Chapter 25
Common Ground, Uncommon Vision: The Importance of Cooperation for Small-Scale Fisheries Governance

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Abstract Like in many countries around the world, concerns about resource degradation due to high fishing intensity and use of illegal fishing gears have led to the creation of several protected areas in Mexico. Also as in other cases, these conservation efforts have not been very successful, especially in areas where boundaries are unclear; resource uses overlap, and enforcement weak. Under these circumstances, conflicts between users are likely to escalate, making the fisheries system and the protected areas ungovernable. As posited by interactive governance theory, how stakeholders interact depends partly on the inherent characteristics of the social system, including images that they have of each other, and of the governing system. Stakeholder interactions are also reflections of their willingness to cooperate with each other, which in turn affects the overall resource governability. We illustrate the importance of stakeholder cooperation for governability using a case study of two neighboring small-scale fishing communities, San Felipe and Dzilam de Bravo, on the Yucatan coast of Mexico. While sharing fishing grounds and two nested protected areas, fishers from these two communities had different images about what the protected areas were for, who benefited from them, and how they should be governed. The communities also differed in livelihood options, the level of internal organization, and in the mode of governance. Based on our findings obtained through participatory research, we discuss how to foster cooperation between small-scale fishers and promote co-governance in order to enhance resource governability in the area.

Keywords Cooperation • Participatory research • Protected areas • Resource governability • Small-scale fisheries • Mexico

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Introduction

Benefits of marine protected areas (MPAs) are often stated in terms of biodiversity improvements and "spill-over effects" (Guénette et al. 2000; Sale et al. 2005; Aguilar-Perera et al. 2006; Mora and Sale 2011) and, to a lesser extent, in terms of their economic contributions (Sumaila 1998; Hannesson 2001). Yet, one of the factors restricting the successful implementation of MPAs around the world is related to the social and institutional consequences of these instruments (Christie 2004; Hilborn et al. 2004; Jentoft et al. 2007; Mora and Sale 2011). As argued by several authors (White et al. 2002; Hilborn 2007; Berkes 2008; Jentoft and Chuenpagdee 2009), fisheries over-exploitation and environmental degradation in coastal areas have more to do with the socio-economic and institutional-political nature of the problems than with the resources themselves. For this reason, participation of fishers and communities in decision-making about the size, location and governance of MPAs is imperative to enhance fisheries governance, including MPA governability (Davy and Breton 2006; Berkes 2008; Charles and Wilson 2009; Jentoft et al. 2012). This is particularly important given that MPAs are likely to affect livelihoods and the viability of small-scale fisheries. The process can also be rather cumbersome when fishing communities are diverse, complex, and dynamic; thus a common vision or agreement on MPA goals may not be easily achieved (Hilborn et al. 2004; Jentoft et al. 2011).

Further complication can arise when participation of fishers from one community is not entirely independent from what goes on in neighboring communities, especially when they share common pool resources and also the protected areas (Fraga et al. 2006; Pajaro et al. 2010). In such instances, enhancing MPA governability is not only about improving fisher participation in the discussion about where MPAs should be situated, how big they should be, what activities should be allowed inside them, and who should make decisions. It is also about understanding how affected small-scale fishers interact in their own community and with others in nearby areas. These interactions reflect some inherent characteristics of the social system, including images that they have of each other and of the governing system, as well as of their capacity for self-organization and their willingness to cooperate (Gutiérrez et al. 2011; Jentoft et al. 2012; Ovando et al. 2013). We argue from the interactive governance perspective (Kooiman et al. 2005) that unless these interactions are well understood, in their own context, small-scale fisheries governability challenges will remain. Cooperation as a form of interaction is of specific interest in this chapter, given the peculiarity of the case study of two neighboring small-scale fishing communities, which share fishing grounds and protected areas, but not much else.

Situated in close proximity to each other, small-scale fishers of San Felipe and Dzilam de Bravo, on the Yucatan coast of Mexico, fish in the same nearshore waters. Both communities are located within the boundary of Dzilam de Bravo State Reserve (Fig. 25.1), declared through a top-down process by the state government in 1989 (Secretaria de Ecologia 2006). Concerns about the dwindling fisheries

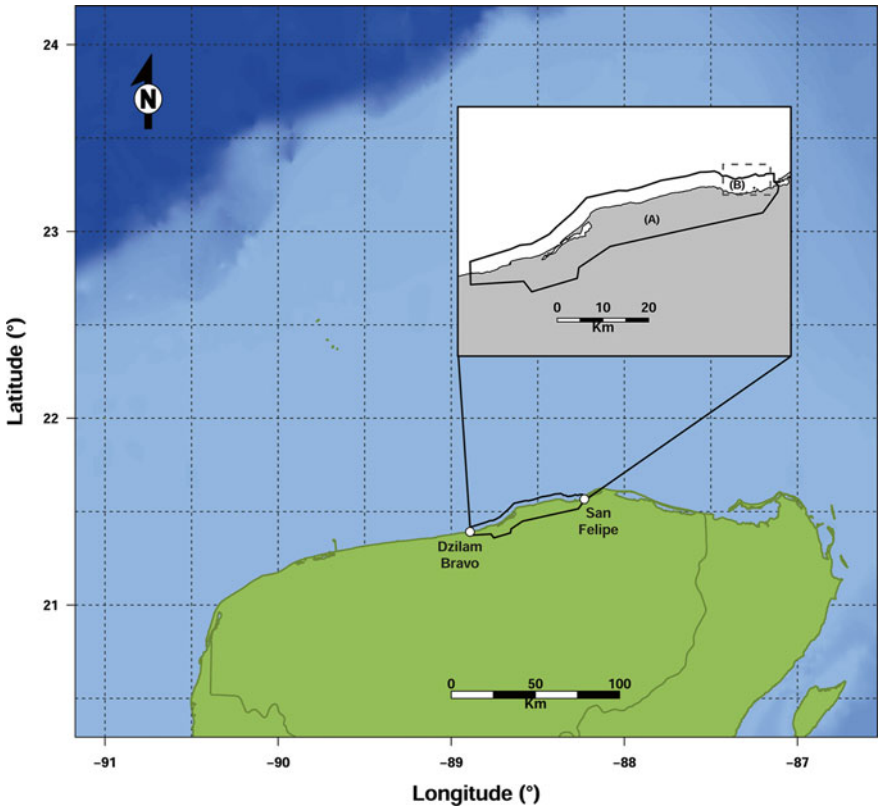

Fig. 25.1 Location of protected areas along the Yucatan coast, Mexico: (**A**) Dzilam de Bravo State Reserve and (**B**) Actam Chuleb Marine Reserve

resources and the 'paper park' status of the State Reserve drove the small-scale fishers of San Felipe to create their own marine reserve, Actam Chuleb, in 1995 (Chuenpagdee et al. 2004). Through their fishing cooperative and with support from the municipal government, they established their own rules and a local management committee to enforce them (Ayuntamiento Municipal de San Felipe 1999; Diario Oficial del Gobierno del Estado de Yucatán 2005; Aguilar et al. 2012). Rather than being praised for this conservation initiative, San Felipe small-scale fishers were reprimanded by state officials, especially as small-scale fishers of Dzilam de Bravo, whose access to fishing grounds were affected, lodged complaints. Since Actam Chuleb Marine Reserve is embedded within the boundary of the existing Dzilam de Bravo State Reserve, San Felipe fishers had no legal right to prevent others, like small-scale fishers from Dzilam de Bravo, from entering and fishing in Actam Chuleb. This situation with the MPAs adds another layer of complexity to the relationship between these two fisher groups, thus affecting the overall governability of small-scale fisheries in the area.

This chapter aims at understanding the complex relationship between small-scale fishers of San Felipe and Dzilam de Bravo and its effect on resource governability, taking into consideration the overlapping boundaries of the MPAs, their different origins, and how fishers perceive them. We ask what these two fisher groups have in common, what distinguish them from each other, and what factors and conditions determine their interactions. In accordance with meta-order governance posited by interactive governance theory (Kooiman and Jentoft 2009; Song et al. 2013), we further analyze the 'images' that small-scale fishers have about MPAs, based largely on their knowledge and perception about these protected areas and what they intend to do. This examination contributes to determining avenues to enhance cooperation between these two small-scale fishing communities. We argue that cooperation between small-scale fishers who share fishing grounds and protected areas is beneficial for the health of the ecosystem and for their livelihood viability.

In what follows, we present an overview of the two small-scale fishing communities and the historical development of their protected areas. Next, we briefly describe the various studies that we base our examination on, before presenting the key findings, and discussing the implications. We conclude with some recommendations about steps that can be taken towards enhancing cooperation and thus overall resource governability.

Background: The Communities and Their Protected Areas

The coastal area of Yucatan is rich in mangrove forests and submerged aquatic vegetation, which provide nursery and feeding grounds for many juvenile fish and crustaceans (Arceo-Carranza et al. 2010). These ecosystems support productive fisheries, of economic importance to small-scale fishers such as red grouper (*Epinephelus morio*), spiny lobster (*Panulirus argus*), and octopus (*Octopus maya*) (Pedroza and Salas 2011). Small-scale fisheries dominate the area and over time the sector has grown in capacity and efficiency as well as in number of fishers and boats, thus increasing competition for limited and dwindling resources (Fraga et al. 2008; Pedroza and Salas 2011). Rapid development in the coastal area—including the clear-cutting of mangrove forests for housing construction and burning of forested areas for pasture or agricultural land—has prompted several government initiatives to help protect the rich biodiversity of these areas and several others along the Yucatan coast (Chuenpagdee et al. 2002; Jesus and Euan-Avila 2008). Dzilam de Bravo State Reserve is one such example.

Established by the federal government in 1989 and designated as a RAMSAR site in 2000, the state reserve comprises about 69,000 ha (Secretaria de Ecologia 2006). It is situated at one end of the 'ring of cenotes' (sink holes), a unique hydrological system formed by the impact of a large meteor in ancient times. The reserve encompasses a range of coastal habitats, including submerged aquatic vegetation, inter-tidal zones, coastal dunes, and forests. High biological diversity characterizes

this area. It contains 38 species of fishes, eight species of amphibians, and 148 species of birds, attracting a large amount of tourists each year (Secretaria de Ecologia 2006). Many of the endemic fish species are native to the cenotes and many marine species are of high commercial value.

Dzilam de Bravo State Reserve falls within the municipal boundary of Dzilam de Bravo and San Felipe (Fig. 25.1). Dzilam de Bravo, the larger of the two municipalities, is the third largest fishing community along the Yucatan coast, the majority of which are of small-scale. The labor force in the fisheries has been rising steadily, from 58 % of people dedicated to fishing in 1989 to 76 % by 2004 and close to 90 % by 2010 (INEGI 2014). The increase in fishing population is also due to fishers coming here from nearby communities during the octopus season (August to December), or for the sea cucumber season (November-February), thus putting heavy pressure on fisheries resources in the area (Salas et al. 2011). Many small-scale fishers also engage in supplementary income-generating activities, such as aquaculture and tourism. Mostly, efforts to develop alternative livelihoods are household-based or promoted by small groups of people. Limited interactions, both among small-scale fishers and with government agencies, make it difficult to coordinate actions.

Closely connected by sea, but rather far in travel distance (about 70 km by road) from Dzilam de Bravo, is San Felipe. As shown in Table 25.1, although smaller in size, San Felipe has some similar socio-economic characteristics as Dzilam de Bravo. While activities such as ranching and tourism provide additional income for the small-scale fishers (Aguilar et al. 2012), fishing is still considered the main economic activity in San Felipe, engaging about 90 % of the population.

Concerns about ecosystem health and livelihoods due to rapid and unplanned coastal development have prompted small-scale fishers of San Felipe to take action. With support from the municipality and local officials, they worked with the only fishing cooperative in the community to create the Actam Chuleb Marine Reserve mainly to promote conservation (Chuenpagdee et al. 2002; Fraga et al. 2006; Jesus

Table 25.1 Socio-economic characteristics of the fishing communities

	Dzilam de Bravo	San Felipe
Population (2010)	2,463	1,839
Female population (%)	48	49.0
Male population (%)	52	51.0
Illiterate people above 6 years old (%)	1.4	6.6
People without sanitary services (%)	4.9	4.3
People without power (%)	4.7	3.9
People without drinkable water (%)	25.0	3.9
People without medical services (%)	45	59.0
People involved in fishing (2010) (%)	90.0	65.2
Other activities	Commerce, ranching, aquaculture, tourism	Tourism, ranching

Sources: INEGI 2005; Datos económicos, demográficos y sociales, Gobierno del Estado deYucatan

and Euan-Avila 2008). The reserve covers an area of about 30 km^2 from the edge of the mangrove forests to about 2 km from shore. It encompasses dense nesting areas of several types of birds, with rich and diverse marine habitats providing shelter for many commercially important species, including lobster and other crustaceans. It also includes a small island named "El Cerrito," which contains rich archeological Mayan artifacts of high cultural value (Andrews and Gallareta 2003; Secretaria de Ecología 2006). The fishing cooperative, in coordination with local authorities and the municipality, defined the reserve as a self-regulated area where only subsistence fishing using non-destructive gears such as hooks and lines was allowed (Bjørkan 2009; Aguilar et al. 2012).

Given their small size and homogenous characteristics, governability of this small-scale fishing community could be assumed to be high. However, seasonality creates resource variability that presents some challenges to small-scale fisheries governance. While the creation of Dzilam de Bravo State Reserve did not lead to any serious disagreements, problems and governability challenges arose with the community-driven establishment of the Actam Chuleb Marine Reserve. Through decentralization, resource management was under the authority of local governments, which, for the most part, work collaboratively with the municipalities and fishers cooperatives in making local level decisions. Nonetheless legal acknowledgement of this reserve was not achieved and control over external users was not enforceable as was wished by small-scale fishers of San Felipe. As a consequence, conflicts arose between these two small-scale fishing communities and a stalemate lasted until 2006, when the Actam Chuleb Marine Reserve was officially recognized and incorporated into a special "extractive zone" within Dzilam de Bravo State Reserve.

Data Sources

For this study, we draw from three main sources of data. The first was a survey conducted in these communities between 2001 and 2003, which solicited their knowledge of the protected areas, their perception of their importance, and their level of participation in the management of these reserves. A total of 175 respondents in San Felipe and 231 in Dzilam de Bravo were surveyed. These included small-scale fishers (both members of the fisheries cooperative and non-members), tourism-businesses, housewives, scientists and other residents.

Second, we organized community workshops to discuss the future of the protected areas, after the completion of the surveys. One workshop was held in each community while a third one was held in the town of San Felipe, which was aimed to promote interaction and foster collaboration among members from both communities. Sixty people attended the workshop in San Felipe, 45 in Dzilam de Bravo and 48 in the third workshop. In all cases, participants were mostly small-scale fishers, but government officials and scientists working in the areas also joined.

We conducted another survey in 2008, using a questionnaire with open-ended questions, to obtain an update on the conditions of the protected areas. This survey was done in response to some fishers reporting that the protected areas were not operating effectively. This time the objective was to evaluate people's perceptions regarding coastal resources and management strategies of the protected areas at that time, and assess their level of involvement in management. The study also aimed to pinpoint which factors would encourage compliance with conservation measures in the protected areas. The study targeted three groups of respondents, i.e. cooperative fishers, non-cooperative (or independent) fishers, and middlemen. A total of 99 people were interviewed in San Felipe (about half were cooperative fishers) and 172 in Dzilam de Bravo (two-thirds were cooperative fishers).

In addition to the more systematic survey-based approach discussed above, we went back to visit the two communities in 2013 and 2014 to have conservations with some of the key informants, including the leader of the fishers cooperative, tourist guides and hotel managers to follow-up on the marine resource situation and the outcomes of the protected areas.

Key Factors Affecting Governability

Perceptions and Knowledge About Coastal Resources and the Protected Areas

From the first survey we observed that in general residents of Dzilam de Bravo and San Felipe acknowledged the importance of coastal ecosystems, such as mangroves and rocky areas, in terms of their roles as habitats for birds, and nursery and refuge areas for economically important species, like lobsters and groupers. Consequently, they expressed concerns about clear-cutting of mangrove forests and fishing in shallow waters, which they said affected juvenile lobsters. They also expressed concern that development in the area had led to concerns of coastal pollution such as excessive garbage. On the other hand, impact from tourism activities (e.g., boating operated by local guides who took tourists to visit the spring waters and the cenotes) was of least concern to the communities. This could be because, in both cases, tourism offered supplementary income to fishing and was considered a viable alternative livelihood option. The Dzilam de Bravo community particularly expressed the need to protect the cenotes, recognizing the biodiversity and tourism values of these areas within the reserve system. Both communities talked about environmental education as a way to inform people and help reduce pollution as well as a way to promote conservation.

The high level of awareness about environmental issues and the shared understanding about the importance of conservation make small-scale fisheries highly governable, and provide a good foundation for collaboration. Unfortunately, the two communities differed markedly in terms of their knowledge about the protected

areas. Results from the surveys showed that the majority of the people in San Felipe (86 %) were familiar with the existence of the two protected areas and acknowledged their importance. While 75 % of the respondents from Dzilam de Bravo knew about their state reserve, only 14 % had heard of the Actam Chuleb Marine Reserve. Most of the respondents in Dzilam de Bravo were not able to explain why and how the state reserve was established, or how it operated. Many thought its purpose was to provide protection to plants and animals, and the majority of small-scale fishers in Dzilam de Bravo viewed this area mainly as an opportunity to develop tourism activities, given the presence of spring water and the cenotes.

Respondents in the San Felipe community were generally more aware of the limits of the Actam Chuleb Marine Reserve. However, only two percent recognized that the Actam Chuleb was nested within the Dzilam de Bravo State Reserve. Further, they were unaware about the legislative boundary of the protected areas and whether they were under the authority of the municipality of Dzilam de Bravo or San Felipe, or both. The overlapping boundaries of the two protected areas created confusion and misunderstanding among small-scale fishers in both communities. It also had consequences in terms of the images that small-scale fishers had about resource ownership and their role and responsibility in stewardship. For instance, San Felipe small-scale fishers had previously been very proud of their reserve and were willing to make sacrifices when thinking that the reserve was theirs to protect. However, with the changing image of the reserve, challenges in the governance of small-scale fisheries are likely to multiply.

Partnership and Cooperation Between Communities

On the whole, fishers in Dzilam de Bravo felt alienated from the management of their own protected area, having received no direct benefit from it. Less than 30 % of the respondents reported having been involved in the management of the state reserve. The fact that the state government was in charge of the management of the reserve may have left small-scale fishers of Dzilam de Bravo with no motivation for engagement. Another reason identified by the respondents was the general lack of interest from the research community and non-governmental organizations in this community and its reserve. This contrasts starkly with San Felipe where the high level of awareness, participation and self-governance capacity among small-scale fishers was attributed, to some extent, to these external stimuli (Jesus and Euan-Avila 2008). Interestingly, about 10 % of the San Felipe respondents did not like the idea of receiving financial support from international agencies. The reason proffered for this response was a feeling that these agencies might have special interests and may wish to impose some conditions upon them, thus affecting the self-governing system they had long employed. The different levels of participation, and thus experience, in resource governance between the two communities make governance of small-scale fisheries in the area more complex and less governable when involvement of fishers from both places is required.

The spatial overlap between Actam Chuleb and the state reserve raised awareness that led to action being taken in San Felipe. Small-scale fishers, community members, and local officials came together to search for options to legalize the management plan they had developed for their marine reserve, after recognizing that they could not impose sanctions on outsiders (like those from Dzilam de Bravo). Cooperation with Dzilam de Bravo community members was deemed necessary to facilitate the legal process. However, there was no history of collaboration between the two communities, notwithstanding their proximity to each other. The joint community workshop held in 2003 was a small step in facilitating discussion. The workshop participants suggested revision of operating rules and enforcement, search for funding to support monitoring and surveillance, and development of mechanisms to generate collaborative interaction between community members, including establishing a new committee to promote community-driven initiatives. Since only a few people from Dzilam de Bravo attended the workshop, it is doubtful as to whether cooperation would be fostered. Unless other avenues to improve interaction were found, the governability of small-scale fisheries would suffer as a consequence.

The Changing Land- and Seascape

Data from the 2008 survey revealed that the number of small-scale fishers combining fishing with tourism had increased in both communities. Recreational fishing and fishing for previously under-utilized species such as crab were also more common. When asked to compare the conditions of the resources in 2008 with 5 years earlier (the first period of study), many respondents indicated the steady deterioration of fisheries resources in the area. This situation created governability challenges as many fishers in both communities indicated that they turned to the protected areas, either to fish illegally or to increase income by bringing tourists there. According to the key informants, tourism income was perceived as the main benefit derived from the reserves, also attracting external investors. Tension between community members surfaced as many felt that only a few people benefited from the reserves. In San Felipe, the largest hotel in town (Hotel San Felipe) had a clear advantage in tourism business, with their ability to attract foreign tourists with package tours, which included accommodation, food and recreational fishing in the reserve. In Dzilam de Bravo, the fisher cooperative was seen as granting tourism-operation permits to family members and relatives. Unlike in San Felipe, the Dzilam de Bravo fisher cooperative played little role in promoting the wellbeing of small-scale fishers and was not involved in the discussion about the MPAs. From the governability perspective, the change in fishing practices and the perceived inequality in the communities will likely result in making small-scale fisheries less governable.

Small-scale fishers also seemed to have less faith in the conservation value of the protected areas. While about 72 % of the 98 fishers interviewed said that the protected areas continued to provide benefits for local fisheries and the community in

general, the other 28 % of the respondents felt that these protected areas did not meet conservation goals as they were not effective in controlling illegal activities. In fact, a key informant interviewed in 2013 revealed that small-scale fishers from San Felipe had collectively agreed to stop supporting enforcement efforts in Actam Chuleb and in fact started to utilize the resources they had taken care of for a long time. In his words, "*It is like taking our savings out of the bank instead of allowing others to take a free ride*". Such a negative downturn towards conservation is likely to raise another governability challenge in the area.

Another noticeable change in the dynamics of fisheries was the heightened role of women in fisheries, the local economy and resource governance. In 1996, women in San Felipe came together to establish their own cooperative that focused on small crabs used as bait for the octopus fishery (performed by small-scale fishermen). Since 2005, another group of women initiated production of handicrafts made out of shells and sold them to tourists in Dzilam de Bravo. In addition to the new social and economic dynamics that emerged because of increased involvement of women, it also resulted in changes in governance when women wanted to be involved in resource management and conservation. The fisherwomen, in particular, became very active and vocal in decision-making about fisheries, after garnering interest from the media, funding organizations and government. The new dynamic in the community brought about by the women's groups may contribute to making small-scale fisheries more governable since additional income generated by women may help lessen household reliance on fisheries resources. Considering that women are keen on conservation, their involvement in resource governance may contribute to making the MPAs more beneficial to small-scale fisheries than they have been in the past.

Discussion

In their study of the Philippines and Indonesia, Pollnac and Pomeroy (2005) state that socio-economic variables can vary by groups within a community and can define behavioral responses towards the use and management of resources. Cinner and Pollnac (2004), on the other hand, observe that perceptions about environmental resources and the wealth of community members define not only how resources can be used in a place, but also the values people place on them, which consequently influence their response towards conservation initiatives. In this study, high economic dependence on coastal resources plays a key role in how communities interact with each other and with the marine ecosystem. Concerns about mangrove forests and rocky bottoms (as refuges of important commercial species) expressed by small-scale fishers of Dzilam de Bravo and San Felipe reflect the level of importance that they place on both fishing livelihoods and conservation. Recent changed attitudes of San Felipe fishers towards the marine reserve, which are less concerned with current conservation initiatives, suggest that a deeper understanding of what underlie people's priorities and actions is required. This includes a thorough

examination of internal and external factors and conditions that are either conducive to or prohibitive of individual conservation efforts and community cooperation. A proper analysis of the small-scale fisheries system using the governability assessment framework would help reveal what these factors and conditions may be.

Values and images can change over time, especially when induced by ecological, social and political changes. As suggested by Salas et al. (2011), resource degradation, variability in environmental conditions, and changes in management policies can modify people's behavior and attitudes, and hamper possible cooperation. The recent decline in fisheries resources in the whole region (Pedroza and Salas 2011; Salas et al. 2011) has created high uncertainty of resource availability, which has, in turn, increased the cost of resource extraction. In the study areas, recurrent red tides, reduction in the availability of fishing resources, and increase in the fishing population have induced small-scale fishers from both communities to extend their fishing activities around or inside the state reserve. With insufficient enforcement capability (e.g., only two officers undertaking multiple tasks in the reserve, including patrolling), the level of compliance is low. The situation is not unique as lack of personnel dedicated to the monitoring and enforcement of protected areas is common in Mexico. Cudney-Bueno et al. (2009), for instance, report a situation in San Jorge reserve in Baja California, Mexico where members of the local government have not been able to deter fishing in the reserve, and after various confrontations with interlopers, have agreed to allow fishing in the area so as to prevent others from free-riding.

A major change in the governing system in the area deserves special attention because of its potential effects on values and images of small-scale fishers towards the MPAs, and thus governability. After several years of self-enforced regulatory practices, small-scale fishers in San Felipe lost their autonomy in decision-making about Actam Chuleb Marine Reserve. Since its creation, San Felipe fishers and their cooperative had worked closely with the community and the municipality in defining the governance of the Actam Chuleb Marine Reserve. They had agreed on operational rules and elected a group of fishers to represent them in coordinating surveillance activities. In effect, they have expressed a desire for self-governance and exclusive rights to the area. As shown in our study, the realization that their efforts were not legally acceptable came as a surprise to San Felipe small-scale fishers. To rectify the situation, they initiated discussions with local governments and Dzilam de Bravo small-scale fishers in order to provide legal protection to the Actam Chuleb. The result may not be what they had wished for, however. The legislative change that occurred to officially incorporate Actam Chuleb Marine Reserve as a special extractive zone within the Dzilam de Bravo State Reserve has come at a price. The multi-stakeholder reserve committee, which San Felipe small-scale fishers themselves recommended, implies that they would no longer have sole authority over Actam Chuleb. Further, with the state government assuming responsibility over Actam Chuleb, the local government in San Felipe has discontinued support to the cooperative for surveillance activities. This, along with the recent change in the local ruling political party, has created a deep division within the organization, and the eventual break-up of the fishing cooperative. Many small-scale

fishers operate independently while disbanded members have formed a new tourism cooperative. In sum, San Felipe has been transformed from a place of high social capital, good communication and cooperation among small-scale fishers to one of factions and self-interest. Such a dramatic change presents a major governability challenge for sustainable small-scale fisheries in the area.

Is it possible to restore social cohesion and self-governance that has been eroded due to social dynamics and governance changes in the MPAs? We suggested earlier that fostering cooperation between the two communities may help improve small-scale fisheries governance. This requires, however, an understanding of values and images that underlie small-scale fishers' behavior, as well as an alignment of these elements with those of the governing system (Jentoft et al. 2010; Song et al. 2013). Also, as suggested by Gatewood (1984), human sociability is a process of negotiation in which individuals cooperate and/or compete with one another while pursuing diverse goals. Hence, cooperation among stakeholders can occur only when there is a perception of mutual benefit for those involved in the process. Although small-scale fishers in Dzilam de Bravo perceived little benefit from the MPAs early on, they became more interested in conservation because of the growth in tourism development in the area. While San Felipe small-scale fishers may no longer place such a high value on their MPA, they also benefit from tourism income. The common interest of both fisher groups in the development of eco-tourism offers a potential common ground for cooperation. The Actam Chuleb Marine Reserve once upon a time had unified small-scale fishers when fisheries resources were in decline. Hence, it may be possible for them to unite again, this time also with their neighboring fishers who similarly depend on fisheries resources and whose cooperation is necessary in order to achieve sustainability of small-scale fisheries livelihoods in the area.

Governance interventions are required to promote cooperation between the two communities in combining fishing and low-impact tourism. As stated by Skaperdas and Syropoulos (1996) and Cudney-Bueno et al. (2009), people need to perceive the potential benefits of their engagement in cooperative actions in resource governance. While these benefits may not be obvious, there is a synergistic action where the total effect is greater than the sum of the independent actions (Guttman 1996; White et al. 2002; McConney and Baldeo 2007; Ovando et al. 2013). However, only under certain conditions would an individual be motivated to participate fully in a collective action (Gatewood 1984; Gray et al. 2012). It can be assumed that cooperation will take place when the results are perceived as mutually beneficial. Developing a common vision for cooperation in business development and in conservation may need to be accompanied with a set of incentives, in the short- and long-term. One of the first steps may be to create a multi-stakeholder committee to develop a sub-regional plan for promotion of fishing and eco-tourism in the area.

In the case of Dzilam de Bravo more work needs to be done as the ground to promote internal and external cooperation is weak. There are a few starting points that may provide further grounds for cooperation. For instance, a few respondents in this community did mention that they were concerned about the decline of the fisheries resources. Some small-scale fishers from Dzilam de Bravo also acknowledged the efforts of fishers from San Felipe in protecting their reserve. While Dzilam de Bravo

fishers are not sure how they can get directly involved in the management of the state reserve, they may be keen to participate in discussions about tourism-fishing cooperation. Unfortunately, the recent opening of the sea cucumber fishery in Dzilam de Bravo may have complicated the situation since it has led to illegal fishing that even the state government cannot control. The problems with the sea cucumber fishery would need to be addressed before talk of cooperation can begin.

Cooperation between different levels of government is another key element that needs to be fostered in order to enhance governability. Enforcement problems are worsened by gaps or overlaps in regulations as well as the lack of communication between government officials. Several legal instruments are in place regarding conservation of protected areas in Mexico (see Jesus and Euan-Avila 2008; Garcia-Frapolli et al. 2009; Cudney-Bueno 2009 for details). However, there is a lack of mechanisms to coordinate efforts by various agencies and to evaluate their efficiency (Vidal and Capurro-Filograsso 2008; Salas et al. 2011). Further, communication between those who share responsibility in the management process is a major problem (Jesus and Euan-Avila 2008; Garcia-Frapolli et al. 2008). For instance, exchange of information among government officials (municipality, community members and the Secretaria de Ecologia (Ministry of Ecology)) has been poor and is worsening in our case study area since the recent change of local government in San Felipe. This political rift is a good example of how small-scale fisheries governability is affected not only by what is happening with the fisheries resources and the fishing communities alone, but also by what goes on in the governing system that may be beyond the control of small-scale fishers.

Conclusion

This chapter illustrates the complexity of governance when only fishing grounds and protected areas are in common, but not much else. The difference in the characteristics of the two communities, e.g., in terms of social capital, level of organization, and perceptions of users, means that opportunities and willingness to participate in resource governance and cooperate to promote alternative economic activities are uneven. A complete governability assessment (Chuenpagdee and Jentoft 2013), along with a 'step zero' study (Chuenpagdee and Jentoft 2007; Chuenpagdee et al. 2013), could help examine what would be required to provide a level playing field for both communities, as well as offer ideas about innovative mechanisms and governing interventions that would result in greater cooperation for resource governance. Through this process, small-scale fishers and other communities of San Felipe and Dzilam de Bravo may be able to work collaboratively in defining objectives for protected areas, and formulating fishing rules and regulations that recognize local user rights and self-governance traditions. This will also provide opportunities for the governments to consider an appropriate channel through which to improve interactions between small-scale fishers and government officials, fostering co-governance in the future.

In the meantime, alternative employment activities must be considered to provide supplementary income to fishers' families, to reduce pressure on resources, and as a way to cope with uncertainty due to resource variability. One of the main challenges that implementation of protected area regulations face is finding options for displaced people. Coercive actions generally fail to achieve desirable outcomes, and instead generate conflicts. Hence local communities need to understand the purpose of protected areas and agree on the goals. The shared interest between small-scale fishers of San Felipe and Dzilam de Bravo in combining fishing with low-impact tourism offers an opportunity to explore mechanisms that can help foster and strengthen cooperation. This has also to be in line with the rules and regulations promoted in co-governance of fisheries resources and protected areas.

After 5 years of showing little interest in Actam Chuleb Marine Reserve, in 2014, the National Commission of Protected Areas, together with different environmental organizations, started conducting community workshops. These workshops aim to "revive" interest and participation of small-scale fishers and other communities in the management of MPAs. Community members once again recognize the importance of self-governance. They want to take advantage of a recent policy that introduces the concept "Refugio Pesquero" (fishing refuge) in Mexican law, as it offers an opportunity to generate community-based actions with the support of government agencies. San Felipe has a unique opportunity to engage in an initiative that addresses conservation issues by combining low impact fishing and ecotourism activities. The local Actam Chuleb Civil Association has secured a 5-year agreement to be part of a state ecotourism network, as well as committed itself to being more involved in administration of issues external to the community as opposed to with only fishing related activities. The strong interest in ecotourism highlights the economic transition that has taken place in the community. It remains to be seen, however, whether involvement in ecotourism will enhance governability of the marine resources in the area and increase cooperation between the two communities.

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