Chapter 18
Scaling-up Small-Scale Fisheries Governability Through Marine Protected Areas in Southern Brazil

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Abstract This chapter investigates governing interactions at the Baleia Franca Environmental Protection Area (Santa Catarina state, South Brazil) as an example of new opportunities and challenges to scale-up small-scale fisheries governability through Marine Protected Areas (MPAs). Previous studies on MPAs in Brazil highlight the innovative aspects of these governing systems such as their well-functioning, active, and progressive management councils. We describe the increasing response of the governing system to fisheries issues that are largely aligned with governance paradigms of collaboration and social learning. Despite all efforts and some notable accomplishments in responsiveness and performance, we point out the challenges related to the mismatch between the governing system and the systems-to-be-governed that hinders fishers' political agency and limits small-scale fisheries governability at broader territorial levels. We identify and analyse the wicked problems faced by actors engaged in processes of transformation in coastal-marine governance and provide suggestions for improving governability.

Keywords Coastal Governance • Participation • Leadership • Brazil • Conservation Unit • Innovative Institutional Arrangements • Fisheries Management

Introduction

Since the 1960s, fishers and scientists have witnessed an accelerating fisheries crisis in Brazil. The crisis has been characterized by a rapid erosion of the diversity of ecological knowledge, practices, and identities amongst small-scale fishers, known

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S. Jentoft, R. Chuenpagdee (eds.), *Interactive Governance for Small-Scale Fisheries*, MARE Publication Series 13, DOI 10.1007/978-3-319-17034-3_18

in Brazil as artisanal fishers (Diegues 1983; Dias Neto and Marrul Filho 2003; Vasconcelos et al. 2007; Rebouças et al. 2006; Gerhardinger et al. 2009) as well as a rapid decrease in abundance, richness and diversity of marine communities and species, particularly those of interest to fisheries (Castello 2010). However, recent political and institutional changes in Brazil have opened opportunities for new interactions in order to address this crisis. Decentralization of some decision-making processes, participatory mechanisms, and the creation of new Marine Protected Areas (MPAs) are ingredients that have redefined the 'rules of the game' in which the governability of small-scale fisheries are expected to improve (*e.g.*, Cordell 2006). Fisheries governance through MPAs is frequently proclaimed as an important strategy in Brazil (MMA 2013). This chapter will investigate the changes, obstacles, and opportunities associated with this governance scheme in the governability of small-scale fisheries, using a case study of a large-scale governing system named '*Baleia Franca* [Southern Right Whale] *Environmental Protection Area*' (BF-EPA).

The BF-EPA is part of a national protected areas governance system called National System of Conservation Units (SNUC, its Portuguese acronym), under the aegis of the Ministry of Environment. SNUC encompasses 12 categories of protected areas divided into two main groups – sustainable use areas that allow consumptive use (*e.g.*, human residency, customary activities, managed extractive activities) and full protection sites allowing only non-consumptive use (*e.g.*, research, tourism). The institutional architecture and participatory mechanisms between both groups are very different. The former is based on more socially inclusive governance and geared towards reconciling economic and environmental goals. The latter is based on more top-down governance and restrictive of human intervention. EPAs are sustainable use protected areas, and are usually extensive areas including both public and private land, and crossing territorial jurisdictions and governmental institutions at federal, state, and municipal levels. Their social (and environmental) complexity creates major governance challenges.

In a recent study on MPAs in Brazil, Gerhardinger et al. (2009, 2011) noted that the BF-EPA had a particular governing approach when dealing with institutional, bureaucratic, and financial challenges shared by other MPAs in the country. This approach included active engagement of BF-EPA staff in partnerships with local actors. These local constituencies were mandated high levels of decision-making power and autonomy in the process of establishing the BF-EPA Management Council (hereafter BF-EPA Council) in 2005. This council is often treated in the literature as an innovative institutional space for integrating policies and actors in social learning through collaborative governing modes (Macedo 2008; Macedo et al. 2013). Further official recognition of this innovation came in 2012, when the BF-EPA was designated by the Ministry of Environment as a pilot-project to support the reformulation of national guidelines for elaboration of management plans of protected areas. If well developed, this process can potentially influence governability of all protected areas in the country. However, though expectations for innovation within this particular governing system are high, both in academic and policy terms, fisheries governability remains arguably poor at the EPA territorial level.

The self-proclaimed innovative nature of such interactions, as will be shown, offers us an intriguing case through which to analyse the challenges and opportunities of dealing with the social-ecological fisheries crisis. The implementation of the BF-EPA generated expectations for increased governability through augmented performance of the governing system. It also raised expectation over its capabilities to respond to fisheries problems and enable opportunities for sustainable territorial development of the sector. The improvement in governability of the (fisheries-related) social system was also explicitly desired, *e.g*. through increased responsiveness of self-governing modes as an outcome of participative and social learning incentives offered to fishing actors (Macedo et al. 2013). Ultimately, the BF-EPA Council was expected to alleviate the mismatch between institutional and ecological systems by scaling-up fisheries governability through the operation of a problem-solving platform dealing with issues at EPA territorial-level.

This chapter will first provide a general description of the fisheries natural and social systems and respective governing system. This will be followed by a description and analysis of the main fisheries governability issues emerging at the BF-EPA in the past decade. Finally, we discuss the major territorial-level governability challenges and distil the insights and lessons offered by this case study. We focus our analysis on the conduciveness of governing interactions at the interface between the social and the governing system.

The description and analysis of governing interactions is based on in-depth semi-structured interviews and participant observation in the central-southern coastal area of Santa Catarina state in 2007–2008 (Gerhardinger et al. 2009, 2011; Macedo et al. 2013) and 2011–2012. In the later period, semi-structured interviews were carried out with eight key individuals, identified through peer recommendations of BF-EPA Council members (the identity of the interviewees was protected due to pre-interview shared agreement), belonging to the BF-EPA governance system. Three non-structured interviews were also conducted to include complimentary perspectives from different sectors (*e.g*., State agents, resource users (including fishers), academics and environmentalists). Furthermore, observational data were recorded in nine BF-EPA Council meetings and numerous informal encounters. We have also thoroughly analysed official minutes of 30 BF-EPA Council meetings from 2005 to 2012. Governability assessment follows the step-wise approach synthesized by Chuenpagdee and Jentoft (2013). The interactive governance approach is used in the description and analysis of the system-to-be-governed (natural and social systems), the governing system (BF-EPA Council), and governing interactions regarding fisheries issues.

Systems-to-Be-Governed

BF-EPA encompasses a high diversity of coastal-marine ecosystems. It lies in a regional transition zone and includes several ecosystems such as bays, estuaries, sandy beaches, mangroves, sandy dunes, rocky shores, salt marshes and coastal

lagoons and lakes. Biological productivity in this region is generally higher than in other tropical Brazilian coastal ecosystems, partly due to small resurgence currents in some locations. There are strong seasonal variations under the influence of sub-Antarctic Atlantic waters, continental freshwater discharge (winter), and predominance of subtropical waters of the Brazilian current (summer). As a result, the area is characterized as an ecotone with particularly high biodiversity due to the presence of both tropical and temperate marine communities (Floeter et al. 2007). A recent marine ichthyologic richness study reported 203 species of marine fish in an area immediately northwards of the BF-EPA border (Bertoncini et al. in prep.).

Small-scale fisheries at BF-EPA dates back to the Portuguese period in the eighteenth-century, when fishers and farmers from the Azores and Madeira islands migrated to the south of Brazil (Lago 1961). Small-scale fisheries and small-scale agriculture predominated until the 1960s, when national development policy encouraged rapid economic transformation (Borges 2008). This resulted in urban expansion, demographic growth, market integration, expansion of tourism and industrial development (Diegues 1983; Câmara 2001; Polette and Vieira 2009).

The fishery system was also transformed from the 1960s as a result of policies prioritizing industrial fisheries (Diegues 1983; Capellesso and Cazella 2011; Oliveira and Silva 2012). As a result, small-scale fisheries have declined and the local economy has shifted to services such as tourism, ports, and other sectors (Diegues 1999; Filardi 2007; Vasconcelos et al. 2007). In addition, several families rely on pensions and unemployment benefits, particularly during seasonal fishing bans on certain species (Capellesso and Cazella 2011).

The fishery system in the region encompasses a number of different fisheries ranging from small to large-scale industrial fisheries. Industrial fisheries are predominantly based on bottom trawling, seining, long-line, rods with live baits (tuna), and passive gears such as bottom or surface-set gillnets and traps. Small-scale fisheries combine several types of small vessels (*e.g.,* small purse-seining and undecked boats, aluminium speedboats, canoes, and closed cabin boats), and a large range of fishing gears. Gomes (2012) has identified 22 fishing gears used at sea and in lagoons, such as gillnets (used for seining or passive fishing), nets used for bottom trawling, cast nets, hand-lines, rods, and long-lines. The diversity of the fishing systems is reflected in the catch composition. Gomes (2012) has identified 62 folk fish species belonging to 37 scientific species captured in the BF-EPA territory. In coastal lagoons, summer shrimps are the main targeted resource, followed by crabs and finfish such as mullets (Seixas 2002; Filardi 2007).

The small-scale fishery systems of BF-EPA are fundamentally dynamic due to their coupling to the natural system. Although they occur throughout the year, activities are amplified during the winter, following the dynamics of main fishing migratory resources (*e.g*., mullet *Mugil liza* between May–July and bluefish *Pomatomus saltatrix* after July).

Fish is sold in local markets or to related industries, frequently through middlemen (Filardi 2007). Conflicts between small-scale and industrial fisheries are diffuse and chronic, although fishing actors move between industrial and small-scale fisheries – *i.e*., small-scale fishers sometimes become crew members in industrial

fisheries (Filardi 2007; Saraiva 2010; Oliveira and Silva 2012). Conflicts amongst small-scale fishers are also common due to the impact of different fishing gears or due to disputes over certain fish resources (Rodrigues 2011). Some of the main problems mentioned by small-scale fishers are lack of enforcement, corruption, institutional misfit and other public policy flaws (Filardi 2007; Rodrigues 2011), as well as conflicts with other coastal marine actors.

Governing System

Over the past decade, several authors have outlined promising ongoing incipient coastal governance initiatives in the central-south coast of Santa Catarina state. Seixas and Berkes (2003), for instance, describe historical changes and tensions in governance modes in one of many coastal lagoons in the region (Ibiraquera lagoon). Rebouças et al. (2006) propose actions for participatory and integrated management of small-scale fisheries at a broader territorial level. These emerging initiatives were seen as part of a relatively new *territorial ecologization dynamics* (*sensus* Rebouças et al. 2006) that valued cultural patrimony while seeking opportunities for economic and political inclusion of traditional small-scale fishing and agricultural communities (*e.g.* Rodrigues 2011). These interaction patterns were part of the process of designing and implementing new governing instruments for *sustainable territorial development* (Cerdan et al. 2011) within or surrounding the boundaries of the broader governance structure of the BF-EPA.

Designated through Federal Decree IBAMA Nº14 in 2000, the BF-EPA encompasses 1,561 km^2 along 130 km of coastline (Fig. 18.1). This region supports nearly 800,000 people in nine municipalities in the south-central coast of Santa Catarina state (South Brazil). The statutory objective for governance of the BF-EPA is framed around the protection of the Southern Right Whale (*Eubalaena australis*), as stated in the regulation and planning of territorial occupation and use of the regions' coastal and marine ecosystems.[1]

The BF-EPA is under the jurisdiction of different governmental agencies. The Ministry of Fisheries and Aquaculture, created in 2009, is generally in charge of fisheries and aquaculture issues. However, the mandate to oversee fisheries issues within SNUC protected areas has been disputed and since 2011 the responsibility has been assigned to the Ministry of Environment. Finally, municipal and state level agencies may also engage in fisheries issues.

Two governing instruments are crucial for the implementation of protected areas in Brazil – Management Councils and Management Plans. The BF-EPA Management Council was created between 2004 and 2006 through a bottom-up process of

[1] "…[to] *protect, in Brazilian waters, the Southern Right Whale (*Eubalaena australis*), organize and guarantee the rational use of regional natural resources, organize the occupation and use of water and land, organize recreational and touristic use, activities of research and the traffic of boats and airplanes.*" (Federal Decree IBAMA, 2000 Nº 14, Art.1; our translation).

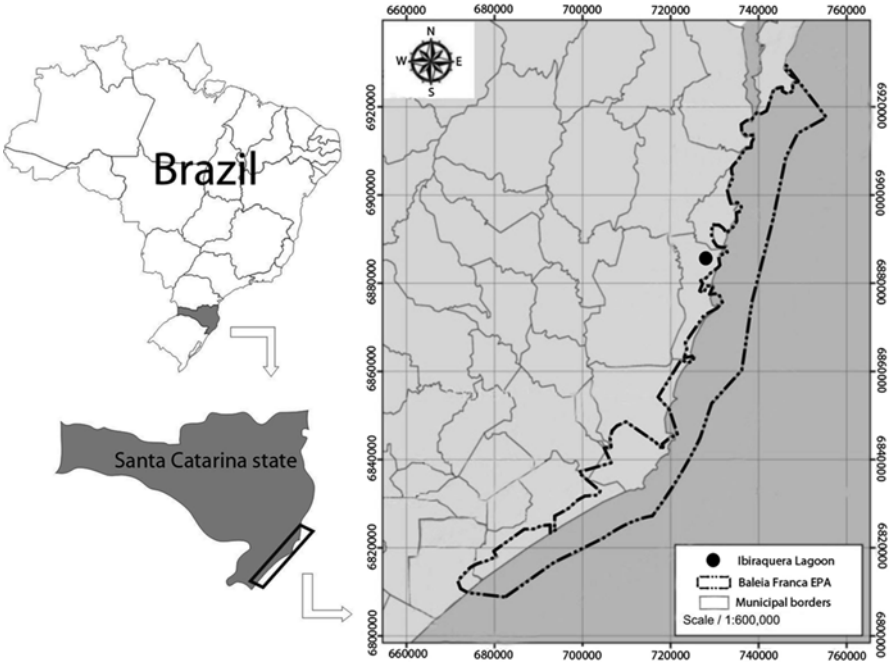

Fig. 18.1 Baleia Franca Environmental Protection Area (After Macedo et al. 2013)

multi-stakeholder institutional interaction (Fig. 18.2). The statutory roles of the Management Council are: (a) to stimulate the participation of different actors in the elaboration, implementation and review of management plans; (b) to facilitate the multiple uses of the area; and (c) to formulate guidelines for actions to integrate, optimize and make compatible the livelihoods of local populations with the site's conservation objectives. The Management Council is composed of 42 elected members (see Gerhardinger 2014), equitably distributed across three social groups – public organizations, resource users (*e.g.*, small-scale fishers, tourists, mining companies, port services providers), and environmental organizations. The Council is also supported by Working Groups organized around topical governing issues, five Technical Chambers, and an Executive Committee, whose role is to facilitate meetings and serve as the secretariat (Fig. 18.2).

In 2012, most of the 42 Management Council members, despite differences over specific issues (*e.g.*, mining development *vs* lagoon conservation) were aware of the need to work collectively, and therefore took the opportunity to pro-actively reshape undesirable structures in the governing system. For example, SNUC requires a Management Council for EPA but does not specify its role (consultative or deliberative). Although most government managers consider their role as consultative, the

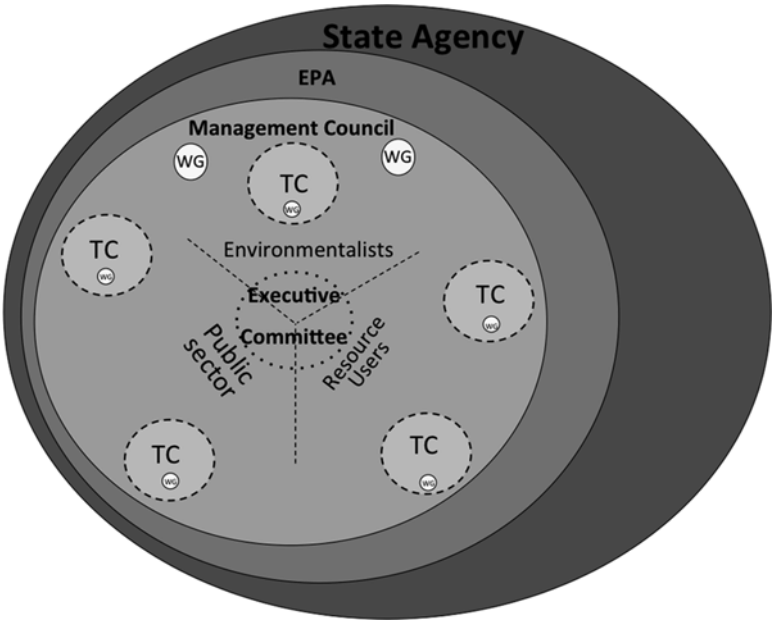

Fig. 18.2 Institutional architecture of the Baleia Franca Environmental Protection Area (EPA) Management Council, including its respective socio-political support entities (*e.g.*, *TC* technical chamber, *WG* working group). There are currently (as of 2010) five Technical Chambers operating under the following themes: Biodiversity Management; Territorial Management; Protection and Monitoring; Sustainable Economic Activities; Southern-right Whale Conservation

Management Council continuously sought to establish a deliberative role by operating according to a self-designed institutional structure and decision-making procedures.

The Council has also been involved in promoting a bottom-up management plan (see Macedo et al. 2013; NEXUCs' 2012). Such a plan was led by key people from communities, universities, and NGOs and was largely enabled by the head of the BF-EPA. The approach was locally referred to as a '*transgressive approach*'[2] and was recognized by the Protected Areas Federal Agency (ICMBio for its Portuguese acronym) as a *pilot project* to inspire possible reforms in the federal guidelines. Considering that ICMBio is currently responsible for approximately 10 % of Brazilian territory, the potential agency of BF-EPA Council members in transforming the governing system has been (and remains) high.

The following section will explore governability through a description and analysis of the main small-scale fisheries issues related to the responsiveness of coastal and marine governing systems particularly how they related to the operation of the BF-EPA Council between 2005 and 2012.

[2] For a detailed analysis of the '*transgressive approach*' see Gerhardinger (2014).

Scaling Up Fisheries Governability

Over the last decade, societal response to fisheries problems in the south-central coast of the State of Santa Catarina has been primarily mediated through governing arrangements for the implementation of the BF-EPA. However, in its initial phase (2000–2003), the capacity of the BF-EPA to govern small-scale fisheries was limited because the structure to foster fisheries governance was not yet in place.

This initial phase was characterized by a top-down bureaucratic process that resulted in the creation of a 'paper park'. Upon the arrival of a new park manager in 2003, the process became more inclusive. This process coincided with political changes at the national level with the election of a left-leaning national government (Hochstetler 2008). Grounded in a progressive discourse of social justice, several activists were invited to support governmental agencies and develop collaborative initiatives with civil society organizations (Hochstetler and Keck 2007). Leadership has played a major role in bridging the gap between bureaucratic and informal systems, creating space for identification and mobilization of constituencies to establish legitimate participatory mechanisms. As described above, the creation of the BF-EPA Management Council is a case in point. It has become quite responsive to a plethora of fisheries issues since 2005. Moreover, over the years the Council has also supported in various ways (politically and/or technically) the self-organization of complimentary fisheries-related governing systems in the central zone of its borders.

We first focus on the claim made for and the negotiation process involved in getting a Protected Area constituted for the aquatic system of the Ibiraquera Lagoon (Fig. 18.1) – adjacent to BF-EPA. Although the final decision has not yet been made, the Council has been actively supportive of a *Marine Extractive Reserve* claimed by the local stakeholders (Vivacqua 2012). Second, the Council played an important role in providing a platform for discussions about the seasonal opening of the sandbar between the sea and the Ibiraquera lagoon. Customary practices regulating the seasonal opening of the lagoon mouth have become a source of conflict between local fishers and other users (*e.g.*, tourism, water sports) in the last few decades (Seixas and Berkes 2003; Berkes and Seixas 2005). Fishers and tourists disagree on the criteria to be used for opening the lagoon mouth. In 2010 the *Ibiraquera Lagoon Mouth Opening Management Committee* was created in order to coordinate public and private interests' vis-à-vis the seasonal opening. Discussions were held about the conflict and possible alternative ways forward within the BF-EPA Council. The Fisheries Technical Chamber (FTC) in particular played an important role. Nowadays, decisions of this new committee are based on a set of agreed principles and criteria for problem-solving. Local knowledge is obtained from three local experts (skilled fishers). Once direct intervention (removal by trucks) of the sand barrier is needed to re-establish water inflow into the lagoon, our informants claim that a more conventional governing approach would require a bureaucratic and costly environmental licensing process. Several BF-EPA Management Council actors were directly engaged or supportive of this largely novel governing mechanism in Brazil.

Between 2008 and 2012, three initiatives/projects relevant to creating opportunities for small-scale fisheries under the label of '*territorial development*' were implemented with an interface with the BF-EPA: *Sustainable Territorial Development*

Project (2008 onwards); *Territorial Laboratory* (2009–2010); and *Southern Santa Catarina Territory* (2009 onwards). The two former projects were led by universities and the Santa Catarina State Rural Development Agency. The latter focused on aquaculture opportunities in coastal lagoons in the South of the BF-EPA, and was part of the national *Fisheries and Aquaculture Territorial Development Policy* of the Ministry of Fisheries and Aquaculture. These projects were aimed at fostering economic incentives that are sensitive to endogenous characteristics of institutionalized units of territory lying fully or partly within the borders of BF-EPA. However, according to our informants, although many Council members have taken part in these different projects and the need for integration amongst them repeatedly stressed, the capacity of the BF-EPA Management Council has been limited.

In 2009, the BF-EPA Management Council representatives supported an ambitious small-scale fisheries monitoring initiative to upscale fisheries governance along the coast of Santa Catarina state. The program was initiated by the Rural Development Agency of the State of Santa Catarina (an active representative of BF-EPA Management Council) with technical support from UNIVALI (Universidade do Vale do Itajaí) and financial support from the Ministry of Fisheries and Aquaculture. The main goal was to implement a monitoring program amongst 237 fishing communities comprising 1,500 fishers in 33 coastal cities. The proposal aimed to engage fishers in participatory monitoring of fish harvests, oceanographic parameters, structure and dynamics of a diverse fishing fleet and gears throughout the coastal seascape. However, the project was discontinued in 2011 due to a number of reasons. Firstly, the regional agency CEPSUL (Traducao do CEPSUL esta estranha Cheque no Google se ha exemplos. Minha sugestao seria: CEPSUL (Center for Marine Biodiversity Research and Conservation of the Southern Region) (Southern Region Marine Biodiversity Research and Conservation Center of the Ministry of Environment) and managers of all the MPAs along the coast of Santa Catarina State had limited involvement. Second, fisher organizations avoided the project, as they were not pleased by it. Third, local partnerships and funding were disrupted (Foppa et al. 2011).

Another initiative worth mentioning was the creation of the Fisheries Technical Chamber (FTC) in 2007. In contrast to the former institutional arrangement of issue-specific Working Groups, the FTC mandated on all local and regional-level challenges in small-scale fisheries under the BF-EPA Council umbrella. The creation of this forum was key to linking fishers' grassroots organizations with state bureaucracies. Between 2007 and 2010, the FTC had the direct support of an external consultant/facilitator to co-design and implement a FTC-Action Plan (Rodrigues 2011). The consultant's hybrid position as an autonomous United Nations Environmental Programme consultant and as representative of the BF-EPA staff led to increased participation of fishers in the Council. The FTC-Action Plan included the implementation of capacity building courses on fisheries management, an agenda for the elaboration of a local fishing management instrument called *Fishing Accords*[3] in order to tackle fisheries conflicts, and an agenda for the elaboration of a

[3] Fishing accords are defined in Brazil as '*...the body of specific measures derived from consensual treaties amongst diverse fishing resource users and management agency in a geographically defined area*' (IBAMA IN Nº 29/2002).

Participative Fisheries Management Plan for the BF-EPA. In early 2010, the FTC had been effective in proposing new regulations for the mullet (*Mugil liza*) fishery, a socioeconomically relevant activity in the region, and in mediating conflicts between small-scale fishers and recreational spear-fishers. Despite the fact that the governance system had become more responsive, the FTC Action Plan was poorly implemented. In fact, by 2010 all co-designed Action Plans of the BF-EPA Council had failed because it went beyond the Council's capabilities and/or mandate. The FTC was finally discontinued during a Council regimental reform in late 2010, and fisheries issues were transferred to a new Biodiversity Management Technical Chamber (Fig. 18.2).

The end of the FTC, the discontinuation of the consultancy work to foster the participation of fishers in the Council, and emerging fishing conflicts drove the decline of the fisheries governability in this period (Macedo et al. 2013).

The situation improved in 2011 when fisheries issues assumed importance again and the BF EPA actively collaborated with fishers who were now led by State authorities. Despite tensions between BF-EPA authorities and some fishers from the southern part of the territory, a series of capacity building and assessment workshops were carried out and a preliminary collaborative working agenda was proposed for co-designing a *Participative Fisheries Management Plan* in 2012. This plan, however, was put on hold as it would become a chapter of the EPA Management Plan which was still under design.

Fishers' participation remained low at the Council until mid-2012, when the '*Artisanal Fishers Movement of Santa Catarina Coast*' emerged in the region. A former Council member was particularly influential in this process and led the movement, together with other small-scale fishers. This grassroots movement, frustrated by the severe depletion of the fisheries and transformations in small-scale fisher identities, organized around the ban of industrial fisheries inside the BF-EPA. Although an initiative of approximately only 30 fishers, this bottom-up mobilization has potential in terms of new opportunities for interactions between the social and the governing systems. Fishers' participation in the Council, however, as suggested by one informant, remains one of the main challenges of this governing system:

> *What have we done wrong? We have invested so much in fisheries education* [pt: formação; capacity building]. *But where are the fishers?"* (BF-EPA Management Council member)

Trimble et al. (2014) investigated the reasons behind fisher's non-participation in meetings with government staff, including marine protected area managers, in the southeaster coast of Brazil. They concluded that (i) the timing of the meetings were often not nor were fishers properly invited to the meetings; (ii) the meetings were carried out by government staff and were often biased *i.e.*, not respecting different sources of knowledge or fostering consensus building; (iii) there was a lack of transparency and (iv) no clear objectives, procedures and intended outcomes of meetings contributed to fisher non-participation in such decision-making arenas. Next we will explore the patterns found at BF-EPA, some of which coincide with those listed above.

Fishers' Interaction with the Governing System

Accounting for the challenges and opportunities for fishers' to participate in governance is key to improving governability. However, participation is a costly activity, as it requires time and motivation, and needs to be prioritized. Therefore, in order to enable the participation of fishers, a good match between the governing system and the social and natural systems is required. In the case of the BF-EPA, we identified several mismatches between these systems that are related to the level and quality of participation of small-scale fishers in the Council. We will explore in particular the structural mismatches between the fishery system and the governing system, with a particular focus on contrasting or alternative governing images in interactions between fishers and other actors.

The dynamics of the fishery system and the natural system are closely connected. For example, during the mullet (*Mugil liza*) fisheries (May–July) and the bluefish (*Pomatomus saltatrix)* and drummers (*Micropogonias furnieri*) fisheries thereafter, participation of fishers in governing interactions can be challenging. Likewise, during the summer (Dec–Feb), many fishers work in tourism. Therefore, despite the innovations observed in the Council, meetings and workshops across the year should account for patterns in the dynamics of natural systems (e.g., seasonal migration/availability of main fish resources). However, this governing system often follows bureaucratic and political schedules, which usually falls to a low priority in the fishers' schedule. Alternatively, fishers rely on non-fishers to represent them (*e.g.*, environmental institutions often speak for fishers in Council meetings) or fishers' representatives that do not engage in fishing activities themselves and/or do not properly articulate the interest of small-scale fishers. Interestingly, some of the Council members blame the lack of fishers' participation on their '*passiveness'*, or because they are subject to '*paternalism',* or '*clientelism'*,[4] rooted in historical social relations in the region, as illustrated by the quotations below:

> *In fisheries I believe there is such an apathy… it is historical I think to be dependent on government, on the Fishers' Unions [Colonia de Pesca in Portuguese]. These Unions operate a lot with such a political exchange of favours, with the* defesos [compensation during fishing bans] *more the Fishers' Union. They live upon that pattern; the more people become dependent, the more the Colony receives. Archaic politics but continues to be valid…* (Council member)

> *…people living along the coast in the littoral are very dependent on the cycles of nature… 'There is fish, great we have fish! There is no fish, it is because of God's will'… and thus you live as you can and wait for things to get better. On the one hand it is interesting to learn from these traditional communities, the recovery of the sacred, improved connection to nature and understanding of natural cycles. But there is this apathy. These are not entrepreneurial communities.* (Council member)

[4] Social relations between "patrons" (rich, powerful and influential elites) and "clients" (poorest and powerless) in which the former provides jobs, protection, infrastructure, and other benefits in exchange of votes and various forms of loyalty (Johnson 2010; Basurto et al. 2013).

The boundaries among the diverse fishing modalities are source of another mismatch that has direct consequences for the responsiveness of the governing systems. Fishers' social system is intrinsically diverse. They continuously move through a spectrum of modalities between independent small-scale fisher and hired job in industrial fishing boats (Filardi 2007). This mobility is asymmetrical, however, as they shift from an autonomous production system to an economically dependent employment system. Nonetheless, fishers often make use of this divide strategically. On the one hand, their role permeates their position between that of autonomous small-scale fishers and employed industrial fishers; on the other hand, they emphasize their distinctive position as small-scale fishers in order to position themselves and claim their rights in particular context of internal and external conflicts. Oliveira and Silva (2012) argue that the '*cristalization'* of these two fishing categories in the bureaucratic system is reflected in recent efforts to build an objective juridical-political language for fisheries management in the country.[5]

A third mismatch is related to images of the system-to-be-governed across stakeholders. EPAs are the most heterogeneous category of protected areas in Brazil, comprising a diverse range of stakeholders that are generally characterized by highly asymmetric power relations. Therefore, the way the socio-environmental challenges are problematized and how solutions are proposed will depend on how governing images are shaped and how they interplay in governing interactions. In highly asymmetrical power structures, some governing images tend to prevail over others. The fact that the BF-EPA is named after a flagship species indicates that the governing image for this territory emphasises a very particular set of interactions with the natural system, in contrast to the complexity of the 'statutorily-defined' system-to-be-governed.

This image not only influences the representation of the BF-EPA among local fishers as a territory of the whale but also influences how fishers perceive of themselves in this governing system. Our analysis, as well as those of Bueloni (2012), Gomes (2012), and Palhares (2013), has indicated severe communicative obstacles in the application of the image of the Southern-Right Whale as a denominator for a new territory expected to be co-designed. For instance, Gomes (2012) points out that fishers often relate the BF-EPA to the whale itself or to local NGOs, as explained by one Council member:

> *We perceived a confusion. When they* [fishers] *complained about the 'APA'* [EPA – Environmental Protection Area], *it was more about the Southern-Right Whale Project and about the Southern-Right Whale Institute* [marine conservation Non-Governmental Organizations]*, because the actions carried out by these institutions were more intensive on the beach, particularly with the fishers.* (Council member)

The BF-EPA mandate focused on a single species makes the Southern-Right Whale a key 'agent' in the mainstream governing image, a trend observed in other parts of Latin America as well (Few and Tortorici 2013). When discussing and proposing fisheries regulations, the BF-EPA Council has engaged in statutory statements that presuppose the customary rights of traditional and small-scale fishers, evoking livelihood security and autonomy. Thus, although the problematization of

[5] Brazilian Fisheries Code – Law N° 11.959, June/2009.

socio-environmental challenges at BF-EPA Council meetings goes beyond human-whale interactions, the governing image of whale protection conflicts with fishers' images of small-scale fishing protection.

Therefore, governability is hampered because the governing system misplaces fishers' political ecology and agency patterns. The current governing system presupposes the unnecessary and costly need to adapt local ecological knowledge. This is not simply requiring too much of the fishery social system, but perhaps is also inherently counterproductive. Ultimately, the governing system is about governing humans-in-ecosystems at a defined terrestrial-marine borderline. In other words, the BF-EPAs' territorial governance mandate is much broader than the whale-focused image communicated to all stakeholders through the EPA name. We therefore suggest that when communicating about the BF-EPA, all actors would benefit from the usage of alternative/complimentary images synthesizing broader biogeography/ecosystems – even with absolutely no formal changes in statutory governance mandate.

Finally, the way solutions and opportunities are explored among local fishers and other actors represent another mismatch in the governing system. Formalized and institutionalized interactions carried out under rigid bureaucratic structures hinder fishers' participation, not only because of their limited experience in this realm, but also due to their subordinated position towards other groups. This structural problem is often overlooked or interpreted as being a result of fishers' limited knowledge of formal institutions, as suggested by one of our informants:

> *The fisherman understands very little about institutions* [pt: institucionalidades]*, they seldom understand their own… that the Fishers' Union, the association or the assembly/guild* (key-person of BF-EPA)

It is interesting to see the contradiction emerge from participatory procedures implemented under different images of governing systems. On the one hand, fishers are continuously called upon for improved citizenship and participation through engagement in social learning processes. On the other hand, they are simultaneously pressed to 'learn' how to perform in a bureaucratic institutional arrangement, which does not translate into an immediate increase in decision-making power or even fishing power. In the case of the BF-EPA, we argue that the increasing frustration with the limited results of efforts to build organizational capacity among fishers raises questions about the method of political inclusion through top-down training systems. We are thus pressed to remain critical and cautious of compulsory training schemes that are deliberately bound to institutional building processes for environmental governance.

Final Remarks

Governability of small-scale fisheries is often characterized by highs and lows due to complex social and biophysical features. Small-scale fisheries are embedded in broader economic, political and social processes where power relations play a key role. BF-EPAs are a territorial representation of this heterogeneous socioecological

context where dynamic and emergent processes are highly influenced by multiple factors at different scales. As a result, the up-scaling of small-scale fisheries in marine protected areas is faced with several dilemmas. This case study reveals three key factors influencing fisheries governability in Brazil: mismatches between the social and governing system affecting fishers' political agency (limited participation), institutional instability and leadership.

Limited Participation

Over a decade, the BF-EPA governing system has been transformed and has created new governing interactions through participatory mechanisms. Increased governability of fisheries was enabled by a participative and inclusive step-zero process to designate and activate a BF-EPA Council. This new governing instrument was scaled-up to improve the fit between the fisheries social system and systems-to-be-governed at the EPA territorial level (nine coastal municipalities). Governability thus increased substantially with the collective capacity of actors to elaborate more sophisticated images of problems and opportunities in fisheries. In some cases, this process is reflected in more sustainable use of fisheries such as in the case of Ibiraquera lagoon. Nevertheless, the potential role of BF-EPA in fostering sustainable territorial development still lags behind expectations, and many informants argued that things would only improve through the design of the long-awaited participatory EPA Management Plan.

The limited participation of small-scale fishers, however, reflects power asymmetries related to various mismatches outlined in governing interactions held at the interface between social and governing systems. Also, even though fisheries has been an important theme recurrently dealt with by the Council, it has often been regarded as a secondary issue because of competing demands to implement a very broad territorial governance mandate that focuses on whale conservation. Substantial efforts to increase fishers' participation were placed on formal training and inclusion in the EPA Management Council structure. However, due to the interplay of the outlined meta-order (image) mismatches, small-scale fishers showed low level of responsiveness. Limited participation is also often associated with perceptions of fishers' behaviour (*e.g.*, passiveness or clientelism) or misbehaviour (*e.g.*, predominance of corrupt or self-interested leaders).

The economic permeability between small-scale and industrial fisheries further illustrates fishers' agency patterns. While such a distinction is necessary for small-scale fishers to be empowered in such participatory forums, they have somehow to balance their priorities between a crystallized artisanal fisher category or stay as a marginalized category with more economic flexibility. We have thus also noticed an increased tension emerged from the polarization between industrial vs small-scale fishers due to the institutionalization of these two categories in the Brazilian fisheries legislation.

We have thus described several symptoms partly associated with a wicked problem. This problem can be framed as follows: while the identity of the fisheries social system reflects the dynamics of the natural system in order to prosper and be viable, the governing system frequently assumes its own identity and governmentality over the fisheries social system, to which formalism and bureaucratic dynamics is unnatural. Small-scale fisheries, on the other hand, presuppose stability in natural systems provisions and dynamics, and a rich and diverse set of communicative typologies mirroring the natural system. We suggest that improved governability should emerge from alternative ways of dealing with this wicked problem of mismatch in systems' identities. However, for this to happen, mutual learning and adaptation of both fishers' political ecology and/or governing system is necessary. We do not intend to disregard the important role of a formal learning and capacity building process, nor the very significant initiatives undertaken by BF-EPA actors. Nonetheless, we contend that the learning process must emerge spontaneously from the interactions between actors of both governing and social systems. We suggest that the required learning, representational, and political activation patterns shall emerge from gradual, experiential, and predominantly informal and reflexive interactions between actors with agency in the interface between these systems.

Institutional Instability

Power asymmetries in the governing system influence not only the level of participation of fishers but also fisheries governability. These asymmetries result in an unstable governing system and limitations in institutional capacities.

Despite increased efforts at inclusiveness and innovation, Brazil is a recent democracy characterized by historical legacies of inequality and dependency, with limited institutional capacity and social organizations. We have shown that BF-EPA actors have been actively trying to identify and transform an untenable governing system in which Management Plans in protected areas have been criticized for their overly technical, diagnostic/normative-oriented, top-down and ultimately inoperative nature. In the last 10 years protected areas have been downgraded, downsized, and reclassified in Brazil (Bernard et al. 2014). As a result stakeholders deal with complex interrelated governability challenges or wicked problems related to limited institutional capacities and strong influences from informal and formal politics.

During the first operational phase of the BF-EPA Council (2006–2009), other subsidiary governing instruments and interactions were activated to improve governability. For example, the FTC was created and designed to match the participation and learning demands of fisheries governing systems. However, the subsequent shutting down of the FTC in 2010, despite its improving performance, combined with the failure to implement the participatory Action Plan in subsequent years, indicates serious limitations to governability. Since 2010, progress in fisheries governability in the BF-EPA has declined due to the breakdown of formal initiatives (second order interactions *sensu* Kooiman et al. 2005) concerning fishing issues

(*e.g.,* fishing accords and participative fisheries management plan). It was only in 2012 that a strategic re-orientation took place in the BF-EPA, with full acknowledgement that fishing issues should now be nested as a special chapter in the participatory Management Plan. Institutional instabilities and consequent strategic adaptations in governing MPAs has had a direct effect on fisheries governability. Thus, it is clear that the challenges in fisheries governability are not only an outcome of poor BF-EPA performance but also due to the external influences of national and regional politics.

Leadership

While power relations have affected levels of participation and institutional functioning, key actors enjoying particular attributes and resources have helped enable improvements in governing interactions. Such actors have mobilized their resources in order to facilitate social interactions, knowledge exchange and production, and conflict resolution. Moreover, they have the ability to bridge different institutional arrangements and reconcile different perceptions. A few actors have played this role at different moments, fostering the development of the BF-EPA Council and the engagement of small-scale fishers in the process. The shift of the BF-EPA from a consultative to deliberative body, a crucial transformative process desired by most Council members, was triggered by the BF-EPA chief in charge and supported by other actors such as researchers, environmental organizations and other government authorities.

The involvement of small-scale fishers in EPA governance was enabled by an external consultant. His hybrid institutional background enabled him to facilitate interactions between hierarchical and self-governing modes of governance.

Key actors involved with the BF-EPA Management Council have been able to seek new opportunities through influence of individuals (leadership) and new institutional (formal and informal) mechanisms. Outcomes, however, have taken different forms at different times. Leadership has been key to minimizing power asymmetries in participatory initiatives, and in seeking new opportunities for institutions to upscale fisheries governability to the territorial level under unstable institutional conditions.

In sum, the BF-EPA case illustrates the complexity of small-scale fisheries in coastal-marine governance processes in Brazil. While BF-EPA actors have yet to achieve desired outcomes, they have done a great job in opening up a window of opportunity for broad-level governing systems reform. While many actors are still frustrated and some have given up along the way, the formulation of a collaborative and adaptive Management Plan for an entire coastal-marine territory is an achievement in itself. Therefore, fisheries governability must be seen as a continuous learning process mediated by changes in structure, values, and interactions. Despite the several challenges faced to date, the lessons learnt in the process of developing the BF-EPA Council so far provide a positive outlook for the future. We thus hope

the ideas outlined in this chapter contribute to the hypothesis that they are now inspiring larger transformative systems change, thus responsible for what may (or hopefully) be their most fruitful journey for scaling-up coastal-marine governability in Brazil.

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