

## **PUTTING MPAS TO WORK: A Mexican Case Study on Community Empowerment**

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*Abstract* There are increasing pressures on the coastal zone on a global basis. Marine Protected Areas (MPAs) are employed in order to soften pressures on coastal environmental integrity. As a result, the establishment of MPAs usually encounters opposition locally. This is so since softening the pressure typically means reduced access to and use of the given area, which can have great impact on local communities. The case study presented here is an exception to this general rule. Drawing on empirical data from Yucatan, Mexico, I show how a small fishing community managed to create an MPA for local purposes. Like most coastal communities in the region, the village depends on fisheries for both subsistence and commerce. In order to protect their interests, increasingly under pressure from overexploitation, immigration and hurricanes, the villagers turned to the global environmental discourse and to the MPA. Here, I demonstrate how the MPA in the village in my case study was used to empower fishers and their communities, and how the global discourse on environmental protection and biodiversity was made to work for local interests.

### **Putting MPAs to Work**

In a maritime context, Protected Areas were not widely applied until the 1970s, and the number has increased significantly, particularly within the last two decades (Sumaila *et al.* 1999). Today, such areas have become major tools in modern resource management. Marine Protected Areas (MPAs) come in many forms, such as closed areas, no-take reserves, zoning of oceans and under different names, such as parks, reserves and sanctuaries (Charles 2001; Jentoft *et al.* 2007; Pomeroy and Rivera-Arriaga 2006). MPAs are typically attempts to protect and conserve the integrity of marine and coastal ecosystems. Many definitions of MPAs exist, but the definition offered by the World Conservation Union (IUCN) seems to be widely used:

Any area of inter-tidal or sub-tidal terrain, together with its overlaying water and associated flora, fauna and cultural features which has been reserved by law or other effective measures to protect part or all of the used environment to maintain essential ecological and life support systems; to ensure the sustainable utilisation of species and ecosystems; and to preserve biotic diversity (IUCN 1994).

In general, MPAS have been sponsored primarily by biologists, ecologists and conservationists, who consider them as a key tool to protect nature from human activities that affect the ecosystem in a negative way. An illustration of this is offered by how the conservationist community seems to measure MPA success by biological indicators alone (See for instance Murray 2005). In general, many ecologists, conservationists and institutions such as the UN and the IUCN emphasise the positive effects of MPAS, such as their capacity to preserve, maintain, protect and restore healthy marine ecosystems. Another view, typically represented by social scientists, tends to focus on the propensity of MPAS to generate conflicts, since they reduce the level of activity in a given area to a varying degree (Neis and Felt 2000; Sumaila *et al.* 1999). Social scientists tend to criticise the 'globalised conservationist' movement for being indifferent to and unaware of local realities, such as communities that depend on fishing both for subsistence and commerce. Accordingly, social scientists are advocates of a perspective where humans are considered as part of ecosystems. In that view ecosystems should involve more than pure bio-ecological processes where all traces of human activity are erased (Bundy *et al.* 2006). However, both perspectives have in common that they are conceptualisations of MPAS from the top-down. Somehow, they seem to be imposed on local communities from above, where scientists – both social and biological – push MPAS down on local people and their communities as a management tool or as theoretical solutions and challenges.

However, there are some cases where MPAS have been implemented from the bottom-up. In Yucatan, Mexico, there is a small fishing community called San Felipe that has implemented a MPA on their own initiative, and a number of scientists have been part of the process. One of the first persons I talked to in San Felipe during fieldwork was Eliseo, which is referred to as 'the biologist' in the community. Eliseo explained to me why and how ACMPA was created:

The fishers, headed by the cooperative, did not find the measures implemented by the state to be enough to protect the resource [fish], and hence our way of life. At a workshop [organised by Fuerzas Vivas, an umbrella organisation in the community] with the community, they [the community] agreed upon some collectively established rules, and that any form of illegal fishing should be met with economic sanctions.

Eliseo further explained that a management plan was created, and it was officially named Actan Chuleb Marine Protected Area in 1994. According to Eliseos and statements and those of others, ACMPA was established by the fishers as an incentive to improve the sustainability of their fisheries, on which their livelihoods depend.

In light of the above, ACMPA seems to be a promising case to help understand what MPAS can look like from below. My aim in this article is to understand the perception in San Felipe of their MPA. In the following I will look into how ACMPA is put to work for the community. I do this by asking what function it should have according to the fishers of San Felipe, and by investigating how they actually use it in their daily life. Theoretically, I will relate ACMPA to the concepts of hybrid arenas, social capital and empowerment.

## Methodological Considerations

This article is based on eight months of fieldwork in 2003 and 2004 in the communities of San Felipe and Dzilam de Bravo, Mexico, Yucatan. Also, I am familiar with the general area since I lived and studied in Mexico for several years. Both primary and secondary data are used. However, primary qualitative data is predominant, with a 'classical' focus on situations and participatory observation, together with conversations and interviews.

Vayda (1983) presents a method that he calls 'progressive contextualisation', which he developed to avoid long-term projects and unnecessary assumptions about premeditation and the stability of units or systems. This involves a focus on 'significant human activities or people-environment interactions and the explanations of these by the placement within progressively wider or denser context' (Vayda 1983:5). Following the activities of the fishermen – or more precisely, following the fish – I used this method to develop an understanding of the locals' perception of their work and social life, and the meaning and interpretation given to this especially in relation to environmental interactions. I conducted interviews with people who I came into contact with during this process, that is, personnel at the processing and ice plants and the women who fish bait, in addition to the fishermen themselves. Following every step of the process gave me the opportunity to conduct relaxed and in-depth interviews in a setting in which they (the interviewees) felt comfortable, that is, on their boat, and I gained insights into the physical and practical challenges involved. Since many interviews were conducted while fishing, I could not record them. However, careful notes were taken during all interviews.

In San Felipe, sixteen in-depth and issue-focused interviews were completed with fishermen (two of whom are independent fishers) on their boat, and twelve interviews in other settings and with people related to fishing directly or indirectly. In Dzilam de Bravo, six in-depth interviews were carried out with fishermen on their boats, and fifteen with other informants directly or indirectly related to fishing, that is, the local president, the president of the cooperative and with nine private permit holders. Group interviews were conducted once in both communities.

The Centro de Investigacion y Estudios Avanzados Unidad Merida<sup>1</sup> (CINVESTAV) has kindly provided me with secondary material, such as articles and master theses, with both qualitative and quantitative profiles. Furthermore, they helped me get in touch with key persons in the communities studied.

## A Theoretical Framework

In the following, I outline the idea of hybrid arenas. The concept of hybrid arenas is built on the methodological focus in the sociology of science on 'controversies', that is, to locate places where key issues are open and under debate. MPAS are not necessarily examples of hybrid arenas as local people are typically excluded from both the discursive dimension of its implementation and the use of the area. How-

ever, I argue that ACMPA in San Felipe is an example of such. This is so since the design and implementation processes for ACMPA can be characterised as meeting places for different stakeholders and expertise (Holm 2001), due to the process of implementation which depended on cooperation between fishers and scientists. The fishers had, according to literature and my informants, a central role in the process (Chuenpagdee *et al.* 2002; Fraga *et al.* 2003).

This meeting between fishers and scientists will be related further to the concept of social capital. Social capital is an abstract property of relationships. Here, I understand social relations and structures of any type to promote different forms of social capital (See for instance Halpern 2005). Since this article focuses on the collective aspects of social capital, I refer to Putnam's (in: Schuller *et al.* 2000) definition, where the 'society's perspective' is dominating: 'Features of social life- networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives' (in: Schuller *et al.* 2000:11). However, there are some practical problems as regards studying and measuring this concept. (Halpern 2005). In this article I argue for my use of social capital based on others' work in the community, which states that the level of social capital in San Felipe is high, and higher than in the neighboring community of Dzilam de Bravo (Fraga *et al.* 2003). Dzilam de Bravo shares most aspects, such as history, culture and socio-economic context with San Felipe and will be used for comparative purposes, but the focus for this article is San Felipe and ACMPA. Social capital facilitates cooperative action, which is important in relation to common property management, as it enhances communication and the capacity of organisation (Bourdieu and Wacquant 1992). Bonding, bridging and linking are different forms of aggregating social capital, and Halpern (2005) refers to this as different characters of function. *Bonding* refers to the strong ties between individuals belonging to the same groups, and it is important for the reinforcement of homogeneity. *Bridging* concerns the connections built between heterogeneous groups, while *linking* refers to individuals' relationships to those with more or less power and resources (Halpern 2005).

Also, power becomes an issue since I understand the implementation of ACMPA to be related to a process of empowerment. There is a broad literature on empowerment in many academic fields, and in relation to fisheries, for example, the valuable contribution by Jentoft (2005). Following his work, I find the definition below from the field of psychology useful, since it considers aspects important to social capital, which can improve the quality of community life as well as the levels of organisation and efficiency: '[empowerment is a] social process that promotes participation of people, organisations and communities towards the goals of increased individual and community control, political efficiency, improved quality of community life and social justice' (Wallerstein 1992:198). In the specific context of fisheries, Raakjær-Nielsen *et al.* define empowerment as 'a mechanism to give the people within fishing communities a chance to influence their own future in order to cope with the impact from globalisation; competing use of freshwater and coastal environments; and other fisheries-related issues'(2004:5).

## The Local Context and the Fisheries

Mexico is today among the world's twenty leading fish producers and, as in Latin American fisheries in general, the most noticeable issues in Mexican fisheries are over-fishing, overcapacity and conflicts (Aguilar Ibarra *et al.* 2000). There has been an enormous growth in the fishery sector over the last twenty years. The majority of Yucatan's coastal fishers are artisanal, using mainly fiberglass boats that are powered by outboard motors.<sup>2</sup>

The collective management of natural resources has deep roots in Mexico (Berkes *et al.* 1998). After the Mexican Revolution<sup>3</sup> of 1910, traditional pre-Hispanic community-based management was reintroduced. In fisheries, these rights were strengthened through the special emphasis and rights given to cooperatives over the years. Until the new Fishery Law of 1992, the legal framework in the fisheries consisted of two models; private investment in the commercial, industrial fisheries; and the cooperative system (Hernandez and Kempton 2003). The cooperatives have a union-like structure, and small-scale individual fishermen organise to get credits, subsidies and to protect their rights.<sup>4</sup> From 1948 to 1992, certain high economic value species were reserved by law for the exclusive use of cooperative fisheries. This is no longer the case after the 1992 Fisheries Law. Since then, cooperatives' historic rights have been withdrawn and replaced by a system of permits and concessions. Today, any social or private agent can participate and obtain any concession, permit and authorisation. This has led to an increase in private companies entering the socio-economic landscape – a landscape traditionally reflecting values that can be said to be more community-based as the cooperatives have their roots in the local community (Bjørkan 2005).

There are two fisheries that are of particular importance in economic terms in Yucatan, namely the octopus and lobster fisheries. The coastal communities refer to the time between January and July as a times of crisis, since the octopus and lobster fisheries are closed and the weather is unstable due to wind from the north. However, the cooperatives managed to secure themselves exclusive rights to the lobster, hence, only cooperative fishers can participate in the lobster fishery. The octopus fishery, on the other hand, is an open access fishery with regards to who can work in it. It is therefore especially the octopus fishery that provides employment opportunities for immigrants who come to Yucatan in search of a living. This fishery will be described in more detail below.

### *The Octopus Fishery*

As mentioned above, the octopus fishery is one of the most important fisheries in this region in economic terms. To understand the local use of the San Felipe MPA, I will use this fishery as a cultural window. Accordingly, some contextual details are necessary.

The octopus fishery has been regulated by Mexican Official Norms since 1993 (compare with Rivera-Arriaga and Villalobos 2001) and comprises an artisanal fleet operating in shallow waters, and a mid-size fleet fishing in deep waters. Although one needs a permit to fish octopus, there are no controls on the number of fishermen who may fish for the permit-holder (CINVESTAV, Personal

Communication). The permit holders I met were men with some capital, who hire the number of fishers they find necessary for each season. Most local fishers target octopus, including cooperative fishers as well as 'free fishers' and 'temporary fishers'. The cooperative fisher has an obligation to deliver their entire catch to the cooperative, including the octopus. 'Free fishers' is a term used for those who fish full time but deliver products to a permit holder who often owns the boat, the gear and provides the bait. 'Temporary fishers' is used to describe those who come for a short time to participate in the easily accessed and low investment octopus fishery.

#### *The Organisational Landscape and the Role of the Octopus Fishery*

The octopus fishery has, simply put, a TAC limitation and no access regulations in terms of how many can participate in it, as long as they work for a permit holder. All of the participants fish as much as possible between August and December, which is the official open season for octopus. When fishing for octopus, the motor is off and the boat simply drifts with the wind, which gives ample opportunity for conversation. These fishing trips became central to my understanding of what the local fishers think about ACMPA, its purpose and use.

There are no official data on how many people come to Yucatán's coastal communities to participate in the crew-demanding octopus fishery each year. However, the number is substantial. This is a situation that generates high pressure on the local communities as well as the fisheries, since people come from all over Mexico looking for a living. The temporary fishers are a source of conflict in the coastal communities in Yucatan. In most communities, the new presence of larger private companies – a result of the 1992 Fishery Law – generates a high demand for crew, and they bring people from neighboring states like Campeche and Vera Cruz.

The organisational landscape is quite complex in the fisheries. The community of Dzilam de Bravo, a typical community in the region (see figure 2), is organisationally complex. The number of permit holders is high – and hence the number of temporary fishers from other states is high – while the cooperative is weak politically and with few members (eighty-five in 2004). However, in San Felipe the situation is reversed. Here, the cooperative is a political force and with a high number of productive members (218 in 2004). During my fieldwork there was only one permit holder in San Felipe, while in Dzilam de Bravo there were more than fifteen. Despite my efforts to locate and find all the permit holders in Dzilam de Bravo, they were so scattered that I could only get a partial picture. However, it is safe to say that while the cooperative dominates as an organisation for fishers in San Felipe, the Dzilam de Bravos organisational landscape is filled with permit holders.

Figure 1. The organizational landscape

Numbers are from 2000	Dzilam de Bravo	San Felipe	Numbers are from 2004	Dzilam de Bravo	San Felipe
Total Population	2292	1838	No of cooperatives	1 (85)	1 (218)
No of households	562	409	No of Rural Societies	0	1
No of local fishermen	1519	414	No of Solidarity Societies	4	1
No of temporal fishermen	682	207	Permit holders	More than 15	1
Total no of fishermen	2201	621			

These numbers are based on my own fieldwork data from 2004, as well as different official reports (such as Fraga *et al.*, 2003).

## San Felipe

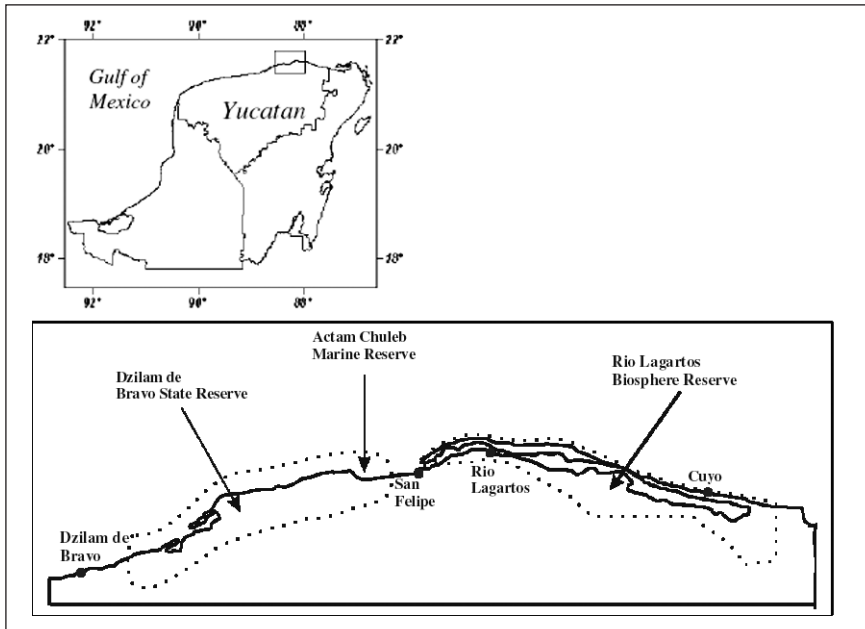
San Felipe, one of Yucatan's twelve coastal communities, is located 210 kilometers from Merida, the capital of the Yucatan state. Agriculture and ranching are important activities, while the main activity is fishing (Chuenpagdee *et al.* 2002). Mangrove forests dominate these coastal areas that support economically important species, like red grouper, spiny lobster and octopus, as well as submerged vegetation such as sea grass in coastal lagoons (Chuenpagdee *et al.* 2002). Due to a variety of factors, fisheries production has declined. Since the 1970s, an increasing number of fishermen, as well as better technology, have resulted in higher pressure on the resources. Furthermore, parts of the mangrove forest have been cut down for housing and agriculture purposes, and hurricanes are a threat on a yearly basis to the mangrove forest and other marine resources (Chuenpagdee *et al.* 2002; Fraga *et al.* 2003). San Felipe shares many features, like ethnic identity, political orientation, infrastructure and social organisation, with the other coastal communities in the region.

During fieldwork, the fishers, their families and others in both communities gave me insight into their daily lives, and importantly, I got access to information about their use of MPAS – particularly ACMPA – and its different meanings in terms of cultural, political, social and economic aspects. The map below shows the MPAS in the area as well as the location of San Felipe.

## A Bottom-up Perspective of MPAS

Today, San Felipe seems to be the exception to the conditions in which most fishing communities in Yucatan find themselves, where institutional change and external forces can be argued to have caused social disintegration. They all face the same external challenges such as immigration and poverty. Importantly, I will explore the question of how the local people in San Felipe have put ACMPA to work and how this is related to the relationship with scientists, social capital and empowerment. First, the main character, ACMPA, will be presented.

Figure 2. Marine Protected Areas Bocas de Dzilam, Actan Chuleb, and Rio Lagartos Biosphere Reserve (adapted from Chuenpagdee et al 2002)



#### *Actan Chuleb Marine Protected Area – An Area for Bad Times*

Actan Chuleb Marine Protected Area (ACMPA) is a picturesque MPA just off the coast of San Felipe. Oral traditions tell that this port was founded at the little beach ‘Actan Chuleb’ (Chuenpagdee *et al.* 2002; Salas and Torres 2003). Here, ACMPA – originally called an ‘area for bad times’ – was founded by the fishing cooperative in 1994 (Chuenpagdee *et al.* 2002).

Simply put, a MPA can be described as a chunk of a marine ecosystem that usually is rich in biomass, beauty, cultural heritage and diversity. With regards to ACMPA, this ‘chunk of nature’ encloses mainly azure blue water, framed by the region’s famous white beaches. The rocky bottom structure is an area rich in lobster and octopus, while sea grass provides a home for shrimp. Mangroves offer important shelter for juvenile fish and birds that are residing there as well. ‘El Cerrito’ is a little island just within its borders, and archaeologists have discovered that there were trade relations in salt and fish between this isle and Chichén Itzá, an influential city of the ancient Maya civilization (Chuenpagdee *et al.* 2004). As the map above shows, the area is situated inside the state reserve of Dzilam de Bravo and next to the biosphere reserve in Rio Lagartos. Also, it is part of the greater Mexico Meso – American Biological Corridor conservation program funded by the World Bank and the global environmental facility (Chuenpagdee *et al.* 2002).

The above description is concerned with what this chunk of nature contains, but a MPA also needs borders, or legal frameworks and devices that can protect it from the rest of the marine nature that it is ‘extracted’ from. These



can be rules of conduct and access, and stipulations of what and how much can be extracted from the area. In San Felipe, Eliseo, approached me himself to tell me about ACMPA. He volunteered information about the social organisation of the community, especially in relation to ACMPA and the process of its creation. This process was initiated by the umbrella organisation 'Fuerzas Vivas' (Living Forces). Among the people in San Felipe there is a large amount of social capital as a product of the formal and informal social relations fishers have with each other (Chuenpagdee *et al.* 2002; Chuenpagdee *et al.* 2004; Fraga *et al.* 2003; Salas and Torres 2003). Since San Felipe is a relatively homogenous community, the *bonding* dimension of social capital seems to be high, and it can be understood as reflected in, for instance, the generation of 'Fuerzas Vivas'. 'Fuerzas Vivas consists of representatives from different groups or organisations in the community. This is a strong community organisation that arranges meetings where everybody in the community can come and voice their opinion. For instance, they convene meetings when the area is facing hurricanes, or if there are some conflicts such as quarrels, fights or theft. According to Eliseo, Fuerzas Vivas is '[The organisation] that makes decisions about where this harbour [San Felipe] is going [in the future]'. Eliseo continued:

We have a management plan for the reserve. There are economic sanctions if you fish illegally. The Mayor takes your fishing nets, and the first time, you will be charged 5,000 pesos to get them back. The second time 10,000 pesos, and the third time, well: expelled!

Eliseo explained that if fishing with nets in the area, a few people will take most of the profit, especially in the low season. Accordingly, only subsistence fishing with hook and line is allowed in ACMPA. When I asked my informants why they implemented a new reserve within the BDD, they answered more or less the same as Eliseo: 'it is just that the Dzilam reserve [Bocas De Dzilam] wasn't enough – we felt that more protection was needed'. I asked Obaldo, the president of the cooperative, if the fishers obey the collectively established rules, or if they catch octopus in the reserve (it was during the octopus season): 'No. Here, the fisher watches the other fisher'.

In light of what my informants told me, ACMPA communicates that resource protection is a core value for the community and its fishers.

### **Local Control and ACMPA: People from the Outside**

According to my informants, sustainability seems to be the main reason for establishing ACMPA, which involves stronger management rules than apply for the state implemented MPA, Bocas de Dzilam. Still, what really struck me during fieldwork was the community's ability to communicate this aspect so uniformly.<sup>5</sup>

'Everybody' I talked to supports ACMPA and underlined the need for sustainable use of the fisheries. Typically, however, MPAs are perceived differently depending on how they affect the person and his or her family. In San Felipe, the

fishers and their families, the people dependent on tourism and agriculture as well as the local government, all voiced their support at a collective level. However, when the scene for the interviews moved to the sea, as I went fishing with them, the reason for supporting ACMPA became multidimensional. The fishers' focus of their aim, and the reasons why they support ACMPA, became more related to excluding people from *the outside*. In both San Felipe and Dzilam de Bravo they refer to *people from the outside*, meaning people from other states or sometimes from villages with whom they do not have a close relationship. The possibility of participating in open access fisheries is for many poor people the only way of making money. In Yucatan, this attracts not only local people from the area, but also people from other areas scarce in fisheries resources. In most coastal communities in the region, these immigrants are not received with open arms.

#### *Backstage: ACMPA as a Way to Face Immigration*

Immigration is an issue that affects all the fishers in Yucatan, and this has been an issue since the 1970s. The first wave of migration to the Yucatan coast started in 1976 as a consequence of the 'March to the Sea', a political program (Fraga 1993). Mexico's preparation to enter the North American Free Trade Agreement (NAFTA) in 1994 provoked the second wave (Hernandez and Kempton 2003). During this process, Article 27 of the constitution was changed, and neoliberal restructuring programs<sup>6</sup> paved the way for selling the traditionally collective *ejido*-land (Fraga 1993; Lothe 2002). It was, above all, landless farmers who then came, and still come, looking for a new life on the coast, where the open access<sup>7</sup> regulation of the octopus fishery provides an opportunity for entering the fisheries. This situation is in no way unique to Yucatan, and it seems as if fishing is the best and sometimes only alternative for people in poverty ridden contexts (see for instance Béné 2003). Here they can participate in open access, low-investment fisheries (Salas and Torres 2003). At the beginning of the 1990s, the fisheries entered a phase of crisis, still dominating the area today. Catch rates have diminished, operational costs are higher and distances to fishing grounds have increased. Nevertheless, more people entered and still enter the fisheries (Fraga *et al.* 2003; Salas and Torres 2003). Of course, several factors have influenced this picture, such as the improvement of fishing technology, and government credits to stimulate the extraction of marine products.

Today, most communities in Yucatan are suffering from natural resource overexploitation. This is aggravated by mass migration, partly due to neo-liberal reforms in the agrarian sector. As most Mexican peasants cannot compete with farmers in the USA and Canada<sup>8</sup>, they come in waves during the octopus season, looking for alternatives on the coast. This has also led to enormous pressure on the culture as well as the socio-economic structure, and has generated conflicts between local and immigrant fishers (Fraga 1993). The open access nature of the octopus fishery in particular, and the lack of appropriate resource management plus limited enforcement in general, leave the local communities with little authority and few possibilities to control their situation.

Many of the people I interviewed who live in these coastal communities commented that the immigrants cause social and economic problems. During

fieldwork in Dzilam de Bravo, my informants expressed frustration about the declining catches, and related this to the growing number of fishers from 'the outside'. One of my informants said that 'Our hope is the octopus (...). The people from "the outside", they dedicate themselves to exploit the resource, they don't fish to survive.' In San Felipe, as we were fishing octopus, another of my informants said that: 'The people from the outside, they are not going to stay here. I [the immigrants] come, I [the immigrants] take the product and I [the immigrants] go.' The dominating view seems to be that it is unfair that strangers come to exploit the resource. The logic being that since the locals are suffering the 'crisis' (the closed season for octopus and lobster), they should be the ones profiting during the 'good times', meaning the period when the octopus and lobster fisheries are open. Migration to the coastal areas has led to great pressure on the social as well as ecological systems, and the local people blame the immigrants for the decline in fisheries. People migrating from other states are also considered 'troublemakers'. In San Felipe, one informant said:

People from other places who migrate all the way here bring many problems such as alcohol, drugs, and conflicts. And they are not peaceful like us. They solve their conflicts with knives.

These are only a few of many statements that demonstrate the troublesome relationship between local and immigrant fishers. As the comments from my informants in Dzilam de Bravo demonstrate, the people in Dzilam de Bravo seem to have the same attitude towards people from *the outside* as the people from San Felipe, but they have not managed to organise against the politically more powerful permit holders in the community. Several permit holders, as well as the representative from the Department of Agriculture and Fisheries management<sup>9</sup>, told me that 'even if a community wants to deny immigrants to come and work as crew, it is impossible since the octopus fishery is by law an open access fishery'.

However, while most communities accept the stream of people immigrating *from the outside* – a situation that is important for the private actors depending on the octopus fishery – the community of San Felipe seemed to be coping with the same challenges differently. Don Marcos, one of the permit holders in Dzilam de Bravo, told me that the fishers working for him never go to San Felipe and even less fish off the coast where ACMPA is located since 'they [the fishers] are not welcome. They are allowed to buy food and water, but have to sleep on the boat or on a beach outside San Felipe.' When I asked the 2004 Mayor of Dzilam de Bravo, Audomaro, why there are so few immigrants in San Felipe compared to other communities in the area, he answered that 'it is the people [of San Felipe]. It is the people who always have taken action.'

### **Putting ACMPA to Work**

In light of the above, the community of San Felipe seems to cope differently than their neighboring communities with external pressures such as immigration. Im-

portantly, the local MPA seems to be central in limiting the number of immigrants to the community. In San Felipe, the internal networks and norms, supported by and maybe caused by the politically strong cooperative, seem to prevent immigrants from other states coming to the community, despite the juridical status of the octopus fishery. The role of social capital is also important in this process. However, I argue that ACMPA is pivotal, since it provides a framework for action in a way that is accepted by modern fisheries management – and the ecosystem approach – rhetoric. ACMPA is important since the community can use it to control access to their resources, despite the lack of access limitations of the octopus fishery. This is a pressure that has left most other communities standing defenseless and exposed due to the national regulations – or lack of such.

After spending several months in San Felipe, I went fishing with Eliseo and his brother. As we were drifting along, pulling up the octopuses and changing the bait, we talked about ACMPA. Eliseo explained to me that they are five members of the cooperative who have the formal role of ‘looking for alternatives’, meaning project or credits. He told me:

There are people coming from ‘the outside’, like England, France, Spain and USA with donations and projects. (...) We are going to use Actan Chuleb [Marine Protected Area] to get resources. But, we [the cooperative] have an obligation as well; we must take care of it.

Hence, in addition to protecting the fisheries – which was the reason expressed for establishing ACMPA during my first interviews in the community – the fishers are aware of the identity of MPAs as a source for funding in the environmental discourse. So, when meeting scientists, like myself, the fishers seem to be well aware of what scientists want to hear, namely arguments related to the sustainability discourse. My point is not to portray the fishers as two-faced. Rather, as most people, they have the capacity of having more than one goal at the time. And, as anyone, they are prepared to use, and are familiar with, the symbols that may benefit them economically, socially or politically. So, I argue that the local fishers in San Felipe have multiple ways of using ACMPA; resource protection is one aspect that they tend to use as a ‘front-stage’ discourse, while access control is another aspect that is not necessarily voiced in the meeting with scientists. There is nothing really new in the fact that people can reproduce social products – such as MPAs – in ways that are not in accordance with rule-governed procedures. This can be done since they present a resource in schemes of actions, and ‘both express and represent a set of discursive practices’ (Prior 2003:13).

Above, I have argued that San Felipe uses ACMPA as a tool for access control, which is not mirroring the global discourse of MPAs as such. However, access control is fundamental with regards to resource management, since the tragedy (in theory at least) is avoided when access is restrained. There are several types of rights important to resource management. These include access rights, management rights, and crucial to the context in which the people of San Felipe live, the right to exclude others (Charles 2001). The latter is important since optimal power to prohibit someone from a defined territory, generates incentives to improve the

resource (Pinkerton 1989). Predominantly, this area 'for bad times' seems to make sure that the access to the area is closed to people who do not belong to the area. Accordingly, they are reserving the natural resources for the locals, ensuring food and money within its borders. As Eliseo told me, *ACMPA* is based on the idea that it: 'should be a reserve for the hard times [closed season], and if we fish with hook and line, there is enough for everybody to survive that period'. This is positive for those belonging to the community, however, exclusion also represents a problem for those who are excluded, given that they are poor people using the fisheries as a last resort (Béné 2003).

Importantly, the creation of *ACMPA* has returned some management responsibility from the state back to the community. In order to protect their interests, increasingly under pressure from overexploitation, immigration and hurricanes, the villagers turned to the global environmental discourse and the *ACMPA*, in order to reserve the natural resources for themselves. This is an example of how a bottom-up approach, coupled with knowledge transfer and money transfer, can generate a positive process of empowerment and alternative employment sources, as well as the obligation to protect and not only to exploit the natural resources.

### Hybrid Arenas and Linking Social Capital

The vocabulary of fisheries management has changed over the years, and fisheries management can be said to provide the conceptual framework in terms of which Western culture understands fisheries. Management implementations have changed from informal institutions such as prayers and norms to state-driven, formal institutions such as Total Allowable Catch and Individual Transferable Quotas. The changes in management tools from single stock to ecosystem management based management can be used as key indicators of how the professional and technical discourses have altered, as well as how political, legal and socio-economic processes impose on the affairs of science and fisheries management (Holm 2001; Prior 2003). In short, in fisheries – as in many fields – buzzwords come and go. Today, *MPAs* are key tools, and can sometimes work as passwords to funding, power and influence.

Before 1994, *ACMPA* was called 'an area for the bad times'. The reasons why San Felipe translated this into *ACMPA* can be many. However, I believe that this is related to the concept of hybrid arena and the close relationship between the community of San Felipe and scientists (see Fraga 2004), and hence, the linking aspects of social capital. Linking social capital refers to the relationships between those with more or less power and resources (Halpern 2005). Fishers and scientists have different ways of knowing, as well as different ways of expressing this knowledge (Knudsen 2004). The latter is essential here since language is a major tool in politics, and often decides whose voice and perspective should be considered valid in the political arena and hence who should have control over resources. It is difficult for non-scientists to participate in scientific discourses in general, and I see no reason for considering the *MPA* discourse as different. As mentioned above, *ACMPA* was created as a joint process between the community of San Felipe

– where the organisation Fuerzas Vivas and the fishing cooperative had a central role – and a number of scientists. In the collaborative process of establishing ACMPA, scientists learnt about distribution and abundance of the most important species from fisher's knowledge, while fishers acquired knowledge from scientists about the diversity of species as well as some technical skills and knowledge with regards to the process of data collection (Chuenpagdee *et al.* 2002). Importantly, fishers acquired skills with regard to the political framework and how it works.

Here, I argue that the knowledge transfer within San Felipe can be related to the close relationship and strong bonds between the scientists and the community (See for instance Fraga 2004). As mentioned, this is related to the concept of linking social capital. Fishers often have problems communicating their knowledge in terms of scientific knowledge since the former is silent, and embodied rather than written and communicated (Knudsen 2004). Here, however, they have learnt how to communicate not only with the local scientists but also at an international level, such as with the United Nations. For instance, ACMPA has been granted more than 50,000 American dollars<sup>10</sup> from the United Nations Development Group.<sup>11</sup>

The community of San Felipe communicates using scientists' symbols and sharing their knowledge system. Accordingly, in the encounter between these different knowledge streams, a dual process is initiated whereby fishers also acquire new knowledge that they can use to empower themselves. This is a situation that exemplifies how knowledge can represent a positive sum game (Stehr 2001), and that such hybrid arenas provide an important platform for possible empowerment of people. This will be further elaborated below.

## The Process of Empowerment and Symbolic Power

Fishers are often understood as disempowered in management discourse, but my data suggest that this is not always the case.

There are several definitions of empowerment, and most of them have in common that it is perceived as an enabling process. Repeating the definition of the concept from Raakjær-Nielsen *et al.* (Raakjær Nielsen *et al.* 2004:5), where the importance of community control is underlined, empowerment is understood as 'a mechanism to give the people within the fishing communities a chance to influence their own future in order to cope with the impact from globalisation; competing use of freshwater and coastal environments; and other fisheries-related issues'. Also, Giddens (1999) talks about empowerment as the enlarged capacity of individuals to change the material world and to transform the conditions of their own actions. In a globalised world, the political skills that are required to employ such transformation can actually be easier to access. This is so, in part, due to a higher flow of information helping agendas and ideas, such as MPAs, to spread (See for instance McGoodwin 1980).

In the move towards the Ecosystem Approach in fisheries, MPAs have become a symbol for sustainable fisheries and ecosystem management. Following Charon (1995), symbols are important since '[s]ymbols are (...) social objects used

by the actor for representation and communication' (Charon 1995:44). Bourdieu and Waquant (1992) talk about symbolic power, and how such power reproduces the social order. I argue that in the symbolic universe of fisheries science, MPAS have positive associations, with significant symbolic power. In light of this, ACMPA can be understood as a symbol, used intentionally by San Felipe to communicate and represent sustainable practices. Moreover, I argue that they have constructed their own meaning of the symbols, one that does not reproduce the social order of the scientists but their own social order. For instance, they have made their own definition of MPA, which is found in their Management Plan for ACMPA, where the authority over the area is located in the community and not the nation state. As stated in their own definition of MPAS: '[A MPA is a] Surface or heritage site of the community, where everybody should participate to protect it and as such protect the environment (...)' (Management plan of ACMPA 1994 unpublished). In contrast, the Mexican state definition of MPA declares that MPAS are 'parts of the national territory, and parts over which the nation has jurisdiction, where the original environment has not been transformed significantly due to human activities (...)' (LEGEEPA 1988). This is important since San Felipe is relocating management responsibility from the state to the community. This gives the community the possibility to increase its control over local natural resources, and hence their possibility to influence their own future, which is important according to the above definitions of empowerment.

This process of empowerment is important since conflicts can be addressed in less demanding ways and democratisation of civil society is a possible result (Pinkerton 2003). It leads actors to address the fact that being a fisherman does not only imply rights, but also comes with a duty to protect the resources, and hence sustainable use (Pinkerton 2003). This can bridge the gap between scientists and users, widening the range of information available for decision-making (Douglas *et al.* 2003; Grant and Berkes 2004). And, as this case exemplifies, science and knowledge transfer can widen the range of strategies available to stakeholders.

With regards to resource management, fishers are mostly understood as disempowered (Jentoft 2000; Neis and Felt 2000; Ostrom 1990). This is, of course, often the case. Still, I draw attention to how such encounters between 'David and Goliath' can also lead to a process of empowerment. Science and technology have significant enabling qualities that can be used by other than the already powerful. This is so since these qualities can give the less powerful access to new strategies, acquire a higher level of flexibility, and hamper the capacity of the more powerful to exercise control (Stehr 2001).

Here, I argue that San Felipe has learnt about MPAS in general in their meetings with scientists, and that they have put ACMPA to work locally as a tool that reserves nature for the local fishers. What is more, I believe such empowerment is crucial to the implementation of MPAS as a tool for the ecosystem-based approach in fisheries. Concurrently, with the move towards the ecosystem-based approach in fisheries, growing attention is afforded to the role of fisher knowledge in fisheries and how this can contribute to the management regimes. Accordingly, it is crucial that fishers can communicate their knowledge and learn new skills.

Socioeconomic, ecological and political systems do not exist in a vacuum, but are subject to external disturbances, from the regional and global level. How the communities cope with these challenges, depend on factors such as organisational strength, formal and informal institutions, social capital and power-relations. Since the same features can be a constraining or disempowering force, I would again underline that the outcome of different processes is contextual (Jentoft *et al.* 2007).

### **General Lessons about MPAS**

This case study shows that it is important to investigate every MPA as a unique construction that is dependent on the local historical, economic and cultural context in which it is embedded. MPAS are 'chunks of nature' with borders and contents. What the content and borders are can differ. Moreover, it is dependent on what meaning the local people attribute to it as well as that held by scientists. When a MPA is implemented from below, it is reasonable to believe that the legitimacy of the rules is higher than if it is implemented from above. MPAS have become a symbol or sign of sustainability in the global management discourse. However, such signs can be real tricksters, as they come into being, move around and change identity.

MPAS are considered a key tool by international NGOs, such as the World Wildlife Federation, as well as many scientists and international institutions such as the United Nations. Understanding MPAS as such signs or symbols, it is important to remember that their meaning can be altered at a local level. According to theories on social capital, enabling people to act together to pursue shared objectives is central (Putnam in: Schuller *et al.* 2000), and the people of San Felipe are doing just that in order to pursue their own objectives. As a sign of sustainability it is straightforward to conclude that the implementation of ACMPA is based on the same values as scientists' values. However, it seems to me that reserving the resources for the locals, and hence excluding people from *the outside* is the primary goal of ACMPA for the fishers of San Felipe. This is not the same as saying that they do not consider resource protection as important, just that it may not be their main focus. If the pressure on their coast is lower, it is also positive for the sustainability of the resources.

### **Final Remarks**

In resource management, a chunk of marine nature is typically withdrawn from local people by someone with more power, advocating goals and theories that are far from the reality of those whose livelihood depends on the given area. Hence, MPAS have a huge potential for disempowering local people. This is not the case with ACMPA. On the contrary, I argue that San Felipe is using ACMPA to take some authority back from the state by turning ACMPA into a local commons.

The establishment of ACMPA can be related to a high level of social capi-



tal – both the *bonding* and the *linking* level of social capital. The community as a whole gains, as people can solve their conflicts internally and block immigration from elsewhere to San Felipe. Immigration is perceived as a problem in Yucatan's coastal communities, and San Felipe is coping with this issue in a way that differs from most communities. In this paper I have aimed to demonstrate that the MPA discourses within fisheries management are used by San Felipe as a rhetorical strategy to empower themselves in a context where their frameworks for action are changed in the move towards new political programs such as the ecosystem-based management approach and centralised management. Typically, these are frameworks that leave communities with fewer options for local control, or disempower them. In San Felipe, limiting the number of immigrants from 'the outside' is important. This is pivotal since it reduces pressure on natural resources while reserving them for the local fishers. ACMPA is a tool that helps the community achieve this, despite the lack of state access limitations for the octopus fishery. In addition, San Felipe is renewing its rights to community-based resource management by using their political know-how to compete in an uncertain and changing reality in the 'market place' for authority and security.

Fisheries science has considerable disempowering potential, as fishers often are muted in their encounter with scientists (Pálsson 1991). However, global policies, science and knowledge transfer can also provide local people with new strategies. San Felipe has managed to reserve a piece of nature where access and conduct rules are decided by the locals. This is done using one of the most powerful characters in modern resource management, MPAs, which now is one of the 'fads and fashions' promoted by a global community of scientists and powerful organisations. There seems to be a relationship between the local community's success and its close cooperation with scientists. But, even if ACMPA is created as a cooperative process between fishers and scientists, where both knowledge systems have been used and expanded, ACMPA is not a pure reflection of scientists' values. Rather, the community is using the scientists' symbols actively to create a future defined by the community itself and that represent local aspirations: they have empowered themselves, employing the global discourse at a local level.

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## Notes

- 1 In English, CINVESTAV translates into the National Center of Research and Institute of Advanced Polytechnic Studies. This is 'one of the most important and prestigious postgraduate and research institution in Mexico' (CINVESTAV 2009).
- 2 During my field work, this fleet contained 3,804 boats, with 3,331 in the artisanal fleet, and 473 boats in the industrial fleet.
- 3 The Mexican Revolution is renowned for the impact it had on labour, agriculture and anarchism, not only at a national but also at an international level. The revolution produced the Mexican Constitution of 1917, which was the first in the world to recognize social guarantees and collective labour rights
- 4 These actions are based on the law of cooperatives, 1936 (Peterson, 1980).
- 5 I am grateful to one of the anonymous reviewers who pointed out the importance of this aspect of my analysis.
- 6 Such as PROCEDI in the agricultural sector.
- 7 As explained earlier one needs a permit to fish octopus, but the permit holder typically hires free or temporary fishers to fish for him.
- 8 Often due to a lack of fertile soil, equipment and fertilizers.
- 9 Secretaría de Agricultura, Ganadería, Desarrollo Social, Pesca y Alimentación.
- 10 One American dollar equals 9.923 Mexican pesos (06.10.05) (<http://www.xe.com/ucc/convert.cgi>).
- 11 the UNDG webpage provides an overview over some of the projects that San Felipe has received funding for (UNDG, 2005).

## References

- ACMPA  
1994 *Plan de Manejo [of ACMPA].* Fuerzas Vivas and Fishers Cooperative of San Felipe.
- Aguilar Ibarra, A, C Reid, and A Thorpe  
2000 Neo-liberalism and its impact on overfishing and overcapitalisation in the marine fisheries of Chile, Mexico and Peru. *Food Policy* 25:599-622.
- Béné, C  
2003 When Fishery Rhymes with Poverty: A First Step Beyond the Old Paradigm on Poverty in Small-Scale Fisheries. *World Development* 31:949-975.
- Berkes, F, C Folke, and J Colding  
1998 *Linking social and ecological systems: management practices and social mechanisms for building resilience.* Cambridge University Press, Cambridge.
- Bjørkan, M  
2005 *Cooperatives and Community Failure in Fisheries Management: a Mexican Case Study on Collective Opportunism and Social Capital.* Social Science, University of Tromsø, Tromsø.
- Bourdieu, P, and L. J. D Wacquant  
1992 *An Invitation to Reflexive Sociology.* University of Chicago Press, Chicago.

- Bundy, A. R, R Chuenpagdee, S Jentoft, and R Mahon  
2006 If Science is not the Problem, What is? An Alternative Governance Model for Reversing the Dismantal State of the Worlds Fisheries Resource. *Frontiers in Ecology and the Environment* 6:152-155.
- Charles, A  
2001 *Sustainable Fishery Systems*. Blackwell Science Ltd, Oxford.
- Charon, J  
1995 *Symbolic Interacionism: An Introduction, An Interpretation, An Integration*. Prentice Hall, New Jersey.
- Chuenpagdee, R, J Fraga, and J Euán-Avila  
2002 Community Perspectives Toward a Marine Reserve: A Case Study of San Felipe, Yucatán, México. *Coastal Management* 30:183-191.
- Chuenpagdee, R, J Fraga, and J Euán Avila  
2004 Progressing Towards Co-Management through Participatory Research. *Society & Natural Resources* 17:147-161.
- CINVESTAV  
2009 [www.cinvestav.mx/ingles](http://www.cinvestav.mx/ingles).
- Douglas, C. W, J Raakjær Nielsen, and D Degnbol (Eds.)  
2003 *The fisheries co-management experience: accomplishments, challenges, and prospects*. Springer.
- Fraga, J  
1993 *La inmigración y sus principales efectos en la costa Yucateca. Estudio de caso en Celestun y Sisal*. Masters thesis, Universidad Autónoma de Yucatán (UADY), Merida.
- Fraga, J  
2004 Perspectives in conservation: Biosphere Reserve. *Landscape and Urban Planning* xxx.
- Fraga, J, J Euán Ávila, and R Chuenpagdee  
2003 *Manejo Comunitario de una Área Natural Protegida en Yucatán (Fase II)*. CINVESTAV.
- Giddens, Anthony  
1999 *Runaway World: How Globalization is Reshaping Our Lives*. Profiles, London.
- Grant, S, and F Berkes  
2004 *One hand can't clap: Combining Scientific and Local Knowledge for Improved Caribbean Fisheries Management*. Paper presented at Tenth Biennial Conference of the International Association for the Study of Common Property (IASCP 2004), Oaxaca, Mexico.
- Halpern, D  
2005 *Social Capital*. Polity Press. Polity Press, UK.

- Hernandez, A, and W Kempton  
2003 Changes in Fisheries Management in Mexico: Effects of increasing scientific input and public participation. *Ocean & Coastal Management* 46:507-526.
- Holm, P  
2001 *The Invisible Revolution: The construction of Institutional Change in the Fisheries*. PhD, University of Tromsø, Tromsø.
- Jentoft, S  
2005 Fisheries Co-management as Empowerment. *Marine Policy* 29:1-7.
- Jentoft, S  
2000 The community: a missing link of fisheries management. *Marine Policy* 24:53-59.
- Jentoft, S, T. C. Van Son, and M Bjørkan  
2007 Marine Protected Areas: A Governance System Analysis. *Human Ecology* 35:611-622.
- Knudsen, S  
2004 I midtøsten er det Islam, ikke "innfødt" kunnskap. *Norsk Antropologisk Tidsskrift* 15:56-70.
- LEGEEPA  
1988 Ley general Del Equilibrio Ecologico y la Proteccion al Ambiente (LEGEEPA) (General Law of Ecological Equilibrium and Environmental Protection), edited by Secretaria General. Mexican Government.
- Lothe, L  
2002 Landartikkel om Mexico. In *Latin-Amerika årboka 2002; Åpne brev, hemmelige dokumenter og andre utklipp fra latinamerikanske medier*. Latinamerikagruppene i Norge og Solidaritet forlag, Norway.
- McGoodwin, J  
1980 Mexicos Marginal Inshore Pacific Fishing Cooperatives. *Anthropological Quarterly* 53:39-47.
- Murray, G  
2005 Multifaceted Measures of Success in Two Mexican Marine Protected Areas. *Society & Natural Resources* 18:889-905.
- Neis, B, and L Felt (Eds.)  
2000 *Finding Our Sea Legs: Linking Fishery People and Their Knowledge with Science and Management*. ISER books, St John's.
- Ostrom, E  
1990 *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge University Press., Cambridge.
- Pálsson, G  
1991 *Coastal economies, Cultural Accounts. Human Ecology and Icelandic Discourse*. Manchester Universtiy Press, Manchester.

- Pinkerton, E (Ed.)  
 1989 *Cooperative management of Local-Fisheries: New Directions for Improved Management and Community Development.* The University of British Columbia Press, Vancouver.
- Pomeroy, R.S, and R Rivera-Arriaga  
 2006 *Fishery Co-Management: A Practical Handbook.* CABI Publishing, Oxfordshire.
- Prior, L  
 2003 *Using Documents in Social Research.* Sage Publications, London.
- Raakjær Nielsen, J; P. Degnbol; K Viswanathan; M Ahmedb; M Harac; N Raja Abdullah  
 2004 Fisheries co-management—an institutional innovation? Lessons from South East Asia and Southern Africa. *Marine Policy* 28:151-160.
- Salas, Silvia, and R. Torres  
 2003 *Factors Affecting Management in a Mexican Fishery.* Paper presented at 2nd World Fisheries Congress, Fisheries Centre, University of British Columbia.
- Schuller, T, D Balton, and J Field  
 2000 *Social Capital - Critical Perspectives.* Oxford University Press Inc, New York.
- Stehr, Nico  
 2001 *The Fragility of Modern Societies: Knowledge and Risk in the Information Age* Sage, London.
- Sumaila, U, S Guenette, J Alder, D Pollard, and R Chuenpagdee  
 1999 *Marine protected areas and managing fished ecosystems.* Christian Michelsens Institute.
- Vayda, A  
 1983 Progressive Contextualization: methods for research in human ecology. *Human Ecology* 11:265-281.
- Wallerstein, N  
 1992 Powerlessness, empowerment, and health: Implications for health promotion programs. *American Journal of Health Promotion* 6:197-205.