ACTORS AND NETWORKS IN THE DEVELOPMENT OF ENVIRONMENTAL TERRITORIES: THE CASE OF THE RIGHT WHALE ENVIRONMENTAL PROTECTION AREA

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1 - Introduction

Until the end of the 1980s, the Brazilian environmentalist movement and related environmental management policies placed emphasis on the superiority of nature over humanity. The creation of protected natural spaces was already one of the main environmental policy strategies, based on a *biogeographical* model of "islands of diversity"[i]. During this period, most protected spaces were created under a "total protection" regime, where no human permanence of any kind was accepted (MEDEIROS, 2006). With the emergence of the concept of sustainable development that has gained prominence since Rio 92, discussions on the uses of protected natural spaces have led to changes in the strategies for creating new areas. Thus, the Brazilian government developed different categories of protected spaces, more permeable to human actions.

In 2000, the implementation of the SNUC - National System of Conservation Units - consolidated the national policy for managing protected natural spaces, or Conservation Units (CUs). SNUC organized and vided a framework for some of the most environmentally valuable areas in Brazil and set out criteria and rules for its management. In the last SNUC assessment, conducted by the Ministry of the Environment (MMA, 2010), 760 federal, state and municipal CUs were listed, encompassing approximately 17.5% of the national territory. If the targets accepted by the Brazilian Government at the UN COP 15 (Conference of the Parties) on Climate Change are met by 2020, this proportion will be equivalent to approximately 21% of the national territory.

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Despite the advances within the academic debate on this topic[ii], most publications in Brazil still show a bias toward an applied technical approach (MARTINS, 2012b). This article was motivated by the lack of theoretical analysis on the situation of human populations in protected spaces and the impacts of the policies for the creation of CUs. It analyzes the interactions between governmental agencies, the business sector, the local populations and nature within a coastal/marine CU, discussing the mechanisms and social processes that foster these relations and organize environmentally protected spaces.

We argue that the social transformations driven by conflict situations within CUs may not lead to significant territorial changes. These are the result of spatial transformation processes, involving alterations in the patterns of power relations that affect a specific spatial grid. The aim of this article is to understand what types of inter-relations are necessary for territorial transformation that lead to sustainable projects, as well as to understand how these inter-relations come about. In order to do so, we have analyzed two conflict situations - a "fishing" and "port" conflict, related to the establishment of the Southern Right Whale Environmental Protection Area (APABF), situated in the center-south coast of the Brazilian state of Santa Catarina. These two cases involve the management of nature and of players within various organizational configurations, such as national and supranational government spheres, as well as local actors.

The research was conducted between 2005 and 2012 and encompassed three qualitative procedures: documental analysis, interviews and participatory observation. This article is divided in three parts, in addition to the introduction: 1) a description of the theoretical-methodological framework; 2) an analysis of the SNUC and the APABF, taking into account two conflicts associated to economic growth and environmental conservation in the coastal areas of the center-south of Santa Catarina; and 3) the conclusion, synthetizing the results and returning to the relationship between the different forms of social interaction and the promotion of territorial changes.

2 - Actors, networks and territories: the environmental field in perspective

Different approaches were deployed to understand the complexity of processes, actors, spaces and the scales of actions in the environmental field. They have different epistemic origins and vary in the way they interpret nature and society, which can be understood in a number of ways, ranging from two opposing and irreconcilable systems to being part of a large living system. Nevertheless, all these approaches start by supposing that nature and society are separate elements. The differences in perspective lie on the types of relationships established between them. A different view of the relations between environment and society is provided by the Actor Network Theory (ANT) that is gaining ground in the social sciences as one of the most suitable theoretical models for building realistic and constructive approaches to environmental issues (HANNINGAN, 2009). In this approach, it is not possible to separate the social from the natural spheres, nor sociological from scientific perspectives, given that both the environment and society are concepts created by humans and human beings are themselves hybrid phenomena of

nature and culture. The natural and social sciences address equivalent, correlated and interdependent problems. Thus, there is no difference in their object.

In ANT, the "social" is seen as an unstable and ephemeral phenomenon formed by relations between actors that are not inherently social. Humans, other animals, plants, fungi and inanimate objects account for almost all beings in our planet and it is the relationships established between them that make up the social world and frame the different realities. Like the "social", we are also *hybrid*[iii], half humans and half primates, sometimes subjects and sometimes objects, part scientists and part political beings, precariously integrated in the midst of scientific institutions, half philosophers, half engineers. The "social" is a human invention, as is the idea that society is only made up of human actors (LATOUR, 2004/2008a).

Thus, ANT focuses on the analysis of the network of relations between human and non-human actors, taken as key elements in the organization of living spaces. Despite the multiple meanings of the concept of *network*, it is worth pointing out that this approach does not involve the meaning of network as coined by Castells (2000). He describes a new form of organizing society that is more interconnected and fluid, where the internet and microelectronics are the main elements responsible for driving collective relationship strategies. In ANT, networks are, above all, a methodological research tool deployed to describe the way in which the collectivities and events studied are organized and inter--relate with each other (LATOUR, 2008a, b).

The notion of performance is central to this approach because it highlights the idea that the events and collectivities studied are created by, and are the result of, these practices. Instead of having a structural and immutable nature, these collectivities are taken to be fluid processes based on the actions and performance of different actors. It is said that human and non-human actors operate together to produce particular effects (LAW; SINGLETON, 2000). From this point of view, CUs can be understood as the products and producers of social practices. They are not only legal instruments promoted by the government to ensure environmental protection. Their materiality produces effects that are the result of the links and interactions established through them. They alter pre-existing realities and influence those that subsequently emerge.

Within the social sciences, CUs have become increasingly important, above all, because they are linked to conflicts generated by the use of space. Some studies argue that these conflicts are inherent to any societal system and that they work as drivers of social changes[iv] (HIRSCHMANN, 1996; FERREIRA 1999, 2005). This approach provides an alternative vision of the relations between nature and culture in protected spaces, because it allows for the questioning of the supremacy and efficiency of "traditional populations" in protecting nature. It questions the idea that traditional populations are "natural" allies of biological diversity and that their practices are always aligned and in synchrony with nature (DIEGUES, 1994; 1999). It also suggests that the focus of the analysis is expanded to include all the populations influenced either directly or indirectly by the creation of CUs (CREADO *et al.*, 2008; MENDES; FERREIRA, 2009; FERREIRA, 2004; 2005; MARTINS, 2012a). In this way, the notion of conflict represents an analytical alternative

that reveals the heterogeneity of interests, values, agents and ways of appropriating spaces that are in place in different collective groups.

Conflict theory is also linked to the concept of *territory*. It allows for an understanding of both the cultural and the material complexities inherent in space. It serves as a key to analysis, highlighting the struggle between social groups with different ways of appropriating space (ACSELRAD, 2004; ZHOURI; LASCHEFSKI, 2010; TORRE *et al.*, 2010a, b). Despite the various meanings of territory, this article focuses on its political nature, highlighting the asymmetry in power relations and the influence of certain actors and institutions in spatial organization. According to Souza (1995), frequent overlaps and conceptual confusion between the notions of power, domination, violence and authoritarianism are responsible for the traditional analytical mistakes that have obscured structural differences between the concepts of "power", "politics" and "territory". Territory is conceived as the meeting of the multiple relationships of power, from the material power inherent in political and economic relations to the symbolic power of cultural relations.

When Gottman (1973) traces the trajectory of the concept of territory, he focuses on the fact that the division of space has always signified the organization of a group's internal and external relationships. Gottman's analysis reveals the successive resignification of this concept and how it has changed the way in which space, when converted into territory, continues to serve both as a "shelter" and as a "springboard for opportunities" (p. 14). From these definitions, we presuppose a conception of a hybrid geographical space that is, at the same time, cultural and natural, scientific and technical, traditional and modern, as well as the product and the producer of material and immaterial relations that change in space and time.

Thus, territory is also relational (GOTTMAN, 1973; RAFFESTIN, 1993; SOUZA, 1995; HAESBAERT, 2009) and this is how CUs are understood as environmental territories. That is, as spaces appropriated by the State in order to regulate the use of nature. They can act both as shelter and as an opportunity for local populations to benefit from environmental conservation. Thus, CUs become spaces for new forms of material and symbolic appropriation. Material appropriation takes place when the populations involved obtain material gains. Symbolic appropriation occurs through sociocultural identification with the space and it is expressed in different forms, from the self-identification of local groups to "traditional" identity[v] and the appropriation by entrepreneurs and public institutions that benefit from a CU's "politically correct image". Thus, the territory emerges as the embodiment of a plurality of interests, projects, ways of life and power relations that, through continuous disputes and struggles, controls a specific space.

3 - The National System of Conservation Units (SNUC) and the Southern Right Whale APA: The State and populations involved in the process of building environmental territories.

In Brazil, SNUC ushers in the management of territorial spaces of significant environmental interest. This system organized and integrated the normative apparatus regulating CUs that had previously been governed by different legal instruments in the

various governmental spheres. In addition, SNUC set out the criteria and guidelines for the creation of new areas (BRASIL, 2002). It also institutionalized social organization tools with a view to involving the population in the management of CUs and to minimizing conflicts. Thus, Management Councils are a legal requisition for the creation of all Brazilian CUs.

If, on the one hand, SNUC brought important advantages in terms of nature protection, strengthening the potential of management and control by the State, on the other, it aggravated territorial conflicts. Thus, new and more restrictive rules and mechanisms for controlling space came into force in spaces traditionally used by the great majority of local communities which, in general, were not concerned with the environment. In many cases these regulations were extremely coercive. Some protection categories provided for in the SNUC established that resident populations needed to be relocated outside protected areas. Despite the fact that this system was set up to mitigate or minimize longstanding struggles and spatial conflicts, as a policy for creating CUs, it intensified and increased the tensions between the State and some sectors of civil society nationwide.

Among the twelve management categories set out in the SNUC, APAs [Environmental Protection Areas] are the most permeable to human activities. From the legal point of view, they provide for the lowest level of environmental protection and spatial control. CUs classed as APAs can consist of both public and private lands and there is no need for expropriation. Indeed, APAs allow for a certain level of urban agglomeration and trade, as well as industrial ventures of low socio-environmental impact, as long as they are in accordance with the objectives that led to the creation of that particular CU.

Nevertheless, even accepting a number of economic and leisure activities, the degree of restrictions imposed is sufficient to alter the local socio-economic dynamics of the areas not regulated by SNUC, and because it is possible to practice a wide range of human activities within APAs, they are frequently the *locus* of tensions and conflicts.

3.1 The Southern Right Whale APA: the conflict between fishing and environmental conservation

The Southern Right Whale Environmental Protection Area [APABF] encompasses both land and water territories in nine coastal municipalities in the center-south region of the Brazilian state of Santa Catarina (MAP 1). This region is known for its beautiful beaches and lagoon systems and it is an area of intense tourist activities. The region's bays and inlets are the most important reproductive area for southern right whales (*Eubalaena australis*) in Brazil (PALAZZO *et al.,* 2007). In addition to pressure from property speculation and tourism, driven by the beauty of its beaches, the region is also one of the most productive fishing areas in Brazil.

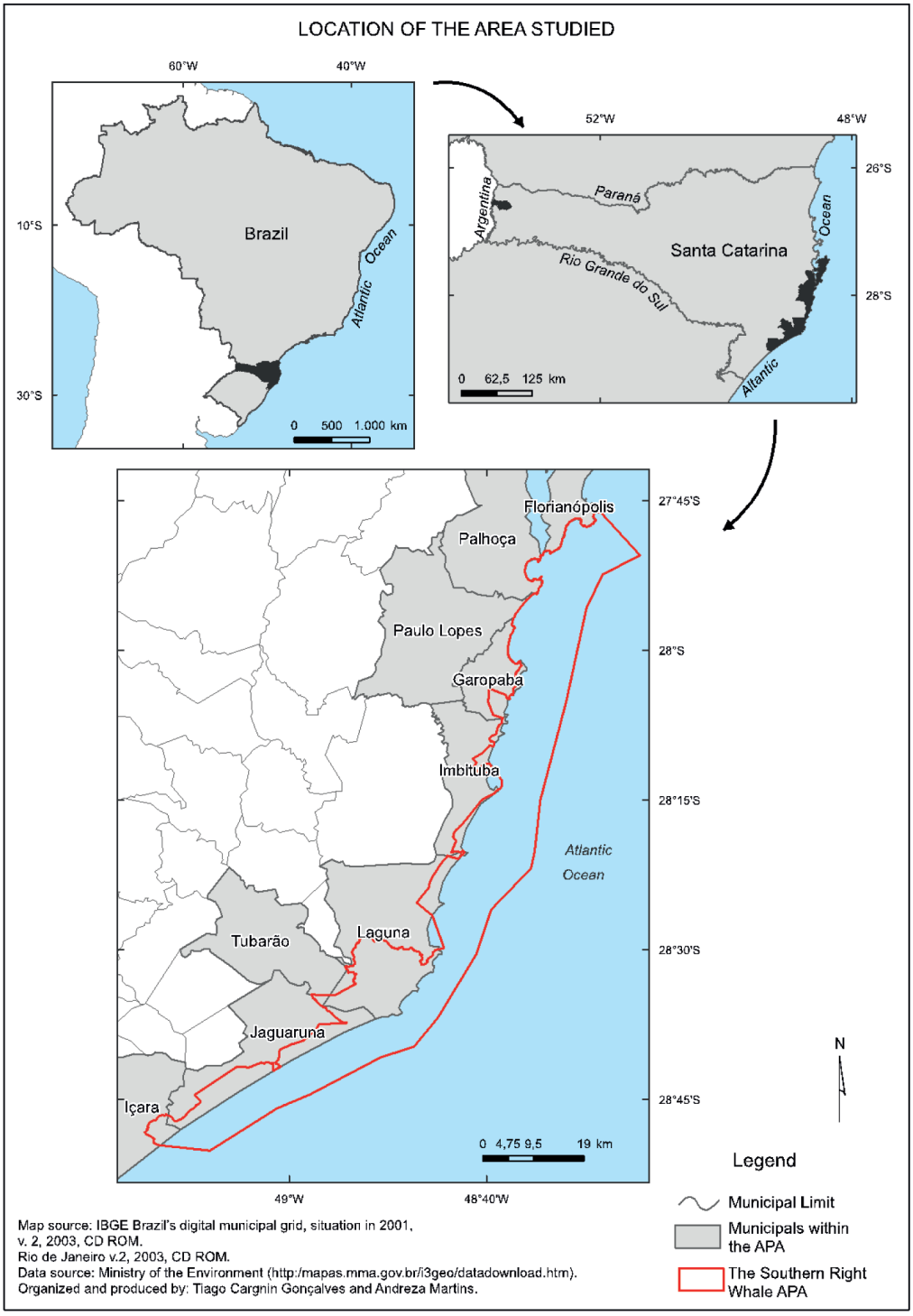
The state of Santa Catarina is the most important fishing center in Brazil, responsible for 25% of all national fishing and approximately 80% of the frozen fish consumed in the country. Much of the fishing takes place on the APABF coast (SEPESCA, 2010).

Santa Catarina has the largest industrial fishing fleet in Brazil. Between 1990 and 2009, its industrial fleet doubled the landed fish production from 64,500,937t to

136,189,336t (UNIVALI/CTTMar, 2010). According to the former president of the largest employers association, the Ship Owners and Fishing Industry Association of Itajaí and Region (SINDIPI), today, the total industrial fleet of Santa Catarina is made up of approximately six hundred boats, encompassing 10 fishing categories and employing approximately 7000 people. In addition to this fleet, there are 55 fish processing plants. According to SINDIPI, they employ approximately 50,000 direct and indirect workers. The intense activities of industrial fisheries have had a significant impact on the variability and abundance of the marine fauna. It has also affected the development of the local artisanal fishing sector. This region has traditionally been populated by small artisanal fishing communities and there is still an expressive number of families that survive on artisanal fishing (MARTINS et al., 2015). This means that the local situation is one of intense competition for fishing resources and specific and localized fishing areas.

Although the pressure from industrial fishing on the APABF as a whole is intense and continuous, conflicts in relation to artisanal fishing are restricted to particular locations and certain types of resources affecting three categories of fishing: i) trawl fishing; ii) capturing of live bait for tuna fishing and; iii) mullet fishing. Each of these categories reproduces a particular *conflict structure* within the more general conflict between artisanal and industrial fishing. These *conflict structures* consist of a particular set of interactions involving actors in the industrial and artisanal fishing sectors, the government bodies responsible for fisheries management at the local and national level, as well as actors representing the affected communities.

Map 1. Site of the Southern Right Whale APA



The analysis of these conflicts reveals a multi-faceted and heterogeneous social field made up, on the whole, of six key human actors and two non-human actors, namely: 1) human actors - artisanal fishing sector, industrial fishing sector, the Ministry of the Environment (MMA), the Chico Mendes Institute of Biodiversity Protection (ICMBio), the APABF's administration (the local ICMBio representatives) and the Ministry of Fishing and Aquiculture (MPA). To a higher or a lower extent, these actors are sometimes in conflict with one another and sometimes in cooperation, according to the situation and the interests at hand; 2) non-human actors - whales and fish - stand out due to their undeniable influence in the territorial organization of APABF, as well as in the configuration and the outcomes of the fishing conflicts here analyzed.

These disputes are associated to two main factors: the growth in industrial fishing and the fact that spatial planning remains inadequate for fishing activities. The first factor represents the increase in industrial fishing in the region and asymmetries in terms of access to fishing resources. When the industrial sector began to compete for resources, stocks were abruptly affected. The smaller the amount of fish in the sea, the worse it is for the artisanal sector, since it has fewer economic resources and more difficulty in capturing fish, thus the greater the tensions between all actors. In the actor chain within this sector, the rationale is to maximize fishing efforts to expand capture and increase profits.

As fishing resources are moveable and have no specific location, the Brazilian government subdivided its maritime territory into two large fishing regions: north-northeast and south-southeast. Thus, the whole of the Brazilian industrial fleet registered in the South and Southeastern states are granted fishing rights within this maritime area that goes from the extreme north of the State of Espírito Santo to Chuí, the southern limit of the southernmost state, the State of Rio Grande do Sul. In other words, the entire south--southeastern industrial fleet has permission to fish within the APABF and this occurs during certain periods, according to the availability of target species for specific fleets.

The second factor relates to the APABF fishing spatial planning which is still "unregulated". Most of the interviewees believe that if spatial planning was effectively implemented, it would reduce local disputes with industrial fisheries because there would be clear rules and criteria regulating this activity within the CU. However, reality is more complex than it seems and the artisanal fishermen themselves are in part responsible for the absence of spatial planning within the APABF.

According to a number of authors who have studied artisanal fishing in the region, the artisanal fishing sector is not unified and does not have a single voice (ADRIANO, 2011; FILARDI, 2007). Interactions between the fishermen of the municipalities of Garopaba, Imbituba and Laguna (the main municipalities in the APABF) are extremely hierarchized and organized according to power relations, where family ties, economic power, intergenerational knowledge (the older members are called "fishing masters") and party political associations interfere at different levels and to different degrees in the collective organization of fishermen, according to specific situations (ADRIANO, 2011).

The more detailed and closer the analysis, the more subdivisions, disputes and divergences are found. Indeed, sometimes there are even new and often unexpected alliances and coalitions between groups. An important example is the smaller specific

agreements reached between some artisanal fishermen and the tuna fishing crew, where the former provide boat masters information as to when sardine and anchovy schools are near the beach so that the industrial boats can capture and use them as live bait for fishing tuna in the high seas. In return, they receive fuel for their boats and certain amounts of tuna they can sell to local restaurants. This is a common occurrence in the history of the conflicts between traditional and artisanal fishing. The industrial fisheries capture live bait and thus control fishing species in the chain. That is, species that also serve as food for other species, coveted by the artisanal fishermen.

According to Filardi (2007), cases such as these, where fishermen go against the collective demands of their class, are neither the exception nor the rule. They occur frequently and characterize the artisanal fishing sector in the region. The actor-network theory helps us to address this complex, multi-faceted dynamics and to understand and accept that certain social structures cannot and should not be understood within a prior or static analytical framework that presupposes the positions of actors within preconceived, theoretical organization structures. The example above underlines the existence of sporadic agreements between the industrial tuna fisheries and artisanal fishermen. It also reveals that although there are disputes between these two fishing segments, it is not possible to consider the subgroups that make up the artisanal fishing sector as stable, homogeneous and coherent. Indeed, it may be extremely difficult, or even impossible for APABF staff to conceive harmonized fishing spatial planning to meet the needs of the artisanal fishermen in the APABF, given the diversity of fishing spaces and capture methods and the resulting divergences among the artisanal fishermen themselves.

Another particularity of these conflicts are the different types of relations established between both segments (industrial and artisanal) and governmental actors. Here, the Brazilian State has been highly criticized by the fishing sector (artisanal and industrial) for its inefficient management and lack of political and institutional organization. Until October 2015, fishing in Brazil was regulated by agreements between two ministries with contradictory objectives: The Ministry of the Environment (MMA) and the Ministry of Fishing and Aquiculture. Each conducting their activities based on different political and economic strategies. The Ministry of Fishing and Aquiculture has developmentist objectives and was established to promote and stimulate the growth of the productive fishing sector. Whereas the MMA follows predominantly preservationist and conservationist strategies (MARTINS, 2012; MARTINS et al., 2015), resulting in distinct and often conflicting practices that make it difficult and sometimes obstruct the management of fisheries and fishing resources in Brazil.

The management system within the APABF is even more complex, because it is directly managed by ICMBio, an independent body under MMA's control, whose role includes managing all of Brazil's federal CUs. The Ministry of the Environment is subdivided into the ICMBio and IBAMA (Brazilian Institute for Environmental and Renewable Natural Resources) In theory, it is the APABF that manages the space and its fishing resources. However, at the national level, until 2015, fishing management was jointly carried out by the Ministry of Fishing and the MMA. Within APABF, this resulted in regulations and deliberations originating from different governmental bodies and

administrative scales that were frequently controversial.

Interaction analysis allowed for the identification of three main points which, in addition to the heterogeneity of the artisanal fishing sector and the power asymmetries between this and the industrial fishing sector, helped to understand the main obstacles to spatial planning in the area. The first refers to the lack of interaction between the APABF technical staff and the industrial fishing sector. This can be seen from the fact that the staff were not very committed to establishing a dialogue with the industrial fishing sector, except through indirect contacts (official documents or telephone calls). The second relates to the management efforts associated to fishing and resources, exclusively for the artisanal fishing sector, in order to provide them with training and political empowerment, as well as supporting the demands of some artisanal fishing groups. Between 2005 and 2010, almost all the actions of the APA staff related to fishing, focused on three interconnected and superimposed action fronts geared towards the political empowerment of fishermen and the improvement in the conditions of artisanal fishing practices.

The third "obstacle" to the APABF fisheries spatial planning relates to management incoherence and the perceived mistrust in the local institutions responsible for environmental management. It is important to highlight two factors: 1) the overlap of responsibilities and the divergence of interests between the political institutions responsible for managing the CU (ICMBio and the MPA) and the state environmental body, especially in relation to the regulation of APABF's space. This has resulted in administrative mistakes and power disputes between these institutions, disrupting processes and often blocking licensing applications and spatial regulation; 2) the inability of the local management team to implement important actions agreed with the artisanal fishermen, given the bureaucratic interferences of other federal administrative spheres. This has affected the credibility of this institution in the region.

Nuijten (1998) examines in detail the characteristics of the Mexican State bureaucracy and how it affects the development of locally-based state programs, describing a similar situation to the one analyzed here. The popular conception of the formation of a "State" as an entity with authority, that controls everything, is central for bureaucracy to function as a "hope generating machine". In as much as it gives the false impression that all projects are possible, that cases never close and that things will be different from "now on", the bureaucratic machine generates happiness and expectations, but also produces fears and frustration, instead of rationality and coherence. In this article, we highlight that government officials, to a certain degree, have been coopted by the bureaucratic mechanism of "hope generation".

This was the case with some APABF staff who were initially seduced by the possibility of changing the model of political organization and the fishing spatial management set out by the legal instruments and rules put in place with the establishment of the CU. These officials became involved with the demands and projects of the artisanal fishing sector and expected to use their institutional knowhow to meet local demands. With time, they were confronted with a number of obstacles both when they attempted to push locally developed agreements through the administrative federal spheres, and when they sought to build alliances between local social sectors with diverging interests. Thus, the

staff themselves were influenced by the idea of a State that can do everything. However, their inability to implement some of the locally established agreements resulted in a lack of trust and a loss of credibility.

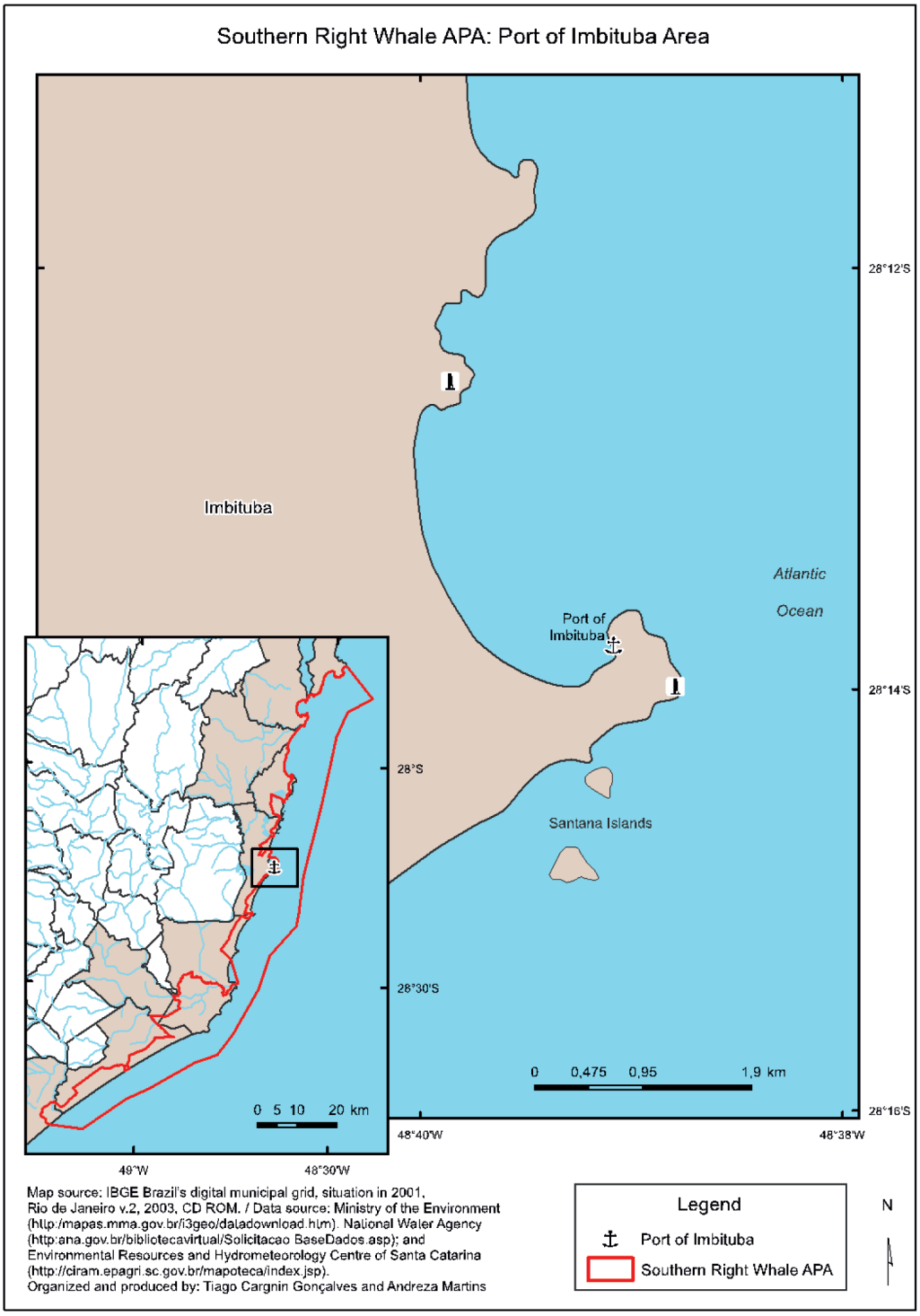
3.2 - A port, many problems: cooperation in perspective.

The "port" conflict addressed a localized situation that arose from an embargo by APABF of civil infrastructure works for repairing the piers and expanding mooring berths in the Port of Imbituba (Map 2). The embargo was issued in August 2009, when a "piling" machine produced large amounts of subaquatic noise. According to Pallazzo *et al.* (2007), Imbituba Harbor is situated at the "heart" of the most important southern right whale reproductive area in Brazil. Although not within the APABF, the harbor is surrounded by the CU areas, having direct influence in this zone, where adults whales and their offspring are frequently observed.

According to the APABF management, prior to the start of the works, port expansion and modernization projects needed to be analyzed by ICMBio to assess whether they would affect the safety of the whales that frequent these waters. The Imbituba mayor, however, claimed that this venture met all administrative recommendations, including those from the State of Santa Catarina's Environmental Foundation (FATMA), the state environmental body responsible for licensing the works. A superficial look at this situation suggests that this conflict involved two very clear interests: the economic development of the region, achieved by boosting the port's activities, and the conservation of southern right whales. From this point of view, the conflicting actors are represented by the port sector and the environmental sector, respectively. However, a more in-depth analysis revealed two important factors: i) the central motives of the dispute were not exactly the tension between development and conservation and; ii) environmental and developmentist sectors did not form homogeneous and cohesive groups. There are internal divergences which, if not taken into account, can undermine the successful outcome of local projects.

With regard to the reasons for this situation, it was observed that the conflict was not the result of the struggle between development and conservation, rather it was associated to power disputes between the state and federal environmental bodies (FATMA and ICMBio, respectively). Tensions between these two institutions were already known at APABF. A recurring problem had to do with the overlapping of administrative remits and the low level of legitimacy in which FATMA[vi] was held by the local population. According to the APABF director, her team had been asked by the residents of the region to address environmental problems outside the CU's area. At the root of the problem was the fact that the population did not know what was APABF/ICMBio's responsibility and what was FATMA's. In the case of the Port conflicts, FATMA denied ICMBio access to the environmental licensing process, arguing that this did not fall within their remit.

Map 2. Imbituba Port Location



Both the APABF director and the developer responsible for carrying out the works in the port remember that, before the embargo, an amicable agreement was put in place to conduct the monitoring of the whales' movements in the area. That is, both sides were willing to resolve the situation without resorting to conflict. However, in the meantime, the CU's director was pressured by the Federal Public Prosecutor's Office (MPF) to embargo the works. Unless the embargo was imposed, the organization could be legally liable for any harm caused to the whales. At first, APABF issued the embargo and all the port works stopped. There was an opportunity to establish communication with the actors in the port sector. In addition to preventing direct confrontation - a dispute the APABF director believed they could not win - communication led the director to adopt a negotiation strategy that later proved to be the right decision.

At the federal level, the director negotiated with the MPF and the higher environmental bodies to maintain the embargo only on the portion of the works that most acutely affected southern right whales. At the local level, she managed to get the commitment of the port sector that there would be no redundancies until negotiations were concluded and the embargo lifted. The embargo lasted forty days, the time required to reach an agreement between the parties. After many meetings and political coordination and dialogues to bring the opposing parties closer together, the direct network of actors involved in the conflict were finally organized at two levels: a) the federal level, MMA, IBAMA, ICMBio and the National Centre for Research and Conservation of Aquatic Mammals (CMA/ICMBio) and; b) at the local level, APABF, the municipality of Imbituba, CIA Docas (the company managing the Port), Santos Brasil (the company responsible for carrying out the works in the port) and the Right Whale Project (PBF).

The analytical decision to present actors organized in different operational levels was based on the methodology proposed by ANT, in that it followed the flow of actors in the field. The aim was to reveal the interactions between both these complex spaces (the local and the federal spheres), that are frequently in competition, in order to interpret the conflict in light of the relations established between actors and not through a preconceived analysis based on the dichotomy between development and conservation.

Finally, the short but intensive negotiation process resulted in two structural agreements whose objectives were to ensure the continuity of this and other works in the Port of Imbituba: i) the implementation of a plan for monitoring right whales in port areas, to be carried out by PBF and funded by Santos Brasil; ii) Santos Brasil's commitment to develop studies and deploy boring techniques in the marine subsoil with lower environmental impact.

The agreements were implemented and the whale monitoring program was incorporated into the timeframe of the works which are still ongoing. With regard to the second agreement, the company adopted a mechanism for minimizing the noise impacts of the piling machines that, in addition to minimizing subaquatic noise, improved the efficiency of the equipment and, consequently, reduced the costs of the operation. This new, more environmentally "sustainable" technology is now being replicated by the company in other ports across Brazil and presented as an innovation in seminars and international congresses geared toward the port sector.

Among the subjective consequences of the conflict, it is important to highlight the increased legitimacy of the work conducted by the APABF team and the improvement of this agency's image both at the local level, with the business sector, the municipal government and the population in general, and at other levels - its improved reputation with state and government bodies. With regard to material returns, we stress the transformation of the port space, in face of the introduction of efficient technical interventions proposed in order to adapt economic growth to environmental demands, as well as the alliances established between the public bodies.

4 - Final considerations

If on the surface, the fishing conflict can be interpreted as the driver to establish alliances between artisanal fishermen and APABF staff, thus promoting social changes, a more in-depth analysis revealed that this alliance was not enough to ensure territorial transformation. Our research showed a more complex and multi-faceted scenario, consisting not only of the artisanal and industrial fishing sectors, but of a number of government actors, responsible for the management of fishing policies. By following these actors, it was possible to identify two distinct and interactive networks: the first brings together actors and territorial projects with the aim of achieving environmental conservation; the second has the main objective of developing the fishing sector as a whole.

Within this context, actor-network concepts enabled us to understand that the actors involved are not fixed or stable and are able to move between networks without causing their destabilization. APABF officials have been faithful to the conservation objectives of the CU, mainly driven by the conservation of the southern right whales and their environment. Indeed, the robust network established to protect these animals impelled the creation of the CU and in the wake of this process, facilitated the implementation of a number of projects involving artisanal fishermen, among others. Some of these fishermen, however, have supported APABF's conservationist project, but only as far as they believe they benefit from doing so. Although artisanal fishermen can move between the conservationist and developmentist networks, the networks themselves remain relatively stable in this process, given that these also involve other actors. For example, the whales, fish, the industrial fishing sector and different segments of the population.

Despite the fact that these networks remain relatively stable, the cases analyzed here reveal the establishment of micro-localized cooperative agreements that have improved the political organization of fishermen, but have not been sufficient to meet their demands. Even if some groups have become empowered through this process, benefits have not resulted in concrete territorial changes: power relations in this space have remained practically the same. At the local level, there were few changes in the material situation of fishermen: power relation patterns remain unchanged, fishing stocks continue to dwindle, the area's fishing spatial planning has not advanced and the prospects for artisanal fishing have not improved.

The way in which the APABF team dealt with the conflict between the Imbituba Port and ICMBio suggests a change in the operational behavior of APABF staff in

addressing "problem" situations. In this case, the APABF coordinator was successful in local negotiations with all the actors involved in the dispute. Thus, she managed to take to the Federal Government in Brasilia proposals that had been agreed in advance by all parties. In this way, the success of the negotiations between the representatives of the port sector and the APABF team resulted in concrete spatial changes, positively affecting the way in which the works at the Imbituba port were executed. The adoption of less impacting technologies for boring the marine subsoil and the implementation of a permanent southern right whale monitoring program in the port areas are clear material evidence of this. Furthermore, the relations established between APABF staff, ICMBio, the port sector and Imbituba municipality opened the way for the analysis, by the CU management team, of subsequent expansion stages of the Imbituba Port. Consequently, there is a new territorial context geared to minimizing the environmental impact of port activities that have been experiencing dynamic growth in the region.

Notes

i The 1980s saw the return to Brazil of some nationals who had been politically exiled because of the military dictatorship. They were influenced by the international debates on the environment and the publication, in 1972, of studies pointing to the exhaustion of natural resources. This was the political scenario that led to the emergence of environmentalism in Brazil (VIOLA, 1996).

ii For further information on the debate polarizing researchers on the presence or otherwise of human populations within CUs see Balée (1989), Gòmes-Pompa and Kaus (1992), Diegues (1994, 1995, 1999, 2004), Olmos et al (2001) and Dourojeanni (2001).

iii The hybridity concept refers to a new way of interpreting or describing the world, "connected both to the nature of things and to the social context without, however, being reduced to either one thing or the other" (LATOUR, 2008B, p. 11)

iv For a general view of conflict theory applied to environmental research and CUs, see Ferreira (2005) and Martins (2012b).

v Some research projects suggest that associating a group to a "traditional" identity can be used as a strategy to fight for political rights and ensure this group's permanence in these areas, as otherwise, they may be denied their rights (FERREIRA, 2004; MENDES, FERREIRA, 2009).

vi For an idea of the corruption scandals faced by this organization, see news reports on the Moeda Verde [Green Money] operation, by the Brazilian Federal Police in 2007. It investigated fraud, traffic of influence, the falsification of documents, as well as racketeering within this institution (TERRA NOTÍCIAS, 2007).

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ACTORS AND NETWORKS IN THE DEVELOPMENT OF ENVIRONMENTAL TERRITORIES: THE CASE OF THE RIGHT WHALE ENVIRONMENTAL PROTECTION AREA

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***Abstract*:** Within a context of climate change and crisis in fish stocks associated to the increase in the global demand for fish and its derivatives, the creation of protected spaces continues to be the main policy tool for the conservation of marine biodiversity. By deploying the general theory of conflict and actor-network theory, this article discusses the social mechanisms and processes that influence the organization of spaces with a view to enhance environmental conservation, as well as understand and establish different types of interactions needed to promote territorial transformation in these areas. To do so, it compares spaces in dispute in two situations of conflict in the field of marine environmental protection in Southern Brazil – conflicts of "fishing" and of "port", both before and after these conflicts arose. Although social changes have occurred in both cases, territorial transformation only took place in the latter case.

***Key-Words*:** Conflict. Network. Territory. Protected Areas.

***Resumo*:** Em um cenário de mudanças climáticas e crise dos estoques pesqueiros associado ao incremento da demanda mundial pelo consumo de peixes e derivados, a criação de espaços protegidos continua a ser a principal ferramenta política para conservação da biodiversidade marinha. Mobilizando a teoria geral dos conflitos e a teoria ator-rede, este artigo discute os mecanismos e processos sociais que influenciam a organização de espaços calcados na conservação ambiental e busca compreender quais são e como se estabelecem os diferentes tipos de interações necessárias para promover a transformação territorial nessas áreas. Para isso, compara-se a situação de espaços em disputa em dois conflitos de uma Área de Proteção Ambiental Marinha no sul do Brasil – conflitos "da Pesca" e "do Porto" –, nos períodos precedente e subsequente ao estabelecimento desses conflitos. Apesar de a mudança social ter ocorrido em ambos os casos, a transformação territorial só se concretizou no segundo.

***Palavras-chave*:** Conflitos. Redes. Território. Espaços Naturais Protegidos.

Resumen: En un contexto de cambio climático y crisis de los recursos pesqueros asociada a la explosión de la demanda mundial de consumo de pescado, la creación de áreas protegidas sigue siendo la principal herramienta política para la conservación de la biodiversidad marina. Este artículo discute los procesos sociales que influyen en la organización de espacios protegidos y busca entender cuáles son y cómo se establecen los diferentes tipos de interacciones necesarias para promover la transformación territorial en estas áreas. Para ello, se compara la situación de los espacios en disputa en dos situaciones conflictivas de una Área de Protección Ambiental en el sur de Brasil - conflictos "Pesca" y "Puerto" - en los períodos anteriores y posteriores a estos conflictos. Aunque el cambio social se produjo en ambos casos, la transformación espacial se concretizó sólo en el segundo.

Palabra clave: Conflictos. Redes. Territorio. Espacios Naturales Protegido.