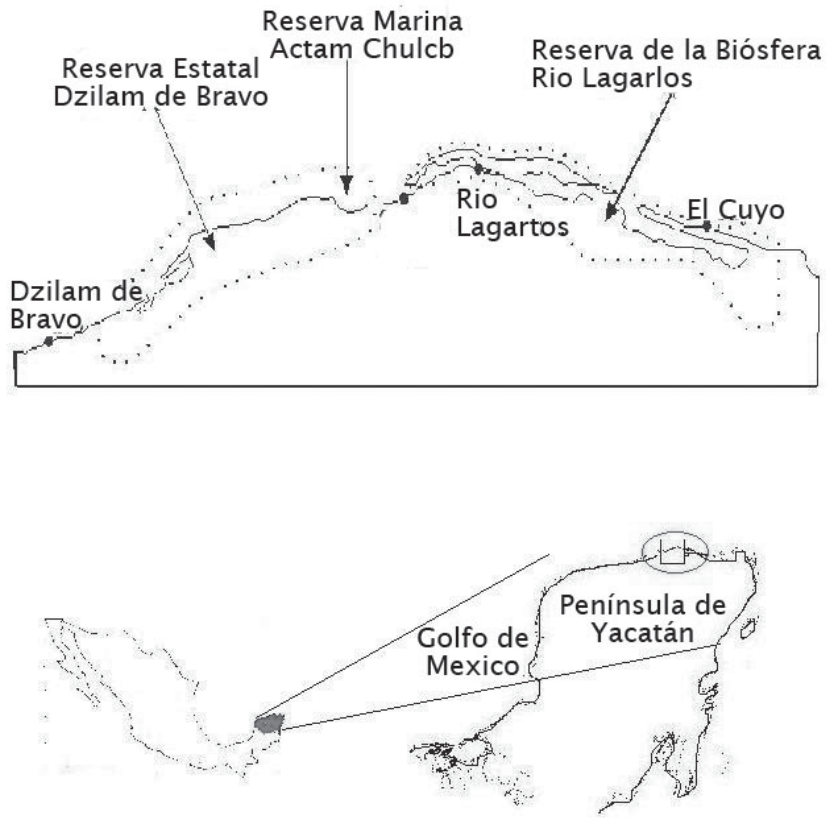

Map of the marine reserve of San Felipe in Yucatán, Mexico

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.

...due to the lack of information, participation and consultation with fishers...academics and State administrators have ignored local initiatives.

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."

JULIA FRAGA

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

Build new, better lives

Solidarity is key to recovering from a disaster, as the experience of Mexican earthquake victims reveals

Early in the morning of 19 September 1985, at 7.19 am, Mexico suffered a magnitude 8.1 earthquake that damaged several parts of the country, affecting Mexico City the most.

In Mexico City the situation was catastrophic: around 50,000 people died and 100,000 were injured. In all, around 120,000 families became victims of the earthquake. Hundreds of schools, some of the main hospitals, many factories, offices and different facilities were severely damaged or collapsed.

Neighbourhoods around the centre of town were the main affected areas. So extensive was the damage to human life and property that the government entered a state of shock and did not now what to do.

But we, the victims, did not have the time to wait for the government to react. From the start we handled the situation on our own. In my neighbourhood, Tlatelolco, where more than 1,000 died, we began searching for survivors as soon as conditions allowed us to do so, that is, the instant the cloud of dust disappeared. By 8 am, we had already begun assembling different commissions of volunteers, to list the injured, the dead and the missing, to install shelters, and to search for medical aid.

When officials of the government showed up hours later, we were the ones who told them what to do and co-ordinated their activities. Around 500,000 volunteers were collaborating everywhere. In the beginning, our only tools were our own hands; only later did machinery and tools begin to arrive. By 9 am, we had the first shelters functioning. By noon, we began sending volunteers out to other areas to find out what was happening there. At 5 pm, we held the first assembly of the survivors. In the afternoon of the next day we had a meeting with local authorities where we presented our first list of demands. This meeting was abruptly interrupted by a second and powerful afterquake of magnitude 7.2.

The next few days were spent organizing shelters and camps, even as rescue work continued. One week later, we held our first demonstration, marching towards the President's house to demand solutions to our problems. That was when we had the first contact with ministers of the government. As an outcome of our meetings and assemblies, unions of victims and neighbours were formed in each of the affected neighbourhoods of the city.

When the government recovered its wits, it decided to follow the Nicaraguan government's policy for the victims of the Managua quake: to expel them to the outskirts of the city. We strongly opposed that policy and, in our assemblies, we resolved not to allow anyone to relocate us. So the tents and camps were built exactly in front of the collapsed or affected houses and buildings. We also began regular meetings with the elected representatives of the unions. On 23 October, we held a big demonstration at the main square of the city to demand that the government stop debt repayments and, instead, use that money for reconstruction.

Big demo

One day later, also in Tlatelolco, we held the foundation congress of the Co-ordinadora Unica de Damnificados (CUD), the co-ordination centre for the victims. Two days later we held another big demonstration outside the President's house, which forced him and some of his

ministers to meet us. That meeting led to a lot of other meetings with different ministers, who began to discuss our demands.

Meanwhile, the unions were organizing a lot of activities in each neighbourhood. The commissions had now enlarged to include social, technical, cultural, communication and womens issues. We began organizing large art festivals, in which both victims and well-known artists participated.

Several months later, on 13 May 1986, we finally signed with the Mexican government the Democratic Agreement for the Reconstruction. This document gave warranties to each one of the victims and gave birth to different housing programmes. An expropriation decree gave all victims equal rights, and private properties became the property of the State, to be developed as part of the reconstruction process. All the victims became inhabitants of the expropriated land. No matter what their status was before the quake whether they were owners or tenants, rich or poor—they all had the same rights. Thanks to the agreement, special consideration was given to the poorest, the elderly and widows.

Apart from focusing on housing reconstruction, we also began to work in the fields of health, education, labour and culture. We established direct relationships with different agencies and non-governmental organizations (NGOs), both local and international, so that they could support us directly. Through different programmes, we got houses for all the victims and we ourselves built around 5,000 houses.

It was not easy, and we had to spend hundreds, perhaps thousands of hours, in negotiations, demonstrations, rallies, assemblies, press conferences, academic and social encounters, arts and sports activities, solidarity encounters and much more.

There are many lessons from our struggle. All solidarity was welcomed, as long as it was given unconditionally. We fought the battles on our own; we did not allow political parties or churches to represent us.

We worked for all the victims without exception, and we took care to ensure greater support for those more in need. The reconstruction process was handled in accordance with the needs and demands of the victims and not those of the government.

New future

The philosophy behind our reconstruction was not to go back to our past but to build a new and better future,

with the participation of everyone and for the benefit of all. The basic value that drove us was—and remains—solidarity.

There were other consequences of our movement. Existing laws were changed, and new ones created. A new generation of politicians, musicians, artists and poets, among others, was born. The people had won new rights. The political situation in Mexico City changed forever. So great was the influence of our movement that it got reflected all over the country.

Since then, we have tried to use our experience to help others who, like us, became the victims of disasters. We did it in El Salvador, in 1986, when a big quake struck, and in many other places, both in Mexico and abroad. As a result of contact with the victims of the great Hanshin quake in 1995 in Japan, a co-ordination network of local NGOs was born. That group of Japanese NGOs later consolidated into a network called the Citizens towards Overseas Disasters Emergencies (CODE). CODE (www.code-jp.org) has done a lot of work in disaster-hit areas in countries like Taiwan, Afghanistan, Iran, El Salvador, Mexico, Algeria and Turkey. Currently, we are developing relief activities and recovery projects in Sri Lanka and Indonesia.

We hope that the victims of disasters can take advantage of our experience. If we can be helpful in any way, just let us know! Remember, the basic value is solidarity. We have to fight for all, without exception. The idea is not to rebuild but to build new and better lives!

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Mexico

Women in fisheries

No women, no sustainable fisheries

To ignore the role of women in fisheries is to brush aside their potential to strengthen the sector

Oh, lady, how sad my life is, nowadays I can hardly afford to eat...

In the fishing town of El Bellote, this is how they begin telling the life story of Rosa, mother of 11 children. El Bellote is situated on the edge of the Mecoacan Lagoon, in the humid tropics of Tabasco State in Mexico. The main fishery is for oysters, which, along with other species caught in the coastal strip, used to be sufficient to provide the basic food and subsistence needs of the local population.

But, since the arrival of 'development', things have changed. During the decade of the 1960s, Mexico entered the era of the petroleum boomthe 'black gold' became the force driving national development. The daily export of oil from Puerto de Dos Bocas in Tabasco was 437,000 barrels.

The construction of infrastructure transformed the environment, damaging marine fauna and flora. There were frequent oil spillages and accidents, which caused fishery production to fall. Jn 1992, a crisis occurred in Mecoacan, when oyster mortality reached 70 to 80 per cent of the total production. This is but one example repeated with different actors but with similar consequences, along the entire coastline of our country.

The environmental impact on the quantity and quality of artisanal fish catches in Mexico has become a central problem for coastal dwellers. To this phenomenon has been added a fierce competition for resources, due to the increase, in the number of producers and the proliferation of small boats. Thus, pollution and overexploitation are the two principal causes of the fall in income of coastal fishermen. The deterioration in the quality of life of families dependent on fishing for their livelihoods has affected the entire community and is changing relationships between men and women. Women have developed multiple survival strategies to compensate for the fall in production.

Women increasingly go fishing with their husbands, brothers or fathers, an active role, which was previously almost exclusively a man's. More women are also working as traders, filleters in salting and drying, in packing and de-shelling.

Nowadays, it is common for women to enter the job market as cooks, workers in fish and shellfish restaurants, as housemaids or in small enterprises. Others have entered the 'non-formal economy', as street or door-to-door saleswomen, doing stitching and maquila (assembly work).

Women's contribution to household income in cash or kind has not diminished their traditional roles. Looking after the children, cleaning the house, cooking and other domestic duties are now supplemented by other work. This is not very different from the fate of women in other sectors who perform a double role. Work commitments of Third World women have become so great as to force them to 'work round the clock'.

Household routine

However, in the case of fishing, there are some differences. For example, the routine and hours of catching fish determine the daily pattern of household activities. Many fishermen leave for fishing at night. If their wives work during the day, there is little or no opportunity for family life.

Another issue is that fish is highly perishable and fisherfolk have few places for storage, and also lack facilities to

preserve the quality of their products. Unless the fish is sold immediately, they lose the opportunity to get the best prices from the middlemen waiting on the beach.

Thus, it is common that women are found selling fish in the community or in the regional markets, immediately after the men have landed. These jobs oblige the women to leave their children alone, or put their eldest daughters-often still girls-in charge of the household. The consequences are not only economic and physical, but also emotional and psychological.

There are also other factors intrinsically associated with the environment, which have repercussions on the quality of life in coastal communities, particularly for women. For example, some health problems have got worse. It is common for the so-called poverty-related diseases like stomach and respiratory infections, cholera, malnutrition, etc. to be found more in communities with environmental problems, such as pollution of water bodies, lack of health services and atmospheric pollution (especially in areas of petroleum industries).

New diseases are evidently appearing. For example, a medical study in the Tabasco region found an increase in leukaemia. In the northern border area, babies are born with anancefalia, possibly associated with the presence of toxic substances. The lack of research linking health with environmental problems makes it difficult to decidedly establish the causes of such diseases. But these growing health problems affect women more, as they are the ones traditionally responsible for the sick.

Once communities 'enter the market' women also find less access to the sustainable use of natural resources. They also lose options to produce food in family gardens or to raise domestic animals. So too in many other aspects which, in the end, result in a deteriorating standard of living for coastal families. All of these issues have hardly been considered in the debate on environmental problems, which ignores the impact on different sectors of the population.

Evidently, there is a need to design policies, which address and alleviate the situation. In Mexico, as in many other countries, coastal fisheries are low on the list of government priorities, despite being an important source of food for many people and low-cost protein for those with scarce resources.

Traditionally subordinate

This marginalization is far worse for women, due to the traditionally subordinate role that society bestows on them. Even traditional fishermen's organization like co-operatives, unions and other organized groups, do not provide space or a voice for women.

Apart from an in-depth analysis of the situation of women in fishing communities, what is more important is to promote them as social actors with the potential to improve their family situation, their communities, the fishery and their country. It will be difficult to have sustainable fisheries without the participation of women.

This piece is by Hilda Salazar Ramirez, on environmental activist who works with the fishermen's union in Mexico