

COOPERATIVES IN TRADITIONAL FISHERIES COMMUNITIES:  
INSTITUTIONS FOR COLLECTIVE ACTION

Henrique Callori Kefalas

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### **Abstract**

This work was based on the theoretical-methodological approaches of the collective actions and the shared management of common-pool resources of two cooperatives in traditional fishing communities in Brazil: the Carutapera Artisanal Fishermen Cooperative, located at the coastline of the state of Maranhão, and the Cananeia Oyster Producer Cooperative, located on the South coastline of the state of São Paulo. The following methodological proceedings were carried out: literature review, secondary data collection, direct observation of facts and phenomena, contact with stakeholders for data provision and analysis of the contexts of case studies. The trajectory of the collective action that led to the creation of the cooperatives were organized in a historical perspective, separated by phases, and the main events that contributed to the development of local cooperatives were listed/organized. The data analysis allowed for the inference of what were the facts and key phenomena in promoting joint and coordinated actions among individuals. The local value chain was described, and the social production relations that deal with the market aspects in these cooperatives were also identified, as well as the traditional and ecological knowledge regarding production in the fishery systems. Finally, the common areas used for fishing and artisanal mariculture were described, as well as how the property regimes employees work in the management of these territories. The main contribution of this study is the fact that it is necessary to pay attention to the historical context that drives the development of collective actions. When aiming to obtain living conditions for the communities, there is the need to identify potential leaders, the reasons that make people cooperate with each other and the mechanisms that maintain trust between individuals, which in turn leads to feedback on the solidarity cycle fabric on values such as reciprocity.

Keywords: artisanal fisheries, collective action, common pool resources, fishing cooperative.

## Introduction

In the context of the Brazilian artisanal fishery, the assurance of access to fishing territory and the development of value chains that consider both fish and fisherman are conditions that can be achieved through the cooperative organization of production and communities. The development of conditions for the cooperation culture to be established in the form of associations, cooperatives, consortia, and other types of organizational links is essential for the maintenance of coastal communities. These forms display the capacity, to a greater or lesser extent, to improve productivity and quality levels, and, especially, to make it easier to cope with turbulence, discontinuities and uncertainties present in the artisanal fisheries scenario (Maldonado and Santos, 2006).

From this organization, different actors adopted some strategies, seeking to overcome the adversities imposed on traditional livelihoods. Among these strategies, the following are noteworthy: the formulation of public policies aimed at guaranteeing essential rights, such as the recognition of quilombola (Brazilian hinterland settlement founded by people of African origin) and indigenous lands in the 1988 Constitution, the No. 169 Convention of the International Labor Organization on Tribal and Indigenous Peoples of 1989, of which Brazil is a signatory, the creation of a National Policy for the Sustainable Development of Traditional Peoples and Communities through Decree Law 6040/2007 (Grzebieluka, 2012), the mobilization of community members in social movements that claimed access to Amazonian forests, resulting in the creation of Extractive Reserves (Alegretti, 2008), and the rivers and seas of the country (MPP, 2014), and biological conservation projects and local socioeconomic development, whose actions aim at the implementation of participatory monitoring programs for the extraction of natural resources, diffusion of processing techniques and commercialization of local products, among others (Ummus, 2015).

Thus, it is convenient to state that, in this work, all these strategies and organizations assume the condition of collective actions, defined as a set of configurations in which a group of people share common goals and, in the same way, faces potential tensions regarding those common interests and the expectations of each person (Ostrom and Anh, 2009).

The application of cooperativism in artisanal fishing arises from the inability to organize production, to eliminate intermediates from the productive chain and to value fish. However, a closer look at the correlative literature identifies more cases concerning the failure of cooperativism in fishing activities than reports of successful projects and collective actions in the use of this form of productive organization, especially in so-called developing countries (Deacon, 2012). For this reason, it is common state that the substantiation of cooperatives from solidarity values increases potential fishermen autonomy regarding their productive activity (Eid and Lianza, 2004). In fact, in certain cases, it contributes significantly to the sustainability of the shared management of fishery resources process (Seixas and Kalikoski, 2009; Rivera et al., 2015).

The present study had two case studies, the Carutapera Artisanal Fishermen Cooperative, located at the coastline of the state of Maranhão, and the Cananeia Oyster Producer Cooperative, located on the South coastline of the state of São Paulo. The choice of these two cooperatives to compose this paper was because they are recognized as successful, as well as the need to analyze two distinct realities within the same problematic, depending on the fact that cooperatives share similar challenges and different trajectories.

In this context, the main objective of this work was to investigate the trajectory of the collective actions that gave origin to two cooperatives, highlighting the role of these organizations in the composition of the local productive chains and in the appropriation of common use areas.

## Methodology

Two case studies were carried out, validated from the combined and complementary use between different sources of evidence, composing the formative basis of the convergent lines of investigation, directed, in this case, towards the understanding of the collective action of the fishing communities, of the local productive chains areas and common use areas. In this way, the convergent lines of different sources of evidence form a logical basis called data triangulation, i.e., the organization and systematization of the different sources of evidence in an argumentative logic to be discussed by applying the Theory of Collective Action and the Theory of Commons.

Thus, some of the techniques described above were combined: (A) bibliographic review, (B) direct observation of facts and contact with key actors, (C) open or spontaneous interviews (Yin 2001, 112) with local leaders, and (D) qualitative and contextual documentary analyses, based on the socio-historical focus of the territories and their characteristics, the trajectories of collective actions, productive chains, common use areas and the current configuration of the cooperatives.

The characterizations were described according to adaptations of the framework developed by Ostrom (2007 and 2009), to analyze the sustainability of socioecological systems, and the fields and analysis indicators described by Búriego (2014), in a study on small-scale fishing entrepreneurship. The categories that evaluated the appropriation of cooperatives by the communities were then defined based on this effort (Table 1).

Table 1: Elements of analysis and scope.

<b>Elements of analysis</b>	<b>Scope</b>
<i>Trajectory of collective actions</i>	Historical process of the formation of communities and cooperatives, organizational forms, the role of leaders and external agents.
<i>Local productive fishing chain</i>	Productive fishing systems, social actors involved, social production and infrastructure relations.
<i>Common use areas</i>	Use and appropriation systems, rules, sanctions, and limits.

Sources: by the author, based on Ostrom (2007 and 2009) and Búriego (2014).

The socio-historical perspective has put research evidence under a procedural trajectory, oriented to describe the facts and the relevant events in the articulation of collective actions, productive chains, and common use areas. From this, it was possible to identify the most important facts and events and make them objects of analysis, by comparing them as essential elements for cooperative appropriation.

## Results

### Carutapera Artisanal Fishermen Cooperative

#### *Trajectory of collective actions*

In figure 1, the events highlighted in bold refer to the collective actions taken by the fishermen, while the other elements are the public policies and the events resulting from them. These actions originate in the spatial scale, from the *micro* level, which corresponds to the local and endogenous level of the cooperative organization; crossing the *meso* level, which refers to the regional level, and therefore, the municipality of Carutapera and the State of Maranhão; up to the *macro* level, corresponding to the federal level, represented by the ministerial public policies and their articulation interfaces with all other levels.

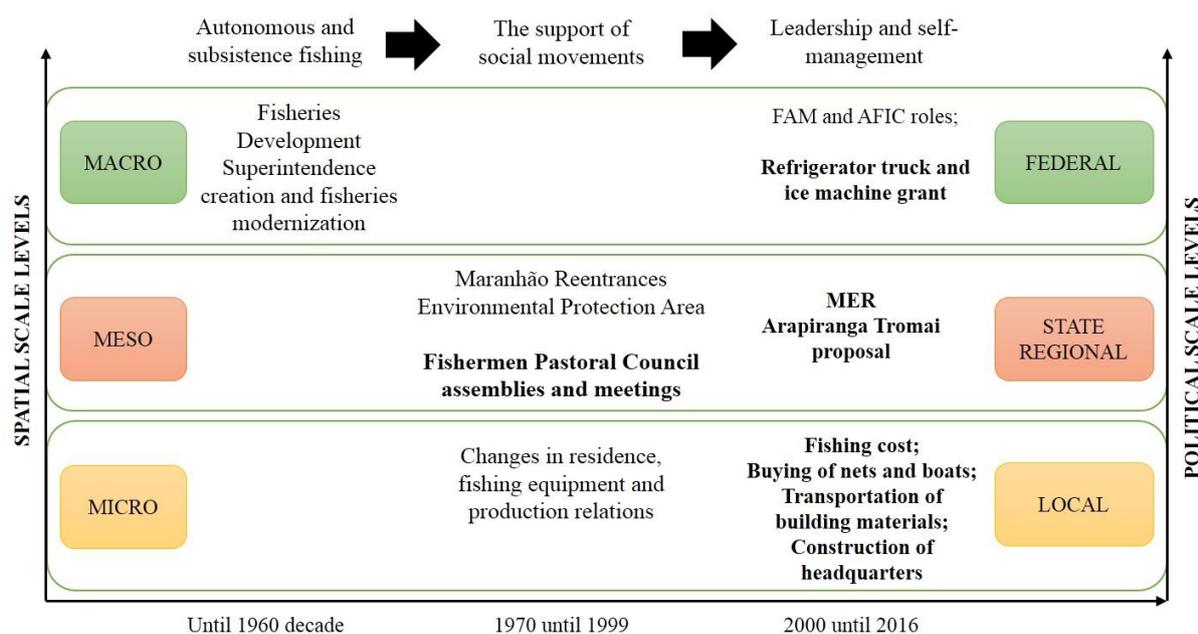


Figure 1: Trajectory phases. Source: adapted from Prado (2013).

Observing the events and the origin of each action within the spatial scale, it is possible to analyze the interdependence of the hierarchical structures that influenced the constitution of the cooperative. Actions at higher levels may have an influence on local systems, whether environmental or social, and cause significant changes (Berkes, 2014).

In the trajectory of collective actions that somehow refer to Carutapera Artisanal Fishermen Cooperative, it is verified that the triggering of changes in livelihoods, which ultimately fostered the emergence of the cooperative, occurred at the *macro* and *meso* levels of the scale, in an environment exogenous to the Carutapera Artisanal Fishermen. These changes were caused by the creation of the Fisheries Development Superintendence and the consequent modernization of fishing activities, as well as by Fishermen Pastoral Council intervention in the communities. The creation of the Maranhão Reentrances Environmental Protection Area plays a secondary role in this scenario, since, although it was created over traditional fishing areas with the purpose of regulating fishing activities, the effects of its implementation were not felt by artisanal fishermen.

On the other hand, the changes brought about by the creation of the Fisheries and Aquaculture Ministry - FAM and Artisanal Fishing Integrated Center - AFIC are more associated with opportunities to strengthen the productive organization than with livelihoods changes. This is due to the fact that these strengthening actions did not happen from a command-and-control orientation, in which policies are imposed, but were articulated through interactions between institutions, with one being a provider of public policies (FAM and AFIC) and the other a demandant for services and benefits (Carutapera Artisanal Fishermen Cooperative).

Regarding the proposal to create the Marine Extractive Reserve - MER Arapiranga Tromai in Carutapera, this event will certainly have other consequences when the proposal is implemented. For the moment, the mobilization to comply with the first instances of the proposal can be said to have served the development of the discussion and strengthened the need

for affirmation of the fishing territory used not only by the cooperative's fishermen, but also by other Carutapera fishermen who are not associated with the institution.

Events originating at the *micro* level are, in part, a result of the fisheries development policies of the 1960s, such as changes in housing and workplaces, fishing equipment and production relations. These events have demonstrated the great adaptability of artisanal fishermen to disturbances in socioeconomic and socioecological systems. Although these changes made them more vulnerable, responses from the community organization in Carutapera were efficient enough to build a more balanced scenario, where fishermen reassumed control over their fishery production and created mechanisms that assist in the management and conservation of the fishery resources.

The other part of *micro* level events, such as fishery costing, net and boat purchases, transportation of construction materials and construction of a headquarter, are practical evidence of the intrinsic values of this fishing community, such as reciprocity and solidarity. At a refined level of community mobilization, it was possible to understand that, through these events, the cohesion among cooperative fishermen was present enough that they took responsibility for each other, building internal norms and agreements that regulated the collective actions undertaken to improve both individual fishermen quality of life and that of their families.

The current Carutapera Artisanal Fishermen Cooperative situation reinforces the evidence and interpretations about the cooperation values of this traditional fishing community. The present search for improvement in the articulation of concessions with federal public policies, even in the current crisis scenario, demonstrates its institutional maturation. The history of the events of the cooperative's 17 years of existence shows that, despite undergoing severe crises, the group has a solid human capital in the face of adversity. The leadership, represented by the figure of Mr. J.C., is central for the maintenance of cooperative's social, material,

and symbolic patrimony. Even with his most recent leave of absence, to assume the position of councilman in the city of Carutapera, no problems have occurred in the already consolidated structures. On the contrary, this political capital and the possibility of new collective actions offer the cooperative an expectation of becoming a reference in the national fishing cooperativism scenario.

### *Analysis of the productive chain*

It can be said that the fishing productive chain currently in force at Carutapera (figure 2) is based on the individual ownership of the production instruments; on unequal social relations between proprietary traders, proprietary fishermen and fishermen without possession of labor instruments; on the unequal division of production and on the interdependence of one productive chain agent over the other. For the traders who own the labor instruments, it is important to accumulate capital and improve their production conditions, which includes investing in equipment and recruiting fishing masters and fishermen deprived of the means of production to form permanent and efficient teams.

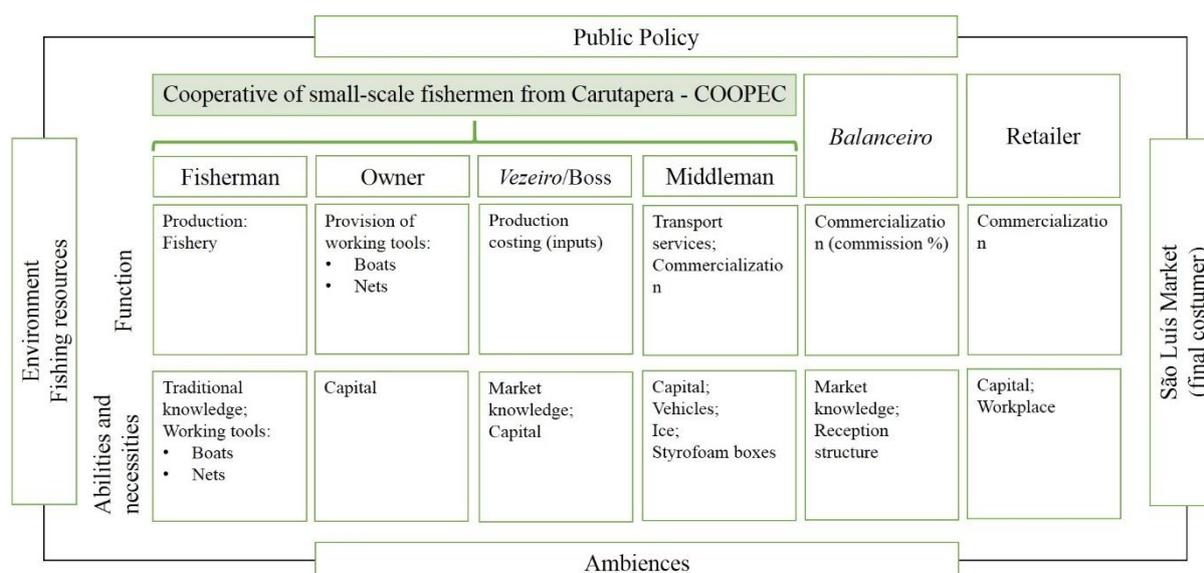


Figure 2: Fishing productive chain. Source: based on Tsuji (2013).

However, the influence of the owner traders has diminished and, increasingly, given way to the action of the cooperative-associated proprietary fishermen, with the difference that, often, the fishermen who form the teams have parental and companionship relations with the owners, which does not mean that the sharing arrangements are much fairer, although they represent more friendly and changeable social relations. In turn, fishermen that do not own the means of production seek to gain their autonomy and attain ownership status.

In this sense, Carutapera Artisanal Fishermen Cooperative's performance is essential, since it has managed to alleviate the negative effects of unequal wealth distribution, marginalization of fishing-class segments and social differentiation, all elements intrinsic to the capitalist mode of commodity production (Caldeira and Pierri, 2014). However, equalizing these nuances is a difficult task, since the trend continues for the same production relations. The search for equity and the fight against marginalization are obligatorily, due to changes in the production relations that coordinate fishing in the municipality.

The possible path to follow is not the increase of individual owners, as the cooperative has encouraged in the past, since this action would follow the reproduction of the current logic, in addition to increasing the fishing effort on already threatened fishing stocks. An initial alternative would be to stimulate the creation of new, more specific, production units based on collective actions, such as with Carutapera Artisanal Fishermen Cooperative, or even an extension of the cooperative - which is already happening. Another fundamental change would be the equalization of the position of the fishermen in relation to the ownership of the means of production. This would be a collectivization of labor instruments, under the responsibility of the cooperative, which could also be an outlet for balancing production sharing and increasing the economic efficiency of fisheries, since these would be better equipped, and, therefore, allow for better intensification and diversification conditions.

### *Common use areas in artisanal fisheries*

The common use areas used by artisanal fishing in Carutapera are constituted by different appropriation regimes, with specific use, regulation, and sanction arrangements, either from the systems constituted within the practiced fishing modality, or by the territorial instances that work in said areas. The appropriation of fishing territories in Brazil takes place through traditional appropriation systems, whose institutionalization can take place from the delimitation of Sustainable Use or Integral Protection Conservation Units, or of areas comprising other institutionalizations, such as Fishing Agreements and Forums.

The fishing areas used by the Carutapera artisanal fishermen are all invariably located within the limits of a Sustainable Use Conservation Unit subscribed to by the government of the State of Maranhão, the Maranhão Reentrances Environmental Protection Area. This categorization, therefore, configures the legal ownership of these territories, while belonging to the Union, and the attribution of management is granted to the state government, exercised through the unit's management council.

A more complex scenario regarding these configurations is also present, with private, state and community appropriation regimes, including a request to create the Marine Extractive Reserve Arapiranga Tromai (figure 3), which is now in progress. The creation of this Sustainable Use area will enable the implementation of a new specific arena to address these issues regarding use and access to fishing territories. In this future perspective, Carutapera Artisanal Fishermen Cooperative plays a fundamental role, since some of the main local fishermen leaders are among the partners, while, in addition, it is important for the cooperative organization to maintain the local fish stocks.

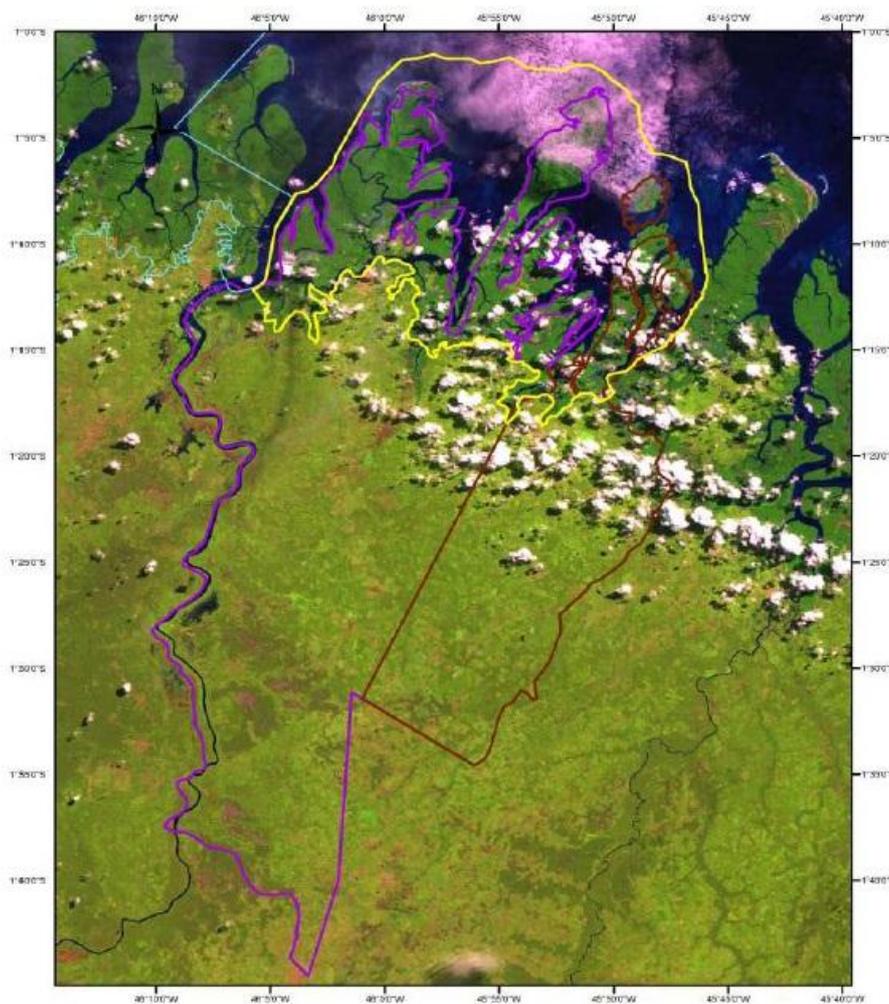


Figure 3: Shape of the Marine Extractive Reserve Arapiranga Tromai in yellow. Source: IC-MBio, 2016.

### Cananéia Oyster Producers Cooperative

#### *Trajectory of collective actions*

To analyze the trajectory of collective actions it is necessary to consider the scale at which the main events are dimensioned, making use of the different levels as the guiding units of this analysis. However, the graphical representation of this trajectory differs from that adopted in the Carutapera Artisanal Fishermen Cooperative case study, since the scheme elaborated by Medeiros (2006) was used.

By taking advantage of this scheme (figure 4), it is assumed that the graphic representation in question is sufficient to explain the operation of the collective actions undertaken by

the institutions that culminated in the creation of the cooperative in Cananéia. The scale adopted contemplates the local/community, municipal, state, national and international levels, and associates the institutions at these levels. The actions carried out by the organizations can move between the scalar levels, exerting incentives and pressures on each other. Even though the scheme was prepared in 2006, there is no loss of analysis regarding the trajectory of recent collective actions, since the institutions that make up the scenario are the same and most initiatives have been continued or improved.

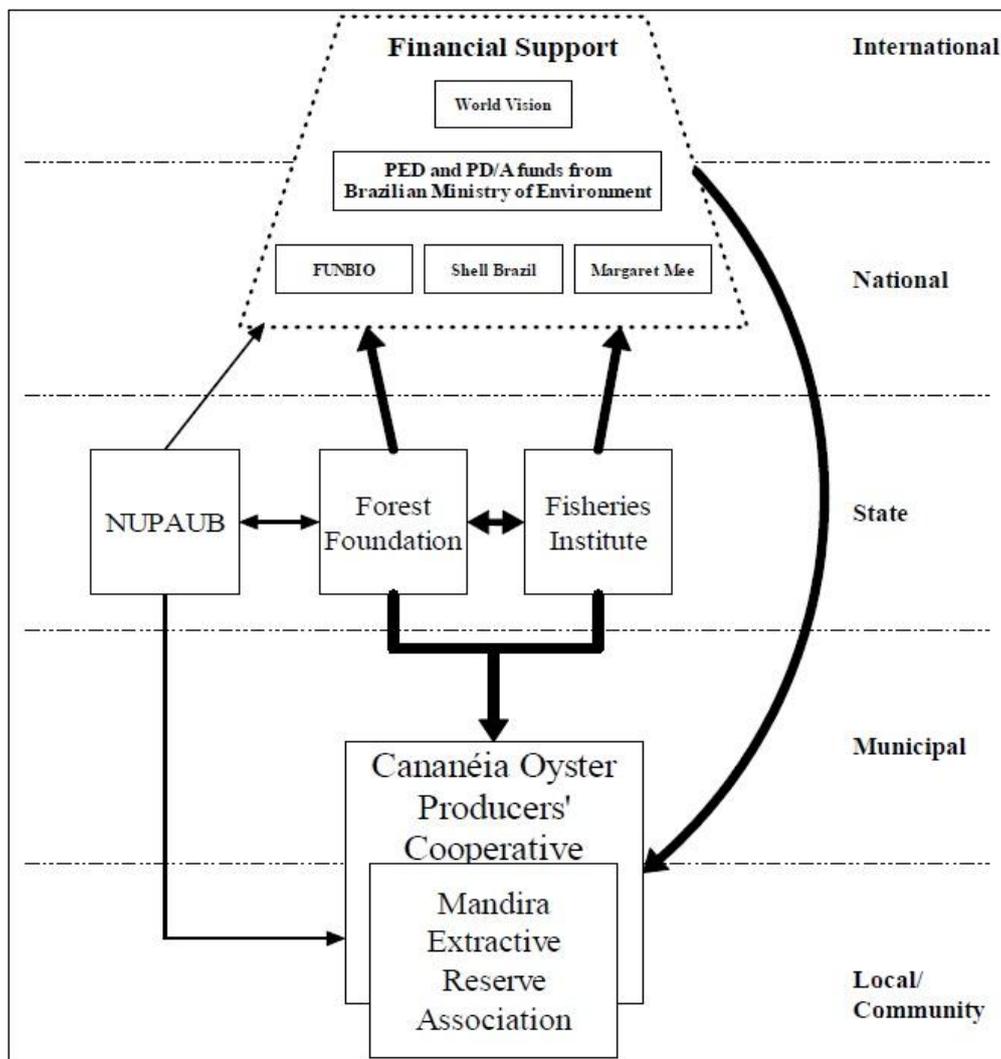


Figure 4: Scheme of the institutions connections in the five levels of the scale. Source: Medeiros (2006).

The collective actions that refer to Cananéia Oyster Producers Cooperative converge with the Quilombo Mandira constitution in 1868, when the rice farmers' land was abandoned and donated to the patriarch of the Mandira family, the slave and son of the landowner. The one hundred years that separate this first event from the next, the beginning of commercial oyster collection in the 1970s, served to build an ethnic and cultural identity based on a singular way of life, since then circumscribed in the multifunctionality of the productive activities. Even with the breakdown of this long period of activities at the local level, the cooperation foundations in the community have not been completely disrupted.

With the support of external agents, such as the intervention of the Fishing Pastoral Council, which influenced the affirmation of the black and quilombola identity, the community followed its multifunctional path, seeking to adapt to the new opportunities and challenges imposed by public policies implemented at both national and state levels. Clear examples of these policies are the São Paulo Coast Superintendence of Development developmental actions, such as road openings and restrictions imposed by environmental policies with the creation of Integral Protection CUs.

Another important external agent concerning the Mandira adaptation, in face of the changes occurred, was the Nucleus of Support of Research on Human Populations and Brazilian Wetlands of the University of São Paulo – NUPAUB/USP. The introduction of the Extractive Reserve theme in 1994 and the aid to carry out the petition calling for the creation of a unit belonging to this category in the region were fundamental actions for the community to arrive at its current stage.

The beginning of the establishment of fattening nurseries, with the aid of local technicians and partners, may have been the main role played by people representing community support institutions. It is worth mentioning that the change from the full extractives practiced until then, with the cutting of mangrove roots without distinction regarding oyster size, to the

cultivation of estuarine organisms in nurseries was crucial to maintain oyster stocks, the product that, even today, still supports most of the local families.

The social and political organization around the Mandira Extractive Reserve Association institutionalized a local/community organization, which, in turn, began to articulate with the other levels of the scale, even reaching perennial joints on the international level. The development of these interactions, however, eventually succumbed to initiatives that maintained the expectation of local development, such as when discussions about the construction of the purification unit in the neighborhood were under way, under the administration of the association.

The decision to create the Cananéia Oyster Producers Cooperative in 1997 ended up overlapping this discussion, under the pretext of increasing oyster production benefits to more communities in the region. The very construction of the purification plant, by means of local crowd efforts, ended up being a demonstration of this need to make the local communities work together. This apparent cohesion link, however, was promptly undone when the management crisis struck in 2000 and the consequent abandonment of the cooperative by many members, leaving the Mandira with the task of maintaining the cooperative and working towards its recovery. The effects of this cooperative stampede went beyond the social and economic scope, since there was also an increase in the pressure regarding oyster capture and the consequent decline of the stocks in later years.

The legal implementation of the Mandira MER and the mobilization to reformulate the Utilization Plan and, later, the creation of the Management Plan, contributed to retake internal agreements, as well as those among the communities, seeking the rebalancing of mariculture activities. Although mandated by state and national level institutions on the decisions that compete with Cananéia Oyster Producers Cooperative (Garcia, 2005; Cardoso, 2008), the Mandira (MER and quilombo) actions have been well performed until now by local leaders.

Proof of this is the recent rise of the community in activities that include not only oyster farming, but also community-based tourism and the organization of community events – that serve to both to spread local history and to affirm the *caiçara* and *quilombola* culture (Lucio, 2013).

#### *Analysis of the productive chain*

Initially, the activity consisted in the removal of the mangrove roots with all types of oysters, of several sizes. Center-driven bundles and paddling canoes were used for transportation to the extraction sites. Root cutting or scraping was performed with scythes. During collection, the oysters were stored in baskets, and when filled, the production was placed in nylon bags tied to the trees. Each collector carried up to two bags a day, the equivalent to about 60 kg (Sales and Moreira, 1996).

During this period, the oyster buyers controlled production. The vessels used in this activity and the ice boxes used for storing the oysters belonged to these traders, the fuel was subsidized and cash loans to the collectors were made. In addition, oyster transportation from the landing point in Mandira to the center of Cananéia was also performed by these intermediaries. Such control over the production process led to low remuneration for the collectors and profit maximization for the middlemen, which in turn increased pressure on the stocks (Sales and Moreira, 1996). This condition remained until the early 1980s, when all the Cananéia *caiçara*'s communities were part of the oyster production system through family work. The values paid for the production was established by the intermediaries and the extractivists had no contact with the consumer market. Almost all production was clandestine and did not meet sanitary and fiscal requirements (Chamy and Maldonado, 2003).

It was in this scenario, of threat of estuary stock exhaustion and unequal work conditions with low remuneration of extractive activities, that the oyster management initiative in the estuarine Cananéia region appeared.

Essentially, two objectives were planned: to organize the exploitation of the oyster bank by the extractive communities and to improve the production and commercialization process of this mollusk, to provide an economic alternative that would guarantee the sustenance of these communities (Lucio, 2013). The conservation projects, which were undertaken by universities and public agencies, contributed decisively to the oyster production in Cananéia, by introducing breeding technology in the intertidal zone, using the "tray" system. Thus, the economic viability of oyster breeding was confirmed, alleviating the pressure on natural stocks (Garcia, 2005).

The beneficiation processes were described and systematized by Garcia (2005) and Lucio (2013). However, the current cooperative situation imposed a new system in the production chain, mainly due to the lack of cooperative members who work at the organization's headquarters.

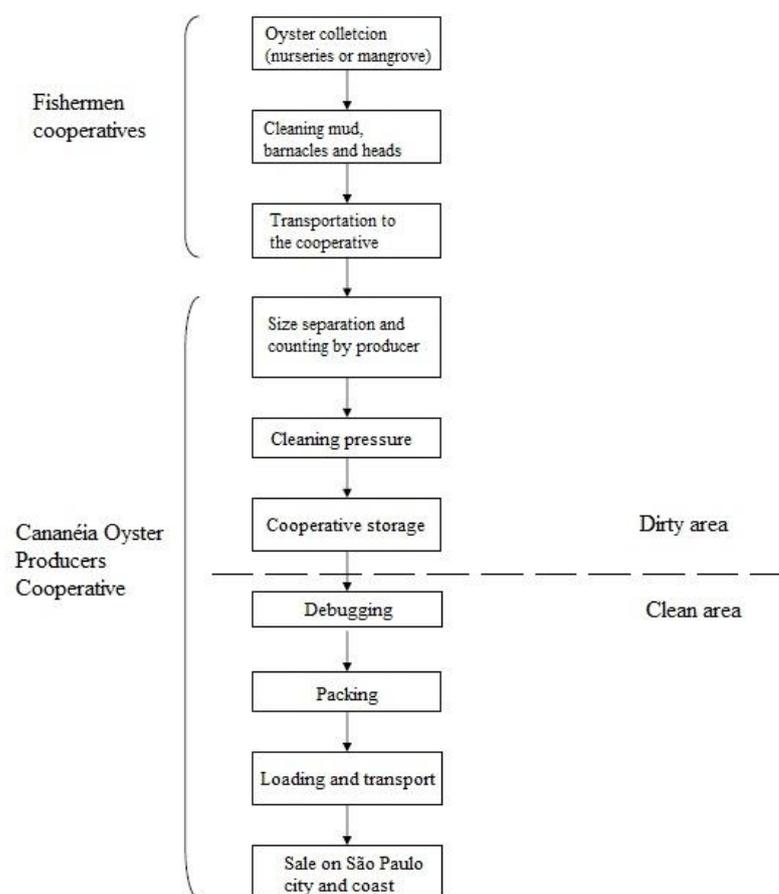


Figure 5: cooperative production flux. Source: Garcia (2005)

Currently, sales, which once reached markets in the greater São Paulo, are restricted to former south coast and Baixada Santista clients, mainly during the summer months, which often do not require purified oysters, which, consequently, decreases the value added to the product. Some of the production has been disposed of within the Mandira community itself at the local sale points, which now count on greater tourist visitation.

*Common use area: Mandira MER and the Quilombo*

Although a considerable part of the information in this item has already been contemplated in the previous sections, it is necessary to state that both legally established territories have specific ordinances. On the one hand, Mandira MER was the first Extractive Reserve created in the state of São Paulo. It is a Marine Reserve, covering 1,175ha of estuarine area and delimited by the limits of the mangrove ecosystem, that occur at the *Boacica*, Mandira and *Rio das Minas* rivers bars. According to Sales and Moreira (1996), Mandira MER is considered one of the most productive mangrove areas in the *Cananéia-Iguape-Paranaguá* Estuary Complex.

The reserve has a fundamental role in the management of marine resources, especially oysters, through the establishment of the extraction area and the fattening nurseries, as well as the homologation of the unit Management Plan, in 2010. In that document, the responsibilities of the local association, as well as of the other participating institutions, are included in the compliance with sustainable management practices, as well as delegating sanctioning power to the violators of these rules through the Deliberative Council, where decisions are taken.

Despite the vast mobilization history regarding this reserve, instituted since the creation proposal in 1996, currently, the meetings of the Deliberative Council and the participation of these institutions have not taken place. According to Mandira residents, the Mandira MER has been managed and cared for exclusively by the community, without any support

from government agents. On the one hand, this autonomy has given residents a certain freedom in decision-making. On the other hand, the inspection actions and access to public policies linked to the CU are underestimated.

The Mandira Quilombo, although officially recognized by ITESP, in 2002, received both land titling by National Institute of Colonization and Agrarian Reform - INCRA and establishment of collective property published in the Official Gazette only in October 2015. The quilombola territory covers the continental area comprising about 1,200ha where 24 families and more than 80 people live, distributed in three villages. The community organization around the quilombo brought direct benefits, since after entering the Ribeira Valley quilombola circuit, the population began to work more intensely with tourism-focused activities. Other actions, such as housing financing for the residents, were accessed because of the organization around the quilombo.

The Mandira articulation around these instances of collective property, the Mandira MER and the quilombo are noteworthy. Through the community's articulation with governmental and non-governmental institutions, the current community has an institutionalized appropriation of its living and production territories. These articulations generated better living conditions through the increase of new productive activities and the affirmation of those already carried out.

On the other hand, Cananéia Oyster Producers Cooperative, despite having an important role as an interface between the community and the consumer market, has not achieved the same successes as these other institutions. The present situation of the cooperative demonstrates that the articulations between different levels of organizational scale carried out by the Mandira community still do not permeate the reality of the productive organization. The dismantling of the Federal Inspection Seal, due to inefficient cooperative management, is a clear sign that relations between institutions do not occur in this context, since the analysis

of the oysters and the water used in the purification could be carried out through partnerships between research institutions and the cooperative. The geographical locations of the Mandira MER, quilombo and cooperative may be a limiting factor in this articulation, since this is an initiative that escapes the permanent control of the community and ends up having secondary importance.

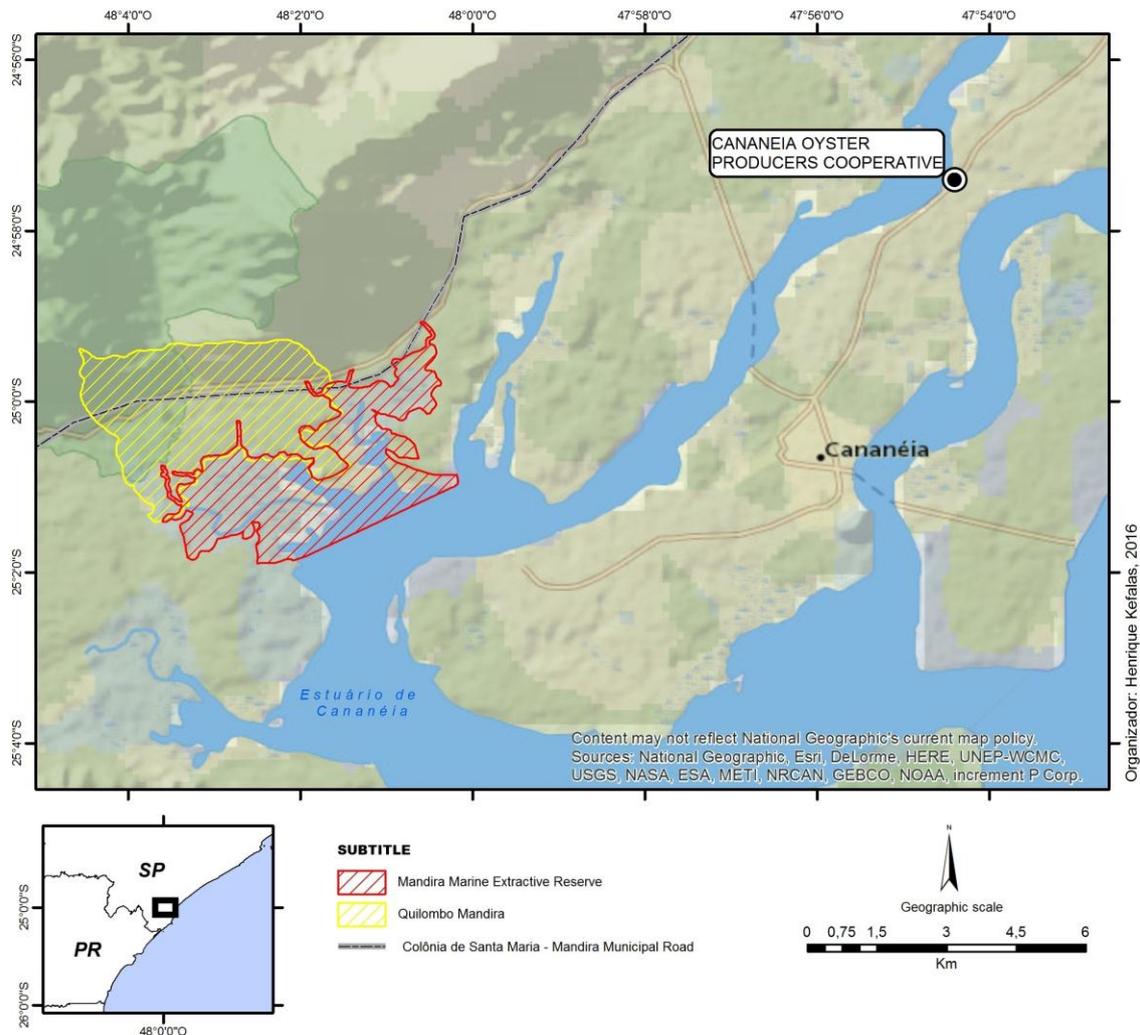


Figure 6: Localization of Mandira MER, Quilombo and cooperative. Source: elaborated by the author.

### **Final considerations**

The research effort in this work was aimed at recovering the historical processes of collective actions that triggered the creation of two cooperatives formed by traditional fishing communities, inserted in different contexts, but sharing common goals, mainly the improvement in the quality of life of their members and the maintenance of the fish stocks on which they depend on. The focus on local productive chains and the ownership regimes of the areas used for fishery and mariculture production has exposed the need for the theoretical-analytical contributions of Collective Action Theory and Common Theory.

The literature review of these theories has demonstrated their potential to explain the mechanisms in which communities take over fishing territories and how collectively undertaken actions produce changes in local systems, which can be arbitrarily defined in their environmental, economic, or social dimensions (Berkes and Folke, 1998; Sabourin, 2010). Among the advantages of this contribution is the possibility to approach the case studies under the same analytical framework, allowing for the finding of the points and the convergent and divergent characteristics between the analyzed cases.

Thus, the logic behind collective actions is important in understanding the paths followed by social movements, cooperative organizations and shared management arrangements employed in the context of artisanal fisheries. Nevertheless, the contribution of the collective actions returns to the social production relations that, in this case, were contemplated within the approach of productive chains and fishing cooperativism. This is because the roles of the social actors and their abilities end up shaping the configuration of these production relations and, consequently, the division of labor and profits in the cooperatives and of the fishing systems (Olson, 1965).

The common approach also led to the territorialisation of the activities undertaken in the scope of cooperatives, seeking to identify the changes that occurred in time and space that

motivated the decision-making by the fishing organizations. Public policies aimed at nature conservation play a fundamental role in the use of the territory, since they can limit the productive practices or conduct them under an inclusive logic, in which the decisions taken are necessarily joint and the norms of use and access defined collectively (Zückert, 2012). In this scenario, in the Mandira MER case, the quilombola territories are also highlighted, whose possession is collective and, therefore, goes back to the traditional appropriation systems. The functioning of this property regime cannot be romanticized, since individual market logic is already present, even in the most isolated societies.

Regarding the case studies *per se*, a categorization of the analyses is present, whose purpose is to organize the chronology of the facts in a logical order. The historical process in which collective actions are described sought to consider demographic, cultural, political, economic, social, and environmental changes in a succinct and holistic way. The unfolding of collective action trajectories allowed us to observe the complete scenario in which the communities and the external actors act.

While collective action among the Mandira impinged a major transformation in the context of this community, changing livelihoods and ways of relating to the natural environment, the same did not occur in Carutapera, since the changes were designed to meet needs of an economic and political nature, without presenting major changes in the way of life of these populations and their relations with the marine and coastal environments.

Another aspect to be considered within the trajectory of collective actions is the articulation with public and private sector institutions. In Carutapera, these relations occurred in a very punctual way, which may have restricted the transformative reach of the territory and livelihoods, as indeed occurred in Cananéia. However, the independence in relations between institutions avoided the practice of paternalism in decision-making. In Carutapera, access to public financing and concession policies did not count on the participation of an interlocutor

external to the cooperative. At Cananéia Oyster Producers Cooperative, the organization's own conception was based on non-extractive agents and, therefore, showed deficiencies regarding the appropriation of the institution by the cooperative members. This effect drained the concept of cooperativism, and in practice the cooperative founding was characterized more as a conservation project with external support than in fact an institutional construction based on cooperation.

Although Cananéia Oyster Producers Cooperative itself did not overcome all the challenges concerning its full operationalization in the different Cananéia municipality communities, an important strengthening of the institutional and socio-cultural relations in the Mandira MER and Quilombo was observed. This strengthening associated with a history of cooperation, mutual aid and struggle for the right and permanence in the territory has a clear character of benefit redistribution among the Mandira community as a whole. On the other hand, the Carutapera cooperative has a more nuclear attribute within the cooperative, without, however, spreading to the community as a whole. The discussion falls on a problem related to the absence of a more solid and comprehensive community organization and identity.

The differential of the analysis to be highlighted in complementation to the extensive literature on the subject (Ostrom, 1990; Zückert, 2012) is not only the social learning directed towards the understanding and execution of marketing practices with socio-environmental imbrication, but also the institutional and political learning related to the narrowing ties with the state. This opens up a wide interface possibility between public management and the local opportunity demands and potentials, such as the establishment of agreements aimed at development from a local perspective.

From this point of view, after the creation of the Carutapera Artisanal Fishermen Cooperative, it began to contribute to the political formation of its members and to the improvement of the living conditions of local fishermen, allowing for the renewal and maintenance of

the means of production and the change of social relations harmful to the fishermen in the productive chain, in addition to the strengthening of the cooperation between the members, reflected in the concern and the care with the fishing implements permanently used by the community.

The cooperative operates in a territory delimited by the Maranhão Reentrances Environmental Preservation Area, but in practice it does little to contribute to the organization of the fishing activity in the region, and this role then falls under the various communal and private property regimes adopted by the fishermen. In addition, the request for the creation of the Arapiraanga Tromaí Marine Extractive Reserve was recently approved at a public hearing and forwarded to upper instances, a measure of great importance to meet the management needs of the fishing territories used by local artisanal fishermen. Only with this arrangement will the interface between the State and the local community be mobilized so as to ally conservation and territorial development, as well as placing the problem of industrial fishing in the territory via the elaboration of a marine/coastal management plan in the government agenda.

In turn, cooperative members from the Cananéia Oyster Producer Cooperative live in one of the best-preserved regions of the State of São Paulo, in an estuary complex considered by the International Union for the Conservation of Nature (IUCN) as the third estuary in the world in relation to primary productivity. The *caiçaras*, *quilombolas* and artisanal fishermen that have occupied this region for centuries have developed an extractive culture based on the use of several local natural resources, with seasonal use, constituting an economy that displays income complementarity in this variety of activities.

The community currently making up the cooperative is that of the Mandira neighborhood, with diverse productive activities, such as oyster farming, fishing, family farming, vegetable extractivism, handicrafts and tourism (Lucio, 2013). The cooperative was created in 1997, and the “Mandira” participated as protagonists in the creation of the Mandira Extractive

Reserve, since 1994, and were recognized as a remaining quilombo community in 2002, with the land titled by INCRA recently, in October 2015. This indicates that the instances of resource and territory management are diverse, as well as the activities carried out in this cooperative. This multivariate context has served, and still serves, as a research object in various areas of knowledge and, therefore, multiple interpretations of the resource functions and territory management arrangements have attributed to it.

In addition, we agree with Lucio's (2013) assertion regarding the decisive twist of the interaction between the state and the Mandira community, emphasizing the synergistic articulation between several state government research agencies and support to local development, such as the Institute of Fisheries, Forest Foundation; ITESP Foundation; Nucleus of Support of Research on Human Populations and Brazilian Wetlands of the University of São Paulo (NUPAUB-USP); Coordination of Environmental Planning of the Secretariat of the Environment of São Paulo, State Program for Biodiversity Conservation (PROBIO/SP), Adolf Lutz Institute of the State Health Department of São Paulo, Vale do Ribeira Intermunicipal Development Consortium, Regional Laboratory of Environmental Planning of the São Paulo State Secretariat for the Environment; in addition to other public institutions such as the City Hall of the Cananéia Spa Resort; Ministry of the Environment; National Center for the Sustainable Development of Traditional Populations (CNPT); Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), Chico Mendes Institute for Biodiversity (ICMBio), not to mention the numerous third sector organizations and funds such as the Socioenvironmental Institute; Cananéia Network; Finish National Agencies for Development and Cooperation; Ford Foundation; Avina Foundation; World Vision; Margaret Mee Botanic Foundation; Shell do Brasil and the Gaia Ambiental Center for Ecological Studies.

It is noted that the community perspective of taking advantage of the positive development projects effects is not lost, but is assimilated and retranslated by the subject role of the

Mandira according to their needs and demands. However, even with a complex exchange between local actors and public and private organizations, some challenges to be overcome by the community still exist, to give greater support to development projects, such as the regularization of the cooperative with the Federal Inspection Service, as well as greater information and advice exchanges on the problems resulting from activities such as tourism and its impact on the management and exploitation of marine resources (Doi et al., 2014).

Therefore, the systematizations and interpretations evidenced in this research from the perspective of the trajectory of collective actions, both cooperatives, evidence similar initial occupation and struggle trajectories for the rights to certain livelihoods and to the territory, fomented in the two cases by the same segment of the Catholic Church (Liberation Theology), represented by the Fishermen Pastoral Council.

However, the different mobilization and community cohesion modes have traced distinct struggle and articulation paths with different governmental and social actors. Thus, while at the Mandira Quilombo a greater permeability to articulation between institutions was in place, in Carutapera, on the contrary, the cooperative maintains more nuclear relations among the members. In both cases, the improvement of the quality of life is also highlighted, through the income increase provided by the sales of fishing products through cooperatives. The role of local community leaderships is also a convergent point in the case studies. In the case of the Mandira, the leadership around a family nucleus is highlighted, not only individualized, as in Carutapera.

The knowledge produced regarding the different mechanisms of collective actions and shared management in the national artisanal fishing is dynamic and no longer of exclusive access to the academic and scientific sector. With each new mobilization undertaken by traditional fishing communities, by social movements, by local associations and cooperatives and by the representations of the territories in which they are inserted, these groups have demon-

strated full capacity to establish dialogue mechanisms with society and new institutional arrangements within the most varied scales.

An increasingly evident fact, however, is that these groups have been placed as subjects of their own history, in part because of demands within the communities, but mostly through the imposition of development projects and policies implemented from interests of large enterprises built in collusion between the state and private initiatives. Despite the advances occurred over the last decade, based on inclusive public policies and the creation of more accessible lines of credit for artisanal fishers, the developmental policy agenda imposed in the country and the current political situation directly damage the constitutional and territorial rights of these communities, including the present threat of setbacks in acquired rights.

The question of the availability of fishery resources stocks also reflects the overlapping of the interests of large fishing industries to the detriment of small-scale practice, even though the latter is most responsible for supplying fish to people's tables. Allied to this factor is a complex scenario in which stocks are affected by global climate change, environmental disasters, pollution and the occurrence of invasive species, among other changes.

The recent events involving the organizational forms in the artisanal fishing scenario, especially in the current national economic and political scenario, reignite the protagonism of the base movements as a political representation of this group of workers of the sea.

## Bibliography

- Allegretti, Mary. 2008. "A construção social de políticas públicas. Chico Mendes e o movimento dos seringueiros." *Desenvolvimento e Meio Ambiente*, n. 18, p. 39-59.
- Berkes, Fikret. 2014. "Social-Ecological Systems and Community Resilience." *Community Conservation Research Network*.
- Berkes, Fikret and Folke, C. 1998. *Linking Social and Ecological Systems. Management Practices and Social Mechanisms for Building Resilience*. Cambridge: Cambridge University Press.
- Búrigo, Fábio. 2014. "Dilemas do empreendedorismo pesqueiro de pequeno porte no Sul de Santa Catarina." *Brazilian Journal of Aquatic Science*. 18 (1): 61-70.
- Caldeira, Guilherme Augusto and Pierri, Naína. 2014. "As relações econômicas e a gestão compartilhada de recursos comuns: o caso da pesca marinha em Pontal do Paraná, Sul do Brasil." *Desenvolvimento e Meio Ambiente*, v. 32, p. 119-137.
- Cardoso, Thaís. 2008. "A construção da gestão compartilhada da reserva extrativista do Mandira, Cananéia – SP." PhD thesis. Universidade Federal de São Carlos.
- Chamy, Paula; Maldonado, Wanda. 2003. "Sustentabilidade social, econômica e ambiental de pequenos negócios: o caso da Cooperostra. Paper presented at V Encontro Da Sociedade Brasileira De Economia Ecológica, em Caxias do Sul, Rio Grande do Sul, Brasil.
- Deacon, Robert T. 2012. "Fishery Management by Harvester Cooperatives." *Review of Environmental Economics and Policy*, v. 6, n. 2, p. 258–277.
- Doi, Sonia, A. and Barbieri, Edison and Marques, Hércio L. A. 2014. "Densidade colimétrica das áreas de extrativismo de ostras em relação aos fatores ambientais em Cananéia (SP)." *Eng. San. Ambient*, v. 19, n. 2, p. 165-171.
- Eid, Farid and Lianza, Sidney. 2004. "Princípios e critérios para o cooperativismo pesqueiro auto-sustentável." Paper presented at I Seminário de Gestão Sócio-Ambiental para o Desenvolvimento da Aquicultura e da Pesca no Brasil, UFRJ, agosto de 2004.

- Garcia, Tatiane. 2005. "Impactos da implantação de uma cooperativa de produção de ostras junto a comunidades extrativistas caiçaras do Litoral Sul/SP: um estudo de caso." Phd diss., Universidade de São Paulo.
- Grzebieluka, Douglas. 2012. "Por uma tipologia das comunidades tradicionais brasileiras." *Revista Geografar*. Curitiba, v. 7, n. 1, p. 116-137.
- Icmbio. Instituto Chico Mendes De Conservação da Biodiversidade. Disponível em: <[www.icmbio.gov.br/](http://www.icmbio.gov.br/)>. Acesso em: abril. 2016.
- Lúcio, C. F. 2013. "Natureza e cultura como commodities: um estudo antropológico sobre três iniciativas de empreendedorismo étnico de cunho sustentável na comunidade quilombola do Mandira, Cananéia/SP." Phd thesis, Universidade Estadual de Campinas.
- Maldonado, Fabiana and Santos, Antônio Carlos. 2006. "Cooperativas de pescadores artesanais: uma análise sob a perspectiva teórica." *Organizações Rurais e Agroindustriais*, v. 8, n.3, pp. 323-333.
- Medeiros, Dean. 2006. "Poverty Alleviation and Biodiversity Conservation in Rural Brazil: A Case Study of the Cananéia Oyster Producers Cooperative." Phd diss., University of Manitoba.
- Mpp. 2014. "Movimentos Dos Pescadores E Pescadoras Artesanais Do Brasil." *Cartilha: Projeto de Lei de Iniciativa Popular Sobre Território Pesqueiro*.
- Olson, M. 1965. *The logic of collective action: public goods and the theory of groups*. Harvard University Press.
- Ostrom, Elinor. 2009. "A general framework for analyzing sustainability of social-ecological systems." *Science*, v. 325.
- \_\_\_\_\_. 2007 "A diagnostic approach for going beyond panaceas." *Proceedings of the National Academy of Sciences of the United States of America*. P. 15181-15187.
- \_\_\_\_\_. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
- Ostrom, E. and Ahn, T. K. 2009. "The Meaning of Social Capital and Its Link to Collective Action." In *Handbook of Social Capital: The Troika of Sociology, Political Science*

- and Economics*, edited by G. T. Svendsen and G. L. Svendsen, 17–35. Northampton, MA: Edward Elgar.
- Prado, Deborah Santos. 2013. “Resiliência de modos de vida na Praia do Aventureiro, Ilha Grande (RJ): uma trajetória de mudanças socioecológicas.” Phd diss., Universidade Estadual de Campinas.
- Rivera, Vivienne Solís et al. 2015. “Integrating traditional and scientific knowledge for the management of small-scale fisheries: an example from Costa Rica.” In: Fischer, J., Jorgensen, J., Josupeit, H.
- Sabourin, Eric. 2010. “Manejo dos recursos comuns e reciprocidade: os aportes de Elinor Ostrom ao debate.” *Sustentabilidade em debate* v. 1, n. 2, p. 141-158.
- Sales, R. and Moreira, A. 1996. “Reserva Extrativista no complexo estuarino lagunar de Iguape-Cananéia: domínio da Mata Atlântica.” *Série Relatório de Pesquisa n°22*, Universidade de São Paulo.
- Seixas, Cristiana Seixas and Kalikoski, Daniela. 2009. “Gestão participativa da pesca no Brasil: levantamento das iniciativas e documentação dos processos.” *Desenvolvimento e Meio Ambiente*, n. 20, p. 119-139.
- Tsuji, Tito Carvalho. 2013. *Pescadores e Cooperativas: um olhar sobre pescarias e sustentabilidade*. São Luís: Edufma, 210p.
- Ummus, Rafael E. 2015. “Diversidade de Respostas Locais a Projetos de Conservação e Desenvolvimento Integrados.” *Sustentabilidade em Debate*, Brasília, v.6, n.2, p. 106-121.
- Yin, Robert. 2001. *Estudo de caso, planejamento e métodos*. São Paulo: Bookman.
- Zückert, Hartmut. 2012. “The commons – a historical concept of property rights.” In *The Wealth of the Commons: A World Beyond Market and State*. Ed. By Bollier, D.; Helfrich, S.