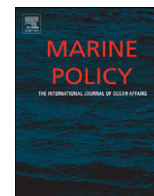




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## Marine protected areas: Re-thinking their inception

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## ABSTRACT

When marine protected areas (MPAs) do not succeed, which is often the case, their failure is mostly attributed to factors related to their design and operation. In this paper, it is argued that reasons for lack of success must be sought in the process that leads up to their establishment, i.e., the initial stage when the idea was conceived, communicated, and discussed among stakeholders. To illustrate the significance of the 'step zero', the creation of four MPAs in Spain and México is analyzed. These case studies show how MPA proposals can easily be drawn not only into power struggles between stakeholders but also into political issues that extend far beyond the MPA itself. For this reason, the governance of MPAs requires broad considerations of the potential political risks and pitfalls. MPAs are, after all, not just a technical management measure, but a socio-political enterprise.

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## Introduction

Despite the recognized complexity surrounding marine ecosystems, management practices are based mostly on readily available tools, some of which end up being treated as simple technical and institutional fixes [1,2]. Marine protected areas (MPAs) are among them. Although similar measures have been used for centuries in different parts of the world, e.g., Oceania and Micronesia [3–5], their development in western societies is relatively recent, starting with the First World Conference on National Parks in 1962, where the need to protect marine and coastal areas was emphasized [6]. Since then, MPAs have attained a status as one of the most widely promoted tools for conservation and resource management. There are many reasons why MPAs have broad appeal. Conceptually, they correspond with the precautionary principle when faced with unknown consequences, which is largely the case with complex marine ecosystems [7]. In addition to their conservation outcome, socio-economic benefits

can also be derived from many different human uses, from fishing to tourism [8].

The need for protection of ecosystems globally provides justification for all levels of governments to create MPAs. However, despite the progress made in previous decades, the spread and coverage of MPAs fall far short of the targets set by international organizations, such as the Convention on Biological Diversity (CBD), which proposed the protection of 10% of all eco-regions in the world (including marine and coastal areas) before 2010 [9]. At the end of 2010, only 1.17% of the world's oceans were designated as MPAs, and probably for this reason the countries that signed the CBD extended the deadline until 2020 [10].

The slow rate of MPA establishment [11,12] and their relative lack of success or effectiveness raise doubts about what MPAs can offer [13–15]. When they do not succeed, it can be mostly attributed to the design of the MPAs, relative to the specificity of the marine systems within which they are meant to operate. Efforts have been concentrated therefore on adjusting their functions and associated rules and regulations in order to improve their performance [16,17]. However, not all failures can be remedied by reorganization and enhancing capacity in monitoring and enforcement. When MPAs do not deliver what they intend to do, the damage may already be beyond repair. For instance, stakeholders may then have lost faith in the MPA and stopped supporting it.

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As argued in this paper, it is imperative that an investigation into MPA failure or success examines the implementation process, starting with the very step when the idea about the MPA is first introduced. This is referred to as the 'step zero' of implementation [18], which is when the problem to be addressed is initially observed and defined and when discussion begins about how to address it and by what instruments. MPAs may come up in this process for reasons that need to be investigated. For instance, it should be asked why MPAs are perceived as a good idea and by whom. The step zero investigation is also about assessing how the concept is communicated and what responses it triggers.

In what follows, the step zero of MPAs is theorized to explain the significance of the pre-implementation stage and which concepts and questions are relevant. Next, the descriptions of what happened in the process of establishing four MPAs in Spain and México are presented. The point here is to demonstrate how MPA proposals can easily be drawn not only into power struggles between stakeholders but also into political issues that extend far beyond the MPA itself [19]. Lessons learned from these case studies are summarized in the final section.

### Theorizing step zero

MPAs come in many forms, such as closed areas, no-take reserves, and multiple use zoning [5,20,21]. They are versatile, and with a proper design, can be tailored to local circumstances [22–24]. The short supply of MPA success stories, despite widespread application around the world, may suggest that they are not panaceas, in many instances. In other words, MPAs are not simple technical and institutional fixes that can be easily applied to manage any marine resource systems. In addition to the fact that MPAs may not be the right tool for all situations, 'doing it right' is also difficult [25,26]. Critical examination of what contributes to such difficulties is needed, given the possible social and ecological consequences of MPAs. Few studies have made the link between this to the MPA creation process [27–30].

Drawing from interactive governance theory [31], the implementation of MPAs should be seen as a process where stakeholders representing governments, markets, and civil society participate in the discussion about what they are for, why they are needed, where they should be located, and how they should operate. People have things at stake when MPAs are introduced, meaning that they may stand to gain or lose from them. Generally, they have clearer ideas about the latter than the former [23]. Therefore, it is hard to predict at the outset what might end up being the goal of MPAs, given that goals may shift as people become involved in the process [24]. When interests collide, one would expect a process characterized by conflicts where outcomes are less than certain. In fact, the only way to anticipate what MPAs may become would be to analyze where power sits and how politics work at different levels.

The reasons for conflicts may also be due to the fact that stakeholders representing different normative orders may exert their power in defining the problem and the process. For instance, the values, principles, and rules of the community may depart from those of the government, leading to contestation about how the MPA should be designed and governed. This situation is referred to as legal pluralism [32], which suggests that MPAs are not introduced in a social, cultural, political, and legal vacuum. Rather, they are situated within a larger sphere where stakeholder conflicts may already occur. Therefore, the introduction of MPAs may bring up issues that are sensitive but have been previously dormant, and which some stakeholders might prefer to remain so, for the sake of harmony in the community or to serve their special interests. As Goffman [33] argued, avoidance is

a way to deal with sensitive issues in social interactions, which is impossible to do when MPAs are in the room. It may also be the case that MPAs, however well intended by those who initiate them, may invoke images of previous management experiences that proved to be unsuccessful or had repercussions for the community or for particular stakeholders. In fact, stakeholders may perceive MPAs as just another effort to exert social control and repression by central governments [34]. For that reason an analysis of the step zero of MPAs, and why they end up being so politicized, should also target the images that stakeholders have about their situation as well as those of others involved in the process and who are exerting their interests in shaping the outcome [23].

Since politics is a dynamic process characterized by differential stakeholder power [35], the objectives of the MPA may change in the inception process depending on how the balance of power shifts. This is also partly due to the fact that not all stakeholders arrive at the process at the same time. As a consequence, those involved at the beginning may not carry the most weight at the end. By the same token, those who are most affected by the original problems and concerns leading to the establishment of the MPA may not be the ones holding the stage at the end of the step zero [24]. Stakeholders may well be aware of the risks involved when they initiate MPAs and are, therefore, more cautious in their actions. How winning and losing stakeholders responds to the negotiated outcomes is an important research question because it may have a decisive effect in the long term. Thus, what warrants a sharper focus on the step zero of MPAs is not only the political turmoil they may trigger, but also the path dependency that may occur as a result. Things that may seem expedient in the moment, i.e., as a solution to an immediate problem, may turn out not to be productive or conducive in the long run. As much as conflicts at the initial stage may affect the entire MPA process, decisions about stakeholder representation, rules of participation, and the chosen forms and avenues for communication may influence how things later evolve. Things said and done in the beginning may create an atmosphere that may taint the process, inhibiting constructive deliberation and cooperation. Further, once representation is defined, it may be hard to change. Similarly, once images about the MPA have been crystallized, they tend to remain, despite new experiences, due perhaps to institutional inertia. When rules are established, they quickly become interpreted as objective reality and hence are not easy to imagine differently [36].

The step zero analysis is concerned with the conditions, drivers, and processes prior to the inception of MPAs. These are embedded in the social, cultural, and political contexts underlying their conception and establishment. The pre-implementation stage is concerned with questions about who brings up the idea about MPAs and why, as well as how this idea is conceptualized and communicated among stakeholders. It further asks who these stakeholders are, who they represent, why and how they become involved, and what legitimacy they possess. Finally, the analysis focuses on the deliberation about the MPA, i.e., about how stakeholders argue, influence, and dominate discussions and decisions about its establishment. All relevant attributes brought to the process must also be examined, be they knowledge, power or images about the situation that the MPA is intended to address.

### Case studies

The four MPA case studies analyzed in this article are at different stages in the establishment process. They serve as illustrations of the challenges and political obstacles that arise from the moment the idea for MPAs is conceived. They reveal the

complex situations and contentious issues within which MPAs are introduced, suggesting that factors not directly related to MPAs, as well as other local circumstances, may affect the implementation process. Through these case studies, the importance of understanding the political contexts and dimensions of MPA establishment and how they come to determine implementation outcomes are demonstrated. The case studies confirm that MPAs are no simple management tool or easy technical fix, as the complexities in the process may surpass the expectations of promoters and stakeholders. They provide useful insights into risks and pitfalls, some of which may be prevented and some of which are perhaps unavoidable.

Research for these case studies began in 2005 in La Graciosa, 2005 in Tenerife, Canary Islands, 2008 in Palamós, Mediterranean Spain, and in 2010 in Xcalak, Caribbean coast, México. The studies employed a mixed methods approach, which was mostly qualitative and longitudinal, including interviews, participant observation, questionnaires, and archival and literature review. In all cases, relevant stakeholder groups such as local residents, fishers, divers, entrepreneurs, scientists, tourists, recreational fishers, and administrators were key informants.

*The marine reserves of fishing interest in Tenerife, Canary Islands, Spain*

Tenerife is located in the Central East Atlantic, 400 km off the Moroccan coast, and has a population of nearly 900,000. The oceanic beauty of Tenerife and mild year-round climate have transformed this island into an important tourist destination since the 1970s, which currently receives more than 3 million visitors a year. Along with coastal urbanization, tourism development has severely impacted the coastline and marine environment. It is also in direct competition with traditional small-scale fishing, and other recent activities like aquaculture and recreational fishing.

The initial proposals to establish MPAs in Tenerife were made by scientists in the 1980s. However, it was not until 2004 that the island government (*Cabildo Insular de Tenerife*), with support from an external EU-related project (Parqmar), began to promote their creation. Several research institutions were involved in feasibility studies of the two proposed MPAs, in Teno and Anaga. The main stakeholders included in the planning process, in addition to the local government and the scientists, were local fishers' organizations, the *cofradías*<sup>1</sup>, who by Spanish law have the formal role and capacity to participate in the creation and management of MPAs. Civil society organizations and the tourism sector also took part. A number of meetings with local communities were held around the island to discuss the proposals, which were met with varying degrees of support. In some communities, small-scale fishers initially rejected the idea, as they thought an MPA would restrict their activities. However, after learning from the experience of fishers in other islands (the marine reserve of La Restinga in El Hierro), they became more keen. Further, after experiencing high fishing pressure from the recreational boating sector and from poaching, small-scale fishers assumed that MPAs would help address these problems. The MPA step zero process took several years before consensus was finally reached in 2008 about where to implement them and what would be allowed.

<sup>1</sup> *Cofradías* are local non-profit corporations with public rights, which represent the interests of the whole fishing sector by acting "as consultative and cooperative bodies for the administration, undertaking economic, administrative and commercial management tasks" and with the ability to "cooperate in matters of regulating access to the resources and informing over wrongdoing occurring in their territory" [37]. They have played an important role in the implementation of MPAs in Spain.

The aforementioned process did not actively involve higher level government administrations, generally responsible for MPAs. For instance, only a low ranking official from the regional (Canary Islands) fisheries administration, with no authority to make commitments, participated in the process. While some recreational fisher organizations were consulted, they were not really involved and thus later used mass media to help block the initiatives. A new negotiation process involving recreational fishers was therefore launched. Two years later, in April 2010, the two proposed MPAs were finally approved by the *Cabildo*. The reaction of some *cofradías* to this final proposal was one of conflict. Although it is not within its mandate to legislate on island fisheries, the *Cabildo* promoted the MPA projects as a way to emphasize its capacity to participate in the fisheries management of the island. The regional fisheries administration, on the other hand, considered this process a threat to their competence and thus delayed the forwarding of the proposals to the national fisheries administration. The financial crisis in Spain also contributed to stalling the process once the proposals finally reached the national administration. By way of response, local non-governmental organizations (NGOs) and the *Cabildo* are now pushing for the creation of a network of "micro-MPAs", which is less demanding on public funding and follows a different legal model.

*The marine reserve of the Formigues Islands, Costa Brava, Catalonia, Spain*

The Formigues Islands are a group of small islets, located approximately one km offshore, between the towns of Palamós and Calella de Palafrugell in Costa Brava. The area has traditionally been used by small-scale fishers from Palamós. Increasing recreational activities, such as boating, sun bathing, sport fishing, and diving, have led to user conflicts. Small-scale fishers felt menaced by the new pressure on the resources and the ocean. Thus, in 2008, with the support of a local scientist, they requested that an MPA be established. Although the proposed MPA was near the Catalan coast, the area lies within the legislative authority of the national, and not the regional, government.

In the first year of negotiations, the main stakeholders involved in the process were small-scale fishers and trawlers (both represented by the *cofradía*) and the national government. However, the trawler group, which held more power within the *cofradía*, imposed a condition that the MPA be situated inside the 100-meter depth contour, in order for it not to affect their fishing activities. The national government, with an interest in increasing the number of protected areas in Spain, pushed for an expansion of the MPA from the original proposal of about 500 ha to no less than 2000 ha. The majority of the municipalities in the area became increasingly involved, and some of them believed that the MPA would add value to their coastal strip.

Studies were conducted by the Spanish government on the various technical and scientific issues of relevance to the proposed MPA, which formed the basis of the first draft of the spatial delineation presented in 2009. Things changed radically after that, when different stakeholder groups started to voice opposition to the proposed MPA. Spear fishers, for instance, rejected the banning of their activity inside the MPA. Representatives of recreational boating criticized the prohibition of anchoring in the reserve, but some of them eventually agreed to the proposal to install buoys outside the seagrass areas. Others insisted, however, that they had the same rights as small-scale fishers and that "the sea belongs to everyone." Finally marina owners felt that their business would be jeopardized if boat owners moved to less regulated areas. Together they launched an aggressive media campaign against the proposal, staging demonstrations in the

streets, and showing up at all stakeholders' meetings organized by the local and national governments to argue their case. After the onset of opposition by these stakeholders, the fishers and their *cofradía* chose not to be present at the consultation to avoid confrontation. They also believed that the government would defend the proposal.

The opposition was fueled by the Catalan nationalist movement, which perceived the MPA as an unacceptable intervention on the part of the Spanish government. They further claimed that the MPA would inflict serious economic harm on the tourism sector. These protests succeeded in halting the MPA establishment process, even after the Spanish government announced its creation in 2010. The government blames budgetary problems arising from the current financial crisis as one of the reasons for their lack of action, not only on this particular proposal but also on all new MPAs. As of June 2012, it is not clear what will happen to this proposed MPA.

#### *The marine reserve of La Graciosa and the Isles to the North of Lanzarote, Canary Islands, Spain*

The marine reserve of La Graciosa and the Isles to the North of Lanzarote is located about 140 km from the African coast, near the fishing community on the island of La Graciosa. The MPA covers an area of about 70,700 ha, with a small no-take zone of about 12 km<sup>2</sup> where only research with special permits is allowed. Hook and line fishing, tuna-bait seining, recreational fishing, and scuba diving can take place in the rest of the MPA. Retired local residents, many of them former fishers, and local residents from the municipality of Haría (Lanzarote) have special privileges for recreational boat fishing inside the MPA that other recreational fishers do not have. Since the early 1990s, the community has witnessed the development of small-scale tourism, which has lowered the importance of fishing to the local economy and led to decreasing numbers of professional fishers (but not the overall fisheries catches) in the area.

Attempts to create a protected area began in the 1980s, with a nature reserve (a model developed for land-based parks). Behind the initiative were local ecologists and the regional government. In the 1990s, scientists, including a biologist working for the national government, pushed to strengthen the protection of the sea around the isles with a marine reserve. In the beginning, some local fishers showed interest in the idea, but the lack of formal discussions at the *cofradía* and confusing information made them suspicious and dubious about endorsing the project. The *cofradía's* president, in particular, played a crucial role in the process. Initially favorable to the idea, he later changed his mind and spoke against it. Nevertheless, the MPA was established by the national and regional governments, through a decree stating that the proposal did in fact have the support of the fisheries sector. The president of the *cofradía* went to the media to protest against the decree, but his voice was unheard. Another group affected by the MPA was women shellfish gatherers who were prohibited from using the area. Recreational fishers, on the other hand, seemed to have benefited more from this creation than other stakeholders.

The MPA establishment process was intermingled with the ongoing resource competition between fishers and other users. More importantly, it became entangled in the political struggle in the area. At a national level, the Spanish government wanted to use the MPA accomplishment as a showcase to gain greater recognition within the larger European Community. For their part, powerful local elites, including the president of the *cofradía*, were trying to gain political status and rally support in other municipalities by staging confrontation with the national government using the MPA as an issue, to the scientists' dismay. On the

whole, the MPA had a bad start and continues to be subjected to skepticism among fishers.

#### *Xcalak Reefs National Marine Park, Caribbean coast, México*

Xcalak is a small community located in Quintana Roo in the south of Caribbean México, next to Belize. In 2011, it had 354 inhabitants, one strong fishing cooperative created in 1959 (38 members), one tourist cooperative created in 1999 (37 members), and 29 eco-tourism hotels. As part of the Meso-American reef system, the second largest coral reef barrier in the world, Xcalak and its rich coral reefs have high socio-economic and ecological values. The MPA comprises about 17,377 ha, 77% of which are marine ecosystems, while the rest are wetlands.

The need for conservation was noted by the fishers in the mid 1990s, when they observed a decline in groupers, lobsters, and pink conch. Their concern was picked up when the discussion to establish an MPA in the area began in 1996. The initiator was an NGO, working in cooperation with foreign scientists supported by a US international development agency. As part of the process, a group of local fishers was invited to visit the Hol Chan Marine Reserve in Belize. Later, together with the NGO, the Xcalak community and its leaders, they formed a committee to develop the MPA proposal. The proposal was sent to the state government, as well as to the National Ecology Institute of the Environmental Ministry (NEIEM).

NEIEM responded positively and proposed a procedure to declare the MPA, which involved technical studies to comply with federal requirements for MPA establishment. The declaration process proved not to be easy, however, with interference by the state government, who did not support the idea. This led to heated meetings and the prolonging of the process by the state government for nearly three years (from 1997 to 2000), hoping that with time the community would recede. Through numerous negotiations between municipal delegates, state and federal agencies, the MPA decree was finally agreed upon.

The priority of the Xcalak people was to have a marine area where they could perform low impact tourist activities that would complement their fisheries. Although they were the principal proponent of the MPA and were involved in the early discussion, their importance was minimized as other stakeholders, particularly scientists from the regional university, stepped in and took control of the process. The fishers' cooperative also became less influential as it lost some members to the tourist cooperative. As the population grows and new economic elites arise in the community, the local capacity to participate in resource governance has been compromised. At the same time, an 'underground' economy, with informal labor, drug trafficking and alcoholism, in the community emerged. Moreover, coastal land speculation has created a flow of people, capital, and ideas that challenge the governing capacity of the MPA. Yet, the existence of the MPA gives the local community an advantage, compared to other communities, in controlling tourist development in the area.

## **Discussion**

The four case studies share a number of commonalities. Most notably, they demonstrate how power and politics run through the entire step zero process. The politicization of the MPA is particularly intense in the step zero because the situation is ambivalent, negotiations are ongoing, and nothing has yet been stabilized. It is also during this pre-implementation stage, when problems are conceptualized and defined, that stakeholders have their window of opportunity to act and react, participate or withdraw, assert their position, or cooperate with others. This is not to say that the step zero is a spontaneous matter that happens

within a short time frame. The idea of the MPA may not be ripe at the time it is conceived but may, in some instances, take years to mature in the minds of stakeholders. Further, the process can be prolonged by certain groups until they are able to secure their positions, as shown in the case studies. In the meantime, other stakeholders are frustrated and lose interest. Thus, power relations shift. Those who are active at the beginning may be pacified in the process, as other groups discover what is going on and realize that their interests may be threatened, and decide to jump on board.

The case studies reveal that power and politics are displayed in several key issues throughout the step zero. They surface with the idea of MPAs but also when particular design questions are raised. They determine who the stakeholders are and who they represent, who participates in the process, at what stage, and at what level and form of involvement. Power and politics are also embedded in the deliberation, as discursive power. It is to be expected, for instance, that stakeholders who possess specialized knowledge relevant to MPAs may acquire a more powerful position than others. Foucault [38] argued that being right is not a guarantee for winning the argument. It is a matter of producing the most convincing story and leading others to believe that they are best served by following a certain pathway. When people choose to support MPAs, they do not necessarily arrive from a thorough assessment of the problem and exploration of all possible avenues. Neither do they make decision without any basis but may simply choose from a pre-defined management menu within which MPAs occur. MPAs are but one of several tools available for resource management and marine conservation, which, as the case studies revealed, have been made attractive mostly by scientists. In these instances, as well as in many others, the discursive power of scientists has been crucial.

Another reason why the step zero drags on, as illustrated in all the case studies, is that the politics of MPAs are not only about MPAs themselves but may also be linked to broader social and political issues, occurring at the same level or higher. MPAs are never introduced in a political and institutional vacuum. They are insertions into ongoing power struggles. MPAs may be influenced by these broader issues but may also help fuel them. They may invoke new issues that stakeholders bring into the process, often as a strategic move to end the initiative. The reverse could of course be true, meaning that it is within the broader context that the MPA could find its legitimacy, meaning, and support. MPAs are, after all, not only local solutions to local problems; they are also global movements targeting issues that are felt all over the world. For some stakeholders, it is the global agendas that are most important. Should the MPAs be swamped in local politics, such stakeholders may soon lose interest and change their mind about the initiatives, perhaps going elsewhere. After all, MPAs are not only about problems seeking solutions, but also solutions seeking problems, as when environmental NGOs, governments, scientists, and others have MPAs on their agendas and are looking for places to implement them.

Although the four case studies have a similar origin and trajectory, they do not result in the same outcomes. The MPAs of La Graciosa and Xcalak have been established but the other two have not, and there is no guarantee that they will be, given the lack of fluidity of the process, the often hidden way that power works, the economic crisis in Spain, and the unpredictability of politics. In addition to the general observations described above, the step zero analysis provides further insights into important issues played out in different contexts specific to the four MPA case studies. First of all, the conditions and drivers for MPA establishment are similar in Tenerife and the Formigues Islands. In both cases, pressures from recreational activities and coastal development are experienced by fishers as threats to their livelihoods.

For them, MPAs were perceived as a solution to these problems. Consequently, fishers in both areas were instrumental in supporting the idea, with local government and scientists as early allies. In the case of La Graciosa, it was the government, rather than the local people, who wanted to establish an MPA, while in Xcalak, the initiator was a foreign NGO, although declining fisheries and the need for conservation had been identified by local fishers years before.

In the three Spanish cases, the *cofradías* played significant, albeit different, roles. Spain distinguishes itself from most other countries by having strong local fishers' organizations to represent their constituents, with historical roots and formal roles in the overall fisheries governance of the country. They are therefore entitled to be involved in the implementation of MPAs that concern fishers. Whether or not the *cofradías* support the establishment of MPAs, they are bound to have a bearing on the outcome. As demonstrated in La Graciosa, the power that the *cofradías* represent has determined the lack of legitimacy of the MPA among local fishers and indeed within the fishing community. Through the *cofradías*, local fishers are a key formal stakeholder, recognized by state law, and thus cannot be easily brushed aside. It was also the *cofradía* in the Formigues Islands case that pushed for the MPA to be outside of the trawling zone. In the case of México, fishers' cooperatives lack similar status and hence the power to influence the process. Pressure from tourists attracted to healthy coral reefs and rich marine life is now increasing.

Spain is also characterized by a multi-level governance structure that includes decentralization of the state to regional governments. While central government has exclusive authority over the Territorial Seas and the Exclusive Economic Zone, the regional governments are responsible for coastal areas (referred to as 'internal water') [39,40]. This means that MPA responsibilities can be shared by national and regional administrations, depending on their locations, and can also involve municipalities or island governments (*Cabildos*). This governance structure sets the stage for power struggles with regard to MPA establishment between different government agencies, as displayed in all the Spanish cases. The Formigues Islands MPA in Palamós is a good illustration of this situation.

Local level politics influence the step zero process in all cases, largely through power relations between stakeholders. The La Graciosa MPA is an example of a step zero that was tainted with confusion and lack of transparency. In fact, the MPA was imposed on the community. The MPA establishment was driven by several interest groups with different agendas: the national government wanted to use the MPA accomplishment to gain recognition among EU member states and local politicians used the MPA discussion to influence regional elections. This demonstrates how other factors not related to the MPA can play key roles in influencing the outcome. Fishers who were originally supportive of the idea became disappointed and were not empowered to negotiate regulations. A similar situation was found in Palamós with the attempt to establish the Formigues Islands MPA.

The Formigues Islands MPA seemed to have a reasonable start, with the initial idea coming from the local fishers. The *cofradía* represented local fishers in proposing the establishment of the MPA, mainly to protect fishers' interests. Although the proposal had originally been supported by the government, protests from other stakeholders, mainly recreational users, brought a halt to the process. As with the La Graciosa case, the MPA became part of a political process larger than the MPA itself, mired in the issue of Catalan nationalism, among other things.

The Xcalak MPA establishment process was far more participatory, receiving full support from the local community and the various levels of government. Although the idea was introduced

by an external agent (in this case, an NGO), local fishers were given the opportunity to discuss and participate in the development of the MPA proposal, and later, its governance. The trip that Xcalak fishers took to Hol Chan was a positive step in the process, as was the case with the Lira fishers visiting La Restinga, reported in Jentoft et al. [23]. Although local fishers are facing emerging challenges with the growth of tourism in the area, their initial and ongoing involvement gives them legitimacy and authority in the decision about coastal development.

As in the case of the Formigues Islands, the two MPAs in Tenerife remain at the proposal level, despite a long negotiation process. In both cases, the creation of an MPA has been stalled partly because of the financial crisis that Spain is experiencing and partly because of the influence of stakeholders (recreational fishers) who were not engaged in the early discussions. The establishment of MPAs in Tenerife is also influenced by political tension between the different levels of government in Spain. As is often the case, the potential benefits of the MPAs are compromised by increasing numbers of stakeholders, and in some instance authorities, claiming rights over decisions about MPA creation.

The four case studies share similar conditions in terms of resource status, with declining fisheries and growth in other marine and coastal activities. In all cases, the idea of the MPA was introduced to the local communities by external agents, and in all cases, varying levels and duration of the involvement of local fishers and other stakeholders can be observed. The engagement of local fishers throughout the process, as in the case of Xcalak, seems to result in positive outcomes. However, it is more common, as the other three case studies show, that the involvement of non-fishing stakeholders may influence decisions about the MPAs in a way that is not beneficial to local fishers. It may be argued that they are also key stakeholders in marine areas. Yet, when considering factors such as livelihood dependency, traditional and cultural ties and the stewardship role played by each stakeholder group, their relative importance may shift. Decisions about MPAs, however, do not always align with how stakeholders rank in terms of importance. As shown in the case of the Formigues Islands, groups that have less at stake from the perspective of livelihood are sometimes more vocal and highly influential in the process.

## Conclusion

The actual implementation of MPAs globally is far behind targets. Even after they have been implemented, they do not always deliver on their goals [24]. There is obviously more to MPAs than just declaration, institutional design and boundary settings. Given the widespread agreement to conserve and protect biodiversity and marine ecosystems, and the strong forces behind MPA establishment, this outcome is rather puzzling. This article provides clues for anyone looking for reasons as to why MPAs are lagging behind. What it demonstrates is that MPAs involve complex matters. They are not easy solutions and quick fixes. They are never instituted in a social and political vacuum. In fact, as these case studies show, MPAs are introduced in places already struggling with political strife and in social environments that are not always conducive to their establishment. Thus, on their own, the institutional design and operation will not produce a positive outcome. Rather, they require negotiated settlements as to who should be involved, how conflicting interests should be balanced, and how the process of harmonization of goals and aspirations should run. These are basically issues related to the step zero. They are also why the step zero can be such a prolonged process, one that may take several years.

Imposing MPAs on people may help establish them and shorten the step zero process, but it risks alienating and dividing

the community. A divided community is not a good breeding ground for success. Furthermore, local stakeholders may not only be skeptical about MPA adequacy, but may also boycott implementation and violate rules [25,41,42]. In many cases, stakeholders have different attitudes and perceptions toward MPAs. Conflicts and political strife can result from this, and the community may become frustrated. It is naïve to suppose that everyone will be equally supportive. No matter how it is done, chances are that some groups will be more pleased than others. Therefore, discussion is needed about which stakeholder groups should have the right of way.

The claim made by recreational people in the Formigues Islands, that the sea belongs to everyone, implying that local fishers have no special rights, is likely to create antagonism within the community. Not everyone has equally as much at stake [43,44], but those who depend heavily on marine resources for their livelihoods have more salient concerns than those who use the area for leisure. Scuba divers and recreational boaters may feel discriminated against, but they do have the option to go elsewhere if they are dissatisfied with the MPA initiative, especially if they are non-local. However, the affected communities and small-scale fishers cannot. They are stuck with MPAs whether they like it or not and they have to live with the consequences. When MPAs result in restricting certain levels of recreational activities, it does not have the same detrimental impact on livelihoods as when small scale fishery-dependent stakeholders are prohibited from using the areas. MPAs are, after all, mechanisms that inevitably limit the freedom of users, some more so than others. However hard these decisions may be, they are better made at the beginning of the process than after the MPA is in effect.

These are considerations and choices that need to be deliberated at the MPA step zero. If not, they are likely to haunt MPAs and their stakeholders, and thus have serious consequences for policymaking and governance. This deliberation process may take some time, but international experiences show that allowing time and efforts for extensive discussion involving all stakeholders in the inception process pays good future dividends. The extent to which a good 'step zero' process contributes to reducing the costs of enforcement, increasing compliance, and enhancing successful implementation is something that requires further research. For instance, what really constitutes a good process is worth exploring. Likewise, questions should be asked about what conditions are conducive for such a process, what the risks and pitfalls are, and what planners and stakeholders can do to prevent them.

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